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Opening ceremony

ROMANIAN LOCAL PUBLIC FINANCE DECENTRALIZATION

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***Abstract.** The work paper highlights the evolution of the public financial decentralization in Romania, based on analysis of legislative changes that occurred after 1991. These changes have had an important impact on local budgets and on local government responsibilities. In the context of increasing local financial independence, local authorities had to demonstrate their ability to take on the tasks of local interest from central government powers. The effect is prompt and timely response to citizen needs.*

Keywords: local autonomy; financial decentralization; local needs; public services; budget.

JEL Codes: H72, H83.

REL Codes: 13C, 13G.

1. Introduction

Local resources have an important role in local development, forming the prompt response in optimal conditions to the community needs. Administrative autonomy is subjected to financial autonomy, providing its material support of the operation. The argument is that, locally, collectivities know best their financial possibilities (Văcărel et al., 2003) and do the best financial estimations to cover the expenditure needs for local interest, detecting this way the degree to which can cope on their own resources. As a result, central government may be released from a series of tasks, which are fulfilled by means of cost savings by the local government. This phenomenon involves the decentralization of local public finances.

2. Literature review

In the past seven years, especially after the adoption of the Tax Code, Romanian literature has noted a positive development of local autonomy municipalities becoming more interested to gain independence, both the administrative and financial one (Bolos, 2006). Local autonomy refers to the organization, functioning, powers and duties of local authorities and also to the territory, city or county's resources management.

Thus, in terms of administrative, local autonomy is the last step of administrative development (Manda, 2002). That involves transfer of competences from central level to the various authorities that operate independently, selected by local authorities, who are entitled by local collectivities⁽¹⁾ to take a series of measures without asking permission of the central bodies, having therefore one's own sphere of action. A real autonomy cannot exist without to serve the purposes for which it was established, without providing the necessary financial resources in an appropriate proportion to the responsibilities and powers conferred by law. Local Autonomy Charta specifies that, in the national economic policy context, local government authorities have the right to own resources, sufficient and proportionate to their competence established by law, which may have freely exercising their duties. Sampling systems, on which the local resources rely on, should be sufficiently diverse and progressing

nature, to enable them to follow the real cost of the exercise tasks they are assigned for. Based on these resources, there can be taken initiatives in any area that involves community, by consulting residents first through a referendum or any other form of direct participation of citizens in public affairs, under the law⁽²⁾. Thus, financial decentralization will begin work when the area of using national interest public goods begins to restrict, in the conditions under which the cost of decision making at the central level is too high than the one at the local level (Văcărel, 2003).

Financial decentralization was pushing local government responsibilities in managing their own budgets, in connection with the report of taxes/fees-benefits, the size of externalities and economies of scale of public goods (Moșteanu, Iacob, 2008). Local authorities should choose programs with few externalities and law economies of scale, to streamline this way the local government expenditure. So, the targets are totally private to community (Dascălu, 2006). Thus, if public services are made at an administrative level closest to the citizen, it will maximize social welfare.

2. Research methodology

This paper work aims to reflect the evolution of financial decentralization in Romania. Analysis consists in studying the legislative changes on local government finances and the accounts data for the execution of local budgets for the past 17 years. The objective is to identify the responsibilities of local authorities and the sources used by them to respond to the collectivities needs.

3. Decentralization of local public finances

Decentralization represents the transfer of authority and responsibility for public functions to local government or the private system. Decentralization may be political, administrative, financial and economic, each with characteristics and conditions for success.

Financial decentralization concerns the right of local government to raise own revenues, proportionate to their needs, both based on local taxes but also by appealing to extra sources like loans, whether first-class revenues prove insufficient. The financial decentralization implies freedom of selection of targets the local revenues to be directed to, both own and borrowed incomes and those obtained by the process of balancing. On the local autonomy, local authorities are entitled to decide the amount of local revenue but also the opportunity and need for public expenditures made from such sources. (Moșteanu, Lăcătuș, 2008)

The financial decentralization establishes a balance between the responsibilities borne by local authorities and material resources available to them and stimulates local government authorities to make efforts and mobilize their own resources which to manage transparently, in low operating cost terms.

In this regard, there is necessary a sustained and continuous dialogue with local people, a cooperation with interest groups and to support public-private partnership. However, this unit should not be applied absolutely to all public utility services serving. There should be considered certain criteria relating to cost, opportunity, necessity, level of development of the beneficiary community, available resources, etc. There are certain public services to be concentrated at the national level, such as public order, defense and national security. Thus, since this is a key area, of general interest, with an exceptional financial need, over local capacity, with entirely different expenditure allocation and management, these services can be deployed in the local task. This case, we can enumerate the environmental protection, citizen protection, external relations, macro policies, etc. Instead, decentralization aims those financial services fixed on specific situations, local or regional ones, those are not national interest or involve phenomena with different intensities of expression. These cases go to local load, local government authorities undertaking to meet local requirements by their own

financial efforts, completed sometimes from the national budget. We can give as example the public lighting, local transport, which are financed exclusively at local level, and child protection, protection of persons with disabilities, advisory, home eating aid, all financed by budgetary transfers.

3. Steps of the Romanian local financial

In Romania, the history of financial decentralization law starts by the vote of local taxes law. The strengthening local autonomy and decentralization of local government finances has continued, supported by the framework law of decentralization and the local finance law from 1998, repealed in 2003 (OU no. 45/2003 took its place) and later replaced by Law no. 273 / 2006.

Before the entry into force of these laws, the financial autonomy of local government was limited and the budget process was taking place on the annual budget law and public finance law (first, Law no. 72/1996, then changed into Law no. 500/2000). This law stipulates that the transition of the public expenditure and financing management burden on the responsibility of local government, following decentralization of activities, is made by law only, with ensuring the financial resources necessary to achieve them.

Migration of responsibilities to local authorities has been gradually took place, on account of the conditional or unconditional transfers, or even their local resources, and covered several areas of public services. Early in the transfer of responsibility dates back to 1992, with the establishment of local government law to collect local taxes. Because these revenues were still low, most public services for local communities were centralized.

The period 1991-1992 is not characterized by local government reforms, public services being coordinated and financed from the central level of administration. Local revenues consist of own revenues and grants from the state budget (about 70% in 1991 and 84% in 1992). Interest in collecting and administering own local funds was not yet justified because Finance Ministry still provided the services of local interest through its regional directorates.

The next period, between 1993-1999, was relatively stable. In that time we can identify a major decrease in subsidies, up to 37% in 1998, but an increase in levies from the state budget, from 0% (in 1992) to 37% (in 1998), which means that the most of local budget sources were from state budget, between 72% and 80%, confirming that the numerous amounts of subsidies got till 1993 were replaced by transfers.

In our study we distinguished five important moments for this period:

- a) 1994, when is enforced Law no. 27/1994 of the local taxes, that entitles local communities to have their own resources. The effects of law begun to have results, because the share of local incomes in total local revenues reaches 26%, from 16% in 1994.
- b) the year 1996, when local loans are made for the first time, as alternative of financing. That is a sign of positive developments in terms of decentralization.
- c) 1997, when is established Special fund for water supply and road pavement. The effect was the growth level of samplings from the state budget, by more than 5 percentage points.
- d) 1998, when the Public Finance Law no.189/1998 was voted, but with effects from January 1, 1999. This year is considered a radical one on establishing local autonomy. The local income increased, especially on the basis of tax. The money from the state budget is maintained around 45% from total local revenues, but subsidies are lower, leading to the 7% of total revenues. It appears the payroll tax, which marks the beginning of using shared taxes, totaling approximately 33% of total local revenues. This event marks the real beginning of the actual transfer of powers from central to local level.
- e) 1999, when are established special purpose revenues, as amounts attributable to the public roads. The broken down rates of the income tax in total local revenues decrease (11% in

1999), as a result of their replacement with the new source, the break down amounts of the income tax.

The 2000-2003 period is characterized by the following:

- a) public-private funding of the grant of heat delivered to the population, eliminated in 2007;
- b) the transfer to local authorities of new powers;
- c) local communities are receiving new inputs, after the vote of Tax Code: stamp duties, notary and judiciary fees;
- d) the development of decentralization, with the establishment of the Record of the Population Service, Local Police Service, Fire Service and Civil Defense.

News on local public finances are:

- a) the introduction in 2000 of income tax amounts broken for balancing, shares of income tax amounts broken down from income tax to subsidize the heat. It should also be noted that, starting with this year, County Council has the right to make transfer to subordinate administrations, from the revenues received. (Profiroiu, Profiroiu, 2004)
- b) the introduction in 2001 of the amounts broken down from VAT, to fund personal expenses of pre-university education. These were ranging between 26% and 30% of the total revenues of local budgets. Since 2001, the breakdown of income tax amounts are complemented by the breakdown of value added tax, with the purpose of balancing the local budgets, as to subsidize the heat (broken amounts of income tax) and to fund expenses of undergraduate education, of nurseries and of advisory centers (decentralized this year, with the breakdown from VAT)⁽³⁾. At the same time, there are still grants from the state budget, aimed to financier investments based on external loans, to support the child protection system (based on grants from other budgets also) as well as to finance the development and the updating of general urban plans and local airports. Also, there took place transfers from the state budget to local budgets, to support investments financed partly from foreign loans. This way the same destination subsidy is replaced. An important part of this period is the one when it is introduced in law the concept of balancing local budgets, improved by the Local Public Finance Law from 2006, to prevent local budget deficits and to make uniform disparities in economic development. We measured a high dependence on the state budget. Thus, if the subsidies continue to fall, the amounts took from the state budget increase. Tax revenues have large share in total income, but local own revenues are down from 30% in 2001 to 20% in 2003. This fact is explained by the poor organization of local government in managing its own revenues.

In 2002, the broken down of income tax amounts are targeted for social aid and housing aid for heating (according to Law no. 416 for the guaranteed minimum income in 2001), for financing the cultural institutions (which have been decentralized from this year) for contributions payment of the non-clerical staff employed in establishments of worship in the country. It should also be noted that subsidies used to finance investments based on external loans are replaced by transfers from the state budget. From the broken down amounts of VAT, it will be supported also, starting this year, the People with Disabilities Protection Service⁽⁴⁾.

Since 2003, the protection of disabled people was based on the broken down amounts of income tax. There are set clear, transparent rules of sharing the balancing amounts between local government levels, thus avoiding their inefficient allocation by the consideration of some non relevant criteria or the „loss” of funds in unduly actions⁽⁵⁾.

In 2004, the broken down amounts of income tax, beside their usual destinations, will finance the centralized heating bill areas, registered till October 31, 2003⁽⁶⁾.

The interval 2005-2008 has its key moment in 2006, when it passed the law on local public finances no. 273/2006. Evolution was to specify a formula calculation and the computation criteria regarding the allocation of the balance amounts on national and county administration level.

Year 2005 is not characterized by major changes in public administration and local budget. It has to be noted that broken down amounts from the VAT will supported the refurbishment, modernization and development of centralized systems of production and distribution of thermal energy⁽⁷⁾. In addition, the broken down amounts from income tax are completed by the broken down rates broken from the same tax. In fact, the broken down amounts from VAT remain the only support for budget balancing seeing public services in education, health, welfare, etc. The broken down amounts from the income tax which had the some objective disappear. The broken down rates of income tax remain available and the legislation provides transparently the percentages taken and how the amounts of money are shared⁽⁸⁾. The dependence on the state budget is maintained for many services, the difference being that the amounts are distributed to predetermined destinations, avoiding so the locally non-judicious spending of money.

More than 40% of the broken down amounts of income tax were not targeted in 2004 and over 50% in 2005. Regarding the broken down amounts from VAT, all have a special purpose. Between 13% and 14% (for 2 years) of the total broken down amounts from the state budget had not a predetermined destination. That gave the possibility to the members of local administrative bodies to use money as they wish.

Since 2006, there are imposed strict rules in spending this kind of public money but there are not provided specific penalties for their infringements yet (Roman et. al., 2007).

For the years 2006 and 2007, we noted that the objectives of the broken down amounts from income tax amounts will be backed by the broken down amounts from VAT. As news, there appears expenditure like special education, the national regional aids (under Law. No. 84/1992 for the free zone regime), the staff expenditures, scholarships and equipment inventory of the public pre-university education institutions, the rights of personal assistants of people with severe disabilities, the record of persons public community service⁽⁹⁾, to be funded from the amounts specified above. In this time the special destination broken amounts from income tax disappear, and the money is refocused to balance local budgets. In 2007⁽¹⁰⁾, from the broken down amounts from VAT it was covered the Rural Infrastructure Development Program.

The 2008 budget⁽¹¹⁾ does not reveal any change compared to the corresponding one for the year 2007, particularly on transfers to local budgets. So, we may conclude that Romania has already achieved a quite good level of local government financial decentralization, managing to identify local needs that can not be met solely on the basis of its own financial effort. The stationary of the transfer pathways reveals that there is a balance between decentralized, deconcertated and self-financed public services.

4. Conclusion

The existence of the local community is subordinate to the local autonomy and financial decentralization functionality, in compliance with existing legislation, without leading to the division of the state, but rather its cohesion. Local autonomy require financial decentralization and that is a reciprocal relationship, which enable individual development of collectivities in the context of a national balance seeing the gross value added distribution in the economy.

In recent years, Romania has made great strides in terms of financial decentralization and increased simultaneously local autonomy (Profiroiu, 2004). Since 1992, the state regulated local taxes and so there were possible changes in the structure and sources of funding local government⁽¹¹⁾. Subsequently, the reformulation of the field legislation had as a result the local public expenditure increasing in GDP. Also increased the local government expenditure in total public spending, a sign that of a part of the state passes through the responsibility of local authorities. Also there have been established rules relating the local public services, widening their area in finance, heritage property management and infrastructure. This evolution has to be specially appreciated because of the financial

difficulties which had to be faced by local government, as a result of the endless non correlation between transferred responsibilities and funding sources provided.

The developing of the process of decentralization and deconcentration through an appropriate strategy will ensure public services quality and management improvement. This way, there is a need of efforts in improving decentralized/deconcentrated public service delivery system, by establishing the necessary mechanisms to coordinate the implementation decentralization strategy, by creating the necessary mechanisms to ensure communication avenues for all actions seeing civil society and other beneficiaries of the decentralization process, the establishment of working groups on key components of the strategy, by developing a indicators system to measure performance of the decentralization process. Clarification of powers to different structures and levels of government, with a rational distribution of responsibilities should be made to flow streams, as well as financial information.

Given all this, we can conclude the following financial decentralization effects: sustainable growth in living standards, social equity between individuals, the eradication of poverty. These are possible because the financial autonomy allows the local and national interest services to fold on local demand and needs, with means and cost economy. In this way can be better identified the possible problems faced by the community members, especially the social and economic ones, and can be initiated specific actions to solve them. Sources are local, so a particular attention will be given to the way how they are used and which targets are assigned. The opportunities for collaboration between local entities, without involving the relationship of subordination, give chances to each local government to answer to the needs of the communities. Thus, the economic, geographic, demographic differences between collectivities may be removed, by the principle of transfers of resources between communities using capital market or budget transfers or subsidies.

Notes

⁽¹⁾ The collectivity means all residents of the administrative-territorial unit.

⁽²⁾ Local government law no. 215/2001, published in the Official Gazette no. 204/2001.

⁽³⁾ Law no. 216/2001 state budget for 2001, published in the Official Gazette no. 214/2000.

⁽⁴⁾ Law no.763/2001 of the state budget for 2002, published in the Official Gazette no.784/2001.

⁽⁵⁾ Law no.631/2002 of the state budget for 2003, published in Official Gazette no. 863/2002.

⁽⁶⁾ Law no.507/2003 of the state budget for 2004, published in the Official Gazette no.853/2003.

⁽⁷⁾ Law no. 511/2004 of the state budget for 2005, published in the Official Gayette no. 1121/2004.

⁽⁸⁾ Law no. 273/2006 of the of local public finances, published in the Official Gazette no. 618/2006.

⁽⁹⁾ Law no. 379/2005 of the state budget for 2006, published in Official Gazette no. 1151/2005.

⁽¹⁰⁾ Law no. 486/2006 of the state budget for 2007, published in the Official Gazette no. 1043/2006.

⁽¹¹⁾ Law no.388/2007 state budget for 2008, published in the Official Gazette no. 902/2007.

⁽¹²⁾ Law no. 69/1991 of local government, published in the Official Gazette no. 238/1991, Government Ordinance on local taxes no. 15/1992, published in the Official Gazette no. 215/1992, Law no. 27/1994 on local taxes, published in the Official Gazette no. 127/1994.

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THE DOMESTIC ECONOMIC POLICY – FROM MACROECONOMIC INFLUENCES TO STRENGTHENING THE COMPETITIVE EQUITY

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***Abstract.** The paper presents issues regarding the economic evolution in Romania in the last decade of the transition process from a super-centralized economy to a functional market economy. The impact of the financial crisis in Romania together with some of its effects are analyzed herein. Finally, we present a set of possible solutions for overcoming the crisis to restart the economy engines.*

Keywords: economic category; crisis; the economics of illusion; driving forces.

JEL Codes: E00, E60.

REL Codes: 3A, 8A.

1. Introduction

Motto: *„Economics is not a body of concrete truth, but an engine for the discovery of concrete truth.”*

Alfred Marshall

We started with this motto as we do not have knowledge that the issue of the absolute truth to be clarified. And as a consequence, we only assume the risk to have some remarks, opinions, assessments, certainly that we consider relevant regarding the subject matter.

Moreover, we undersign to what professor Gheorghe Băileșteanu says, namely *„no indicator or economic category can reflect everything perfect, complex, the reality, the phenomenon or the economic process.”*

2. Approach

From our point of view, a sequential approach with the help of a single economic indicator can ensure a partial investigation with limited results in perceiving the economic reality. It is well known that a certain factor determines an effect or more economic effects which, at their turn, can further convert into factors that influence or generate other effects and so on.

Valuable economic analysts often emphasize that a certain focus to only one indicator, especially macroeconomic, such as the inflation rate, can lead to cyclic economic problems on short-term or longer-term with small chances to exit the vicious circle of the economic decline.

3. Romania's economic paths

In the past twenty years, Romania had an economic path that, extremely tolerant, we can define as interesting.

Let's try a short historic overview from the supercentralized economy to the functional market economy.

The end of the year 1989 represented a crucial and profound turning point, in many cases stunning, as regards the concept of democracy including its economic component.

The main component of the economic policy reform of Romania was represented by the privatization process.

The main laws were adopted in this direction:

- Law no. 15/1990 regarding the turn of state-run enterprises into commercial companies and autonomous authorities;
- Law no. 31/1990 regarding the operation of commercial companies, subsequently amended several times;
- Law no. 58/1991 regarding the privatization of commercial companies;
- Law no. 55/1995 regarding the speed up of the process of privatization that ensured the accelerated privatization of over four thousand commercial companies.

We do not intend to analyze the success or failure of the privatization process. We can only observe that the state entities responsible with the privatization process undertook mostly the role of seller to the disadvantage of the administrator role, up to the end of the process.

Moreover, the main goal of the economic policy reform was to create a functional market economy. This goal was achieved declaratively. The practical achievement of this goal proved to be a complex process with many traps on the path while lacking some logical and coherent strategies available during the election cycles.

The amendments to the laws approved previously, especially Law no. 31/1990, meant to improve the path. Sometimes it succeeded. Sometimes it failed. Furthermore, together with the related regulations it created a labyrinth with random exits.

The existence of some agreements with the international financial entities such as: the International Monetary Fund, the World Bank, the European Investment Bank, ensured confidence capital, but meanwhile constraints were enforced that often had results contrary to ensuring economic balances.

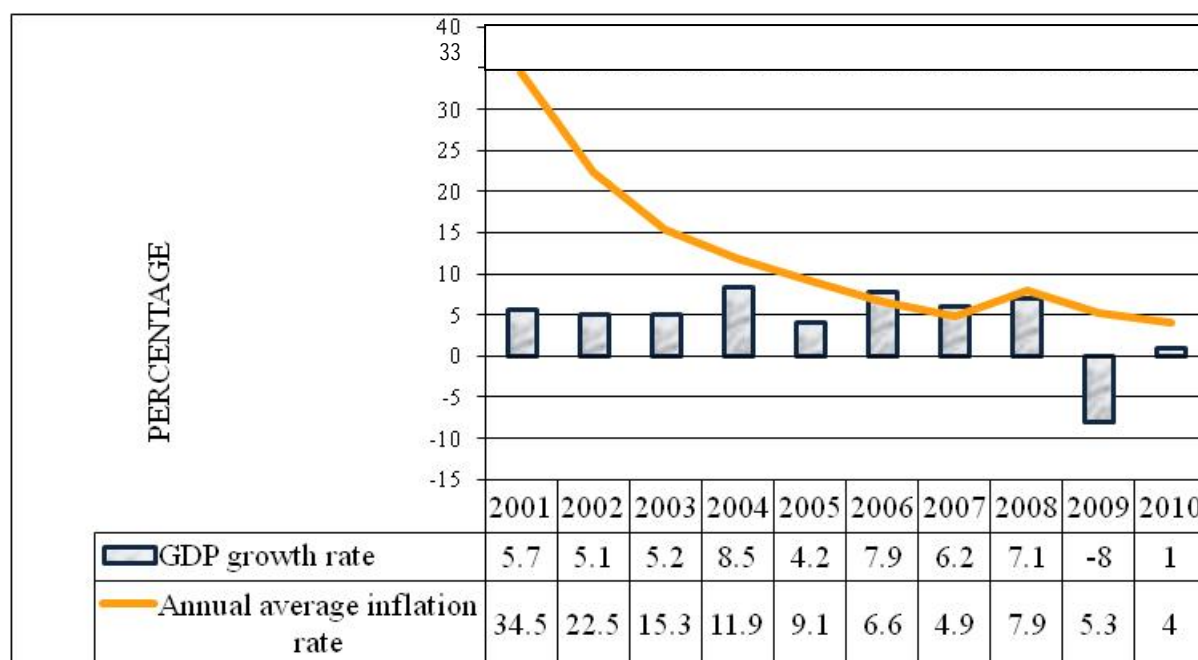
We remark only one negative example, namely the winding-up of Comtim. Due to this situation and not only, Romania became a large meat importer, the meat being processed and consumed internally.

In the period 1992 – 2009, Romania did not record major social slippages, thus ensuring a climate of stability and trust.

Starting January 1, 2007, Romania became full right member of the European Union.

The election cycles greatly influenced the economic path of Romania.

An analysis of the changes of the inflation rates in this period can justify our remark, especially if we superpose with the graph of the GDP trend. We chose the annual average inflation rates because they can produce a better picture about a period of one year length than the inflation rate at the end of period.



Source: EUROSTAT, BNR, Transition report 2009 BERD (forecasts 2009/2010).

Figure 1. Annual GDP growth rate vs annual inflation rate

As we have already mentioned, the analysis of a single indicator is not enough.

An analysis of more indicators can be relevant for what we consider to be important regarding to what happened especially after 2000.

The foreign capital investments were increasingly more significant until 2008, with positive influences on the current account deficit. But these had hidden effects, negative, such as the real estate bubble, thus enabling some to declare **economic turmoils**.

Evolution of foreign capital investment for 2004-2009 period

Table 1

	2004	2005	2006	2007	2008	2009T3
Foreign direct investments (mil Euro)	5.127	5.237	8.723	7.047	9.272	3.064
Foreign direct investments (% out of GDP)	8,25	6,58	8,92	5,81	6,78	10,23
Current account deficit of balance of payments (% out of GDP)	-8,40	-8,91	-10,39	-13,93	-12,33	-11,06

Source: NBR, NIS Bulletin.

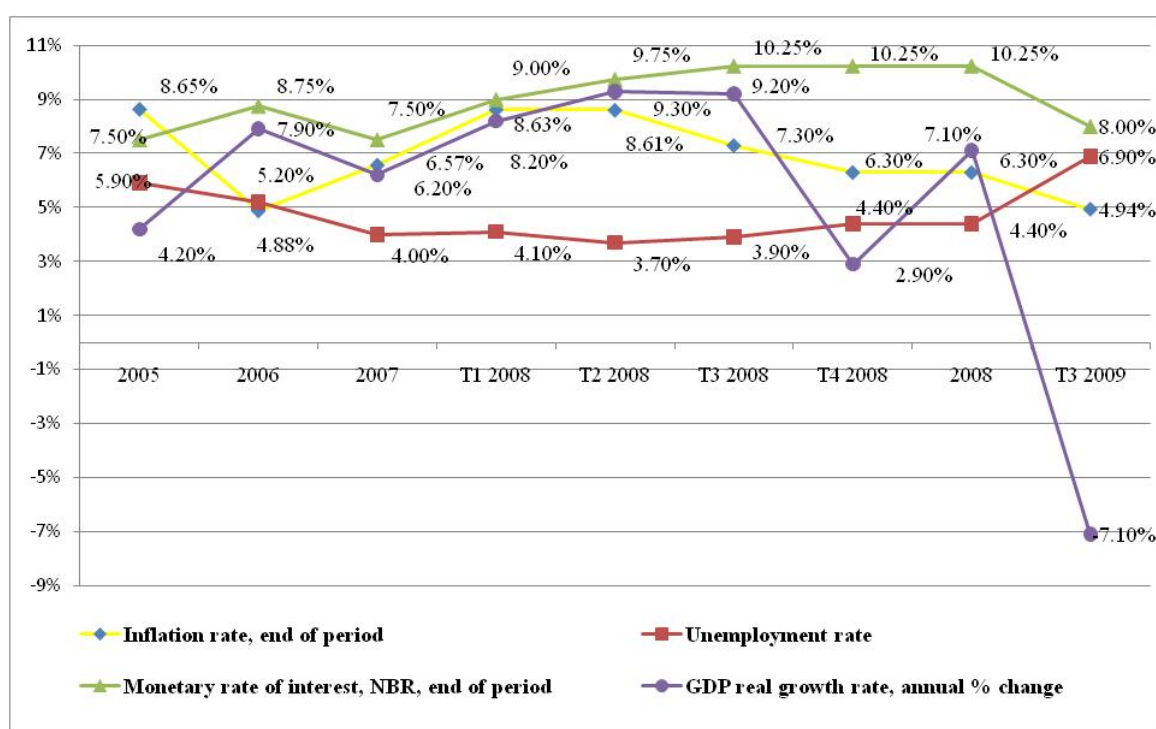
The main macroeconomic indicators for 2005 – T3 2009 period

Table 2

	2005	2006	2007	2008	T3 2009
Annual inflation rate, end of period	8.65%	4.88%	6.57%	6.30%	4.94%
Unemployment rate	5.9%	5.2%	4.0%	4.4%	6.9%
Monetary rate of interest, NBR, end of period	7.5%	8.75%	7.50%	10.25%	8.8%
Interest borrowing rate	15.72%	14.83%	13.32%	15.07%	16.68%
Interest rate term deposits	4.23%	6.51%	6.70%	9.55%	10.51%
Leu/Eur end of period	3.6771	3.3817	3.6102	3.9852	4.1981
Leu/USD end of period	3.1078	2.5676	2.4564	2.8342	2.8619
Nominal GDP (mil Lei)	288,176	344,535	404,709	503,959	497,3
Nominal GDP (mil Eur, average exchange rate)	79,532	97,754	121,268	136,845	22,541
Real GDP growth rate, annual % change	4.2%	7.9%	6.2%	7.1%	-8.5%
The evolution of BET index	6586.13	8050.2	9825.4	2901.1	4397.4

Source: NBR, NIS Bulletin.

The figures in the table can be synthesized in the graph below.



Source: NBR, NIS Bulletin.

Figure 2. Annual change of macroeconomic indicators

4. What can we notice?

At the beginning of 2008, several external financing projects began to be stopped especially in the real estate construction field. The depreciation of Romanian Leu by almost 20% at the end of 2007 until now could not be a stimulus for the expected increase of exports against the economic contractions in the countries of destination for Romanian goods.

Over the analyzed period, except for H1 2008, there was a closeness between the inflation rate and the unemployment rate. There are many expert opinions stating that the rates of inflation and unemployment close to 5% have a reasonable significance.

The monetary policy interest of the National Bank of Romania (NBR) and the loan interest rates increased very much starting 2007, leading to the credit crunch, comparing the possible economic rates of return to loan interest rate.

Even if the worldwide economic crisis emerged in the first half of 2007 and most central banks reduced the monetary policy, NBR did the opposite. Justification of interest rate increase was correlated to the increase in inflation. Indeed, the inflation rate was kept under control, but the GDP decreased and the unemployment rate increased in 2008 and 2009. Hence, Romania is straining in the vicious circle.

It should be also noticed the evolution of GDP, which from an increase of 7.9% in 2006 it dropped to -7% in Q3 2009. But we should not exaggerate in the appreciation of GDP increase in the period 2005 and part of 2008. An insight in its composition shows us a contribution of construction by 26.1% and the agriculture by 21.4% in 2008. The contribution of construction to GDP/2009 is preeliminated to approximative 2%.

We consider that there was an overheating of the economy in the period 2005, 2006 and 2007. In this period, an increase of interest rates could be justified. Along with the first signs of the crisis in 2007, the interest rates should have been decreased even at the risk of a slight increase in inflation. This could have been sterilizing for the economic bubble.

On the Bucharest Stock Exchange, after the historical maximum reached in July 2007, the speculative capital began to withdraw and the stock prices crashed even by 10 times.

The analysis of the current account deficit can lead us to relevant conclusions regarding the fact that relying only on monetary policies is not sufficient. Thus, if this deficit in 2002 was of 3.3%, it reached 14% of GDP in 2007, with positive return in 2009. The crisis had also a positive side, namely restricting the imports of semi-durable goods.

5. Instead of conclusions

Romania had a delayed reaction in the early perception of the crisis outbreak.

This worldwide crisis manifests itself as a strong discontinuity and it could be the start of the economic decline, as Paul Krugman would call it.

The author Liviu Voinea sees an end to the economics of illusion.

The market fundamentalism is considered by George Sörös as bad as the marxism fundamentalism.

The most reliable economic analysts consider that in Romania the crisis is due mostly to inner causes. Only the Romanian politicians have minimized the crisis issue especially at the end of 2008.

To get out of this economic desert, Romania increased its external debt, especially the public one up to a level that calls into question the future direction of economy.

6. Yet what to do?

„The future depends on the measures to be adopted after this crisis.”

George Sörös

„The best way to predict the future is to invent it.”

Peter Druker

„The economic engine will not restart by itself, but it will need an impulse from the government.”

John Maynard Keynes

What do we propose?

- ⇒ Discovering and stimulating the driving forces in economy;
- ⇒ Unlocking the financial markets;
- ⇒ Improving the supervision and regulation systems of the financial markets;
- ⇒ Implementing a new logic in the economic development;
- ⇒ Promoting more equitable foreign trade systems;
- ⇒ Setting some targets embodied in the macroeconomic indicators that should be pursued, addressed and achieved in a way that can be developed iteratively.

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THE PERFORMANCE OF ROMANIAN OPEN-END FUNDS AND THE CRISIS CONTEXT

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***Abstract.** Global financial crisis drastically affected all financial market's segments and highlighted the need to improve regulatory standards and to increase the supervisory degree in all constituents of the global market, applying it to all financial entities in order to ensure greater transparency of their business, investor protection and minimize investment risks. This study provides information on the performance of Romanian open-end funds market, focusing on the most relevant evolutions of the Romanian open-end funds market, their performance evaluation based on return-risk criterion and development prospects as a result of new legislative measures expected at European and national level.*

Keywords: investment funds; evolutions; financial crisis; performances; legislative measures.

JEL Code: G20.

REL Code: 11B.

1. Introduction

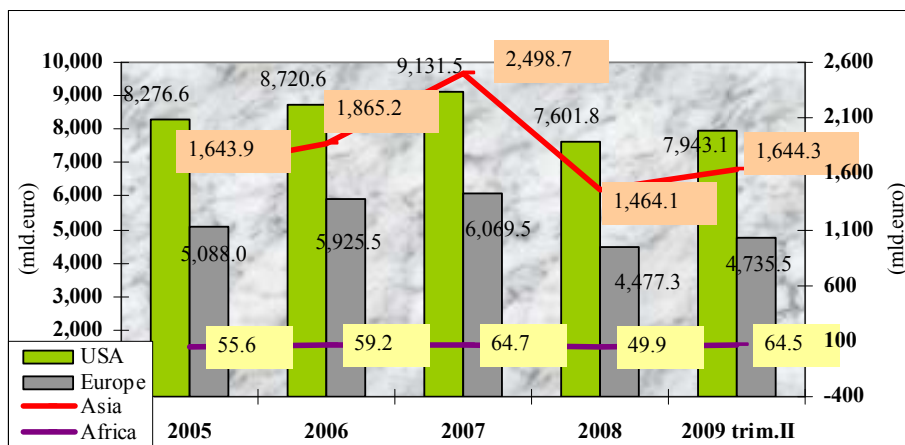
Amid the global financial crisis, investors confidence in financial market specific instruments has been seriously affected. Although the issuers financial performance, their development potential, their specific markets, the management strategy are important factors in evaluating financial instruments, investor expectations and behaviour influence the market trend. The financial market's developments over the past two years have shown strong growth in investor risk aversion, which led to large corrections in the price of financial instruments. The effects of the global crisis flooded all financial market segments, strongly affecting the price of capital market specific instruments. The impact of negative events on the capital market on investment funds led to a significant decrease in financial investment performance and in fund units performance.

Our study provides information regarding the main developments and performances in the investment funds market, between December 2005 and October 2009, being structured in three parts. The first part is a brief description of the global and national investment fund market developments. The second part contains a comparative analysis of Romanian investment funds performances on the basis of return-risk criterion, and also their overall performance, compared to other investment alternatives on the Romanian financial market, on the basis of the return-risk criterion. The last part presents some considerations on legislative news intended to boost the development of investment funds market, ensuring a better investor protection, but also creating new investment opportunities.

2. Significant developments of the investment funds market during 2005-2009

2.1. The international investment funds market

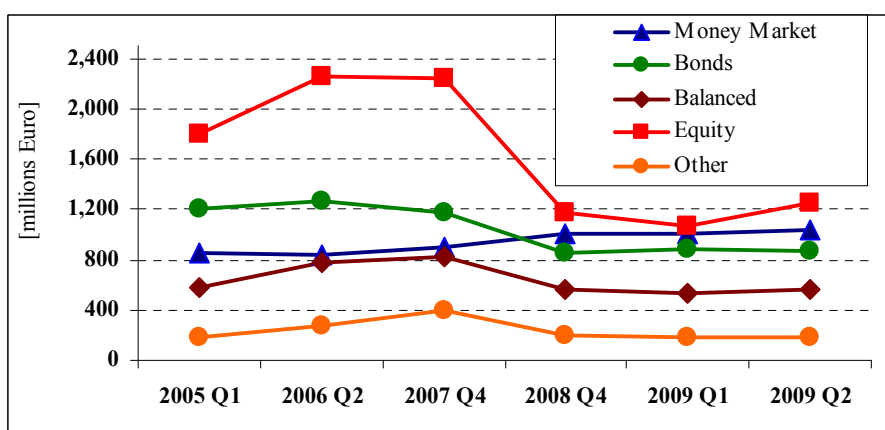
Worldwide, by the end of the second quarter of 2009 there were registered 66,478 investment funds in USA, Europe, Asia and Africa, a 17% increase from the figures of the end of 2005, which confirms the growing interest towards this type of investment instruments (Figure 1).



Source: www.efama.org, „World Investment Fund Assets and Flows, the second quarter 2009”.

Figure 1. Evolution of the funds' net assets

By the end of 2007, the value of investment funds net assets amounted to 17,764.4 billion. EUR, followed by a decrease of 23.48% during 2008. The second quarter of 2009 shows a new decrease of the net assets value to 14,387.4 billion EUR. 80% of the global investment funds are registered in USA and Europe, 36% of which are equity funds and 28% are money market funds..



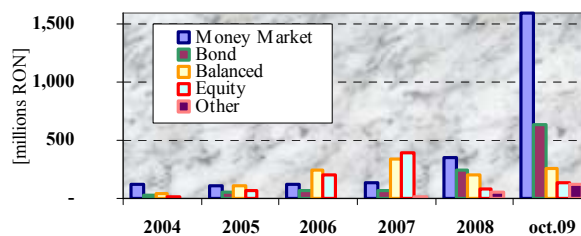
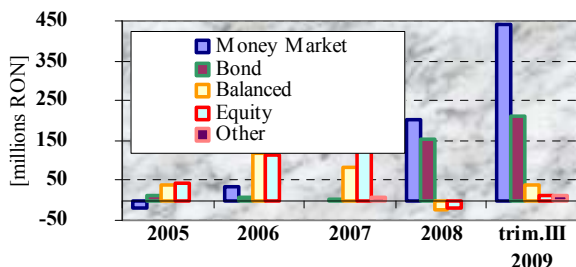
Source: EFAMA Quarterly Statistical Release No38 (Second Quarter of 2009)⁽²⁾.

Figure 2. Investment funds development at European level, UCIT⁽¹⁾

At European level, financial crisis effects are found in the decrease of net assets volume with 34.1% in 2008, compared to the end of 2007, the trend continuing for the first quarter of 2009. By the end of the second quarter of 2009, funds' net assets enter the uptrend, with a constant growth of capital inflows (Figure 2). The main categories are the equity funds (32%) and money market funds (26%).

2.2. The Romanian investment funds market – influencing factors

The Romanian capital market was also affected by the global financial crisis. However, we notice a significant interest in investment funds market, as shown in Figure 4 (an increase in net assets values), Figure 3 (an increase of net sales) and by the increased number of fund units investors. At national level, we find 63 open-end and closed end funds, which have 241,082 investors.

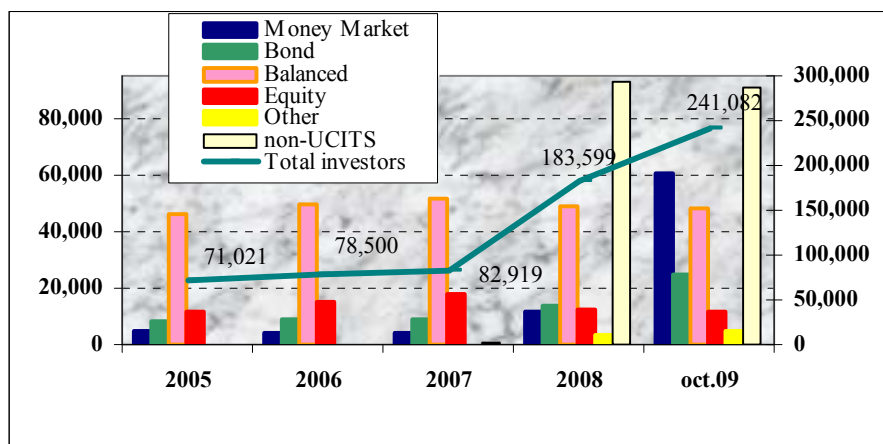


Source: Authors processed data available at www.aaf.ro

Figure 3. UCITS net sales

Figure 4. UCITS net assets

Although open-end funds and investment companies included in UCITS category witnessed a significant increase of net assets during 2009 (almost three times, up to 2.5 billion RON), the market is still way below the level of Central and Eastern Europe market.



Source: www.aaf.ro

Figure 5. The number of investment funds investors

The market share of only 0.03% of total net assets administrated at European level indicates a growth potential of the national investment funds market. This statement is also supported by the significant rise of net sales⁽³⁾. While net sales by the end of 2005 were of 76.11 million RON, by the end of Q3 2009 they reached 711.21 million RON. Starting from 2008 and during 2009, we also notice a significant increase of the number of investors (Figure 5). Compared to 2008, there are over 50,000 new investors in fund units. The most spectacular increases are obvious in the category „Other collective investment organizations”, the number of investors rising with 20.097% in 2008, compared to 2007.

This performance is explained by the 89,707 new subscribers of fund units issued by Fondul Oamenilor de Afaceri, listed on BSE. „Other funds’ category increased with 1943% in 2008, compared to 2007, and with 392% by October 2009, compared to 2008. A similar trend is noticeable for money market funds (+185% in 2008, compared to 2007 and 420% by October 2009, compared to 2008). Such impressive performance on the investment funds market has never been recorder since 2000.

These significant inflows of capital and the increased number of investors are due to the following aspects:

a) *yields* offered by fund units investment are satisfactory, being higher than the money market interest, for the same period. Moreover, between March 2009-October 2009, most equity funds offered better yields than BET and BET-C performance (Table 2).

b) *involvement of the banking system (through the credit institutions networks) in the distribution of fund units* as a strategic element for boosting sales of financial products. This comes in the context of an important setback suffered by the lending process in the Romanian banking system, access being restricted compared to the crisis' previous period. The need to identify new income sources to maintain profitability in the banking sector has gradually led to an increased presence of banks on the investment funds market. We appreciate that this has proved to be beneficial in the end, for the investment funds market, as bank customers were, to some extent, directed towards fund units. One solution for increasing investment in mutual funds and the popularity of these investment products is to develop alternative distribution channels through the world wide web.

c) *growth potential of the investment funds market*. Although Romania is the second largest state in Central and Eastern Europe after Poland, the assets held by investment funds on the Romanian market amount to 1839 million EUR. The level of net assets of investment funds per capita is low, around 33 EUR. While growing three times from the end of 2008, the indicator is far below the level of one thousand euros, achieved in some countries in Central Europe.

d) *extending the promoting activities* for this category of savings financial instruments, as an alternative to money market instruments, such as bank deposits, also contributed to the repositioning of investment funds on the investment market.

3. Open-end funds performance

3.1. Open-end funds return and risk

Considering the outstanding performance of open-end funds during 2009, we seek to assess their performances using the return-risk criterion. We assume an early 2009 investment in five categories of investment funds, called „subportfolios”: „money market” subportfolio, „bond” subportfolio, „diversified” subportfolio, „equity” subportfolio and „other funds” subportfolio. In this hypothetical portfolio, the measures considered for charting the return-risk index are the monthly return, expressed as net asset value (NAV) variation index, and the market share of each investment fund from the total subportfolio assets. For example, the „money market” subportfolio consists of five money market funds. The monthly average return is determined considering the weight of each money market fund in total „money market” subportfolio assets. Based on these weighted average return values we calculate the subportfolio associated risk (standard deviation).

In this way, we assign a pair of values to each of the five funds subportfolios: monthly average return and risk coefficient. Using monthly values, we developed the correlation matrix between the five subportfolios. Next, we used the Mvo Plus v1.6 software (www.ellisols.com) for the optimization process. In Table 1 are described the efficient portfolios and the associated weighted subportfolios, for a certain return-risk index, retaining a finite number „n” of solutions.

Optimized fund subportfolios return and risk

Table 1

Subportfolio category	Diversified *	Other funds*	Bonds	Money market	Equity	Risk	Return
1	-	-	50%	50.0%	0.0%	0.0131	0.1168
2	-	-	-	94.1%	5.9%	0.0844	0.1424
.	-	-	-	67.9%	32.1%	0.4409	0.252
.	-	-	-	47.0%	53.0%	0.7262	0.3394
.	-	-	-	41.8%	58.2%	0.7975	0.3612
n-1	-	-	-	26.1%	73.9%	1.0114	0.4267
n	-	-	-	0%	100%	1.2966	0.5141

* „Diversified” and „Other funds” are not eligible subportfolios for the portfolio optimization process.

The usefulness of these solutions provided is that the investor can select an efficient portfolio that meets a specific profitability goal. For example, at a target level of return of over 0.4%, the solution provided by the software shows the position n-1 of the table (0.4267% return to a risk of 1.0114). This efficient portfolio contains „equity funds” subportfolio in a proportion of 73.9% and „money market funds” subportfolio in a proportion of 26.1%. The solution meets the requirement for overall portfolio diversification (eg. solution „n”, although part of the objective of profitability, does not meet the diversification requirement, contains “equity funds” subportfolio at 100%). The diversification requirement is also satisfied by the solution 1 of the table, but in this case the cost objective is not met (less than the target of 0.4%). Based on the values calculated in Table 1, this software plots the efficient frontier (Figure 6), with indicated efficient portfolios exemplified above.

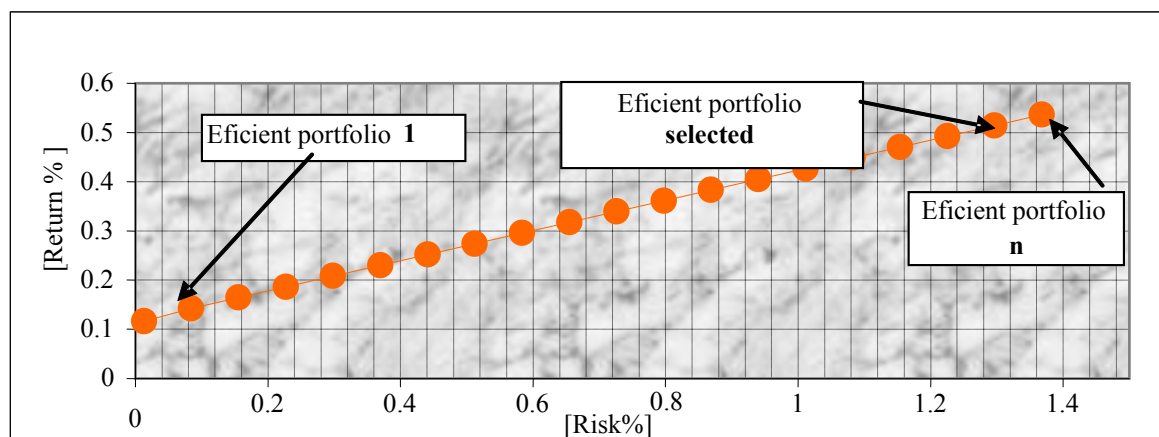


Figure 6. Efficient frontier

With increasing levels of return and risk, the portfolio will comprise an increasing part of „equity funds” subportfolio. The results of the optimization process show that the most profitable investments are in financial instruments issued by equity funds. Moreover, during 2009, equity funds (Table 2) were the most profitable investments, compared to money market funds and bond funds, with superior net assets growth, even compared to BET and BET-C performance.

Equity funds development⁽³⁾ %

Table 2

Equity funds	Assets change 31.08.2007- 01.03.2009	Assets change 01.03.09- 31.08.2009	Assets change 31.08.2007- 31.08.2009	Assets change 01.03.09- 31.10.2009
Active Dinamic	-86.9	123.0	-70.8	158.1
BCR Expert	-64.0	117.6	-21.7	157.9
BT Maxim	-81.5	159.8	-52.0	177.2
Napoca	-88.3	136.1	-72.4	118.1
BT Index	-76.4	133.2	-45.1	148.8
Raiffeisen Acțiuni	-65.6	282.5	31.6	374.5
BET	-81.5	123.7	-58.6	135.3
BET-C	-82.3	102.4	-64.1	113.2

Source: authors processed data from the information provided by www.aaf.ro

3.2. Global return and risk on open-end funds market compared to other investment alternatives existing on Romanian financial market

In considering the above, an interesting approach is to present a return-risk chart (Figure 7), including investment alternatives such as:

- equity (represented by BET index);
- bank deposits (bank interest for non-banking clients);
- gold;
- currencies (EUR);
- fund units, issued by open-end investment funds (represented by mutual funds index IFM).

Similarly, in determining the measures needed to develop the return-risk chart we used monthly return values of the investment tools selected, for 2009.

Each investment alternative is characterized by a monthly average return and risk (standard deviation). We notice the constant attractiveness of fund units investment, compared to other alternatives, which reconfirms the need to strengthen the investment funds market segment. The high growth potential is also supported by the large spread between the volume of managed assets at national level and the volume of managed assets at European level.

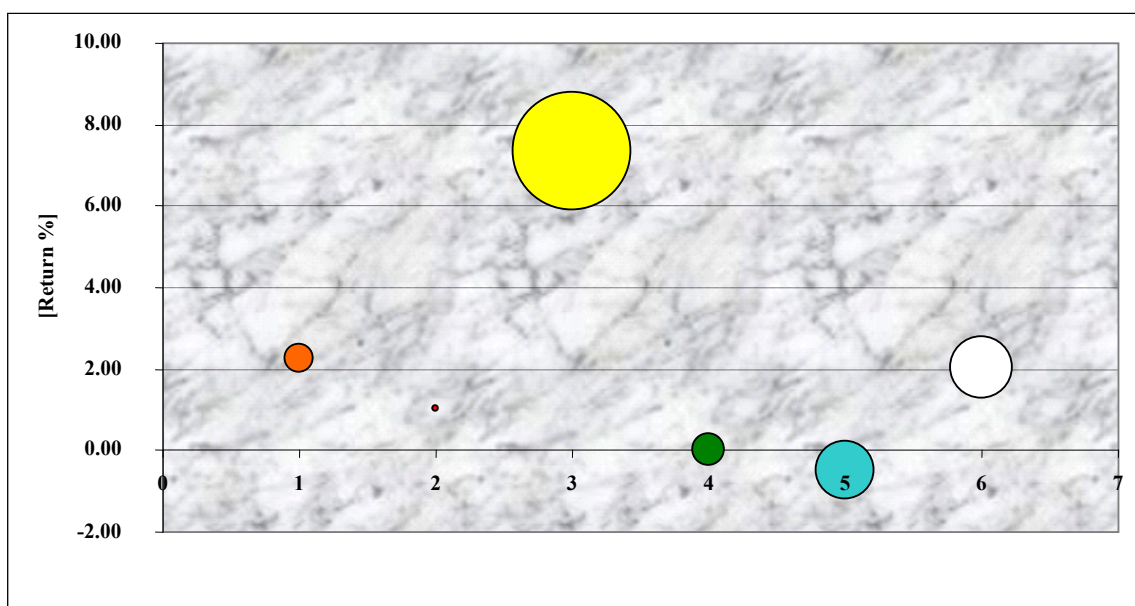


Figure 7. Investment alternatives return-risk chart

4. Considerations on investment funds perspectives

Despite expectations of an imminent collapse of economies and international financial systems, we are witnessing a recovery, of low amplitude, but progressive, in investors confidence, starting from the end of the first quarter of 2009, which generated positive signals in both international capital markets and Romanian capital and investment funds markets.

At European level

Global financial market events of the past two years led to authorized bodies further actions for a better international and national regulation of investment funds, as a reaction to the need for minimizing investment risks. The current crisis requires standardized rules extension on all financial entities and a stricter supervision. In this regard, at European level, the European Union develops its own rules and regulations, which seek to avoid the circumstances that led to the global financial crisis. The European Commission, with the consent of the Member States based on the conclusions of the meetings of G-20 states, redacted during April 2009 the AIFM Directive draft, regarding alternative investment funds, AIF⁽⁴⁾, now under debate. AIF category includes hedge funds, private equity funds, real estate funds, infrastructure funds, commodity funds and other institutional funds.

In essence, AIFM Directive draft seeks to avoid circumstances such as those which generated the global financial crisis, adopting measures regarding the following:

- to ensure an appropriate degree of transparency and prudence in investment funds administration;
- to increase investor protection;
- to ensure greater rigor in supervising investment funds administration, especially AIF;
- to limit incentives for fund managers;
- to secure the independence of depository;
- to avoid tax heaven states.

At national level

The development of investment funds is closely linked to the development of the capital market, so that managers and investment funds have limited opportunities due to low liquidity and the reduced number of issuers. However, the growth potential of the Romanian investment funds market is high, being supported by the positive signs coming from both developed economies (regarding crisis management measures and recovery) and the strongly increasing interest of local investors for such financial instruments, as an investment alternative. Changing the law on investment funds, estimated by the end of 2009⁽⁵⁾, will encourage the development of investment funds, fund managers predicting at least 50,000 new investors in the funds market in 2010. Legislative news will cover the development of investment products currently underdeveloped or non-existent on the national market, such as real estate investment funds and open-end funds listed on the stock exchange (Exchange Traded Funds-ETF) – well-known investment tools in the developed European markets. National Securities Commission seeks, through these amendments, a relaxation of regulations on distributing fund units and advertising the funds. As for the high risk instruments, the commission will maintain strict regulations.

Even if the current short-term macroeconomic forecasts are not very optimistic, we consider that certain announced and awaited measures will strengthen this sector. We are considering the listing of Fondului Proprietatea, *short selling* shares trading operations at the Bucharest Stock Exchange, new IPOs and also some fiscal measures to stimulate investment in Romanian capital market specific instruments.

Notes

⁽¹⁾ UCITS funds, established in 1985, are investing in transferable securities and money market funds in European Union.

⁽²⁾ 26 European countries of EFAMA members reported statistic data.

⁽³⁾ The analysis horizon is divided in two distinct periods: the period corresponding to the onset of the crisis in 2007, by early March 2009, which signaled the end of the powerful downtrend on Bucharest Stock Exchange, and the period between March 2009 and October 2009, characterized by the return of optimism about stock markets, global growth recovery and financial market conditions.

⁽⁴⁾ AIF represents any collective investment fund, located in or outside European Union, which is not an UCITS.

⁽⁵⁾ NSC – Regulation no. 15/2004 changes, regarding the investment funds activity.

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FINANCIAL CRIME AND THE SECURIZATION OF BANKING CIRCUITS IN ORDER TO PREVENT AND FIGHT AGAINST MONEY LAUNDERING

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***Abstract.** This paper presents the main results of the research project „Financial crime and the securization of banking circuits in order to prevent and fight against money laundering”, financed by CNCSIS-UEFISCSU.*

Keywords: financial crime; money laundering; underground economy; economic growth; corruption.

JEL Code: E26.

REL Codes: 13I, 8E.

Introduction

Setting out from the previous research in this area, from the relevance of this subject and from the discussions with other researchers, we structured the paper as follows:

- Chapter 1 „The impact of money laundering on the economic growth of Romania”;
- Chapter 2 „Estimating the size of money laundering”;
- Chapter 3 „Indicators and methods for estimating the size of the underground economy, financial crime, money laundering and corruption”;
- Chapter 4 „The index of the securization of banking circuits”;
- Chapter 5 „Econometric study for establishing the correlations between underground, economy, money laundering and corruption”.

1. The impact of money laundering on the economic growth of Romania

In order to establish the impact of money laundering on the economic growth of Romania, we estimated an econometric model between money laundering (measured as percentage of GDP) and economic growth (measured through the real GDP growth rate). The series of the real GDP growth rate for the year 2008 is provided by Eurostat and is presented in the table below.

Real GDP growth rate (%)

Table 1

Country	UK	Russia	Rom	Greece	Switz	Cypr	Bulg	Austria	Luxem	Germ	Holl	Fra	Spain	USA
Real GDP growth rate	0.70	6.00	7.10	2.90	1.60	3.70	6.00	1.80	0.90	1.30	2.10	0.40	1.20	1.10

The real GDP growth rate is the dependent variable of our econometric model. For the variable money laundering we used our own model of evaluation (presented in chapter 2), the results being shown in the table below.

Money laundering (% of GDP)

Table 2

Country	UK	Russia	Rom	Greece	Switz	Cypr	Bulg	Austria	Luxem	Germ	Holl	Fra	Spain	USA
	1.6	3.4	3.1	1.9	2.1	2.2	2.9	1.7	1.2	2.2	1.7	2.1	2.8	3.9

Money laundering is the independent variable of our econometric model. We estimated the parameters of the econometric model in order to identify the quantitative relationship between economic growth and money laundering and we obtained the following linear function: $Y = 0.014051X - 0.00663$. There is a positive correlation between the variables – increasing levels of money laundering lead to increasing real GDP growth rates.

Regression statistics

Table 3

Regression Statistics	
Multiple R	0,487353
R Square	0,237513
Adjusted R Square	0,173972
Standard Error	0,020132
Observations	14

Variance analysis

Table 4

ANOVA	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	0,0015	0,0015	3,7379	0,0771
Residual	12	0,0048	0,0004		
Total	13	0,0063			

As we can see from the variance analysis (Table 4), the regression model is valid at a significance level of 8%. The intensity of the relationship is quite surprising; 23.7% of the variation of the real GDP growth rate is explained by the variation of the amount of money laundered in the economy. In conclusion, based on these data series we could establish, for a significance level of 8%, that the amount of money laundered in the economy has a positive impact on economic growth. Increasing money laundering generates economic growth. The explanation is quite simple and intuitive: once „dirty” money is laundered, it is able to reenter the circuits of legal economy generating funds for investment and consumption, eventually generating economic growth (Araujo, Moreira, 2005, Masciandaro, 1999). Sometimes, the implementation of anti-money laundering (AML) measures may have a negative impact on economic growth (Cavalcante, Andrade, 2006). Even when an effective AML regime is in place criminal activity will continue to exist, AML measures having only the role to prevent „dirty” money from reentering the circuits of the legal economy. Therefore, it seems that the funds used to implement AML measures should be reallocated to combat criminal activities. However, the conclusions of this econometrical study are applicable only in the case of a short-term perspective. In the long run, the negative effects of money laundering will prevail

and the economic growth of the country will be seriously jeopardized, these aspects being discussed in the following section.

1.1. The long-term impact of money laundering and financial crime on economic growth

The long-term effects of money laundering and financial crime on economic growth may be divided into three categories:

a. Effects regarding the financial sector: an increased probability of fraud which erodes financial institutions; the destabilization of the financial sector through losses of reputation and confidence, thus, diminishing the role played by this sector in economic growth; restricted access on the international financial markets and/or economic sanctions.

b. Effects regarding the real sector: reduced productivity due to unproductive investments (like properties, art objects, luxury goods etc.); the facilitation of corruption⁽¹⁾ and criminality which both have a negative impact on economic growth; increased risk of macroeconomic instability generated by instable exchange rates and monetary aggregates, affecting budgetary equilibrium; exacerbation of the „contagion effect” of the financial crises.

c. Effects regarding the external sector: the facilitation of illicit capital flight, hereby reducing the investment resources of a country⁽²⁾; the deterrence of foreign investment⁽³⁾ due to the lack of confidence in the country’s economic and financial systems; a distorting effect on the country’s foreign trade through the destabilization of the exchange rate⁽⁴⁾ and of the structure of imports.

The overall conclusion is that money laundering and financial crime have a strong negative impact on durable economic growth. However, in the absence of solid evidence concerning the ways in which financial crime and money laundering affect economic growth in the long-term, some observers proposed the implementation of an inaction policy in this area⁽⁵⁾. There are three main reasons in favor of the inaction policy: laundered funds flow from developed to developing countries; the negative effects of financial crime are experienced especially by developed countries; the implementation of AML measures will decrease citizen’s confidence in the domestic financial institutions. Andrade and Veiga (2006) realized a more detailed analysis and concluded that the implementation of an effective AML regime inquires losses for developed countries because the illicit funds will migrate to developing economies. Developing countries are susceptible to accept them in order to finance their economic growth. The main conclusion of this analysis supports the implementation of an international framework for preventing and fighting against money laundering and financial crime that will act as a basis for „healthy” and durable economic growth.

2. Estimating the size of money laundering

In order to estimate the dimensions of financial crime and money laundering more accurately, we proposed a model which evaluates the size of laundered funds before their initial placement. Money laundering essentially consists of funds movement. There is a place where „dirty” money is generated and another one where it is laundered. However, in order to estimate the size of money laundering it is not necessary to track the funds movement after the initial placement because, beyond this point, they appear as legitimate capital flows. From a statistical point of view, tracking the laundered funds from the initial placement to the point where they reenter the legal economy would generate errors because the same illicit funds would be recorded several times while being in different stages of the „cleaning” process. Therefore, our model estimates the size of money laundering before the initial placement. The model estimates, from a microeconomic perspective of view, the size of „dirty” money generated by an economy and uses the following input data:

- nature and size of criminality in a given country (the number of reported crimes per crime type);
- average size of „dirty” money generated by each crime type;
- national wealth.

We set out from the AUSTRAC report which estimates the benefits resulted from each type of crime in Australia. Then, using the database of the United Nations Centre for International Crime Prevention (which offers annual recordings referring to criminality levels in more than 100 countries all over the world), we extended the results of the AUSTRAC report to UK, Russia, Romania, Greece, Switzerland, Cyprus, Bulgaria, Austria, Luxemburg, Germany, Holland, France, Spain and USA. We took into account the most profitable 11 types of crime and, multiplying the benefit obtained per crime with the recorded number of crimes, we obtained a preliminary estimation of the amount of „dirty’ money generated in each country mentioned above. This estimation was further adjusted with the report between the country’s GDP per capita and Australia’s GDP per capita, assuming that the benefit generated by crimes is proportional to the wealth of the country, measured through GDP per capita. The results of the model are presented in the table below.

Money laundering (percentage of GDP)

Table 5

Country	UK	Russia	Rom	Greece	Switz	Cypr	Bulg	Austria	Lux	Germ	Holl	Fra	Spain	USA
%/GDP	1.6	3.4	3.1	1.9	2.1	2.2	2.9	1.7	1.2	2.2	1.7	2.1	2.8	3.9

According to our results, the amount of money laundered in Romania in 2008 is about 15,623 million lei (3.1% of GDP), value that places Romania better than USA (3.9% of GDP) and Russia (3.4% of GDP) but worse than Bulgaria (2.9% of GDP) and Spain (2.8% of GDP). The main purpose of our model was not to obtain precise evaluations of money laundering, but to obtain homogenous results which allow us to make comparisons between countries and, also, to study the correlations between money laundering and other phenomena. In the process of estimating the size of money laundering other factors could be also considered, especially other predicate crimes. The inclusion of these factors into our model will improve the obtained results.

3. Methods for estimating the size of the underground economy, financial crime, money laundering and corruption

3.1. Methods for estimating the size of the underground economy

There are various methods for estimating the size of the underground economy, from econometrical and statistical models to direct observation. The implementation of any method must take into account the economical and social characteristics of the analyzed country and the obtained results must be interpreted carefully⁽⁶⁾. Here, we make a short presentation of the previous literature in this area focusing on the main methods used to estimate the size of the underground economy. Every method is illustrated with quantitative results, if available.

a. Direct approaches⁽⁷⁾ imply a sector by sector estimation of the underground economy. Generally, the effectiveness of the results is limited because direct approaches require high amounts of work and they are not able to offer long term estimations⁽⁸⁾ (Romania

22.7% of GDP; USA 32.7 – 49.1% of GDP; Italy 2% of GDP). The main direct approaches are⁽⁹⁾: the statistical investigation, the statistical monograph and the sampling method.

b. Indirect approaches use macroeconomic indicators in order to estimate the size of the under-ground economy. The main indirect approaches are⁽¹⁰⁾: the discrepancy between income and expenditures⁽¹¹⁾ (Romania 20 – 40% of GDP), the discrepancy between the official and actual labor force (Italy 14-33% of GNP), the discrepancy between official GDP and the value obtained through the transactions approach, the discrepancy between the actual demand for money and the demand for money that can be explained by conventional or „normal” factors (USA 10 – 14% of GNP), the discrepancy between official GDP and the value estimated on the basis of electricity consumption (Russia 40% of GDP, Bulgaria 35% of GDP) and other approaches⁽¹²⁾ such as MIMIC⁽¹³⁾ which is based on the statistical theory of unobserved variables⁽¹⁴⁾.

The fact that there are so many methods used for estimating the size of the underground economy makes it very difficult to realize international comparisons.

3.2. Methods for estimating the size of money laundering and financial crime

Due to the complex and hidden character of financial crime and money laundering, the accurate quantification of these phenomena is not possible. The previous research in this area may be divided in two categories: macroeconomic approaches, which evaluate financial crime on the basis of the size of the underground economy, and approaches based on the recorded cases of financial crime and money laundering. None of these approaches offers satisfactory estimations because they tend to overestimate or underestimate the size of the quantified phenomena. As an alternative, John Walker proposed an original approach which estimates the size of money laundering using a series of indicators concerning the criminality level, the profitability of crime, the corruption level, the effectiveness of the AML regime, the level of economic development and even the distance between countries. Although the model proposed by Walker is based on a series of simplified hypotheses, his results are largely in line with the estimations made by other institutions. Moreover, his model can be further improved by considering more complex hypotheses. Therefore, we consider that John Walker’s model may be a suitable answer to the problem of estimating the size of money laundering and, also, the basis for future research in this area.

3.3. Methods for estimating the degree of corruption

The literature concerning corruption is growing very fast at the moment⁽¹⁵⁾. In this paper, we focused on the indicators developed by Transparency International⁽¹⁶⁾:

a. Corruption perception index (CPI) measures the perception regarding the amount of corruption among politicians and officials.

b. Global barometer of corruption (GBC) is a survey regarding the public perception on corruption and the people’s experience related to this phenomenon.

c. Bribe payers index (BPI⁽¹⁷⁾) is a survey that evaluates the bribe offered in the context of international transactions.

In order to obtain a comprehensive assessment of the corruption level of a country it is recommended to use all of the indicators presented above.

5. The Index of the securization of banking circuits

In order to obtain more accurate quantifications concerning money laundering and financial crime, and starting from the opinions of international experts from USA, Russia,

Romania and other six European countries on aspects concerning the legal framework, reporting requirements and the efficiency of the international institutions involved in the combat against money laundering and financial crime, we created an index that evaluates the solidity of banking circuits when confronted with the phenomena mentioned above: the index of the securization of banking circuits (GSB). The GSB index evaluates on a scale from 0 to 100 the perception of the specialists from financial institutions regarding how secure are the banking circuits, where 0 means the lowest level of security and 100 means the ideal level of security. At the moment, GSB index is the only indicator that evaluates the security of the banking circuits using 13 criteria, such as: the adequacy of the legal framework and of the reporting requirements; the effectiveness of the institutions involved in the combat against financial crime and money laundering; the adequacy of the penalties to the gravity of these phenomena; the adequacy of the instruments used to fight against money laundering to the new methods of laundering illicit funds; the capacity to prevent such phenomena.

The GSB index aims to evaluate if the security level of the banking circuits is able to face the new challenges posed by money laundering and financial crime. Starting from the analysis of the new methods used for laundering illicit funds we realized nine international surveys conducted in financial institutions from USA, Bulgaria, Russia, Romania, Switzerland, Cyprus, Greece, Slovakia and UK. The surveys consisted of two components: first, we personally interviewed a series of reputed experts in this area; second, we asked them to respond to a questionnaire prepared by the members of the research team. If an expert was not available for the interview, we still asked him/her to respond to our questionnaire. Every questionnaire was distributed and collected individually, our respondents being only experts from the international financial markets. The results of our research express the opinion of 105 experts on aspects concerning the legal framework, reporting requirements and the effectiveness of the international institutions involved in the combat against money laundering and financial crime. On the basis of their answers we used the GSB index to evaluate the security level of the banking circuits, the results being shown in the table below.

The GSB index

Table 6

	USA	Bulgaria	Russia	Romania	Switzerland	Cyprus	Greece	Slovakia	UK
GSB index	25	40	43.46	45.18	51.79	57.5	62.5	70	92.5

5. Econometric study for establishing the correlations between underground economy, money laundering and corruption

Corruption is one of the oldest manifestations of criminality. However, corruption always appears in association with other criminal activities, its role being to facilitate them and to protect the criminal organizations. Cressey (1972) concludes that at least half of the specific functions of a criminal organization are connected to corruption, fact that proves the existence of a strong qualitative relationship between corruption and organized crime. Because both corruption and money laundering have strong connections with criminal activities, it is natural to presume that there is a correlation between these two phenomena. In order to verify this assumption, we estimated an econometric model between corruption (measured through the CPI) and the underground economy (measured through the amount of „dirty” money generated by the economy⁽¹⁸⁾ before the initial placement⁽¹⁹⁾). The CPI is interpreted as a classification of countries on a scale ranging from 0 (very corrupt) to 10 (very „clean”). The CPI is the independent variable of our econometric model and its values are presented in the table below.

CPI values*Table 7*

Country	CPI 2008
UK	7.70
Slovakia	5.00
Russia	2.10
Romania	3.80
Greece	4.70
Switzerland	9.00
Cyprus	6.40
Bulgaria	3.60

Estimating the parameters of the econometric model we obtained the following linear relationship between corruption (measured through the CPI) and the underground economy (measured through the amount of „dirty” money generated by the economy before the initial placement): $Y=3.4991-0.2150X$. As it was expected, the correlation between the variables is negative – an increase in the CPI (meaning the perception of less corruption) determines a decrease in the size of the underground economy. The regression statistics confirm the validity of the econometric model.

Regression Statistics*Table 8*

<i>Regression Statistics</i>	
Multiple R	0.7215
R Square	0.5206
Adjust R Square	0.4407
Standard Error	0.5087
Observations	8

Variance Analysis*Table 9*

ANOVA	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	1.6861	1.6861	6.5159	0.0433
Residual	6	1.5526	0.2588		
Total	7	3.2388			

Multiple R= 0.7215, so, the intensity of the relationship is very strong. More than 50% of the variation of the amount of “dirty” money generated by an economy is explained by the variation of corruption level measured through the CPI. The value of Significance F (0.00433) is smaller than 0.05, therefore, the regression model is valid. Also, the p-values presented in the table below are smaller than 0.05. It means that, for a significance level of 5%, we can reject the hypothesis that the intercept and the coefficient of CPI have a value of 0.

Coefficients Estimation*Table 10*

	Coefficients	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	3.4991	0.0003	2.3240	4.6742	2.3240	4.6742
CPI 2008	-0.2150	0.0433	-0.4210	-0.0089	-0.4210	-0.0089

In conclusion, on the basis of the data series used in this study we could establish that the size of the underground economy is significantly influenced by corruption (measured through the CPI) and we were able to estimate a regression model that may be used in forecasts. Our conclusions are in line with the results of other researchers in this area and with the opinion of international institutions. Andrade and Veiga (2006) consider that money laundering and corruption are two faces of the same coin. While money laundering hides the origins of illegal funds, corruption helps criminal activities to proliferate. As a consequence, it is difficult to implement an effective AML regime in a country which has high levels of corruption⁽²⁰⁾. Given the correlations between the two phenomena, the institutions involved in the combat against financial crime and corruption should examine the degree in which these correlations affect their efforts. Therefore, they should update their strategies as an answer to the new dangers posed by these phenomena and strengthen international cooperation. Also, it may be considered the establishment of an institution designed to investigate both money laundering and corruption cases.

Notes

⁽¹⁾ See Section 7: Econometric Study for Establishing the Correlations between Underground Economy, Money Laundering and Corruption

⁽²⁾ See UN Report, 2001

⁽³⁾ See International Monetary Fund, „Financial System Abuse, Financial Crime and Money Laundering – Background Paper”, February 2001

⁽⁴⁾ See International Monetary Fund, „Staff Report on Nigeria”, 2001

⁽⁵⁾ See Brent Bartlett, „The Negative Effects of Money Laundering on Economic Development”, *Economic Research Report for the Asian Development Bank*, May 2002

⁽⁶⁾ See Curtea de Conturi a României, „Studiul privind nivelul și evoluția economiei subterane în România”, 2005

⁽⁷⁾ See International Monetary Fund, „Financial System Abuse, Financial Crime and Money Laundering – Background Paper”, February 2001

⁽⁸⁾ See David M., „Economia subterană și spălarea banilor – studiu criminologic”, *Doctoral Thesis*, State University of Moldova, 2007

⁽⁹⁾ See Rădulescu D.L., „Tendențe în economia subterană mondială”, *Doctoral Thesis*, Academy of Economic Studies, Bucharest, 2006

⁽¹⁰⁾ See International Monetary Fund, „Financial System Abuse, Financial Crime and Money Laundering – Background Paper”, February 2001

⁽¹¹⁾ Bari I. (2003), *Probleme globale contemporane*, Editura Economică

⁽¹²⁾ Rădulescu D.L., „Tendențe în economia subterană mondială”, *Doctoral Thesis*, Academy of Economic Studies, Bucharest, 2006

⁽¹³⁾ Multiple Indicators Multiple Causes

⁽¹⁴⁾ Rădulescu D.L., „Tendențe în economia subterană mondială”, *Doctoral Thesis*, Academy of Economic Studies, Bucharest, 2006

⁽¹⁵⁾ Brașoveanu I., Brașoveanu L., „Evoluții ale corupției și corelația acesteia cu presiunea fiscală totală în UE-27”, International Conference *Financial Crime and Securitization of Banking Circuits in order to Prevent and Fight against Money Laundering*, Sinaia, 24-26 octombrie 2008

⁽¹⁶⁾ See http://www.transparency.org.ro/politici_si_studii/indici/index.html

⁽¹⁷⁾ Bribe Payers Index

⁽¹⁸⁾ We used the definition of the underground economy as it appears in the hearings of Financial Crimes Division in front of the US Senate, September 16, 1997. From this perspective, underground economy is only related to „pure” crimes and does not include unrecorded labor force.

⁽¹⁹⁾ We presumed that criminals are rational, meaning that every crime is done in order to obtain the benefits generated by it. Therefore, we extended money laundering predicate offences to 11 types of crime, being in line with the recent literature that tries to extend the classical definition of money laundering which considered drug trafficking as the only predicate offence.

⁽²⁰⁾ Andrade J., Veiga L.C., „Money Laundering, Corruption and Growth: An Empirical Rationale for a Global Convergence on Anti-Money Laundering Regulation”, *Latin American and Caribbean Law and Economics Association Annual Papers*, 2006

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Section I
Public finance

ECONOMICAL AND FISCAL INSTRUMENTS FOR REDUCING GREENHOUSE GASES' EMISSION

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***Abstract.** Climate changes are caused directly or indirectly by the human activities that determine the modification of the global atmosphere composition to which it is added the natural climate variability observed through a comparable period of time. The effects are visible especially by the increase of the average global temperature with 0.6-0.2°C from the moment when it is started to be monitored, 1860 respectively. Under the Kyoto Protocol, the European Community (EC) has agreed to reduce its greenhouse gas (GHG). The paper aims to analyze the registered at European level for reducing of greenhouse emissions due to the economical and fiscal instruments.*

Keywords: climate change; greenhouse emissions; instruments; measures.

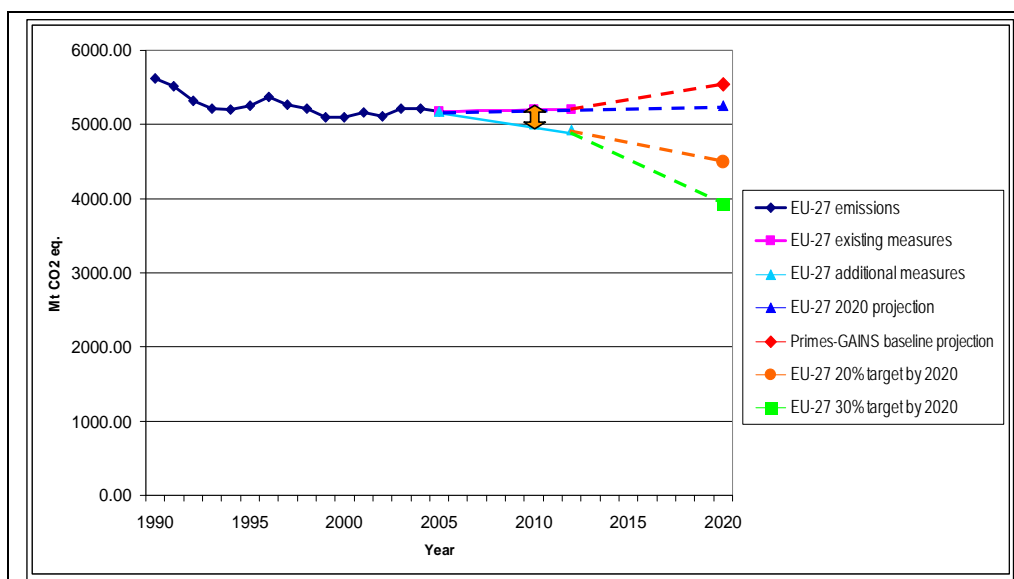
JEL Code: Q48.

REL Code: 15F.

1. Introduction

Most of the scientific community of the world agrees that there can be already observed climate change determined by the anthropic activities that produce GHG emissions. Under the Kyoto Protocol, the European Community (EC) has agreed to reduce its greenhouse gas (GHG). Greenhouse gases foreseen in the Kyoto Protocol are CO₂, CH₄, N₂O, HFCs, PFCs and SF₆. In spring 2007, the European Council endorsed the EU's independent commitment to reduce GHG emissions by at least 20% by 2020 compared to 1990 levels.

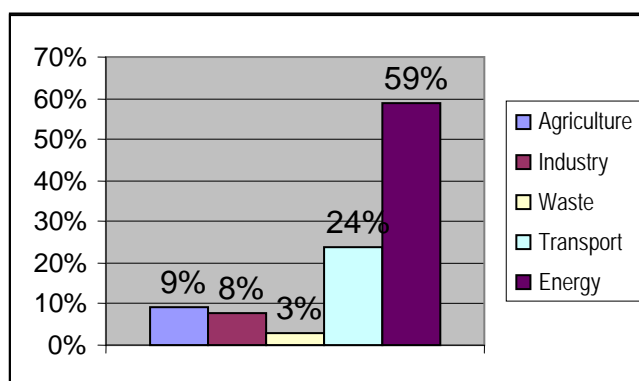
The EU would be prepared to increase this reduction to 30%, provided that such an agreement would indeed materialize. Figure 1 illustrates the significant gap between MS projections for 2020 and the EU's 2020 targets requiring the EU to get onto a much steeper emission reduction path after 2012 as compared to 1990-2012. This underlines the need for the EU to put as soon as possible the necessary legislation in place to implement all the new policies and measures identified in the climate change and energy package.



Source: www.euint.com

Figure 1. Actual and projected emissions

The most important sector, as highlighted in Figure 2, is energy, which accounted in 2005 for 80% of total EU-15 emissions, a 3% increase of energy GHG emissions compared to base year. The energy sector also covers transport which is responsible for 26% of the emissions of this sector. Agriculture is responsible for 9% of the overall GHG emissions; industrial processes are responsible for 8% and waste for 3%.

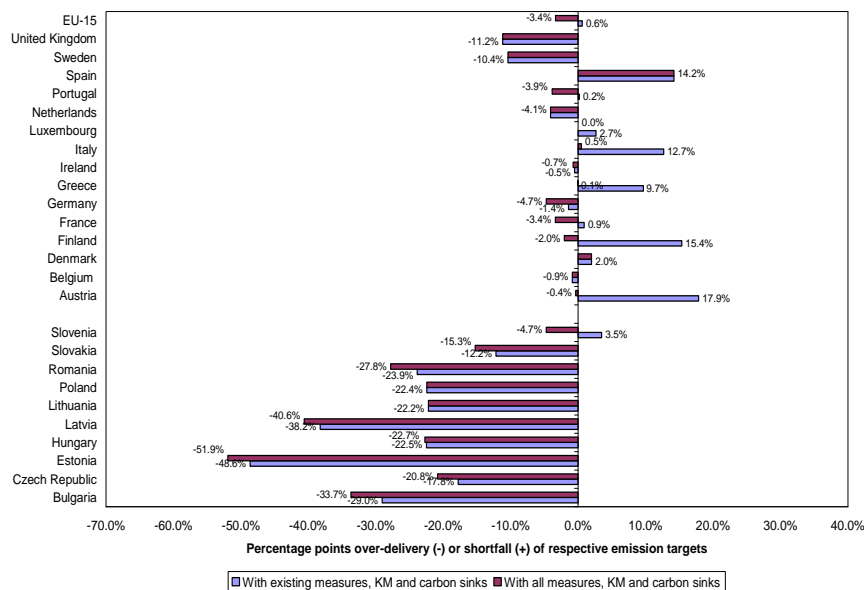


Source: EEA.

Figure 2. Emissions by sector

By 2010, total EU-27 GHG emissions are projected to be about 10.7% below base-year levels. This projection is based on MS' own estimates which take into account all existing domestic policies and measures. The projected decline is 13.2% when the effect of the Kyoto mechanisms and carbon sinks are accounted for and it could reach 16.7% if the additional domestic policies and measures currently under discussion were to be implemented on time and would deliver as estimated.

Relative distance between GHG projections for 2010 and the respective 2010 targets based on „existing” and „additional” domestic policies and measures, the use of Kyoto mechanisms and carbon sinks. (A negative sign (-) indicates an overachievement of the Kyoto target while a positive sign (+) a shortfall).



Source: COM(2007) 757.

Figure 3. Relative distance between GHG projections for 2010 and the respective 2010 targets

2. Economical instruments

The principle „Polluter Pays” is applied under the internalization of externalities, consecutive of the correct calculation of the total pollution taxes required from the economic agents that issue GHG. The instrument is an incentive one, encouraging the adoption of the best technologies in the view of decreasing the emissions and reduction the pollution taxes.

The stimulation gained an additional partial encouraging through the Directive 2003/87/EC “EU emissions trading Directive” or EU ETS, that promotes a scheme for GHG emissions allowance trading within the EU Community.

Emissions Trading Scheme (ETS) including the use of project-based mechanisms will substantially contribute to achieving the Kyoto commitments. Other CCPMs that are both widespread and are expected to deliver significant GHG emissions savings are the RES-E directive (related to the promotion of electricity produced from renewable energy sources), the directives on the energy performance of buildings, the biofuels directive, the promotion of co-generation (combined heat and power), and energy taxation.

The EU – ETS is not a mechanism under the Kyoto Protocol but an instrument for CHG emissions reduction under EU climate change policy.

The EU ETS was conceived to assist the EU Member States in achieving their Protocol CO₂ emission reduction targets in a cost effective way and in full compliance with the principle Polluter Pays. The scheme establishes cap and trade system for GHG emissions, starting in the first phase with CO₂ emitting industrial installations.

The industrial sectors foreseen in the first phase of applying the scheme include: combustion installation exceeding 20 mW, refineries; coke ovens as well as still industry, mineral industry, cement, glass, ceramic, paper and pulp.

2005 was the first year for which verified CO₂ emissions data are available from installations covered by the EU ETS. In 2005, the EU ETS covered about 50% of total EU-25 CO₂ emissions and about 40% of all EU-25 GHG emissions, equivalent to about two billion tones.

A lack of independently verified emissions data for the years before the introduction of the EU ETS makes it difficult to measure the scheme's full impact on emissions. However,

early academic research indicates that emissions may have fallen in 2005 compared with their level before the start of the EU ETS

On average 10,800 installations participated in the first two years of the trading scheme emitting approximately 2,020 Mt CO₂/yr. These installations received emission allowances for about 2,080 Mt CO₂/yr. Two thirds of all installations are classified as combustion installations and are responsible for 72% of overall emissions.

The assessment process for the second NAPs started in 2006. Bulgaria and Romania, which joined the EU on 1 January 2007, had prepared NAPs for year 2007. On average, after the assessment of all NAPs the cap for the EU was reduced by roughly 7% compared to the 2005/2006 verified emissions. The future price for 2008 allowances has remained between 12 Euro and 25 Euro since the start of the assessment of the second national allocation plans in July 2006.

The Directive 2003/87/EC has been amended by the Directive 2004/101/EC, the so-called linking directive, that recognizes the decreasing of emissions generated by JI (Joint Implementation) projects and CDM - Clean Development Mechanism and allows their use within the EU ETS.

3. Financial instruments

Expected impact of JI and IET International Emissions Trading, JI and IET can secure additional sources of funding for domestic policies and measure on climate change. The investment that these flexible mechanisms can secure will have direct or indirect substantial positive economic and environmental impact.

The total potential revenues of ERU sales under JI mechanism in Romania depend on the existing potential for JI project. Until now there have been already contracted projects producing a volume of about 7.5 million tones CO₂ equivalent in ERUs and AAUs, corresponding to a value of aprox 40 million Euro.

Assuming a rapid enforcing of the JI legislation and procedures regarding JI Module I, this volume could be substantially increased until the end of first committed period 2012.

The theoretical potential for international emissions trading AAU under Article 17 of the Kyoto Protocol is much higher. The emission scenario analysis regarding GKC emissions for the 3rd National Communication indicated a surplus volume of AAU of at least 50 million tones CO₂ equivalent annually during the first committed period.

The trading will take place under a Green Investment Scheme and consequently the traded volume will be restricted by the potential of projects that are feasible under the GIS. The potential of trading will as a result depend on the exact design of the GIS and the willingness of AAU buyers to invest to Romania GIS to support the decision on the use of JI mechanism and GIS in sectors covered by the EU ETS.

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THE IMPACT OF FINANCIAL CRISIS ON COMPENSATION STRATEGIES

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Abstract. *The continuous impact of uncertain economic environment affected most organizations' workforce through an uninterrupted increase of unemployment, wage reduction and diminution in offered benefits, thus forcing more and more companies to revise their compensation strategy.*

Employee compensation consists of a series of elements used in order to attract, retain and motivate skilled employees. Nevertheless, especially in Eastern Europe, the most important factor is still the fixed pay, respectively the base salary. Last year's financial crisis has a major impact in shaping the compensation elements to be gradually restructured starting with 2010.

Keywords: Compensation; pay structure; salary budget; workforce; communication.

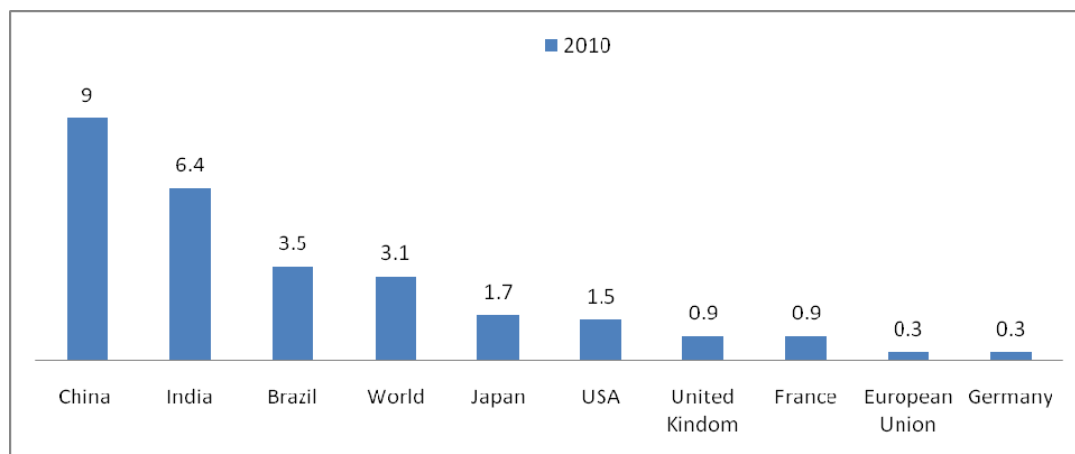
JEL Codes: J30, J31, J33

REL Codes: 12F, 17C

1. Introduction

During the last year, the impact of the financial crisis on the economic environment dismantled the plans of many employers, bringing disequilibrium on the work force market especially by increasing unemployment levels. Consumers and investors demand decreased during the first half of the year, generating a dramatic drop in shares value. The severity of these problems generated a fiscal intervention of governments in their attempt to stabilize this decline with some results registered in demand stimulation for 2010, even though next year is still uncertain.

According to IMF, China and India will register the highest economic growth:



Source: IMF World Economic Outlook Data – October 2009.

Figure 1. Gross domestic product real growth

Due to current economy dynamics, more and more companies fight involuntary unemployment and salary budgets issues. Against the fact that today salary packages offer more than the base salary, this element still remains the highest motivational factor.

2. Compensation Strategy

Employee compensation is defined as all the payment means for the services received from employees used by a company in order to attract, retain and motivate skilled employees. All financial elements received by the employee as compensation are included in his/her contract or in its appendixes.

Professional association World at Work divides compensation into four main elements:

- *Fixed pay*, which is most of the times represented by employee's base pay, pre-established through the work contract. Fixed pay does not vary according to employee performance, but it is established in accordance with the job grading systems and pay levels.
- *Variable pay*, which is directly related with individual and organizational performance. It is usually paid for a fixed period of time and must be re-earned through results obtained during each performance period.
- *Short-term incentive pay*, which is a form of variable pay and has as main purpose to reward work and performance over a period of one year or less (e.g. annual bonus).
- *Long-term incentive pay*, which is a form of variable pay and has as main purpose to reward work and performance over a period longer than one year (e.g. stock options, performance shares).

During the time of financial crisis it becomes more difficult to follow and stabilize a compensation strategy. Payment default, budget cuts, governmental regulation and market trends have a strong and immediate impact on compensation.

Among the factors that influence the internal compensation philosophy, the most important are the following:

- Business and financial performance strategies
- Operational plans, including productivity and cost control
- Organizational philosophy and values
- Organizational structure
- Workforce demography
- Payment capacity

External factors impacting compensation philosophy are:

- Current economic environment and competitors' behaviour
- Workforce trends
- Wage market dynamics
- Taxes and contributions
- Social trends
- Workforce expectations on pay levels

Performance is directly linked to the compensation strategy, as the latter aims at motivating the employee in reaching the agreed objectives. Through a strong compensation strategy, the company attracts and retains suitable employees, encourages certain behaviours

and rewards performance, improving in the same time the chances to obtain the estimated profits.

However, employees perceive three categories of elements within the compensation strategy employed:

- 1) Base annual pay (can also include the 13th and 14th salary if they exist)
- 2) Total income (base annual pay + bonus + commissions)
- 3) Total package (total income + benefits).

3. Pay structure

Most global companies working with many employees (usually over 200), and which have clearly defined and diversified functions, have developed pay structures and levels. Pay structure is used in order to differentiate between the various compensation levels offered, and determines the pay progression.

„Pay structure” term is often confounded with „grade levels”, but they refer to different concepts. In most cases, employees’ pay structure is different from their grade levels, as grades can be identical at global level, but pay levels must be customized from country to country,

A pay structure defines compensation levels for jobs, group of jobs, and offers the possibility to develop a pay progression if performance and contribution requirements are fulfilled. Gradual progression is usually included in the pay structure when every grade has a different pay level attached.

Every level is composed of a minimum, midpoint, and a maximum. The percentage difference between the midpoints of two adjacent grades is known as middle progression or differential. Certain factors, such as function level or competition on the market can influence this progression.

Pay structure example (gross annual value in RON)

Table 1

Level	Minimum (80%)	Midpoint (100%)	Maximum (120%)
Leadership	140,000	175,000	210,000
Director	105,600	132,000	158,400
Manager	80,000	100,000	120,000
Professional	41,600	52,000	62,400
Support	26,400	33,000	39,600

Pay structures are usually developed on geographic categories (countries, cities, districts), sectors (technical, financial, productive), functions (finance, marketing, human resources, IT, sales) and demographic categories.

Compa-Ratio is the employee’s base pay compared with the range midpoint position of the pay levels, expressed as a percentage:

$$\text{Compa-Ratio} = \text{Base pay} \div \text{range midpoint of recommended pay level}$$

$$\text{Range Midpoint plus/minus 20\%} = \text{Pay Level}$$

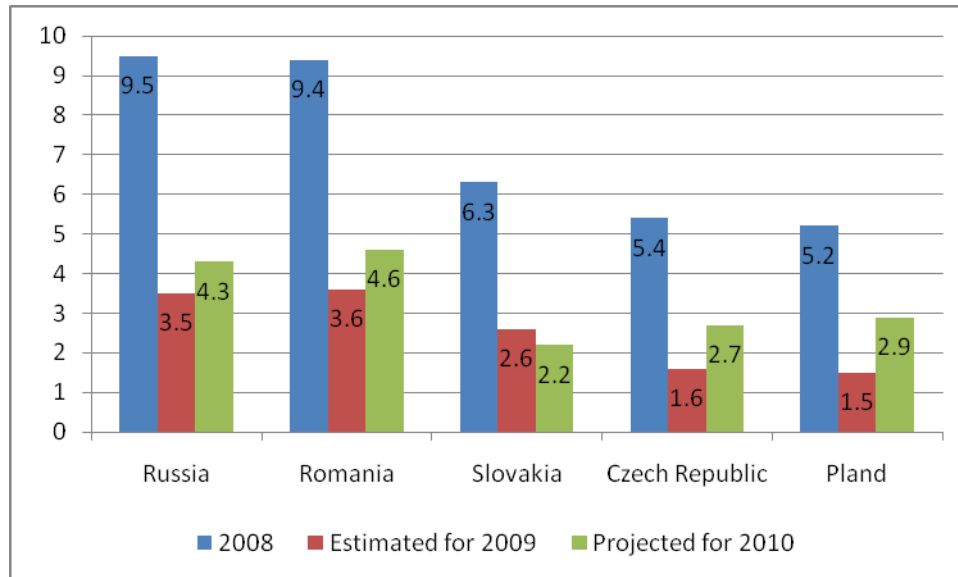
Salary is also directly influenced by employee performance, and its annual growth depends directly of this. Large majority of employees who fill their positions according to company expectations have a Compa-Ratio of +/- 100% and it is desired that the ones significantly surpassing company expectations to be situated at the superior end of the range.

4. Trends in pay rise

Every day more and more countries show signs of surpassing or being on their way to surpass the economic crisis. Nevertheless, inflation rate and companies’ financial restrictions

will continue to put pressure on pay rises and budgets available. It is estimated that inflation will continue to grow in 2010, discretely affecting salary budgets.

According to Radford consultants, two thirds of companies froze salaries in 2009, and more than half have re-evaluated the processes leading to allocation of salary budgets. Even though most companies hope to be able to offer same pay rises as in 2009, some of them will continue to freeze salaries for another year.



Source: Radford ISSIT – September 2008 and September 2009 – General pay rises.

Figure 2. Pay rises as percentage of salary

According to the type of products and services offered, companies are divided into three categories:

- Companies continuing their activity almost unaffected by the crisis, which continue to register growth – minimum impact on compensation
- Companies concerned by the possible effects of the crises and which take measures to reduce costs, but continue to register certain growth – average impact on compensation, translated through the freezing of hiring processes, promotion process control, introduction of alternative budget control measures, and salary freeze
- Companies directly and negatively impacted by the crisis, which are obliged to cut jobs, reduce offered salaries and benefits.

5. Conclusions

The continuous impact of the uncertain economic environment determined more and more organizations to re-examine their compensation strategies. They need to work with restrained budgets, against increased expectations from employees who want not only „pay for performance” but also a „pay for retention” approach from their employers. Special attention must be given to employees with special performance, in the same time continuing to dismiss worse performing employees. A key element in 2010 will be the communication with employees, in order to help them to better understand the value of their salary package and especially of the benefits and their long-term value, especially in an Eastern European culture, where higher importance is given to short-term compensation (salary, bonus, health insurance) than to the long-term compensation, whose effects are seen in several years (stock options, shares, contributions to private pensions).

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THE STATE AND FOREIGN DIRECT INVESTMENTS - SOME ASPECTS IN CONTEXT OF FINANCIAL CRISIS

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***Abstract.** Good governance is a key component of policies and reforms for poverty reduction, for national and global security as well as for the promotion of democracy and human rights. Many developing countries, particularly the least developed countries, are interested in created facilities for foreign direct investment flows.*

The economic decline poses challenges for many developing countries, because the foreign direct investments have become their largest source of external financing. Some aspects about involvement of state in foreign direct investments evolution in actually financial crisis are presented in this paper.

Keywords: foreign direct investments; global economic and financial crisis; transnational corporations; good governance; impact of crisis.

JEL Code: 23F, 59F, 59H,45P.

REL Code: 10B,10H,10J,19I.

1. Introduction

The accelerating globalization of trade and capital flows had brought a rapid economic growth to many countries, including developing countries and countries with economy in transition (Roman, 2006, pp.63-65). It is known the extraordinary increase of their exports, many of these countries having significantly increased their real income and enjoying growth in employment and reduction in poverty. Many developing countries, particularly the least developed countries, had not been lifted by the economic recovery although they had made efforts to face the challenges of globalization. Extreme poverty remained in some of them, and this was linked to primary commodity dependence, a lack of productive capacities and a lack of access to basic services. Couple of years ago, the major challenge for the international community was to ensure globalization as a positive force for the whole population and to deal with its negative consequences.

2. Current global foreign direct investments

World foreign direct investment flows (FDI) fell moderately in 2008 after five-years period of uninterrupted growth (Roman,2009), mostly as a result of the global economic and financial crisis. Developed economies were initially most affected. The decline had spread to developing countries too, foreign direct investments in most of them also fall in 2009.

Global foreign direct investment inflows have been severely affected worldwide by the economic and financial crisis. Inflows are expected to fall from \$1,8 billion in 2008 to below \$1,2 billion in 2009, with a slow recovery in 2010 to a level up to \$1,4 billion (UNCTAD- WIR,2009, p.18).

In 2008 inflows to South, East and South-East Asia rose by 17%; foreign direct investments to West Asia continued to rise for the sixth consecutive years; inflows to Latin

America and the Caribbean rose by 13% and the expansion of foreign direct investment inflows to South-East Europe and the CIS rose for the eighth year running.

In South East Europe and CIS trends in outflows were different between the first half and second half of 2008: (i) in the first half were liquidities which made possible to enter markets and to access raw materials; (ii) in the second half the main characteristics were divestments and freezing of acquisitions. Russian Federations outward FDI reached a new level: \$ 52 billion, this country is the second leading source of FDI among developing and transition economies, after Hong Kong-China (UNCTAD- WIR, 2009, p.74).

Inward FDI flows to group of nine new EU member countries (2004 and 2007) fell by 9% in 2008. So, this was the smallest rate of decline than that of inflows into EU-15 countries. Poland (\$ 16,5 billion), Romania (\$13,3billion), the Czech Republic (\$10.7 billion) and Bulgaria (\$ 9,2 billion) accounted together 77 % of the group total inflows.

In 2009 foreign direct investment flows suffered a decline in all regions. FDI policy trends during the crisis have been mostly favourable to foreign direct investment, both national and international level. In some countries a more restrictive foreign direct investments approach has emerged. There is also growing evidence of “covert” protectionism taken by some developing countries.

Spectacular changes in foreign direct investment patterns over the past year have caused changes in overall rankings of the largest host and home countries for foreign direct investment flows. While the United States maintained its position as the largest host (Roman, 2009) and home country in 2008, many developing and in transition economies emerged as large recipients and investors: they accounted 43% and respectively 19% of global foreign direct investment inflows and outflows in 2008 (UNCTAD, 2009). United Kingdom has lost its position as the largest source and recipient country of foreign direct investment among European countries (Roman, 2009). A few European countries kept up their rankings of foreign direct investments both inflows and outflows. Japan improved its home country position.

Repatriated investments, reverse intra-company loans and repayments of debt to parent firms have exceeded gross foreign direct investment flows in a number of countries (since mid-2008). For example, repatriated investments reached \$110 billion in case of foreign direct investment outflows from Germany, representing 40% of its gross foreign direct investment flows in 2008. Repatriated investments became especially noticeable during crisis. The motivations for these actions have been highlighted during the crisis. TNCs cut operating costs and in some cases take part to the wide restructuring in industry, in environment's investments, in agriculture, in transports and in other domains.

There are 82,000 TNCs worldwide, with 810,000 foreign affiliates (UNCTAD, WIR, 2009, p. 24). These companies play a major role in growing the world economy. For example, *exports of foreign affiliates* of TNCs are estimated to account about *a third of total world exports* of goods and services. The number of employed people worldwide was about 77 million in 2008. Their international status did not estrange them from the global recession. The 4.8% reduction of foreign direct investments stock was reflected in the decline in value of gross domestic product, sales and assets.

The economic and financial crisis has a strong impact in both *industry and company level*. This is reflected in *declining profits* and *forced restructuring* (consolidations, sales, internal restructuring). The rate of internationalization of the largest TNCs decreased in 2008 (according to UNCTAD's preliminary estimates), while their overall profits fell by 27%.

In terms of the sectorial composition of the top 100 listed for 2007, the majority of the largest TNCs continued to be in manufacturing. Thus, General Electric, Toyota Motor

Corporation and Ford Motor Company were among the biggest manufacturers and these were affected by financial crisis (for Ford-SUA's Division). Ford Motor Company – European Division was less affected because production's adapting in last years to demand of European market. In December 2009 the greatest auto engine builder Volkswagen bought stocks with € 3,9 billion 49,9% from Porsche and will take over the whole company by the end of 2011. Porsche will be the second brand of Volkswagen group which will help him to become the greatest world auto engine builder by 2018, exceeding Toyota Motor Corporation. Thus, Volkswagen group will be able to extend its luxury auto production and to obtain an annual operating profit majored with € 700 million. TNCs from the services sector have been steadily increasing their share among the top 100. There were 26 companies on the 2008 list, as opposed to 14 in 1993, with Vodafone Group and Electricité de France among the biggest.

3. Foreign direct investments previsions

It can be said that global foreign direct investments previsions are not so good.

In short-term, with the global recession extending into 2009, slow growth projected for 2010, as well as the drastic fall of corporate profits, foreign direct investment flows are expected to be low. TNCs are hesitant about expanding their international operations: a majority (58%) of large TNCs reported their intentions to reduce their FDI expenditures in 2009 from their 2008 levels (UNCTAD preliminary estimates) with nearly one third of them (more than 30%) even anticipating large decrease.

The *medium-term previsions* for foreign direct investments are more optimistic. TNCs expect a gradual recovery in their foreign direct investments expenditures in 2010; half of them expect their foreign direct investments in 2011 to exceed the 2008 level. The United States, along with China, India, Brazil and the Russian Federation are likely to lead the future foreign direct investments recovery. For example, Hoyo Agricultural Machinery Equipment Chinese Company inaugurated in 2009's autumn in Romania the agrimotors factory from Râșnov, an investment of 50 millions USD. In this factory 20.000 agrimotors will be made annually for European market. Industries that are less sensitive to business cycles and operate in markets with stable demand (such as agribusiness area) and those with longer term growth prospects (such as pharmaceutical area) are likely to be the engine for the next foreign direct investments boom.

4. Some measures of the states in the context of financial crisis

Foreign direct investments are not the cause of this crisis. The crisis began in the second half of 2007. This aggravated in the last quarter of 2008 and determined and led to a slowing down of global economic activity. So, reduced acces to finance it has affected firms' capacity to invest. Loans have become less abundant and more expensive. Firms' propensity to invest has been affected by lack of economic prospect in future. The total output in developed countries as a whole is expected to decrease in 2009 by 3.8% compared with a 0.8% rise in 2008 and this is the first such fall in the post-war period, confirmed by OECD, United Nation and World Bank. 85% of TNC (survey of UNCTAD) reported that the economic downturn had a „negative” or „very negative” impact on their planned investment expenditures. Some national policy measures introduced as response to the crisis are likely to have an impact on FDIs flows and TNCs operations in an indirect manner. In this context the measures may have a positive effect. They could help stabilize. In 2008 some countries continued to liberalize FDI regulations in certain domains: liberalization of electricity generation (Russian Federation), approving a new law on joint stock companies (Ukraine), simplifying the tax system and making it easier to start a business (Georgia).

Most governments have taken actions during the global crisis to support and strengthen competitive markets in financial and banking system and in other domains. The

fiscal and financial measures taken to limit the effects of global crisis are helping to increase the aggregate demand, to stimulate economic recovery and to reduce global macroeconomic imbalances. These imbalances have been a source of trade tensions and contribute to protectionist sentiment. Many developed countries and some emerging economies created *economic actions stimulus packages and financial rescue packages*, for example United States granted US\$ 12 trillion for supporting programs and European Union granted US\$ 8 trillion (Hufbauer, Rubini, Wong, 2009). The financial rescue packages represent 28% of GDP in the United Kingdom, 19% in Germany and 19% in France. Fiscal stimulus packages for 2009 as percent of GDP was 1.9 in France, 1.9 in United Kingdom, 2.8 in Germany, 3.5% of collective GDP of OECD and 4.0% of GDP in Australia, Canada, Korea, New Zealand, United States. Fiscal and financial stimulus packages represent 13% of GDP of China (OECD, 2009).

Some observable measures of world states in order to limit the negative effects of crisis are:

- *governmental expenditures destined to investors*, particularly for private banking system's liabilities.

For example, the government of Great Britain spent for some measures in order to come out of crisis (2009, December), amounts that represent approximate 30,000 £/person. (50,000 USD/person). USA spent amounts that represent approximative 10,000 USD /person.

- *a new interest for agreements* between developed countries, but also between developing countries and countries with economies in transition.

For example, during 2008, the network of international investment agreements continued to expand: 59 new bilateral investment treaties were concluded, bringing the total number to 2,676. The number of double taxation treaties increased by 75 to a cumulative total of 2,805. The number of other international agreements with investment provisions (mostly free trade agreements containing binding obligations for the contracting parties with regard to investment liberalization and protection) reached 273 by the end of 2008. In parallel with the expansion of the international investment agreements, the number of investor-states has also continued to increase, totaling 317 at the end of 2008 (WTO, COMTD, 2009).

- *lending to government of the least developed countries* by international financial institutions, such as International Monetary Fund, World Bank, a.s.o. For example, Angola received \$ 1.4 billion to support reserves, reforms. In response to critical macroeconomic imbalances, Angola's government tightened both fiscal and monetary policies. At the same time, Angola's government must introduce some structural reforms such as:

- ❖ *Fiscal transparency*. The government will publish quarterly budget execution reports to ensure greater transparency and better oversight of major state-owned enterprises.

- ❖ *Tax system*. The authorities have developed a tax reform strategy to move toward a consumption-based improved tax system; it also envisages substantial simplification of the tax system to improve efficiency in collecting the taxes and reduce fiscal evasion. The strategy includes the foundation of an authority in order to strengthen tax system based on less fiscal facilities in order to stimulate the economy. The program includes *measures to strengthen the National Bank of Angola's regulatory and supervisory framework* to limit risks related to economic slowdown and measures related to sizable foreign currency lending to unhedged borrowers, as the degree of US dollar is high. The Stand-By Arrangement will *help Angola restore macroeconomic balances* and mitigate repercussions of the global economic crisis

during the program period. But to lay a robust foundation for growth over a medium term, deeper structural reforms are needed to enhance competition and invigorate private sector development.

▪ **Aid for Trade.** This is a set of measures taken by World Trade Organization to help developing countries in order to ♦ overcome constraints regarding building their economic infrastructure and ♦ increase their competition. The aim of this aid is to assist developing countries integrate into the global economy and ensure that they can take advantage of trade opening and greater market access for their exports of goods and services.

Aid for Trade *includes grants and concessional loans* for: *infrastructure* – building the roads, ports and telecommunications that link domestic and global markets; *productive capacity* – investments in industries and sectors so that the countries can diversify exports; *technical assistance* – helping countries to develop trade strategies; *adjustment assistance* – helping with costs associated with tariff reductions, preference erosion or declining terms of trade (WTO, 2008).

Some developed countries pledged to provide Aid for Trade for developing and transition economies, for example: Japan pledge to provide US\$ 12 billion per year between 2009-2011; Netherlands – € 550 million per year between 2009-2011; France – € 850 million from 2010 and United Kingdom has pledge to spend aproximative £1 billion a year between 2009 and 2011 to enhance growth and trade in the poorest countries (OECD-WTO, 2009). United States pledged to spend US\$ 2.7 billion per year for Aid for Trade expenditure by 2010. European Union and its Member States pledged to provide € 2 billion annually by 2010 on trade- related assistance (OECD-WTO, 2009).

5. Conclusions

Preliminary data for 2009 indicate a general decline in FDI inflows in developed, developing and transitions economies. UNCTAD is expecting a slow recovery to start in 2010.

With *massive government interventions in banking and financial services*, some developed countries' governments have become *the largest or exclusive shareholders* in several of the biggest financial TNCs. In these situations, because there are spent public funds for recovering TNCs activity, *the involved states were obliged to step in, to check* some activities of these companies (the level of wages of management, the level of premiums given to employees and the level of other unreasonable facilities during the crisis). This dramatic change together with the downfall of some of the largest financial TNCs, will strongly influence foreign direct investments in all sectors, especially in financial services sector in the next years.

It is necessary that the governments formulate an *integrated strategic policy* for TNC activities in their countries. This should *include economical vital areas* such as: infrastructure's development, competition, trade and trade's facilitation between states with the same level of development or different levels.

International agreements had an important role in insurance of *predictability, stability and transparency for national investments programmms*. *The insurance of investments* and other measures of host countries that facilitate FDIs can achieve an international cooperation useful for future activities.

Concerns have been expressed that developing countries policy measures could result in investment protectionism by favoring domestic over foreign investors or by introducing obstacles to outward investment in order to keep capital at home. Some countries have begun to discriminate against foreign investors and/or their products in diverse manners using gaps

in international regulations. Thus, protectionism involves: ♦ favoring products with high domestic content in government procurement, particularly huge public infrastructure projects, ♦ preventing banks from lending for foreign operations that cause national security concerns, or ♦ moving protectionist barriers to local level. For the next years a very important question is which FDI policies host countries will apply during the global economy recovering. It is possible a *new wave of economic nationalism in order to protect national performances*.

The exceptional economic circumstances in which the programs were introduced show that there is no general model to analyse the trade effects of their components in isolation from the broad macro-economic effects of the programs themselves.

The role of the World Trade Organization is to encourage additional flows of aid for trade from donors to support requests from beneficiary countries.

Many of the policy measures specific to investment taken by the developing countries in the period November 2008 to June 2009 were non-restrictive towards foreign investments.

For Romania it is important to limit the effects of economic and financial crisis because there are many enterprises, in particularly transnational corporations, that have financial difficulties.

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INTEGRATION OF ENVIRONMENTAL POLICY INTO THE EUROPEAN ENERGY POLICY

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***Abstract.** The idea of integrating the concept of sustainable development concept into the sectorial policies has been promoted in June 1998, at the European council from Cardiff, when a number of economic sector have been proposed for integrated approaching. The paper analyses the main operational objectives of integration the environment policy into the energy policy as well as instruments by which can achieve theses objective, respectively horizontal policy and sectorial policy.*

Keywords: energy, integration, policy, objectives, instruments

JEL Code: Q48.

REL Code: 15F..

1. Introduction

The sustainable energy policy can be defined as the policy by which one can maximize the long-term standard of living of citizens by keeping a dynamic, a reasonable equilibrium between the security of supply, the competitiveness of services and the environment protection as an answer to the challenge of energy system. The overall objective consists in limiting climate change, costs and other negative effect on society and environment by using clean energy and promoting energy efficiency.

The fears generated by the polluting effect on the environment of fossil fuels burning and the study rise of the energy bill because of the high oil price in the context of an current import dependency of around 55% of fossil energy and over 80% on medium term are some of the reasons which determinate the EU involvement in an ambitious and succesful plan with an the aim to become global leader in the renewable resources production. Moreover, the renewable energy seems to be the only available resource in the EU.

EU renewable energy market records a turnover of 15 billion euro and employs 300.000 people. Moreover at the current high level of oil price, the renewable energy is about to complete with fossil fuels price.

Starting from the premise that it cannot afford to increase its already high dependency on primary energy sources imparts without affecting its industrial competitiveness under the supply side and environmental pressure EU focuses on implementing a common energy strategy, with an emphasis on the objective in the efficient use of energy.

Although EU is one of the most efficient regions in the world from the point of view of energy specific consumption it still has an important potential for improving its performances in this field. In the „Green paper about energy efficiency: Doing more with less”, the European Commission argued that up to 20% of the current energy consumption could be saved, these savings would represent the equivalent of 60 billion euro would have an positive impact on the energy security on supply and would generate one billion new jobs in

the involved sectors. The studies showed that a medium family within EU could save between 200- 1000 euro/year only by applying energy efficiency measures.

2. Operational objectives of integration

The main operational objectives of integrating the environment policy into the energy policy have been the following:

- increase of „cleaner” energy sources share (renewable, nuclear energy, natural gases)
- promotion of energy saving and energy efficiency measures
- reduction of the environmental impact of the energy production and consumption

Targets:

- by 2020, 12% of energy consumption, on average, and 21% of electricity consumption as a common but differentiated target should be met by renewable sources, considering raising their share to 15% by 2015

- by 2010, 5.75% of transport fuels should consist of biofuels, as an indicative target, considering raising their proportion

- reaching an overall saving of 9% of final energy consumption over a 9 year period until 2017 as indicated by Energy Saving Directorate

Actions at the EU level:

- adaptation and implementation of an ambitious but realistic plan – Action Plan of Energy Efficiency for turning of energy saving potential, estimated at 20% from the current consumption, until 2020;

- analyzing the way to achieve the existing task for the renewable energy sources and promoting them in a cost efficient manner over the long-term and in the same way further the use of biofuels in the transport sector. Support for research and development of second generation biofuels;

- promotion of biomass consumption with the view of diversifying EU energy sources, to diminish the pollutant emissions from transport, to create new jobs and opportunities for increasing the standard living in rural areas, by expanding the proposal included in „the Biomass Action Plan” in the following sectors: heating and cooling, electricity, transport;

- enhancing the power stations efficiency, particularly by further promoting the use of combined heat and power

3. Instruments to take the objective

At the community level there are promoted instruments by which can achieve these objectives, respectively horizontal policy and sectorial policy.

3.1 Horizontal policy are aimed to prevent and alleviate the negative impact of an uncontrolled increase in energy consumption by setting up a certain indirect control, mainly by means of energy prices, which must reflect real costs, including those of externalities and stimulate energy savings.

The main instruments of horizontal policy are: liberalization, financial and fiscal policies, dissemination of new technology.

The main EU instruments are: Directive on electricity produced from renewable energy sources, Directive of biofuels, resolution of European Council concerning promotion of renewable energy sources – Altener Programmes, Directive 92/75/EEC detailed in a series of directives of the emission for energy labeling of appliances.

Economic instruments: liberalization of energy market and creating of internal market can ensure a healthy competition and guarantee the security of energy offer; enhancing the European economy competitiveness, provided that the transport capacity and interconnection of trans-European-network will be developed.

Decoupling the energy consumption from the economic growth is another trend of the common policy whereby is intended to reduce or stop the negative influences of the energy

sector on the environment and social life. The recommended instruments are the conservation and efficient use of energy.

Fiscal instruments. Energy taxation is on a market more and more opened, a flexible and efficient instrument to stimulate a change in the producers and consumer behavior as regard the promotion of energy efficiency.

The fiscal policy instrument is meant to eliminate the gaps at national level and also disparities at national level and also the disparities between energy producers, to encourage the energy conservation by favoring the internalizing of prejudices to the environment and the reduction of CO₂ emissions. The harmonization, at the Community level, of the energy products tax framework is necessary to prevent the distortions of competitive nature on the internal European market.

The fiscal policy must have a net neutral result, meaning that the increase of taxes applies to non-energy efficient services must be set off by tax reduction applied to labour force or to some energy efficient activity. The member states will be obliged to use revenue derived from these activities in measures of energy conservation, instead of using them for other initiatives.

Among the opportunities aiming at promoting the energy efficiency by means of fiscal system one can be mentioned:

- concentration of efforts on excise taxes in some essential area (for instance armonization of taxes rate in case of competition distortions, use of differentiated taxes for promoting renewable sources)
- bringing the excise tax rates on the energy products nearer to that applied to the electricity consumed activity in the production process and introduction of automatic indexation in order to avoid tax erosion due to inflation
- specific taxation of transports, both as regard excise taxes and tax on the add value
- adjustment of the conditions regarding the border trade
- taxation of energy consumption for thermal energy production, mainly in the new and big buildings
- rationalizing the system of tax exemption and facilities.

Instruments of Research, Development Innovation – dissemination of new technologies

In order to sustain this process it also necessary to develop the markets able to absorb new technologies by means of production base on economics scale. In this context the public acquisition can play an useful role. The 7th Framework Programme for Research and Development established for energy sector the following objectives: use of renewable resources, development of clean technologies for coal exploitation, increase of energy network efficiency and cooperation programme for promoting energy efficiency.

3.2 Sectorial programmes

3.2.1. Construction

The construction represents the most important sector of the EU as for its energy savings.

Targets are achieving saving of 40 billion t.e.p. during 2006-2013 periods, only by applying energy efficiency measures.

Legislative instruments: directive on energy performance of buildings – 2009/91.EC „\European Green Light Programme”.

Use of energy efficient technologies, available and economically affordable can reduce energy consumption in buildings by 1/5 at least equivalent to a reduction of 10% of net petroleum import and of 20% of pollutant emissions.

It is intended also to encourage renewable resources use at the new buildings, the connection of heating and air conditioned systems at multiple energy sources, integration of

photo-voltaic cells technologies and of solar panels in roofs and buildings front a GES utilisation.

It is supposed that up 50% of the energy consumed could be saved by applying the so – called of „intelligent lighting”, as it stipulated in European Green Light Programme.

The main instrument for achieving these objectives will be „certificate for energy performance of building” draw up on the basis of about european standard in this field. These will be applied, at national level, by voluntary agreements, negotiated at community level.

3.2.2. *Industry*

Actions at EU level:

- conclusions of long-term agreements concerning the energy efficiency
- increase of the combined production heat/power
- increase of energy efficiency role in the energy services offered by the distribution companies.

The household appliance is appropriate for major improvements by combining the informal measures with the voluntary agreement. EU countries adopted measures for products labeling, so that the consumers should be informed about energy specific consumption of the appliances they use: Eco-design measures are the first step towards improving the energy performance of household appliances. Other measure refers to the reduction of electric energy consumption in stand by mode and to the VAT reduction for efficient equipment.

3.2.3 *Transport*

The transport sector is the main responsible for EU failure in fulfilling the objective of Kyoto Protocol. EU transport sector is 98% dependent on fossil fuel and 96% on petroleum products. About 90%of the estimated increase in CO₂ emissions during 1990-2010 periods is attributable to the transport sector, the engines with internal combustion will be the main available technology by 2030 and the liquid fossil fuels and renewable sources will be the main fuels.

Administrative instruments for promoting the best practices are the labeling system for motors cars which implies member states obligation to guarantee that the information concerning the fuels consumption and CO₂ emissions will be delivered to the consumer.

As fiscal instruments are used:

- a) motors cars tax calculation on the basis of fuel consumption and of CO₂ and particles emissions,
- b) fiscal measures aimed at eliminating the cars wormed out and encouraging those using clean fuels.

EU is promoting an incentive policy of progressive substitution of diesel cars equipped with motor using ethanol, because of greater availability of production capacity for bioethanol than for biodiesel, of the advantages of using a lesser agricultural surfaces and also because of the better prospects to diminish industrial production cost: it is indented to use modified motors cars, able to use 95% ethanol mixed with diesel oil and also to revise the standard in order to allow switching from metahnol to ethanol.

The stimulation of the production and acquisition of motor vehicle with little pollution degree by using biofules can be achieved by means of fiscal policies.

It has been estimated that bioethanol can become competitive at an oil price level of 90 euro/barrel and biodiesel at 60 euro/barrel but the uncertain evolution of the international oil price and the production costs of biodiesel make difficult a cost estimation.

Preliminary estimates based on 2005 market price indicates that a quota of about 25% of biofuels in road transport up to the year 2030 would imply supplementary costs of 31 billion euro/year, or 6.6. euro cents/litter and 8.2 euro cents/litter for diesel oil.

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TAXATION IN GERMANY

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Abstract. *The paper presents the characteristics of the main taxes in Germany, starting both from the German legislation in the matter, as well from recent scientific papers based on this topic. The spotlight is given to the income tax and in that matter, to the salary tax, which shows interesting particularities in comparison with other countries. It is also presented the professional tax, functioning in Germany since the Middle Ages. Special references have to be made also to the solidarity tax and the fiscal regime of donations and inheritances.*

Keywords: the income tax; the value added tax (V.A.T.); the professional tax; the salary tax; the revenue tax.

JEL Code: G28.

REL Code: 11Z.

Fiscal incomes are in Germany, as in other countries, the main category of budgetary resources.

Taxes are set, charged and allocated, accordingly to the case, into the three levels of the fiscal and administrative organization: the federal level (*Bund*), the regional level (*Land*) and communal level (*Gemeinde*), as showed along the presentation. Most of the taxes are settled on a federal level – the income tax, the revenue tax, the value added tax, customs taxes, most of the excises, the solidarity tax and others. At regional level, there are settled the successor taxes, the confessional tax, the means of transportation tax, some excises, while at the communal level – the land tax, the professional tax, the pet tax, etc. (Grefe, 2002, p. 32)

Of the budgetary resources of fiscal nature, about two thirds come from the income tax and the value added tax. A high ratio is detained by the mineral oil tax (oil and derived) and the professional tax.

The size of the fiscal receipts is relatively a lot different, both between regions, as well as between the cities of certain regions. In order to smooth these differences, compensatory mechanisms were introduced, that means transferring sums between downer regions, more prosperous, and the beneficiary ones.

The income tax, called *Einkommensteuer*, concerns, just like in other states, the incomes of natural persons. The taxation base is composed of two big categories: gain revenues, called *Gewinneinkünfte* (determined as the balance between revenues and expenses of the entrepreneur), and surpluses revenues called *Überschusseinkünfte* (determined as the difference between brute revenues and the costs of obtaining those revenues).

The gain revenues contain three types of revenues:

- agriculture and forestry;
- industrial and assimilated activities;
- independent activities, other than above.

In the revenue from surpluses category there are four types of revenues:

- a) of salary (wage) nature;
- b) from capital;
- c) from subletting properties;

d) from other sources.

Nowadays, in Germany taxation is applied using a progressive ratio per revenue intervals with a non-taxable minimum. Thus, annual revenues of natural persons up to 7,834 euros are tax free, for revenues between 7,834 and 52,552 euros it is applied a taxation ratio of 14% (for everything above 7,834), between 52,552 and 250,400 euros 42%, and for revenues over 250,400 euros the ratio is 45%.

The income tax serves as a base of taxation for the confessional tax, called *Kirchensteuer*. This is paid by the taxpayers accordingly to their involvement into the religious communities and it stands, depending on the region and the confession, for about 8-10% of the income tax value. (Grefe, 2002, p. 174)

The salary tax called *Lohnsteuer* is not a distinct tax in the German fiscal system, it is only a tax on the incomes of a wage nature. In order to determine it, the German fiscal legislation introduced the fiscal book, classes and tables.

The fiscal book, called *Lohnsteuerkarte*, contains the employee's personal data (name, address, age, marital status and number of children in care), the religious affiliation, and the fiscal class.

Today there are six fiscal classes called *Lohnsteuerklassen*, depending on the marital status, children in care, the size of the salary and the number of work places of the employee, divided as it follows:

Class I – single employees (unmarried, divorced, widowed, separated), without children in care;

Class II – single employees, with at least one child to support;

Class III – married employees, but one does not get wages, or gets low wages;

Class IV – married employees, with both getting wages, usually of close value;

Class V – married employees who obtain low wages (one is fitted to Class III);

Class VI – employees who get simultaneous wages from different workplaces, for the second and following workplaces. (Lohse, 2001, p. 84)

Employees can choose for registering in the IIIrd, IVth, or Vth class, depending on the size of the offered deductions.

Fiscal tables, called *Lohnsteuertabellen*, are drafted annually, and they contain, for each class, the tax-free amounts, composed of a base deduction to which it is added, accordingly to each case, home maintenance deductions, for children, for other expenses, within the limit of a certain amount, established every year. The monthly tax is set according to the fiscal tables, withheld monthly through source blocking and wired by the employer. The wage tax is adjusted during the next fiscal year, by comparing the withheld tax accordingly to the fiscal tables with the average income tax, calculated by dividing the annual salary income by 12. Following the regularization, in most cases it results a recovery in favor of the employee, which is not refunded, but compensated with payable amounts in the account of other taxes.

The capital income taxes, called *steuerpflichtige Einkünfte aus Kapitalvermögen*, are also withheld by source blocking. The taxation ratio is of 25% of the income.

The revenue tax, called *Körperschaftsteuer* (in translation, corporation tax), is, as in other countries, the revenue tax of legal persons. Its weight in the fiscal revenues ensemble is only about 5%, since most of the companies are legally organized as partnerships, subject of the income tax. Furthermore, the public interest institutions (ecclesiastic, cultural-scientific and sport-related) are tax-free and foundations and non-profit organizations pay taxes only if they register incomes resulted from economic activities. (Hoffman, 2001, p. 116)

The German fiscal legislation provides the determination of the revenue tax in several stages. The standard taxation ratio, that used to be 25% at the beginning of this decade, was reduced last year at 15%.

Natural persons submitted to the income tax and legal persons subjected to the revenue tax also need to pay the solidarity tax, called *Solidaritätszuschlag* (in translation: solidarity

supplement). This tax was introduced after the reunification of the German state, since the leveling of social-economic development differences between the old lands of the Federal Republic of Germany and the new lands of the Democratic Republic of Germany needed considerable funds, for a long period of time. The base (fictional) of taxation is formed by the income tax, as well as the revenue tax, then applying a standard ratio of 5.5%, but taxpayers with low incomes can benefit of tax exemptions or reductions.

The professional tax, called *Gewerbesteuer*, comes from the German Middle Ages and it was introduced on the basis of the following reason: owners of exploitations, shops, working benches, etc., located in a city, had the duty to compensate the other people because they made the soil uneven and poorer, polluting the water and the air, etc., irrespective of whether they were profit-making or not. The German contemporary legislation kept this tax, from which municipalities benefit: the taxation ratio is between 1-5% of the obtained revenues for small entrepreneurs and 5% for corporations. (Lohse, 2001, p. 99)

The value added tax (VAT), called *Umsatzsteuer*, (in translation, tax on the circulation of goods) has known a lot of legal regulations in the last decades, related with Germany being a member of the European Economic Community (EEC) and, finally, of the European Union (EU), that would need a separate approach. Currently, by consolidating the calculation mode of these taxes to the level of the member states of the European Union, it is determined by the *Allphasennettoumsatzsteuer* system, that implies summing up the tax of the newly created value on each link of production and trade, paid by the final consumer.

The persons registered for VAT (in translation VAT payers) collect VAT from their customers and at the same time they deduct the VAT they paid to their suppliers. The payment is done quarterly, on the basis of the statement. Small enterprises, with a sales volume of under 17,500 euros, are free from paying VAT. The tax free enterprises do not have the right of deducting the VAT paid in earlier stages, which in practice is leading to an increase of the goods price for the final consumer.

The taxation ratio has increased lately from 16% to 19% for current merchandise. For food products of general consumption, but also for publications and others, there is a smaller taxation ratio of 7% in practice.

VAT exemptions regard mainly inter-deliveries, called *innergemeinschaftlicher Erwerb*, as well as exports to third states, called *Drittlandsgebiet*, certain service categories (health, culture, sports, professional building) leases and others. (Lohse, 2001, p. 107-108)

The excises, called *Akzisen*, are perceived, like in other countries, for certain products of large consumption. We mention that oil based products are submitted to the mineral oil tax, called *Mineralölsteuer*, that stands for 6% in the total budget revenues of fiscal nature. The main excised products are alcoholic beverages (liqueurs, wines, beer), tobacco and coffee.

The tax on land circulation, called *Grunderwerbsteuer*, perceived at regional level, with a ratio of 3.5% of the transaction's value, and the land tax, called *Grundsteuer*, perceived at a communal level, at a ratio of 0.35% of the land's commercial value, stand for important income sources (Mitu, 2009, p. 310) for the local communities in question.

Within the German fiscal legislation it is stated the taxation of physical donations between the livings, called *Sachschenkungen unter Lebenden*, and of assets obtained through inheritance, called *Erwerb von Todeswegen*. In the first situation, it is assessed in money the asset's value in nature, in the same criteria applicable to commercial transactions; at the new value, it is applied a taxation ratio between 7-15%. In the case of family foundations, called *Familienstiftungen*, through which assets are passed from the older to the younger generation, the taxation is made once every 30 years starting at the set up of the family foundation. (Lohse, 2001, p. 125) To determine the inheritance tax, the legislation states the existence of fiscal classes, depending on the degree of relatedness between the successor and heirs. In the calculation of the inheritance they add previous donations, abroad property (even if it is affected by the double taxation), as well as any future pension or occupancy rights for life.

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BRAIN-DRAIN MIGRATION IN THE KNOWLEDGE SOCIETY: IMPACT AND CONSEQUENCES

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***Abstract.** Globalization, people's and capital free movement have lead to the creation of knowledge society, a society in which international migration for qualified personnel is interesting for both source state and absorbent force work state. This phenomenon can attract in the source state a decrease of the revenue per capita as a negative result but at the same time it can act as a positive externality in the destination state. In this context this paper aims to analyze different aspects of the brain-drain migration concept and the impact upon both origin and destination countries.*

Keywords: migration, brain-drain, externality, fiscal policy

JEL Codes: D62, F22, H2.

REL Codes: 10G, 13Z.

1. Brain-drain phenomenon and its manifestation forms

The knowledge society is confronted with many phenomenons, one of these being the brain-drain phenomenons that meaning the migration of the specialized labor work. This phenomenon has a long history being known as a manifestation in the '60. Grubet and Scott (1966, pp. 268-74) and Johnson (1967, pp. 379-411) considered the brain-drain as a competence and financial loss for the origin country, this leading on the long-term to a offer crisis of the labor work, or worst, if the population has a natural tendency to decrease, it will put in danger the existence of the national institutions. In order to stop this phenomenon, Bhagwati (1974, pp.19-42) is proposing the introduction of an tax on migration of the specialists.

UNCTAD is seeing this phenomenon as unjust, identifying it as an inverse technology transfer. For the developing countries, the brain-drain phenomenon is denoting a permanent or a long-term migration of the qualified persons that have benefited by the educational investments made from budgetary resources. This competence and knowledge transfer is seen more and more in the knowledge society, finding itself like a loss for the origin country (negative externality) and like a gain for the receiving country (positive externality).

Nodays, from the competence and knowledge transfer, we can see a movement towards the information and knowledge technology transfer (Wickramasekaro, 2002, pp.167-203). The study realized by Docquier and Marfouk (2005, pp. 151-200) is evaluating that the number of resident emigrants in a OECD country has increased by 50% in the period 1990-2000 and from these the number of high qualified emigrants was two and half times higher then the number of emigrants with no qualification. This is why we can state that the migration phenomenon is in expansion. In the last decades the emphasis of the phenomenon has many causes, one of these being that the qualified person has the interest to maximize the social welfare choosing the country that will offer the optimum value. The decision to emigrate is the compromise result between the future advantages and the emigration costs (financial and psychological costs, etc.). Social welfare maximization will be achieved by increasing the living existence, obtaining a higher salary, material base, undergoing activities in a scientific environment, etc.

The effects of this phenomenon are different upon countries taking into account their developing state. The high qualified persons are contributing to the economic development,

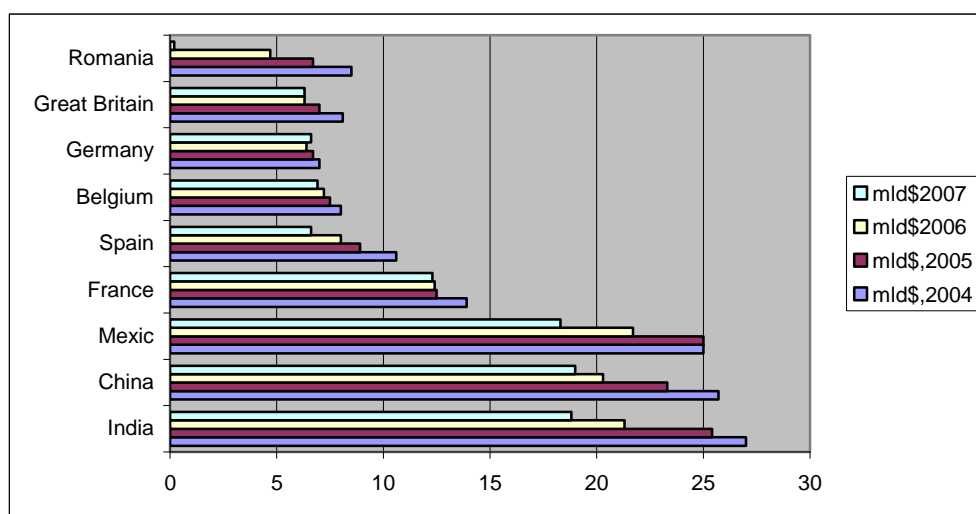
sustaining through taxes and contributions the public finances. This is why if these will emigrate there will be public revenues losses that in time will lead to a lower sustainability of sectors like education, health, social protection, etc. Mountford (1997, pp. 287-303) is stating that emigration of elites will produce some changes in the source country in order to increase professional education because the better you are qualified the higher your salary will be. These are the same conclusions reached by empirical testing by Beine, Docquier and Rapoport (2001, pp. 275-289). They are underlining that the human capital investment and the economic growth rate are increasing the specialization system, but this can fight the negative effect produced by emigrations upon the qualified persons only if a part of the high qualified persons are staying in the origin country are creating a plus-value.

2. The impact of the brain-drain phenomenon upon both origin and destination countries

In the developed countries the individual is bearing all the costs for his high education through his own resources even through he is paying taxes and contribution for the budget. Investing in human capital like investing in education in order to obtain a bachelor diploma is offering advantages in countries like Ukraine, Poland, Portugal, Czech Republic, Romania (the outturn rate in between 20%-30%) but the percentage of persons obtaining diplomas in the total population with the age between 25 and 64 is from 13% to 18%, under the OECD medium of 27% .

As a positive externality upon the origin country we can consider the funds transfers realized by emigrants towards the origin country in order to assert the consumption, savings and investments (OECD, 2005) or to reduce poverty.

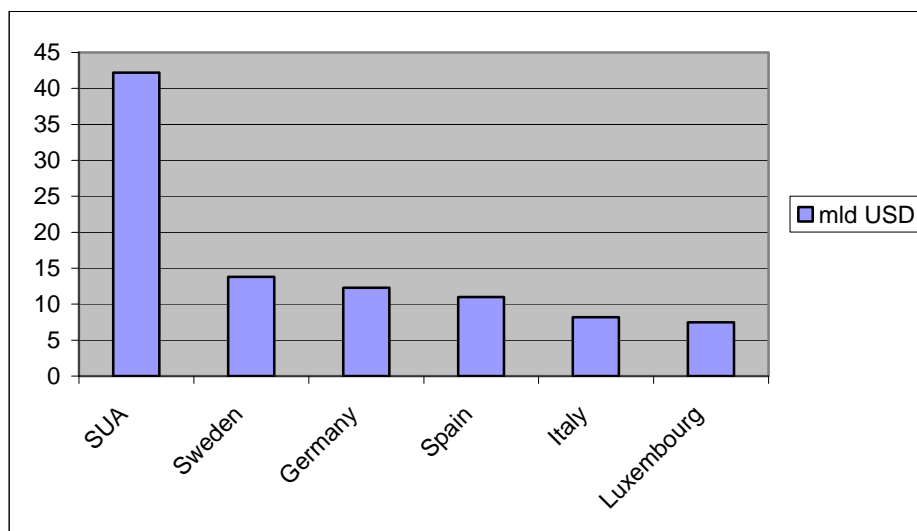
The transfer funds are registering important values with the tendency to increase from 102 billions USD in 1995 to 232 billions USD in 2005, and from all the realized transfer almost 72% were made towards developing countries. In 2007 the transfers reached 318 billions USD and from the total almost 240 billions USD were funds towards developing countries with 50% more than 2002. For the poor countries these funds are main external financing source while for the East European countries there is a relatively constant foreign currency source. The main beneficiary countries of transfer funds in 2004-2007 are presented in the figure below.



Source: data from Eurostat, OCDE, World Bank.

Figure 1. Countries benefiting from emigrants transfers in 2004-2007

The countries from where these funds are issued are selectively presented in the figure 2. For some, these funds are representing important percentages from the gross domestic product (Luxembourg – 18,2%, Sweden – 3,6%) and for other are representing more than the value of incomes from these kind of funds (Germany, Italy, Spain).



Source: data from Eurostat, OCDE, World Bank.

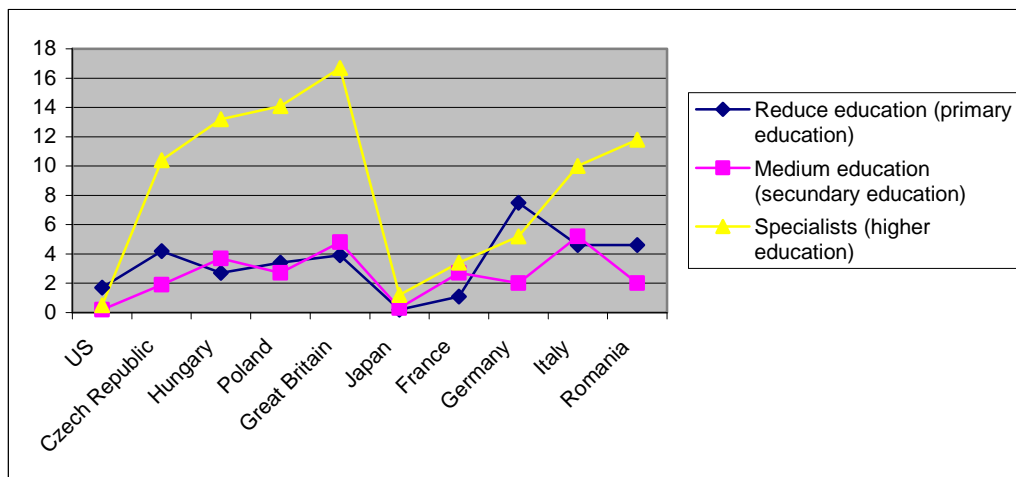
Figure 2. Countries from where the funds have been transferred in 2007

For the origin countries the repercussions are more significant upon budget in which case supplementary measures should be taken in order to fight against the negative effects, such as:

- Restructuration of the superior education financing system by thinking and implementing financing programs for base studies asked on debts rather than scholar subventions given by the state;
- recovering the costs from the ones that are migrating;
- implementing alternative mechanisms for increasing budgetary incomes, that are reduced after the migration phenomenon, like reducing taxes for enterprises that are employing graduates or that are in a business with high technology and are supporting educational costs.

The European Union is acting through political, financial and human means in order to put in practice a coherent program that will favouring the knowledge transfer and also the return of emigrants in the origin countries in order to sustain their development. In Figure 3 it is presented in a comparative manner, for different countries, the migration phenomenon by levels of educations, seeing that if from Japan specialist are migrating in a proportion of 1.2% from the total migration phenomenon in European Union countries this percentage is higher, reaching 16.7% in Great Britain.

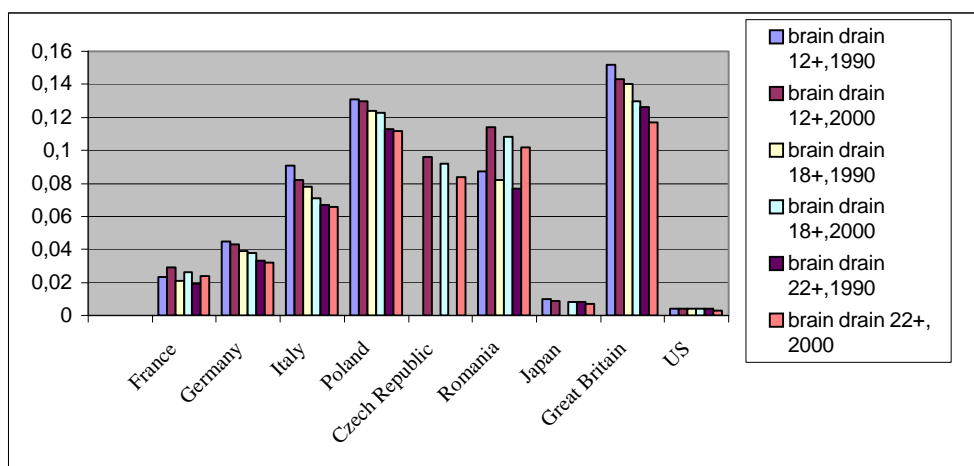
We can see that the migration of specialists is realized especially from the Eastern European countries (Poland – 14.1%, Romania – 11.8%) and in Figure 3 we see that while for the develop countries the brain-drain phenomenon is relatively constant, for the period 1990-2000 (Germany, Japan, US, Great Britain), in the developing countries the phenomenon is growing. This is underlining the information from Table 1 – in Romania the phenomenon is changing according to age groups – 22 year from 7.7% in 1990 to 10.2% in 2000, from which 51,691 specialists have emigrated in the EU-15 and 95,823 in the United States.



Source: Docquier F, Marfouk A, *International Migration by educational attainment, 2005* (World Bank contact PO 7620076-UPI 269656).

Figure 3. Migration by level of education in different countries in 2000 (% from total migration)

Thus, France has created a special statute for foreign students and researchers, Ireland and Great Britain have realized a list with all the qualifications characterized by the lack of specialists (IT, medicine) and Germany has put in practice temporarily emigration programs for 5 years the IT domain.



Source: Beine M, Docquier F, Rapoport H, *Measuring international skilled migration , new Estimates Controlling for age of entry, july2006* (World Bank contract PO 7641476) – work data.

Figure 4. Brain-drain by countries, 1999-2000 (% from total, by age group)

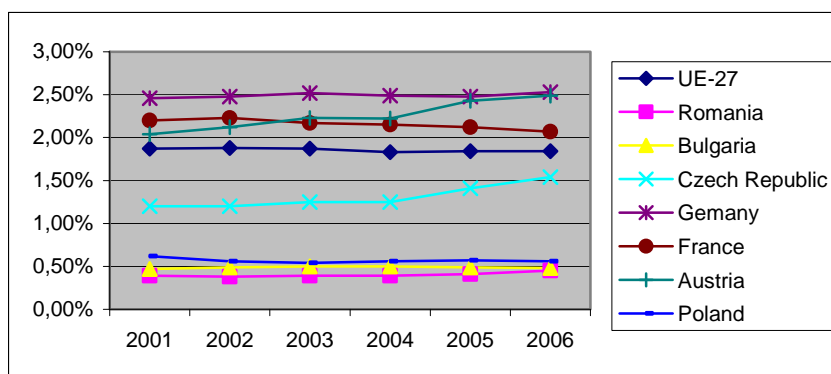
Docquier and Rapoport (2005, pp. 1-27) according to empirical testing, have demonstrated that the structural deficit of “brain” is correlated with institutional, economic and historic characteristics. They are sustaining that although in the European Union more specialization and PhD diploma are obtained than in the United States and Canada, researchers are fewer, the number of emigration researcher can not be compared with the number of researchers attracted (in 2002, according to a european statistics 29,760 specialists from UE 15 have emigrated in US). This way the inequalities between the UE countries have become more prominent but have also obliged the UE to take decisions in order to sustain the education system between 2007-2013 starting from the premise that a society based upon knowledge is the key to higher economic growth rates and labor employment the scope being the Lisbon Agenda.

In Romania, the studies realized (Diminescu, 2005, pp. 275-293, Nedelcu, 2003, pp. 43-63) have demonstrated that there is correlation between the economic, social and political conditions and the brain-drain phenomenon.

We consider that among the factors that are influencing this phenomenon are gross domestic product per capita, public expenditures for education, unemployment rate among specialists with superior studies, public expenditures for research and development activities, the conditions in which the professional activity is taking place, the fiscal policy, etc.

We can see that according to age groups in the period between 2000-2005 the main part of emigrants are between 26-40 years, with a 80% increase in 2004 face to 2002 and the destination countries are Canada (1,220 persons in 2005 face to 2,518 in 2000), Germany (2,196 persons in 2005 face to 2,216 in 2000), United States (1,679 persons in 2005 face to 2142 in 2000), Italy (2,713 persons in 2005 face to 2,142 in 2000). In 2005 the immigrants number was 3,704 persons, more then 80% were from the Republic of Moldova.

In what concerns the state implications in financing the research and development activities Figure 5 is showing their evolution in comparison with the EU-27 medium.



Source: work data from Eurostat.

Figure 5. Research and development expenses in percentage the gross domestic product for the UE countries, 2001-2006

Romania is under the EU medium, being overcome by developed countries like France, Germany, Austria but also by countries less developed like Bulgaria, Poland and Czech Republic which are underlining the theory according to which if there will be not created a proper environment for research activities the number of specialist will decrease due to emigration or due to a lack of choice for those specializations. In Romania from all the expenditures afferent to the research and development activities almost 28% from the funds are allocated for fundamental research face to almost 73% in the EU. If we put face to face the values per capita of the research and development expenditures in Romania – 20.6 euro per capita, with the medium of the EU-27 – 8,429 euro per capita, we come to the conclusion that in order to stop migration the state need to rethink this policy in correlation with fiscal policy.

While in the developed countries the percentage of the public expenses with education were varying in 2005 from 13.7% to 9.5% (US-13.7% – almost 5.1% from the GDP; Canada 12.4% – almost 4.9% from the GDP, Poland – 12,6% – almost 5.5% from the GDP, Japan 9.5% – almost 3.5% from the GDP) in Romania the percentage in the GDP was 3.48%. In most times a factor that is inducing the „brain” migration – is the fiscal factor, the fiscal pressure felt by taxpayers in comparison with the satisfaction felt by using the public goods and services. Considering the fact that Romania has a flat tax (16%) applied upon the physical person’s revenues, we think that it can be an optimum place for an activity to take place in comparison with other European countries. But considering other factors Romania does not attract „brains” but loses them, for example the number of students that are choosing to

continue studying in other UE countries is increasing face to the ones deciding to continue studying in Romania, situation that can be found in all EU.

Romania is in the situation of rethinking its educational system (including research) in correlation with the financial one and the fiscal one in order to grant some fiscal facilities to specialists (there was a time when the tax levied upon the IT persons salaries were reduced) hoping that if there will be taken other measures they will not emigrate and if they are abroad they will return home to sustain the economic development of the country.

Among the choices Romania has to transform itself from an emigration country in an immigration country and stop the brain-drain phenomenon are:

- investments in formation of labor force;
- restructuring the labor force and training it according to the market demands;
- priority program for researchers;
- financing education according to the legal stipulations (6% from the GDP);
- medium and long-term strategies regarding the outflow and inflow of specialists;
- sustaining specialists through fiscal measures (decreasing taxes, spare of value added tax for the specialists books, etc.);
- consolidating the educational and health system.

Conclusions

The brain-drain phenomenon is influenced by a lot of factors: institutional, financial, social and political. A country registering an increase of the brain migration has to put face to face the gains and the losses that can be caused by this phenomenon, trying to find equilibrium in order for the differences between countries to become more prominent. If we were to think in a nationalist way the state can prohibit all form of free circulation but the human right will be violated. If the losses registered are human capital, decrease in economic growth and outturn, fiscal revenues, financing educational system, the gains can be found in the form of currency, technologies transfers, investments and world market integration, etc. The brain migration is causing modifications in the case of receiving countries also: the population structure, the commercial trades, the unemployment rate, the political equilibrium, etc.

In the knowledge society the European Union must act in order to regulate the flow of specialists and to do that it has to take measures to regulate structural problems, sustain the research activity and the researchers, to create a proper scientific environment, better connections between the academic, political, social and research environments in order to reduce the difference between the European space and the United States space.

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THE TAX COMPETITION BETWEEN THEORY AND PRACTICE. EFFORTS AND EFFECTS AT THE LEVEL OF THE EUROPEAN UNION

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***Abstract.** Issues related to effects caused by tax competition on EU Member States' economies have been and have continued to remain a current issue. In order to ensure proper functioning of the Single Market, the Member States have undertaken measures to eliminate tax competition in the field of indirect taxes and consumption. However, there still remain many steps to go in the direction of harmonizing the direct taxes, the remedies being unable to target only the EU Member States, in the context of the reality of the internationalization of capital flows.*

Keywords: tax competition; economic integration; budgetary revenues; capital mobility; labor mobility.

JEL Codes: E62, F15, F22, H71.

REL Codes: 3D, 8K, 10F, 10G.

1. Introduction

In the context of economic integration and increased mobility of production factors, the phenomenon of tax competition is the subject of many analyses. The concept of „tax competition” was introduced by Charles Tiebout (1956), who based on the idea that there is an equivalent for the existence of public goods, namely the private property market. According to the mentioned author, the state authorities, in their attempt to attract new taxpayers in their own jurisdictions, have the tendency to achieve a tax/public goods report desired by them in order to achieve an optimal size of the tax base, which allows minimizing the cost of the provided public goods.

The specialized literature presents numerous points of view on the concept, content, area of expression and effects of tax competition. Classical theory, known nowadays as „basic models of tax competition”, by examining the dynamics and consequences of tax competition, supports the view according to which the competition of capitals leads to minimal competition (race to the bottom) of tax rates and an inefficient level of public expenditure, leaving to the competitor jurisdictions, too little income to be able to provide public services at an optimal, from a social point of view, level. These views were supported by Oates (1972), Zodrow and Mieszkowski (1986) and Wilson (1999).

The analysis of the basic models of fiscal competition makes possible to draw conclusions on the correlation between capital mobility and tax rates charged by different competitive jurisdictions as well as the overall effects cause by them on the welfare of those jurisdictions. In this context, the increased tax rates in a given jurisdiction generates migration of capital to other competitive jurisdictions, for the latter ones, the phenomenon being equivalent to an influx of capital, whose amount is dependent on the number of competitive jurisdictions. The overall effect on capital should benefit from a careful consideration from the government of any jurisdiction since ignoring them could result in the practice of too low tax rates, leading to inadequate provision of a much reduced level of the public goods and, therefore, to reducing welfare.

Moreover, Brennan and Buchanan (1980) have investigated the possibility for the tax competition to generate desirable effects, which were tested later, empirically, by Oates (1985, 1989). The economic literature also presents the view of some authors (Teather, 2005, p. 46) who see tax competition as likely to generate greater efficiency in using the public sector resources and a more efficient allocation of capitals. Seen from this perspective, the tax competition can stimulate the increase of budgetary efficiency, that would lead to offering the best services to taxpayers, at the lowest cost. Since tax competition has as a consequence to reduce the budgetary resources, this would mean a better management of costs, thus limiting waste. In our opinion, this hypothesis would find application only in exceptional situation in which governments should act only in order to maximize the welfare of their citizens, which is contradictory to their clear tendency to increase their resources by increasing taxes. In the same context, tax competition may generate positive effects on economic activities through investment exoneration by a part of the taxation burden.

Therefore, the economic literature on tax competition reveals that this does not always generate positive effects, presenting also the points of view that highlights the potential negative effects, with reference to reduce welfare, producing a sub-optimal level of public goods, the erosion of income, moving the tax burden on less mobile tax bases or influencing the location decisions of investments. Actually, to determine precisely the effects of tax competition likely to manifest itself is very difficult to be done, in the context of the multiple influencing factors such as the existence of asymmetries between countries, in terms of size and resources, degree of mobility of production factors or the concentration of production in certain geographical areas.

2. Globalization, tax competition and European economic integration

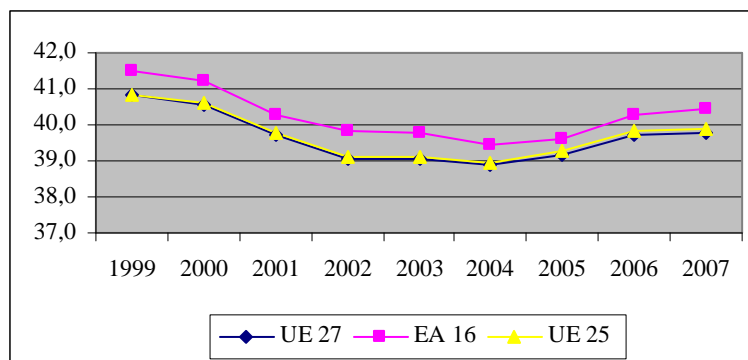
The increase of the mobility of the production factors, especially the capital, became a reality, found, due to the process of globalization, not only throughout Europe. In the context of the creation of the euro area, and the EU enlargement, the question is how the current regulations in the tax domain could be restructured and adapted to handle on the one hand, the increased pressure caused by globalization and of tax competition and, secondly, the need to eliminate obstacles for the liberalization of cross-border activities in the European Single Market and to encourage increased economic integration in Europe. Finding an appropriate response to this problem requires consideration of at least two aspects, namely: whether globalization and European economic integration is or not complementary process, if tax competition in Europe contributes to the integration or to the disintegration of the EU Member States.

Although it may seem that globalization, as a process of global economic integration, includes European integration, this one is a process carried out at regional level, with objectives such as avoiding the „negative” effects of globalization and international competition for the Member States through the expansion of economic space (institutional assured) and continuous increase of economic integration, cooperation and socio-economic cohesion among the member countries. It is clear that on the one hand, the integration in Europe is evolving towards a more profound and more comprehensive economic integration than the process of globalization and induces, on the other hand, the fact that the objectives of these two processes of integration are quite different for a number of problems. In particular, this thing means that tax competition is not a problem for the globalization process itself, given the fact that the integration between the economies of the world is relatively weak. By contrast, in the European Union the externalities caused by the tax competition of the EU Member States are more significant. In addition, the tax competition between the EU countries is in contrast with the objectives of the European economic integration as they are stated in the official EU documents. The phenomenon of tax competition and the recent tendency of reducing corporate tax rates in the EU were not induced by the economic requirements of the European

integration process, being rather the result of the general tendency of reducing the tax rates of societies in the world economy.

3. The dynamics of global indicators

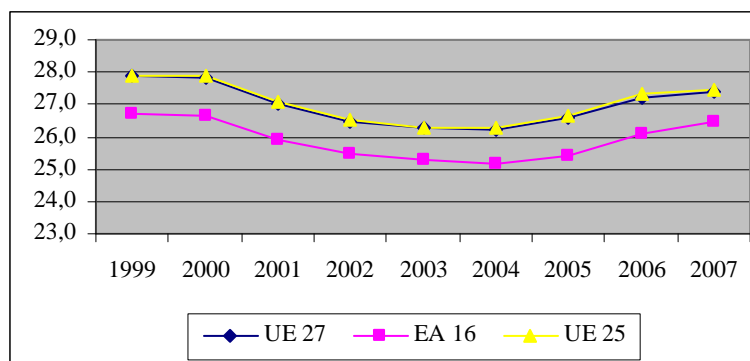
The most common way to make a comparison of taxation in the Member States is the analysis of some global indicators such as tax burden and the structure of compulsory taxes. At EU level, in the last decade, significant changes of compulsory total taxes (including social security contributions) have happened.



Source: http://ec.europa.eu/taxation_customs.

Figure 1. Total taxes (including social security contributions) as a percent of GDP, 1999-2007 period

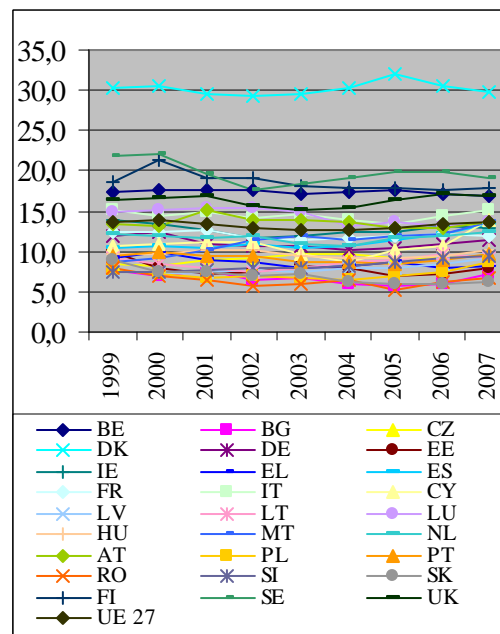
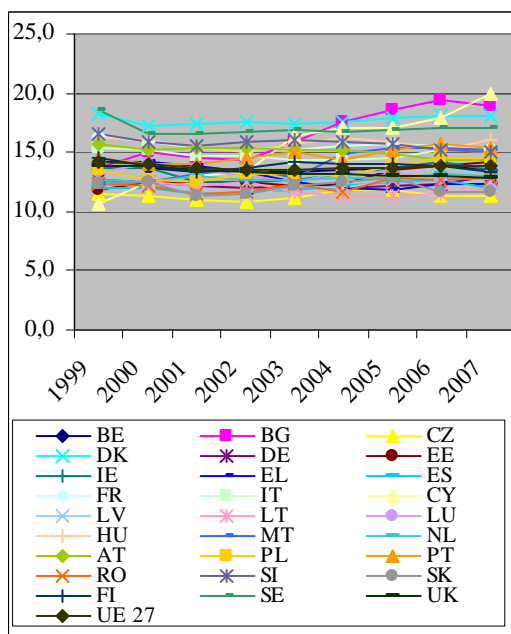
As the chart illustrates, the downward tendency of the total taxes (including social security contributions) as a percent of GDP that has started in 1999, the reference of the considered year, was blurred in most Member States after the year 2004. The differential total taxes (including social security contributions) as a percent of GDP across the Member States is the result of the impact of social policy options and practical techniques for achieving this in every state. Overall, the differences between the level of total taxes (including social security contributions) as a percent of GDP across the European Union are significant (in the year 2007 it can be noticed a difference of almost 20 percentage points from the GDP: from 29.4% in Romania to 48.7% in Denmark). As a general rule, however, the total taxes (including Social Security Contributions as a percent of GDP) tends to be significantly higher in the old Member States as compared to the 12 new states. The exclusion of social security contributions from the analysis, given their specific nature, and taking into account only the taxes, highlights major changes at the level of total taxes (excluding social security contributions) as a percent of GDP in the EU.



Source: http://ec.europa.eu/taxation_customs.

Figure 2. Total taxes(excluding social security contributions) as a percent of GDP, 1999-2007 period

The structural analysis of the total taxes (excluding social security contributions) shows differences between the new and the old Member States. While in most of the old Member States the share of direct taxes is approximately equal to that of indirect taxes, the new Member States are characterized by substantially lower ratio of direct taxes in total taxes (excluding social security contributions). In the year 2007, the smallest share of direct taxes are found in Slovakia (20.8%), Bulgaria (20.9%) and Romania (23%).



Source: http://ec.europa.eu/taxation_customs.

Figure 3. Share of indirect taxes in GDP(1999-2007) **Figure 4.** Share of direct taxes in GDP (1999-2007)

The low level of the income from direct taxes in the new Member States is the result of applying moderate rates of taxation in corporate and personal income. Many of these countries have adopted to impose in fixed percentage rate, having as a consequence a greater reduction in the share of direct taxes than the indirect ones.

4. The compulsoriness VAT and the harmonization of the taxation technique

The tax harmonization has been the subject for many debates since the establishment of the European Economic Community, its legal basis being provided in the Treaty from Rome, in 1957. The first step of the process was characterized by an effort to harmonize the

tax systems (the structural approximation and the harmonization of tax rates). The different levels of economic development and performance of Member States economies and the existence of different social systems and policies at their level, were obstacles to tax harmonization process, so that in the second stage, the attention was focused on those measures that would allow creating the conditions for the functioning of the Single Market, more precisely the harmonization of indirect taxes (VAT and excise taxes).

In order to avoid distortions, the Member States considered necessary to use some indirect taxation comparable instruments, materialized in the general adoption of VAT and in the efforts of harmonizing its regime, in the direction of equalizing the basis of assessment and harmonizing the tax rates. In this respect, the 77/388/EEC Directive established rules aiming at the structural harmonization of VAT, in determining the tax base, the application territory and the persons who would be taxable. The attempts made in order to harmonize indirect taxes have resulted in the establishment of common rules on the applicable VAT rates (a standard rate, a reduced rate and a very reduced rate) and the minimum permitted ratio, namely 15% for standard rate and 5 % for the reduced rate.

In the domain of harmonizing the tax rates, the results were not the expected ones. Although in the year 1992, the 92/77/EEC Directive, concerning the approximation of VAT rates came into force, we can still talk about a large variability at these levels. It is noticed that measures to harmonize VAT rates did not have as an effect to reduce disparities between the Member States, the difference between the extreme levels of standard rates practiced by the countries decreasing by only one percentage point between 1985 and 2007 (from 11 percentage points to 10).

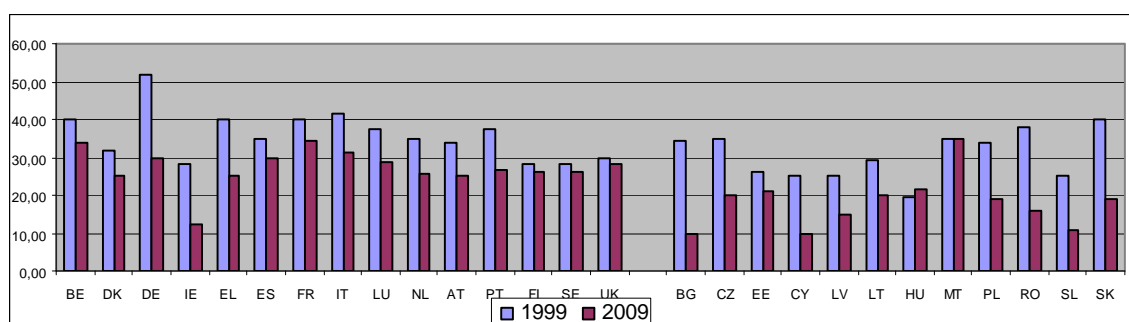
The European Union's Single Market, that appeared in 1993, involved changes in the VAT common system rules applicable prior to its formation. Creating the single market has not been possible by the general applying of the principle of origin (which means taxation of goods and services in the Member State of which the resident is the supplier) since this would lead to unacceptable tax consequences for the beneficiary state. This principle of taxing the delivery of goods and services between the entities of a Member State to another could exist only at the same time with a compensation system that would ensure the reallocation of taxes collected in the home country to the consumption country. The Member States failed to come to an agreement on such a compensation scheme, which was and would remain difficult at present, under the circumstances of the existence of a variety of VAT tax rates, used in these countries. Therefore, for the supply of goods and services from the taxpayers that are residents in different Member States it is, for the moment applied the destination principle according to whom, goods and services are taxed in the Member State whose resident is the recipient, the principle of origin being applied only to sales of goods to the final consumers. In conclusion, we consider that in the EU's Single Market, as far as the VAT taxation is concerned, a mixture of the two principles, the destination and origin principle is being made.

5. Taxation of companies and relocation

In 1992, when the Single European Market was completed, the free movement of goods, services, persons and capital within the European Economic Area, acquired new values. The increased mobility of production factors had serious implications on the policies of the Member States, including their tax bases, which became increasingly mobile. In fact, this mobility generates the migration national tax bases in different countries because of the tax competition. In the European Union, an additional competitive aspect is represented by the common market expansion, with the accession of new Member States, which are usually characterized by a more favorable level of taxation of capital – the most mobile production factor.

The European Union enlargement has been accompanied by the fears of the old states that this process would lead to capital mutations of their economies to the economies of the new states,

which would generate unemployment and erosion of tax bases. As a result, there have been many initiatives aimed at increasing coordination of tax policy, based on the idea of harmonizing the tax systems of the corporate income. These initiatives were triggered by the need to improve the functioning of the common market, in the context of the differences between the national tax systems that distort the competitive conditions, segmenting this market. The countries with a relatively low level of taxation have expressed their reluctance to any proposal of harmonization, seeing the tax competition as a "democratic" right of the poor societies, to improve their living standards by attracting foreign capital. Since, under the subsidiary principle, the decisions on taxation require consensus among the Member States, up to now, the initiatives to increase harmonization of taxation on corporate income have not achieved their goal. However, as a result of increased international capital mobility, a certain degree of convergence is obvious, being materialized by the reduction of legal rates (statutory) of taxation.



Source: http://ec.europa.eu/taxation_customs.

Figure 5. Evolution of the statutory rate of corporate income tax in the EU Member States (1999-2009)

The analysis of the evolution of legal rates of taxation of the corporate income tax in the Member States, in the two extreme years of the last decade, provides a favorable framework for checking the tax competition effects. The decline of the legal rates practiced in the EU is obvious in the last ten years, they being reduced by approximately one third, generally the reductions of the new Member States being more important than those applied in the old states of the Union. This tendency, particularly noticeable after the year 2000, can be interpreted as a sign of tax competition, a process that generates lower tax rates applicable in the jurisdictions of the Member States in order to attract new capital.

In general, taxes distort the optimal allocation of resources, the effects being more visible when the same activities have a differentiated tax in the jurisdictions of the Member States. The statutory tax rates, provided by the regulatory framework of each Member State, when they are seen alone, can not be the single basis for assessing the tax burden, the latter being also correlated with the way the tax base is determined (taking into account the applicable principles to depreciation of assets, the methods of evaluating them, the deductibility of expenditure or the tax treatment of the reinvested profits). However, the statutory rates seem to have an important psychological function, being perceived by the potential investors as signs for the overall tax climate of a state.

The effects of taxation on investment decisions are highlighted by the marginal effective rate, namely the rate of imposing a marginal investment that obtains an efficiency equal to the interest rate on savings. On the other hand, the effects of taxation on public revenues and on their redistributive function are determined by the effective average rate and by the ratio of the total tax of on an activity and the total income produced by that activity. The investment decisions are influenced by the two rates that were presented, but in a different way. While the effective average rates guide the decisions on the location chosen for

investment, the level of investment is strongly influenced by the marginal effective rate (Devereux, 2006, p. 5).

In this context, the free circulation of goods, services, persons and capital within the European Economic Area increases mobility of these elements in a significant way, providing the possibility and making it easier for the Member States to realize this, by practicing lower tax rates, in order to attract capital and labor, in the expense of the other Member States, resulting in a distortion of competition in the market.

6. Conclusions

The increased mobility of capital and the decline occurred in its taxation led to replacing the direct tax structure, namely the less mobile tax bases end up by being taxed more strictly than the mobile ones. Reducing the corporate income tax rates generates inequitable effects on personal income tax. The phenomenon occurs because, if the corporate income tax is lower than the personal income, there is a tendency for the individuals to reorganize their activity in corporations in order to benefit from lower tax rates. To avoid such an effect, many countries try to align the marginal rate of personal income tax on corporate income tax rate, with the consequent reduction of personal tax progressivity, and thus of the redistributive capacity of the entire tax system. Since the fear of the capital outflows attracted by destination, more attractive from a tax point of view, appears to have been the origin for the reluctance of many European countries in order to redirect their revenues from the labor taxes towards the capital, restraining the tax competition could lead to making this readjustments, with the consequence of stimulating employment.

Despite the assertion of the principle of free movement of persons within the European Union and their possibility to choose their residence and work in the Member State they choose, the personal mobility remains limited, in the states due to the persistence of some cultural, linguistic and other barriers. In addition, the residential mobility motivated by the tax factors appears limited to the edges of the borders states on the one hand, and of high income bearers or movable heritage, on the other hand. Neither the creation of the single market nor the implementation of the Maastricht Treaty appears to increase the labor mobility, although it could play an important role in solving regional disparities existing in the labor market (unemployment, per capita income) in the Member States of the Union. The existence of these disparities is that the EU is vulnerable to asymmetric shocks. In a monetary zone, the adjustment to asymmetric shocks can take place either through prices or through fiscal transfers. Concretely, wages should be characterized by a high degree of flexibility, the redistribution tax should be large enough or the capital, the labor and the incoming streams to be adaptable enough to distortion.

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REGARDS ABOUT EVOLUTION OF SOCIAL ASSISTANCE EXPENDITURE DURING FINANCIAL CRISIS

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Abstract: *The EU social policy has known an evolution embodied in the influence from an approach based on minimizing the negative social consequences of structural change, to an approach that envisages modernization of European social system and human capital investment. Employment policies of Member States have to contribute to the goals of sustainable development of economy, high employment and social protection, equality by chances between men and women, a high degree of economic competitiveness, better quality of life and economic and social cohesion. These policies must be consistent with the guidelines of economic policies. The paper presents some aspects of social assistance expenditure in Romania and at the county level in the context of the financial crisis.*

Keywords: social protection; financial crisis; vocational training; stimulation of employers.

JEL Codes: 24E, 55H, 59H.

REL Codes: 8G, 12G, 13C, 13Z.

1. Introduction

Revival of the Lisbon Strategy is carried out following two main objectives – achieving economic growth, creating jobs – and three main axes: *knowledge and innovation* (as engines of economic growth), *creating an attractive area for investments and employment*, the achievement of *social cohesion* through economic growth and employment. Social protection will be addressed in practice: they will try to attract more people in employment, it will seek more flexible arrangements and contractual arrangements in the labor market, emphasis on education.

Regarding to employment, the European Union and individual Member States focus their attention on three basic priorities: ★ attracting and retaining as many people on the labor market, increasing employment and modernize social protection systems; ★ improving adaptability of workers and companies; ★ increasing investment in human capital through better systems of education and training.

In Romania employment program was based on the Government Program for the period 2005 - 2008, National Strategy of Employment for the period 2004-2010, the priority action plan for European integration.

2. Expenditure for unemployed social protection in the consolidated budget

Losing the job is part of the social risks that a person able to work can confront and, because the labor market is in a continuous involution, unemployment in Romania has become a macro problem, for which the State had to find solutions to ensure social security for those affected by it and for their families. Unemployment social protection expenditure compared with the general consolidated budget are between 0.837% and 2.30% of total expenditure of this budget during 2003-2008 period.

Table 1 shows social security expenditure (unemployment) in economic structure, as share of fund expenditure. Although the maximum weight corresponds in 2003, however, in absolute size is the year with the lowest expenditure with unemployment insurance in the

period under review. Current expenditure are between 2.10 % in 2003 and 0.799% in 2008, the largest share of this period being 2.10% in 2003 (Table 1).

**The economic structure of expenditure with the unemployment
in the consolidated general budget in Romania in 2003 - 2008 (selected years)**

Table 1

Nr. crt.	Indicators	2003		2005		2007		2008	
		Value (mil. RON)	%, in BGC	Value (mil. RON)	%, in BGC	Value (mil. RON)	%, in BGC	Value (mil. RON)	%, in BGC
1	Expenditure of the general consolidated budget, total of which:	62727.1	100.00	89897.8	100.00	147142	100.00	189122	100.00
2	Expenditure with social assistance (unemployment), of which:	1446	2.30	1535.1	1.70	2370.9	1.61	1583.4	0.837
3	Current expenditure, of which:	1318.6	2.10	1492.6	1.66	2278.6	1.54	1511.1	0.799
4	Staff expenditure	37.06	0.05	57.2	0.063	81.8	0.055	122.1	0.064
5	Expenditure with materials and services (goods and services)	39.2	0.062	53.2	0.059	91.8	0.062	83.3	0.044
6	Subsidies	-	-	-	-	16.6	0.011	8.8	0.0046
7	Transfers (2007 - between public administration units)	-	-	-	-	475.5	0.323	275.8	0.14
8	Interests	3.3	0.005	-	-	5.2	0.0035	5.3	0.0028
9	Other transfers	-	-	-	-	7	0.0047	13.4	0.007
10	Other expenditure	-	-	-	-	41.8	0.028	4.4	0.0023
11	Social assistance	927	1.47	1300	1.44	1558.6	1.058	997.7	0.527
12	Capital expenditure (2006 - non-financial assets)	9	0.014	6.2	0.006	35.7	0.024	24.3	0.012
13	Repayments of loans (2007 - financial transactions)	5.2	0.008	10.1	0.011	10.2	0.0069	10	0.0052

Source: www. insse. ro

To note that 2008 was the year that *the effects of economic crisis began to be felt and the first austerity measure of the Government was reducing funding allocations for equipment and modernization of institutions (goods and services).*

In „social assistance” is to be found security and social benefits: the unemployment benefit, encouraging work force mobility, compensation payments. In absolute numbers these gradually increased from 2003 to 2007 inclusive, then declined significantly in 2008 by 560.9 million lei and by 70.7 million lei comparative with the level in year 2003. However, assessing the relative numbers, we see a constantly decrease in proportion in the general consolidated budget, from 1.47 % in 2003 to 0.527% in 2008.

Expenditure for unemployed social protection contains: unemployment benefit, allowance for vocational integration, support allowance, expenditure for vocational training, graduates remuneration, incentives for unemployed who got employed before unemployment period expiring, incentives for labour force mobility, incentives for employers who hire unfavored unemployed, compensations granted within the programs of restructuring, privatization and liquidation, payments for graduates stimulation, fight against social marginalization and other expenditure.

3. Some public expenditure with social assistance in a county

In Romania, about unemployment from the effects of the economic crisis began to emerge only in late 2008 data. The private sector reached 150,000 redundant in the last two months of 2008. There was a situation of stagnation, block investment and a significant decrease in export orders. The first layoffs occurred in construction, steel industry and machine building. In October 2008, machine-building industry layoffs announced the order of tens of thousands of workers and agriculture were to become unemployed 50,000 other employees. The large number of layoffs occurred after a long period of sustained decrease in the rate and in a time of year when normally be a slight increase in the number of unemployed as a result of cessation of activities in winter, for example, construction and agriculture.

Unemployment was in the months June-July 2008 at a historically low 3.7% and dramatic changes in late 2008 had a psychological and economic impact.

Comparing data on unemployment in the county with the national level, this occupies a middle position in rankings compiled by unemployment.

On December 31 2008, national unemployment rate was 4.4% with 404,441 unemployed, of which only 143,549 allowances, while at the county level was 5.6 percent, corresponding to a total of 10,854 unemployed of the 2,757 allowances. This increase occurred in the months after August 2008, the county unemployment rate at lowest of the last four years, being only 5%.

As some companies have staggered dismissal plan originally announced and on the list occurred new ones, the number of redundancies increased. In fact, the number of unemployed has increased as a result of collective redundancies (10% of staff redundant number of employees), in November 2008, with 151 people, and in December, with another 270, the difference being due to less that some companies have staggered or delayed for 2009 redundancies, which was reflected in a moderate increase in the rate and costs needed to pay unemployment in 2008.

According to NEA statistics, in August 2008 had the lowest rate since the last four years, by 5%, with a total number of unemployed by 9,679. Since then, the rate increases experienced from month to month, as follows: September 2008 – 5.1% (9731 unemployed) in October – 5.4% (10,423) in November – 5.6% (10,765), December – 5.6% (10,854). The unemployment rate calculated at the end of 2008, of 5.6% is still much smaller than that from the beginning of the interval studied (2003), by 8.1%. For the year 2009 could reach a rate of over 8%.

It is analyzed the expenditure for unemployed social protection in Vrancea county from the South-East Development Region (some expenditure were selected).

Expenditure for unemployment at AJOFM level are between 1.24% and 2.25% of the national expenditure (National Agency for Labor Force Occupation-ANOFM), reaching high values in two years located at the extremes of the range examined, 2003 and 2008. In absolute values, costs evolve differently from 32.63 million lei in 2003, the following year with a value close to 32.64 million lei, although the unemployment rate falls by 0,8% and in 2005 expenses decrease from 30.63 million lei to 29.4 million lei in 2007, to fall to 23.5 million lei in 2008, although unemployment rate has declined steadily in this period from 7.5% to 5.5%.

Regarding the expenditure for unemployed social protection, they have been influenced by unemployment rate, by increased unemployment benefit amount and by the application of state policy of funds allocation for active measures for unemployment. As a share of the costs of AJOFM, „social assistance” was in 2003 54.18%, ranging as follows: increasing from 55.63% in 2005 and decreasing to 52% in 2007, rising again in 2008 to 63%. Since there is not a direct link with the evolution of unemployment, with unemployment benefit payment amounts, the conclusion is that this is due to the influence of values for active measures: subsidies and retraining.

In Table 2 AJOFM costs are presented with employment in the period 2003-2008 (selected years).

Expenditure of AJOFM with employment in 2003-2008 (selected years)

Table 2
– lei –

Year	2003	2005	2007	2008
Total, of which:	17,763,684	17,298,228	15,086,608	15,510,056
Social assistance	17,684,259	17,045,796	10,419,219	10,873,604
Qualification centres	79,425	252,432	279,383	265,599
Welfare	-	-	4,388,006	4,370,853
Unemployment rate	8.1	7.5	6.1	5.5

Source: Balance of checking analytical AJOFM A for the years 2003-2008, Accounting Department and Statistical Department.

Evolution of expenditure for employment in AJOFM level is influenced by the unemployment rate, the amount of minimum gross salary per country guaranteed payment and the costs of active measures for employment of labor. The maximum amount of expenses records in 2003 of 17.76 million lei, on unemployment rate of 8.1 percent and the lowest in 2007 when the unemployment rate fell by 2.0%. In 2008, although there was an annual average unemployment of 5.5%, the costs have not declined as unemployment allowance has significantly increased. Forward it is analysed some expenditure for unemployed social protection.

Expenditure concerning unemployment allowance

The costs of unemployment allowance are analyzed by the number of people compensated (persons receiving unemployment compensation) and the unemployment rate to see the trend based on those 2 items. In Table 3 is presented the evolution of unemployment allowance and of employers from the county during 2003-2008.

Evolution of unemployment benefit and beneficiaries in the county during 2003-2008

Table 3

Year	Unemployment allowance (lei)	People compensated (average)
2003	12.726.356	9742
2005	8.798.781	5695
2007	7.294.507	2703
2008	9.122.115	2392

Source: Balance of checking analytical AJOFM A for the years 2003-2008, Accounting Department; Statistical data – Statistics Section AJOFM.

From Table 3 data one can notice that 2003 was considered a maximum period – amount spent on unemployment compensation and the number of unemployed – 12,726,356 lei expenditure concerning unemployment allowance, then in 2005 the trend is downward, and in 2008 because of economic crisis and due to increasing the amount of compensation of unemployment, amounts spent recorded a higher value than in 2007 although the number of unemployed decreased.

Expenditure concerning unemployment allowance in 2008 is with 3,604,241 lei less than 2003, decreasing the number of people compensated in 2003-2008 being of 7,350. To a decreasing with 71.67 % of unemployment allowance it corresponds a decreasing with 24.55 % of the number of people compensated.

Payments to stimulate employers who hire graduates

Employers who hire for an indefinite period graduates from educational institutions receive monthly for 12 months for each graduate: • an amount equal to the reference of social indicators for unemployment insurance in force on employment for the lower cycle of high school graduates or school of arts and crafts; • an amount equal to 1,2 multiplied with the reference value of social indicators for unemployment insurance for graduates of upper secondary education or post-secondary education; • an amount equal to 1,5 multiplied with the reference value of social indicators for unemployment insurance for graduates of higher education.

Evolution of the amounts granted to employers to encourage graduates to employ in county during 2005-2008

Table 4

Year	Amount	Number of people
2005	1.276.637	479
2007	1.324.741	196
2008	1.036.928	217

Source: Balance of analytical verification AJOFM of the years 2005-2008.

Examining data in Table no. 4 is observed that the number of people who benefit from this measure has a different pattern with a peak in 2005 (479) followed by a decrease in the number of graduates in 2007 (196) because reducing the number of the graduates and together with increasing by 48,104 lei the amount spent on this measure (a phenomenon explained by a large number of graduates with higher education committed to increasing value of social indicators and reference) and in 2008 return to the upward trend of the social protection measures comparative with 2007 (increases by 21 persons), even in conditions of economic crisis occur, decreasing the amount allocated by 287,813 lei.

Expenditure with training and retraining in the AJOFM

Conversion courses and professional qualifications are held by the AJOFM through the Bureau of Training and Professional Advice, realizing both with their own forces and with training providers approved by the National Adult Training in collaboration with the Center Regional Adult Training. After completing a course, all graduates are monitored so that to know the impact on the labor market, which are the results of new occupational skills for those seeking work, in other words how many unemployed people are hired as a result of graduating the qualification course. *Such statistics compiled help achieve the Agency's vocational training policy*, which must adapt to the requirements of the economy at that time. All these services are financed from the budget of ANOFM.

AJOFM amounts allocated for training during 2003 – 2008 are presented in Table 5.

Evolution of training costs, retraining in the period 2003 – 2008

Table 5

Year	2003	2005	2007	2008
Amount (thousands lei)	79.42	252.43	279.38	265.59
Unemployment rate	8.1	7.5	6.1	5.5

Source: Balance of checking analytical AJOFM A, for the years 2003-2008.

Analyzing data from the table we see an increase in the amounts spent from 2003 until 2005, due to putting into service headquarters of the Bureau of Vocational and Professional Counseling of AJOFM, which led to possibility of conducting a larger number of training

courses. Decrease that occurred in the next two years is mainly due to lower unemployment. There were various choices in the labor market and thus, the unemployed were not interested in learning a new trade.

The data provided by AJOFM through the Bureau of Training and Counseling help us realizing the following table.

**Evolution activity of the Bureau of Training and Professional Advisory
the period 2003-2008**

Table 6

Rank	Year	2003	2005	2007	2008
1	Organized courses, total of which:	32	34	45	28
2	Own courses	0	0	8	8
3	Courses with external sources	32	34	37	20
4	Persons enrolled, total of which:	588	395	536	220
5	Persons enrolled own courses	0	0	92	149
6	Persons enrolled external sources	588	395	444	71
7	Persons employed	82	157	225	71
8	Percentage of students employment (4/7) (%)	13.95	39.75	41.98	32.27

Source: Statistics Section AJOFM.

Number of persons participating in the courses is in close correlation with the number of courses taken and has a different pattern with a maximum of participants in 2003(588) while the number of classes is small (32), this can be explained by the large number of participants on average per course, the following year come back the average of about 10-11 people per course. In 2007 is shown the highest number of courses organized with external sources (37) from 45 in total courses. Year 2008 is characterized by a small number of courses with external sources (20) from 28 in total organized in terms of reducing expenditure budget ANOFM, relative AJOFM. The number of own courses was small, only 8 and only from 2007.

**The efficiency of the Bureau of Vocational and Professional Counseling
in the period 2003 - 2008**

Table 7

Year	2003	2005	2007	2008
Amount (thousand lei)	79.42	252.43	279.38	265.59
Employment percent (%)	13.95	39.75	41.98	32.27

Source: Balance of checking analytical AJOFM, the years 2003-2008 – Accounting. Department, Statistics Section AJOFM.

According to the Table 7 there is a close connection to the percentage of persons employed after the training with the money spent for the qualification, retraining, with an upward trend until 2007 where the amount spent and percentage of students employed reach a maximum, followed by decrease in 2008. Therefore with the increasing amounts spent it also increase the conversion efficiency training. Both of them decreased in 2008 by 13,79 thousand lei, relative by 9.71 % respectively.

4. Conclusions

In a recession like the one that started in late 2008, the number of those who need help from the state budget is growing and the state facing budget problems to collect sufficient funds to enable it to support its social policies. Thus, allocation of funds for active employment measures of labor is essential, both for the unemployed and the private sector.

Even under the budget deficit, the investment that the state would do this moment in qualification and retraining of the workforce could bring significant benefits in the future, with lower unemployment and budget relieving the burden of payment of unemployment benefits and other forms of social protection.

Thus, proposals to lower unemployment and consequently on public spending on unemployment refers to:

- increasing skilled labor, according to labor market demand by increasing and diversifying their courses;
- allocation of funds for the scholarship of jobs, direct meeting place (negotiation) of employers with people looking for a job;
- providing funding to cover the demand for subsidized employment and
- develop programs for informing the workforce and employers about the opportunities offered through the County Agency for Employment.

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THE DYNAMIC AND STRUCTURAL EVOLUTION OF THE EXPENSES RELATED TO PUBLIC ORDER AND NATIONAL SAFETY

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***Abstract.** The expenses related to the public order and national safety must be very well weighted within the financial policy of a country, since the functionality of such institutions is being organized throughout many years and maintained to reactive capacity only and only if there is sufficient material and moral support, technical and professional compatibility. In the context of the economic global crisis, the fundamental objective of the study is the analysis of the expenses related to the public order and national safety, their chronological trends and their influence upon the commitments undertaken by Romania.*

Keywords: expenses; public order; index; deflator; percentage.

JEL Code: H55.

REL Code: 13Z.

1. Introduction

At the European level, particularly in Eastern Europe, it is unanimously acknowledged the fact that old conflicts are being reactivated; new sources of insecurity emerge, generated by a wide range of factors, among which the economic and social factors are to be specified, difficulties generated by the political reorganization, financial crisis, etc. Such conflict hot spots and the divergences of interests between countries lead to the existence of certain area of instability deemed to be extremely dangerous for the peace and security of the states within the related area.

The issue of public order and citizen's safety is quite re-emergent in the European area, the preoccupations of the decisional factors in such regards being more and more obvious, equally doubled by the efforts of the citizens, who find it more and more difficult to accept the insecurity feeling.

In such circumstances, the present day society is going through a transformation process in which all economical, social, political, and civic elements have experienced a new dynamics in the attempt to accommodate to the current conditions.

Unfortunately, it seems that there are many persons who did not understand or who do not make the effort to understand the truth that a public order and national safety institution is a consumer. Such an institution cannot stay alive without money and, moreover, there cannot be a modern public order and national safety institution in the absence of the adequate financial means.

The needs of a public order and national safety institution reside from the socially declared state-like functions. First of all, they are the needs of the country, and, without minimum financial means, the public order and national safety do not exist in effect, they are only mimed.

The Ministry of Administration and Internal Affairs has mandate to defend the fundamental rights and liberties of the citizen, the public and private property, to prepare and coordinate the implementation of the provisions stated by the reform and reorganization strategies and programs in the field of public administration and internal affairs, to comply with obligations undertaken by Romania as European Union member state, and to participate to the process of preparing the communitarian policies and normative acts in its area of competence. The main forces of the Ministry of Administration and Internal Affairs are authorized by law to exert the Police right of the state, which represents the basic component

of the structures in charge with the entire range of issues related to the public order area in times of peace or during emergency situations, structured as Police and Gendarmerie forces (the Strategic Plan of the Ministry of Administration and Internal Affairs for 2007-2009, Synthesis).

The public expenses include all expenses incurred for public purposes by the public institutions, expenses covered by the state budget or by the own budget, according to the accrued incomes (Dascălu, 2006, p. 25).

There are quite a lot of expenses related to the financing of the duties and attributions of the public order and national safety institutions; lately however, the resources have been limited to a greater extent in the context of decreasing the budgetary allocations concomitant with increasing the volume of work and the quality of the services provided.

The reform of the public order structures represent a complex process involving coherent actions during a relatively long period of time and significant interest in drawing new European funds for institutional development, in order to provide regional and local decentralization and delegation.

2. Methods of financing the public order and national safety expenses

The public order and national safety institutions are financed from public funds, by redistributing the gross internal product, the funds being necessary in order to comply with the public order duties and attributions (Huba, 2009, pp. 215)

From the point of view of their economic content, the public expenses (the public order expenses inclusively) are classified by categories as follows: current expenses, non-financial assets expenses, financial operations involving credit reimbursements. The current expenses are described as a definitive consumption of gross internal product and this category includes the expenses related to personnel, goods and services, interests, transfers, social security, while the non-financial assets expenses are an advance of gross internal product, investments. According to the functional classification, the expenses are grouped so that to allow the identification of the activity fields. From this point of view, the Ministry of Administration and Internal Affairs is included in the Chapter „Defense, public order and national safety”.

The Ministry of Administration and Internal Affairs crossed one stage of the reorganization process, for the legislative and institutional harmonization with similar components of the other member states of the European Union, successfully using Phare pre-adhesion funds made available by the Union. Such reforms were financed from structural funds in correlation with the important contribution of the national budget.

The use of Structural Funds can only be auspicious, the amount of absorbed quantities being less important than the value of the processes they cause (Florescu, 2008, p. 151).

In this period, as of September the 29th, 2009, the project „SMIS 4427 – *Implementation of a E-learning type system for the continuous training and retraining of the Romanian Gendarmerie employees*” is in progress, co-financed by the European Fund of Regional Development, based on the financing agreement signed with the Ministry of Communications and Informational Society, Intermediary Body for the 3rd Priority Axis – „Information and Communications Technology for Private and Public Sectors” of the Operational Sectorial Program „Economic Competitive Growth”. The total value of the project is lei 23,258,047.52, out of which the financial nonredeemable assistance is of lei 19,544,577.75. The project objective is to „Increase the efficiency and effectiveness of the training process for the Romanian Gendarmerie employees by implementing an e-learning system to allow the employees access to online and off-line courses at the highest technological level, using the information technology, in 62 different locations throughout the country”, which shall lead to the provision of high quality services for the population.

According to the Adhesion Treaty, the Schengen Facility and the Cash-flows Facility represent provisory instruments for supporting Bulgaria and Romania throughout the period between the adhesion date and the end of year 2009 for financing the actions to the new external frontiers of the Union, in order to implement the Schengen acquis, frontiers control and to support the improvement of the cash flows within national budgets. For the period 2007-2009, Romania is granted, through the two instruments, a total amount of Euro 602.5 million (out of which 60% are dedicated to the „Schengen Facility”) (Moşteanu, coord., 2008, p. 342).

3. The evolution of the public order and national safety expenses for the period 2000 - 2009

For the purpose of studying the dynamics of the budgetary expenses, I shall use the following analysis methods: the index, deflator and percentage of expenses related to the public order and national safety within the Gross Internal Product (GIP) and within the total expenses of the state budget.

Evolution of GIP, of total expenses – state budget and total expenses related to public order and national safety, for the period 2000-2009

Table 1
mil. lei current prices

Years	Gross Internal Product	Index (2000 = 100)	Total expenses State Budget	Index (2000 = 100)	Total expenses „Public Order and National Safety”	Index (2000 = 100)
2000	80,984.6	-	14,375.53	-	1.128,63	-
2001	117,945.8	145.60	18,401.22	128.00	2.001,71	177.4
2002	152,017	187.70	23,638.63	164.4	2.537,94	224.9
2003	197,427.6	243.80	29,107.81	202.5	3.239,53	287.1
2004	247,368	305.50	35,132.06	344.4	3.885,24	344.2
2005	287,200	354.60	37,017.69	357.5	2.880,81	255.2
2006	342,400	422.80	43,655.25	303.7	6.904,44	611.8
2007	404,700	499.70	64,373.52	447.8	10.094,38	894.4
2008	503,900	622.20	80,888.54	562.7	11.507,46	1,019.6
2009	592,200	731.30	94,781.78	659.3	10.795,67	956.5

Source: Individual processing based on the data supplied by the National Institute of Statistics, the Ministry of Public Finances and the Ministry of Administration and Internal Affairs.

The dynamics in nominal values of the total budgetary expenses and of the public order and national safety expenses denote high escalations of 6.6 times for the total „Budgetary Expenses” and of 9.6 times for the „Public Order and National Safety Expenses”, against a 7.3 times growth of the GIP. Such dynamics does not reflect the buying power of the respective budgetary allocations, reason for which we shall further analyze it in deflated values; however, we stress upon the following two remarks:

a) the attention paid to this field resulting from the growth sensibly higher of the established budgetary allocations against the total amount of the budgetary expenses, although the preemption index of the „Public Order and National Safety Expenses” against the total „Budgetary Expenses” was maintained at a value of approximately 1.4 throughout the entire time interval subject to study;

b) there were observed two inflexion points in the above-mentioned ascendant dynamics, the years 2005 and 2009 respectively; we estimate that these represent accidental evolutions generated by the electoral character of the years specified; at least for year 2005, it was noticed a come back to the trend in the very next year.

As shown, the budgetary allocations for the public order and national safety expenses have grown year by year, except for the year 2005, when such allocations decreased very much as a consequence of the negative budgetary rectifications; after that, in 2006, a year preliminary to the adhesion to the European Union, the allocations were positively influenced by the allocations of pre-adhesion funds and state budget funds for co-financing the pre-adhesion projects.

In 2004, Romania became member state of NATO, which led to a growth of the budgetary allocations in order to comply with the requirements of the Alliance and due to the participation with military troops to the Kosovo operations, namely gendarme troops.

In the year 2008, of December the 17th, on the occasion of the Reunion of the High Level Inter-ministerial Committee (CIMIN), which took place in the Region of Coimbra, Portugal, Romania, through the Romanian Gendarmerie, became a full member of the European Gendarmerie Force, which involves allocations of funds from the state budget, because every participant to the FJE actions must pay the share of commune costs from receiving the invoices, following the end of the financial exercise and the budgetary discharge by the Financial Committee, based on an audit report. The commune costs are financed by all participants proportionally with the number of positions held within the Permanent Headquarter.

The table below shows the dynamics of GIP and „Public Order and National Safety Expenses”, in deflated values (mil lei), specifying the deflator index generated by the annual inflation rates.

Evolution of deflated values of GIP and total public order and national safety expenses, for the period 2000-2009

Table 2
– mil. lei –

Years	Inflation Rate		Gross Internal Product	Total expenses „Public Order and National Safety”	Indexes	
	With chain base	Deflator Index			Gross Internal Product (2000 = 100)	Total expenses „Public Order and National Safety” (2000 = 100)
2000	–	100	80,984.6	1,128.63	100	100
2001	34.5	134.50	87,692.05	1,488.26	108.28	131.86
2002	22.5	164.80	92,243.33	1,540.01	113.9	136.45
2003	15.3	189.90	103,963.98	1,705.91	128.37	151.15
2004	11.9	212.50	116,408.47	1,828.35	143.74	162.00
2005	9.00	231.70	123,953.39	1,243.34	153.06	110.16
2006	6.56	246.85	138,679.63	2,796.45	171.24	247.77
2007	4.84	258.79	156,375.58	3,900.46	193.09	345.59
2008	7.85	279.11	180,544.61	4,123.06	222.94	365.32
2009	4.94	292.70	202,323.20	3,688.31	249.83	326.80

Source: the Romanian National Institute of Statistics and data processed by the author.

In the case of public order and national safety expenses, the growth ration between the „Public order and national safety expenses” and GIP is 3.3 times higher than the growth of GIP of only 2.5 times higher, thus observing the same tendency as when comparing the GIP related expenses in nominal values.

It is also noticed that the allocations for Public Order and National Safety expenses for the year 2000 were in amount of lei 1,128.6 mil, and for the year 2009 they are in real terms

of only lei 3,688.31 mil., thus resulting an increased purchasing power, along with complying with other duties; moreover, concomitant with the entry into NATO and the European Union of Romania, the attributions of the instructions responsible for public order and safety have enlarged. From the point of view of GIP growth from lei 80,984.6 mil., in the year 2000, to lei 202,323.20 mil., in the year 2009, in real terms, the period 2000-2009 represents a prosperous period of the Romanian economy, which triggered the salaries increase, and the growth of purchasing power.

The table below shows the percentage held by the „Public order and national safety expenses” in GIP and in total „State Budget Expenses”.

Percentage of total public order and national safety expenses in GIP and in total expenses – state budget, for the period 2000 – 2009

Table 3

Years	Percentage of public order and national safety expenses	
	In the gross internal product %	In total expenses of state budget %
2000	1.4	7.9
2001	1.7	10.9
2002	1.7	10.7
2003	1.6	11.1
2004	1.6	11.1
2005	1.0	7.8
2006	2.0	15.8
2007	2.5	15.7
2008	2.3	14.2
2009	1.8	11.4

Source: data processed by the author.

The evolution trend of the total „Public Order and National Safety” expenses is ascendant inclusively compared against both the „Total Expenses of the State Budget” and GIP. Therefore, in the total budgetary expenses, the respective percentage grew from 7.9 % to 11.4%. The studied segments clearly shows two intervals, one from 10% to 11%, for the years 2001-2004, and another interval of 14% to 16% for the period 2006-2008. The inflexion points appear in connection with the electoral years 2000, 2005, and 2009. However, in the context of the economic crisis, it is noticed that in 2009, compared to 2008, several financial measures were adopted, namely negative budgetary rectifications, with the purpose of reducing the budgetary expenses.

The expenses related to „Defense, Public Order and National Safety”, incorporated into the state budget, include operating costs for „Defense” and expenses for „Public Order and National Safety”. The proportion held by the expenses related to “Public Order and National Safety” and by the expenses related to „Defense” in total amount of expenses meant for „Defense, Public Order and National Safety” is relatively equivalent for the period 2000-2006, each of them holding a percentage of 51% and 49% respectively, being followed by a huge gap for the period 2007-2009, when the allocations for public order and national safety expenses grow to approximately 70%. This is due to the re-dimensioning, professionalism, restructuring, and lay off of the army personnel in order to create a professionalized army according to the new objectives of the Ministry of Administration and Internal Affairs concerning the adhesion to the Schengen space, compliance with the obligations and commitments undertaken through international documents, and the continuous participation to international missions organized by NATO, EU or other international institutions.

By analyzing the allocations concerning the state budget expenses, throughout the time period included in the study, we came to the conclusion that the social-cultural expenses have a significantly higher percentage in the total amount of state budget expenses, with an annual average allocation of approximately 33%, compared to the allocations for public order and safety of approximately 13%; the ratio between the two categories is correct because, this way, the standard of living of the population, the professional training are given a special importance.

4. Conclusions

The expenses related to the public order institutions are allocated in order to continue the process of reorganization, operation, and modernization of the capacities necessary for the extended security missions and collective defense within the European alliances, at European standards, and within the North Atlantic Alliance at NATO standards.

In addition, the objective of the public order financing is to create a structure of forces, of operational and administrative management, supple, efficient, with a high level of professionalism.

The analysis undertaken shows that, with regard to the internal financing, the amounts are rather insufficient for the achievement of the collective restructuring objectives so that, in our opinion, the Public Order and National Safety institutions must further concentrate on drawing new structural and cohesion funds. We believe that the economic and financial factors requiring such principles are the austere public budget, and the system with a limited allocation of the budgetary resources, very much depending on the evolution of the gross internal product.

Although the investments project developed so far proved their opportunity and utility, it is necessary to show significant preoccupations for drawing new funds in order to carry on the restructuring and organizing process within the Public Order and National Safety institutions, according to the Strategy of the Ministry of Administration and Internal Affairs.

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PROBLEMS ENCOUNTERED IN THE PROCESS DURING ACCESES EUROPEAN FUNDS

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***Abstract.** The access to Social and Cohesion Funds offers Romania a possibility to develop the regions which are lagging behind, to modernize transport and environment infrastructure, to support rural development, to create new employment opportunities, to sustain social policies which will lead to the growth of the standard of life. This research work displays different problems encountered in the process of attracting European funds while verifying the existence of the link between the value of the projects submitted and the total approved projects.*

Keywords: structural funds; management authorities; absorption capacity; convergence; regression function.

JEL Code: F36.

REL Code: 13G, 18F, 20F.

Categorically, the financial crisis, started worldwide about two years ago, creates big problems to the entrepreneurs. Today, everyone talks about the crisis, even the astrologers make fuzzy forecasts. On everyone's lips one can read questions such as: What is the propagation speed of the crisis? Up to what level shall we see its effects? How does the crisis affect our business? What is the good direction to turn to, so that to be less affected? In short: What's to be done?

If that's how things really were, we only have one solution: to find a cheap financing source, that would allow us to develop new businesses, adjusted to the new requirements and to the new conditions. This particular source is represented by the structural funds, Romania being able to benefit from non-redeemable funds in amount of Euro 32 billions for the period 2007-2013.

When it comes to such amounts, everyone is questioning the manner of improving the capacity to manage the European funds. Even the media which until one year ago was held responsible for getting too little involved in the public information process regarding the possibilities of attracting structural funds and the development opportunities they offer to the beneficiaries, today is quite unlikely for a single day to pass without reading on the difficulties encountered while applying, approving and implementing the projects. The usage of the written and spoken media makes it almost essential to use phrases such as excessive bureaucracy, corruption, administrative intricacies, lack of transparency, and the list may go on with a similar series of key words.

The usefulness of implementing European financed projects cannot be doubted. The opportunity of their promotion results from the need to support the entrepreneurs with a view to increasing their competition on the European market, as well as to decreasing the difficulties they actually face.

When we talk about difficulties we refer mainly to three elements which in the long run govern all the painful experiences related to implementing a project with or without European financing, namely: adverse management, lack of know-how, legislative instability. To these one can add a series of intricacies encountered not only in connection with the implementation of Europe financed projects, but also, generally, in regular activity, in companies' effort to be

competitive on a free market, with a by far disloyal competition among experienced European companies, with highly superior resources, with an easier access to crediting, and which develop on a human resources market if not quantitatively richer, at least qualitatively superior.

But which are the real obstacles that the possible beneficiaries have to face in order to access non-refundable funds?

First of all, the launching of the programs, be they either POS CCE, POS DRU, PNDR, POR etc., was achieved only in the second half of the year 2007, which led to the first European money entering the beneficiaries' accounts only at the end of 2008, and, for certain financing components, even later.

Second of all, the large number of documents requested by the Management Authorities (over 47, for instance, in the case of projects applied for financing through FEADR). Nevertheless, we mention that this large number of certifications and authorizations are not imposed by the Management Authorities, but they reflect the requirements of the Romanian legislation in force, harmonized with the European legislation. Still, it is well known the fact that the thick documentation, with a large bureaucratic element, shall discourage the possible beneficiaries in the process of attracting non-refundable funds. Most of the private entrepreneurs and especially the local administration undergo an imperfect document management. There are very few situations in which those who want to access non-refundable funds dispose of specialized and qualified staff to go through the bureaucratic procedures and not only: even the mandatory technical procedures – obtaining the environment agreement, the Electrica and Distrigaz reference etc., sometimes may represent very hard to overcome obstacles. Of course, there is the solution of externalizing these procedures towards specialized consultancy firms – but we must admit that the situation in the country does not trigger this practice which might save a large part of the beneficiaries' projects. The small amounts that are stipulated within the projects make it difficult to employ competitive consultancy firms.

The Management Authorities did not impose project management models, but they set rules to allow monitoring the financial allocations and the observance of the laws in the field of public acquisitions and taxation. At the same time, through the technical and financial reports and the tests, on-site included, performed both by the Management Authority, and the European Union bodies, and also by institutions authorized in the field of constructions, environment, and others, it is aimed nothing more than observing the laws in force, from a financial – accounting and technical – point of view.

Going carefully over the Applicants' Handbook, especially for the projects filed for financing within PNDR, reveals conditions which make it difficult to attract funds. For instance, micro-companies from rural areas cannot rent spaces or lands, they can only own as property or be concessionaires on behalf of the local public administration, which is also valid for the local public authorities which can perform investments only on the land - public domain of the territorial-administrative unit (commune/town/city).

The series of problems does not cease here, for example, though the lawgiver stipulates that the standard form of the feasibility study is set for all projects financed from public funds by HG no. 28/2008, not all management authorities apply the same standard. For private investors, the Payment Agency for Rural Development created a personal form, eliminating the cost-benefit analysis from the feasibility study.

The large number of taxes (according to a release of MFP in Romania, by March 2009 there were 558 taxes, of which only 78 were fiscal taxes), that have to be covered during the process of drawing up the financing file but also during the implementats of the project, for each certification or authorization being a corresponding tax, representing a discouraging factor for those who wish to invest. Moreover, both the taxes and the costs related to bank loans – interests and account administration costs – are considered to be non-eligible costs, highly increasing the level of the beneficiary's contribution to the project financing.

The wide range of issues that project implementation raises, considering also the diversity of the financing fields (research – development, professional training, agriculture, informatics,

forestry, manufacturing industry, constructions, services, etc.), most inevitably demands a sustained effort of monitoring and correction of inaccuracies, of the challenges that the free market poses but also of the skills and knowledge shortage which the institutions in Romania have to face in our days.

For the next period must find real solutions to simplify the process of accessing European funds, so that the implementation of cohesion policy become effective, complex procedures and standards should not raise difficulties in the project difficulties that lead to major delays in implementation (Huba –Ștefănescu, 2008: pp 152-159).

With regard to the actual stage of the European funds absorptive process, at Oct. 30th 2009, was submitted 12.975 projects with a value of 99,646,853,586 lei, 2.672 of these ones being approved for a total aggregate value of over 22.468.408.391 lei. For the period February-October 2009 the status is as follows:

The value of the projects submitted and approved during the period February-October 2009

Table 1

Months	Total projects submitted (lei)	Total projects approved (lei)	Share amounts approved in total amount required (%)
February	2,579,436,372	1,154,723,394	44.77
March	1,432,932,467	617,224,910	43.07
April	2,237,747,656	554,526,186	24.78
May	2,738,146,594	1,097,438,909	40.08
June	3,843,350,210	2,446,242,237	63.65
July	5,220,708,296	4,740,945,185	90.81
August	2,902,432,571	851,929,039	29.35
September	19,489,146,310	1,060,114,862	5.44
October	17,936,196,301	608,101,944	3.39
TOTAL	58,380,096,777	13,131,246,666	22.49

Source: Authority for Coordination of Structural Instruments.

Projects were submitted in very large numbers, but as you can see less than 23% of them have been approved. The large number of projects in the case of Romania indicate only desire financing applicants not their ability to attract these funds. The reasons are multiple differ from one program to another, from one applicant to another and from one authority to another as we have noted in the above presented

Given the small proportion of projects approved in the total projects submitted we proposed verification of the existence of the link between the two indicators, total value of projects submitted (x) and total value of projects approved (y). When a relation exists, it is necessary to measure its intensity by a simple or a synthetic correlation indicator. It can be determined to what extent the factorial parameter x (total value of projects submitted) contributes to the formation of the dependent parameter y (total value of projects approved) from connection nature, direction and form point of view between the two variables.

There were applied the analytical analysis methods for the statistical connections by using the correlation indicators system:

- regression function;
- correlation coefficient.

Knowing that the regression function means the mathematical relation ship existing between two independent variables showing, in the presented case, how the resultative

parameter y (total value of projects approved) is modified only after the modification of the values of the independent parameter x (total value of projects submitted), we appraise that the other factors that might influence the phenomenon are considered having a constant action.

The mathematical function that expresses the connection form will be following:

$$\bar{Y}_{x_i} = a + b \times x_i \quad (1)$$

To determinate the average regression equation and, with its help, the estimated values (theoretical) for the regression function, first of all, the values of the two parameters „a” and „b” are calculated by applying the method of the smallest squares. The method has in view to minimize the sum of squared deviations of the real values (observed) from the estimated values (theoretical) calculated based on the regression equation.

$$S = \sum (y_i - \bar{Y} \times x_i)^2 = \min \quad (2)$$

In case of linear function the condition becomes:

$$\sum [y_i - (a + b \times x_i)]^2 = \min \quad (3)$$

It determinates the sum in correlation with the two parameters derivatives “a” and “b”:

$$\frac{\partial S}{\partial a} = 2 \sum [y_i - (a + b \times x_i)] (-1) \quad (4)$$

$$\frac{\partial S}{\partial b} = 2 \sum [y_i - (a + b \times x_i)] (-x_i) \quad (5)$$

By cancelling the partial derivatives and by simplifying by 2 we have the following:

$$\begin{cases} na + b \sum_{i=1}^n x_i = \sum_{i=1}^n y_i \\ a \sum_{i=1}^n x_i + b \sum_{i=1}^n x_i^2 = \sum_{i=1}^n x_i y_i \end{cases} \quad (6)$$

The estimated (theoretical) values are called adjusted values. The adjusting a distribution serie one does possible the replacement of the real terms (empirical, recorded by observation) with theoretical ones (estimated, adjusted) calculated based on a mathematical model.

The measurement of the intensity degree of the connection between the two variables will be made after verification of the objectivity of the chosen adjustment function by using the dispersion analysis.

To determinated the parameters of the regression function $Y_{x_i} = a + b \times x_i$ it was used the equation system (6), where „n” is the number corresponding to the nine months.

The value of approved projects as a function of the submitted projects during the period February-October 2009

Table 2
million lei

Months	Total projects submitted (X)	Total projects approved (Y)	x*y	X ²	Y ²
February	2,579	1,155	2,978,745	6,651,241	1,334,025
March	1,433	617	884,161	2,053,489	380,689
April	2,238	555	1,242,090	5,008,644	308,025
May	2,738	1,097	3,003,586	7,496,644	1,203,409
June	3,843	2,446	9,399,978	14,768,649	5,982,916
July	5,221	4,741	24,752,761	27,258,841	22,477,081
August	2,902	852	2,472,504	8,421,604	725,904
September	19,489	1,060	20,658,340	379,821,121	1,123,600
October	17,936	608	10,905,088	321,700,096	369,664
TOTAL	58,379	13,131	76,297,253	773,180,329	33,905,313

By applying the equation system (6) its were obtained the values of the parameters „a” and „b”.

$$\begin{cases} 9a + 58,378b = 13,131 \\ 58,379a + 773,180,329b = 76,297,253 \end{cases} \Leftrightarrow \begin{cases} a = 1,604.9475 \\ b = -0.0225 \end{cases}$$

The average estimation function of the linear connection between the net total value of projects submitted and total value of projects approved result from $\bar{Y}_{xi} = 1,604.9475 - 0.0225x_i$.

The intensity of the linear connection between the total value of projects submitted and the total value of projects approved can be obtained by applying the formula (7) for the correlation coefficient.

$$r_{y/x} = \frac{n \sum_{i=1}^n x_i \times y_i - \sum_{i=1}^n x_i \sum_{i=1}^n y_i}{\sqrt{\left[n \sum_{i=1}^n x_i^2 - \left(\sum_{i=1}^n x_i \right)^2 \right] \left[n \sum_{i=1}^n y_i^2 - \left(\sum_{i=1}^n y_i \right)^2 \right]}} \quad (7)$$

$$r_{y/x} = \frac{9 \times 76,297,253 - 58,379 \times 13,131}{\sqrt{\left(9 \times 773,180,329 - 58.379^2 \right) \left(9 \times 33,905,313 - 13,131^2 \right)}} = 0.07 \quad (7\%)$$

The result shows an inverse and weak correlation between variables. This means that there is a correlation of only 7% intensity between the total value of the proposed projects and those approved. This percentage is quite low and it shows that the estimation of the future amounts of the approved projects depends on the total value of the proposed projects to a low extent.

However, the average function of the estimation of the correlation between these two indicators is $\bar{Y}_{xi} = 1,604.9475 - 0.0225x_i$ and it shows that we can predict (with a certain deviation from reality) the value of the approved projects in case we know the formula sum of the proposed projects mentioned above. Thus, the sum of the approved projects will be determined by introducing the future sum of the proposed projects in x variable in the linear function. In other words, assuming that in November will be submitted projects worth 15,000 million lei, according to the average function medium of the link between the two indicators, that will be approved projects amounting to 1,267.45 million.

Without claiming to entirely present the difficulties that possible beneficiaries have to face, we have tried to emphasize the least propagated ones. The list of difficulties unfortunately remains open, at present still being performed changes in the programmatic documents and not all of them being in favour of the beneficiaries. It is easy to observe that a whole series of funds from European sources remain unaccessed due to conditions which have no relation with the European legal provisions and nor with the matters in the territory.

The non-reimbursable structural assistance is more the support replaces an important part of the financial effort that should be done by a state on its own, the more helpful and precious. The existence of a strong institutional structure capable to ensure the formulation and application of public policies, to keep the coordination processes inside ministries going, the implementation of national programs, increasing the application capacity of partnerships between local administrations, was absolutely necessary

The professionals warn about the fact that „planting” structural funds on an inadequate „soil” does not lead to obtaining the anticipated benefits. The lack of results preserves the negative conditioning state, which further maintains the same unfavourable premises for the period to come.

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ANALYSIS OF EDUCATION IN TERMS OF EXTERNALITIES

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***Abstract.** Research highlights the problem regarding education externalities in the context of quantifying the effects which it produces on an individual level and at the society level. At the same time, the research highlights the importance of externalities in terms of evaluation of investment policies in education and emphasizes the need for greater concentration, in practice, on these elements.*

Externalities have to complete any cost-benefit analysis of the education effects, the context in which at the historical timeline, education accompanies the modernization process.

In terms of public policy, education is considered public or private property according to its effects on each stage of human development.

Keywords: education; externalities; investment in education; educational policy.

JEL Codes: H23, I21, I22, I28.

REL Codes: 4C, 13B, 13J.

Introduction

Within the research undertaken we started from the premise that education is classified as intangible asset being addressed from the perspective of a public good and even as an externality of a particular type. In turn, investment in education is considered beneficial to the society, so that it may be included in the category of positive externalities. In other words, learning generates the increase of choice possibilities, inflicts economic growth effects and positive externalities on the medium and long term.

The main topic of the research concerns the analysis of education in terms of generated externalities, considering the main effects of education depending on the level of training, on educational stages, with the identification of those steps which generate more educational positive externalities.

We believe that when analyzing the effects of education, the externalities phenomenon can be extended on a cost-benefit analysis, and its quantification becomes important both at the individual and at the society level.

From the state of knowledge in the externalities theory, more specifically, in addressing education as a positive externality, its main effects are analyzed.

In our opinion, these factors are at the basis of considering education a public good or private, an important decision for education policies.

Accepting the importance of externalities in the analysis of the education effects, research suggests as a first landmark historical externalities.

During the research other types of externalities are analyzed, such as human capital development, strengthening democratic society, etc.

1. Concepts and theories on education externalities

Externalities theory was introduced in economics by Alfred Marshall and later extended by Pigou, Samuelson, etc. This illustrates the effects of these actions of individual human actions on the society and on its members. Thus, at the level of externalities theory there are costs (private and social) as well as income (private and social) of human actions. Education as an integrating human action in the world represents one of its positive externalities. The human is by definition a social being and, in order to fulfill itself in this regard, he had first to arrange the universe, on a tangible level, in terms of territory and on an intangible level, conceptually-by creating forms of governance and self-government.

Recognizing that some externalities are positive (external revenues are present) and others negative (external costs occur) for various members of the society and the fact that in none of the cases the individuals are compensated for the felt/generated effects, enforces public intervention and highlights the so-called free market failures.

The significance of education has evolved over time in accordance with human society development, from Plato to the promoters of education, the perspective of historical analysis primarily aimed for understanding the externalities of education observed over large periods of time, called „historical externalities”. Historical-philosophical perspective on education helps us to identify a large externality of education, perceived in historical time, namely the modernization of societies. This perspective underlies the popular thesis that education is closely linked to the modernization processes, understood as complex processes of socio-cultural transformation, for changing the values, norms, institutions, structures and social relations. We can say that the education philosophy, closely linked to developments in the general philosophical concepts, reveals a number of positive externalities that education has had on the society development, seen in a historical time scale.

2. Analysis regarding the size of education externalities

Education is classified as intangible asset, being often addressed to as a public good and even as an externality of a particular type.

Quantifying the externalities becomes important in the process of distribution of national wealth and the way we understand that they should be carried out by the state. For this, any cost-benefit analysis, including education, completed also with the study of the externalities effects, including historical ones, is difficult to attain, but undeniably crucial at the company and individuals level.

The inclusion of education in such an analysis is potentiated by modern theory of economic growth. This includes technical progress as an endogenous factor and leaves from a major joint premise, namely that the structure of economic assets includes, in addition to the tangible assets, intangible assets such as technology and knowledge. In particular, it must be reiterated the need for full cost-benefit analysis, materialized in computing the internal rate of recovery of investment in education, with social effects, non-monetary of schooling. This rate cannot include the effects on modernization and civilization, too broad at the historical level to be quantified easily. Moreover, the effects of schooling are particularly complex and their division into several types is primarily intended to contribute to a better understanding of a unitary concept as the importance of education in human development.

Education begins to be studied by economists in terms of intangible property, being associated with increasing returns. Education becomes in the economic concept a real growth engine and therefore a target for public investment. Since education does not only have effects on the receiver of education, but also on other members of society, the theory of externalities and of public goods are used as main tools for analyzing educational policies, in particular, public investment in education. Considering that investment in education can be regarded as a public good, then it meets to a certain extent also public goods related properties (Suciu, 2000,

p. 101-102), and also non-exclusivity and non-rivalry. However, the fact that the two rivalries are specific pure public goods must be considered, and education is not a pure public good, but this represents the generic sense which is attributed to goods suggestively named „collective consumption goods”.

2.1. Monetary and non-monetary effects of education

In the undertaken research, the effects of education will be considered non-monetary and monetary effects (behavioral), felt at the individual level (particularly) or collective.

In our view a matrix of education effects may have the following representation:

Matrix of educational effects	
Monetary effects	Non-monetary/behavioral effects
Increase in individual income	- human development
Increase in gross domestic product (increase and economic development)	- training and developing human capital - constituting and enhancing capital

Monetary effects are important for balancing two main elements of any investment: costs and monetary benefits. Whatever the scope of the action or the event, the phenomenon of externalities requires references on private cost and social cost categories and details related to the private and social income.

Private cost is reflected in the cost borne by the operators directly involved in producing educational asset. Similarly, private income includes only revenues obtained by operators directly involved in a particular activity such as educational activities.

However difficulties arise in defining social costs and revenues. In the case of education, the social costs are those costs incurred by the members of a community by organizing educational activities. Likewise, social income is the amount of income of the community members from an activity (in particular educational activity) regardless of the involvement in this by supporting the afferent costs. If for the social cost there is a reference calculation (amount of funding allocated to education), the definition of social income is more problematic because not all education gains are measured in monetary terms. It is difficult to determine exactly what revenue accrues to the society from the collective investment in education.

One of these revenues is the extent to which the created human capital contributes to economic growth (e.g. changes in growth rates compared to the number of years of education), causing collective effects, social, in monetary form.

Generally speaking, the non-monetary effects of education are treated as externalities. From the research done, the main effects of education resulted depending on the level of training and highlighting those steps which generate more positive externalities:

Table 1

Educational stage	Effects on individual development	Externalities
Primary school	- Formation of own capacities for participating in the community life – the acquisition of general knowledge (mathematics, natural sciences, etc.)	- First steps to integrate into society - Important externalities for the rest of society
Secondary school	- Onset of formal operational thinking - Developing the first concerns of self-education	- Ensure the continuity of development and socialization - Important externalities for the rest of society
Secondary education	- Develop responsibility, decision-making capacity	- The opportunity to start university is ensured

Educational stage	Effects on individual development	Externalities
/professional	- Targeting young labor market	- The externalities produced by the company decrease and individual income made on labor market increase
Tertiary education/ university	- The acquisition of specialized knowledge - Preparation for integration into the labor market	The externalities produced by the company decrease and individual income made by labor increase
Permanent education	- Retention in employment by constantly upgrading knowledge - A second chance to integrate into society the uneducated	- The externalities produced by the company decrease and individual income achieved in the labor market increase

Source: The scientific information regarding the effects of education on the individual development are developed from “Education and the child development”, Diaconu, M., p. 63.

It is commonly accepted that primary education brings positive benefits to the society, because at this level it generates the most positive externalities, such as those reviewed above; one of the most important being the integration of individuals in the society, making life possible in human communities. On the other hand, it is considered that university and continuous vocational training are forms to prepare and improve the professionals on an increasingly selective labour market. The difference between them is that individuals will have not only non-monetary gains from higher education, but also significant material revenues, from which they benefit directly.

Non-monetary effects of education are those not directly expressed in monetary units, whether they may subsequently be traded or valued in money, regardless of the extent to which they increase productivity. Monetary effects of education are also called social or non-market effects (Marinescu, 2001, p. 25) and currently relates to better health, greater civic involvement, information regarding consumption, more selective preferences, a greater capacity to adapt. Routinely, they are referred to as the influence of education on other variables of human life and different social productivity.

In the light of productivity, Psacharopoulos and Patrinos indicate that „a recent review shows that empirical records are scarce and inconclusive, supporting the existence of human capital externalities in a limited form. These studies estimate externalities considering them human capital of the individuals which increase productivity of other inputs by transmission channels which are not internalized by the individual (...) some research have reached negative values, other very high values” (Psacharopoulos, Patrinos, 2002, p. 3).

In our view, externalities cannot be quantified exclusively on the productivity growth effect, as this is not compatible with the idea of externalities and education as public good. Moreover, the ultimate goal of education is not to increase the productivity of human resources, but to help the complex development of people and societies.

2.2. Implication of externalities at the educational policy level

The authors of the research considered that the implications at the educational policy level of the positive externalities of education are important. For example, the link between education and health is strong and requires a complex cost-benefit analysis, to determine the extent of which the education funding for improving health and reducing health costs compensate the savings made in the health system. On the other hand, the effects on subjective welfare state should not be overlooked in addressing the effects of education on health, despite the difficulties of quantifying them.

Education externalities are linked by its contribution to the creation and development of social capital. Social capital is usually discussed in terms of input and transaction costs, which can increase or decrease.

Sources of social capital include, among other things, the universe of family, school, local community, the private sector and civil society. From our point of view, social capital develops as an externality to human capital formation and the main mechanism through which education contributes to creating social architecture is that which provides students with models of organization and human cooperation.

In this context, we consider that social externalities of education relate to the transmission of criteria with high generality of the organization of society. They are useful for ordering economic and social institutions and organizations, accepted cultural norms, foundations of justice and social equity, regulatory contexts in which human activity is conducted. Moreover, and in terms of social interactions, defined as transfers between members of a society, it is considered that their effectiveness is determined by the degree of affiliation to the rules and values agreed upon in that certain community.

Similarly, education provides the individual the possibility of changing its role in the structure of the society, regardless of variables that characterize life, but which are independent of their control (personal or family wealth, social position).

The phenomenon of intergenerational mobility between social classes is in this respect an important externality of education, research showing that schooling is the most important factor determining the socio-economic and professional mobility.

Education is also the expression of reinforcing democratic societies. The relationship between democracy and the level of education is, as well as between education and health, both causal and reversed, from education to democracy. Democratic states are characterized by education systems that provide equitable access for all members. The school educates voters and therefore improves the results of the democratic process, which is in our opinion the most important dimension of the externalities. Without civic participation the aggregation and expression of political interests cannot be achieved, for which encouragement is important in terms of individualism growth and declining interest in public action, collective, especially among young people.

Social effects of education have an important cultural dimension: „Schools are social institutions with social purposes. Schools not only provide skills, but also characteristics and conduct of ideal students (...) and these aspects are missing from current economic modeling” (Akerlof, Kranton, 2002, p. 1181). Externalities of cultural dimension are difficult to surprise in economic analysis, but their major contribution to human development and social progress cannot be reduced. Education is one of the greatest inventions, but also one of the safest forms of perpetuating the characteristics of human societies over time, which enables continuity of human social organization.

Researches on education have as purpose the development of responsible educational policy for enabling fulfillment of human life. Depending on the size of externalities – positive social effects experienced by the society – education is considered a public good or private good, choice which determines whether the main share of its funding will be for the state or private actors. Differentiation of educational based on their externalities which they produce became a primary criterion in the definition of public or private nature of such property.

We emphasize that studies on the size of education externalities and of public or private nature support changes when taking into account their implications on state intervention in education financing, and, therefore, within the economy and lives of individuals.

Conclusions

The context in which educational policy decisions express ethical judgments of the community regarding the importance of fairness, efficiency and economics based on which social systems are created, we consider it important to include externalities of education in any analysis. In particular, it is reiterated the need for full cost-benefit analysis, whether the calculation of internal rate of returns on investment in education, social effects, monetary of schooling. This rate may not include the effects of modernization and civilization, too broad at the historical level to be quantified easy. Growing interest of educational theorists in their research confirms a more accurate approximation of economy of scope „more ethereal” as he called a Barro, human capital externalities and education.

In our view, education becomes a real engine of growth, and therefore a target for public investment, also enhancing the expression of democratic societies. Research on education should have developing educational policies that aim to enable responsible and fulfillment of human life. In this context, the implications of educational policy at the positive externalities of education are important.

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PLACE AND ROLE OF LOCAL PUBLIC FINANCE IN THE PUBLIC SECTOR ECONOMY IN EUROPEAN UNION MEMBER STATES

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***Abstract.** Decentralization of public responsibilities implies also financial decentralization. The effect of this process in EU countries' budgets is important to be evaluated in order to correlate with macroeconomic indicators. From financial point of view, local revenues and expenditures and the balance of local budgets constitute the main research theme. Different experiences and realities reached under the same normative framework (European Charter of Local Self-Government) are analyzed in this paper.*

Keywords: local public finance; public service; local budget balance; local public debt; public debt.

JEL Codes: H00, H41, H62, H63.

REL Codes: 13A, 13B, 13G.

1. Introduction

Functions and responsibilities of local authorities must be oriented to assure equilibrium between citizens' demands and response of sub-national governments based on institutional and legal systems. This expresses the constraint for local policies necessary to provide local services which are financed mainly by own taxes. Therefore, sub-national governments must have an important degree of independency reflected by local financial autonomy. Also, financial autonomy is correlated with the decentralization process that implies the distribution of responsibilities among levels of governments.

An efficient allocation of public resources at sub-national levels involves the identification of the specific services that must be delivered by local authorities in order to fulfill the citizens' demand.

OECD and European Commission are concerned by the need to improve governance and management at all governmental level in order to assure equal access to local public services.

Starting from this concern it is necessary to investigate local public finance in order to identify its place and role in the public sector economy. This expresses the aim of the study that is structured as follows. Section 2 presents some aspects regarding competences and functions for sub-national governments as key elements for local public finances. Section 3 consists in investigation the place of local public finances in the public sector economy based on local budget balance and local public debt. Section 4 highlights the concluding remarks of the study. This paper is financed by NURC on project no. 1780/2008.

2. Role of local public finance in public sector economy

The starting point in identifying the role of local public finances is expressed by the answers to the questions regarding what type of services must be delivered by the sub-national governments and what policies must be applied by these authorities in order to fulfill the citizens' demand for local services. In order to do so, we must consider the legislative

framework which defines competences and responsibilities of different governmental levels, the instruments, such as local budgets and local services, which can be used by local authorities in order to achieve objectives of local interest for citizens. Also, many local authorities deliver local services by contracts with different economic units.

Parrado (2005a) highlights the importance of correct identification of competences and functions for sub-national governments based on experiences from France, Germany, Portugal and Spain. There are also studies that investigate the same issue for other countries (OECD, 1994, Parrado, 2005b). Also, Parrado defines functions and competences for local governments as: „*Functions* refer to what governments do or to the fields of activities in which they play a *de facto* role. ... *Competences* refer to responsibilities and powers, formally bestowed by law, with which public authorities are entrusted in each field of activity” (Parrado, 2005b, p. 5).

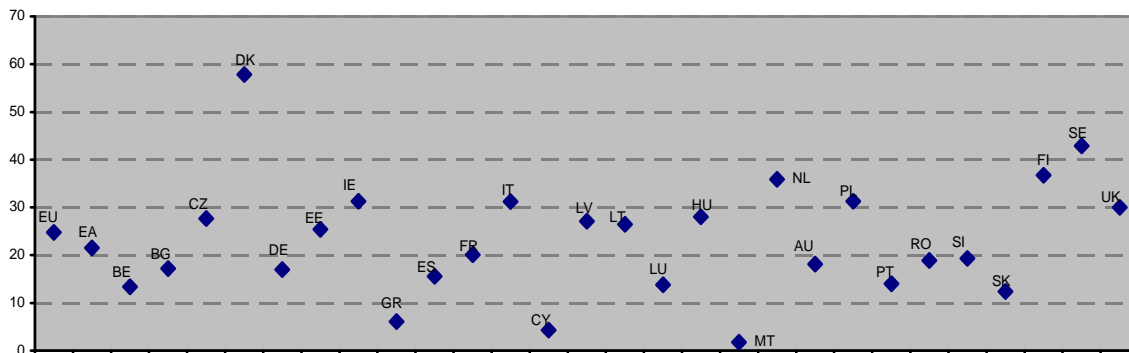
The responsibilities of sub-national governments are constrained by the local budget revenue that must assure financial support for local budget expenditure. Local budget revenue are represented by own revenue, subsidies from central budget and other sources. For instance, in 2009, in Romania, according to budgetary law, the main sub-national revenue categories consist in profit tax from local interest companies, income tax, property taxes (on buildings, lands and vehicles), value added tax, hotel fee, tax on shows, fee for certificates, permits, and authorizations issuance, fees for services, penalties, subsidies and other revenues. These revenues must finance expenditure, according to budgetary law, such as public authorities, military centers, local police, education, healthcare, culture and religion, social assistance, public development and housing, environment protection, agriculture, transports and other expenditures.

At sub-national level we must make a clear demarcation between services that have expenditures sustained by users (*industrial and commercial public services*) and *administrative public service* that are financed by taxes and subsidies from different public budgets. These administrative public services that are partially sustained by central budget express the transfer of functions and responsibilities between governmental levels. This transfer imposes some budgetary principles for local budgets defined by European Charter of Local Self-Government such as: (i) principle of autonomy; (ii) principle of proportionality; (iii) principle of subsidiary; (iv) principle of diversity; (v) principle of flexibility; (vi) principle of universal access.

The aim of this study is to investigate also the place of local public finance in public sector economy. Therefore, in the next section we will focus on this issue based on local budget revenue, expenditure, balance and local public debt.

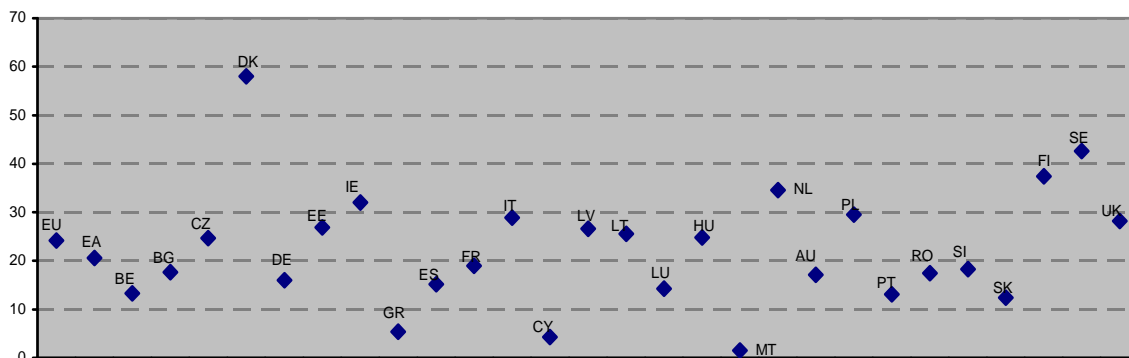
3. Place of local public finance in public sector economy

In order to identify the place of local public finance in public sector economy we must take into consideration the local budget variables ratio to general government variables for European Union member states. Analyzing these ratios we find that in Denmark almost 60% of total public service is delivered by sub-national governments and only 1.5% in Malta (Figure 1 and 2). Based on public indebtedness, sub-national governments in Estonia issue more loans than other public authorities which conduct to an average local public debt of 54.7% of public debt, during 1991-2008 (Figure 3).



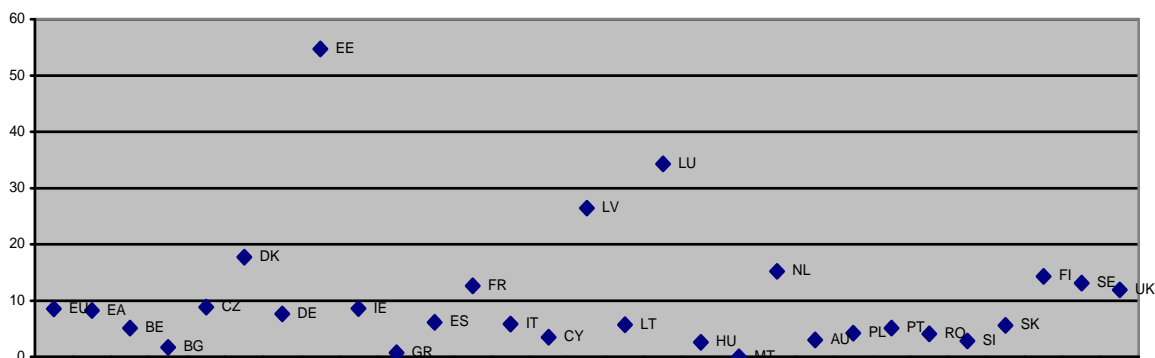
Source: own determination based on data available from EUROSTAT.

Figure 1. Average of local budget revenue (% of total general government revenue), during 1991-2008



Source: own determination based on data available from EUROSTAT.

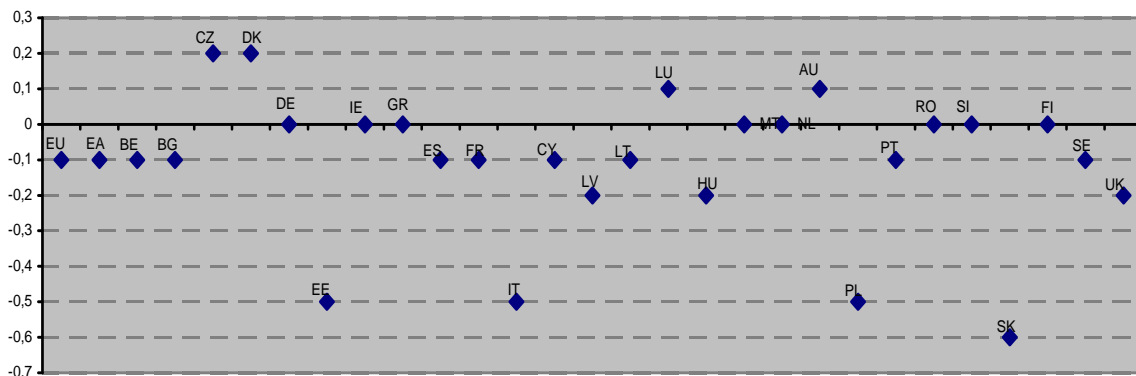
Figure 2. Average of local budget expenditure (% of total general government expenditure), during 1991-2008



Source: own determination based on data available from EUROSTAT.

Figure 3. Average ratio of local public debt to public debt (%), during 1991-2008

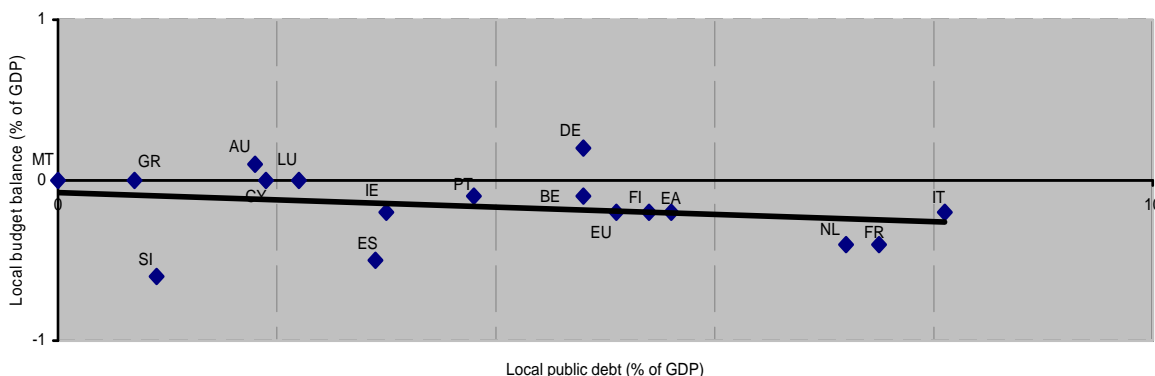
Investigating the local budget balance ratio to GDP, we identify that the local revenue assure financial support for local expenditure in Germany, Ireland, Greece, Malta, Netherlands, Romania, Slovenia, and Finland where the local budgets are in equilibrium. Czech Republic, Denmark, Luxembourg and Austria obtain local surpluses which can be used to sustain other public deficits. In other cases (especially Slovakia, Italy, Estonia, Poland) the local budgets have deficits which are covered from the central budgets or by contracting medium and long term loans (Figure 4).



Source: own determination based on data available from EUROSTAT.

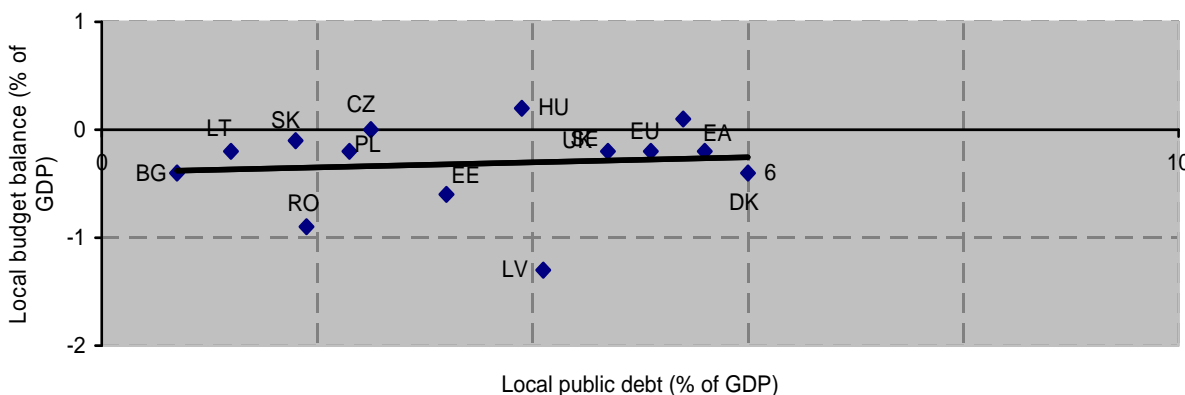
Figure 4. Average of local budget balance (% of GDP), during 1991-2008

Analyzing the relationship between local budget balance and local public debt, we identify that in Euro area countries the increase in local deficits conduct to more local indebtedness. The general tendency expresses an increase in local public debt especially for non euro area member states (Figures 5 and 6).



Source: own determination based on data available from EUROSTAT.

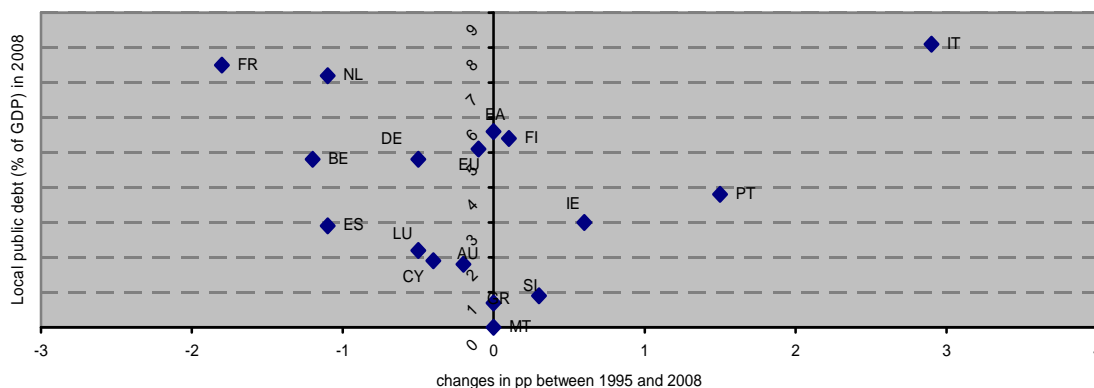
Figure 5. Evolution of local budget balance and local public debt in Euro area (% of GDP), for 2008



Source: own determination based on data available from EUROSTAT.

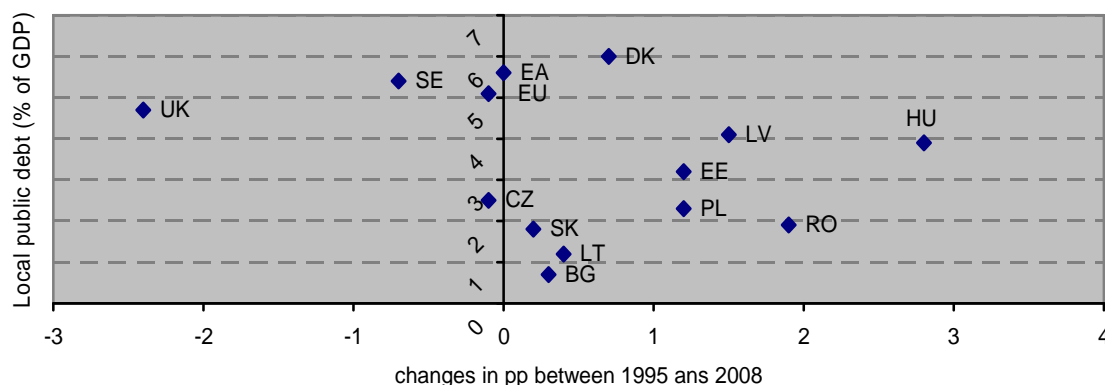
Figure 6. Evolution of local budget balance and local public debt in non-euro area (% of GDP), for 2008

While local public finance’s role increases in public economy, the impact of local public debt could be more serious. The dynamic of local public debt in the latest decade (Figure 7 and Figure 8) shows a relatively small change (plus or minus maximum 3 percent) in comparison with the significant grows of the local public sector in the same period. The explanation should be identified in the public financial policies. The migration from central to local financing of different public interest areas was accompanied by supplementations of local resources (although central budgets remains in deficits). In this way, the deficits (and automatically the public debts) were split between central and local, having a bigger part the central component.



Source: own determination based on data available from EUROSTAT.

Figure 7. Dynamic of local public debt in Euro area, during 1995-2008



Source: own determination based on data available from EUROSTAT.

Figure 8. Dynamic of local public debt in non-Euro area, during 1995-2008

The dynamic of local public debt will be one relatively small because the local budget balance is strictly controlled in majority of EU countries (Figure 9 and Figure 10). The rules applied in local sector are more severe because it is relatively difficult to monitor hundreds or thousands local budgets’ balance in order to assure a certain balance at national level. An easier mechanism is to cover local imbalances by taking over (wholly or partly) the deficits to the central budget.

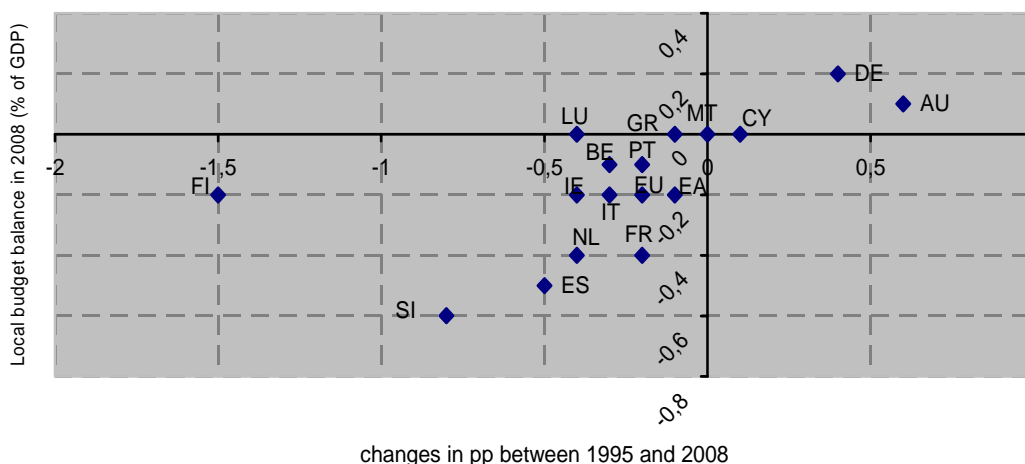


Figure 9. *Dynamic of local budget balance in Euro area, during 1995-2008*

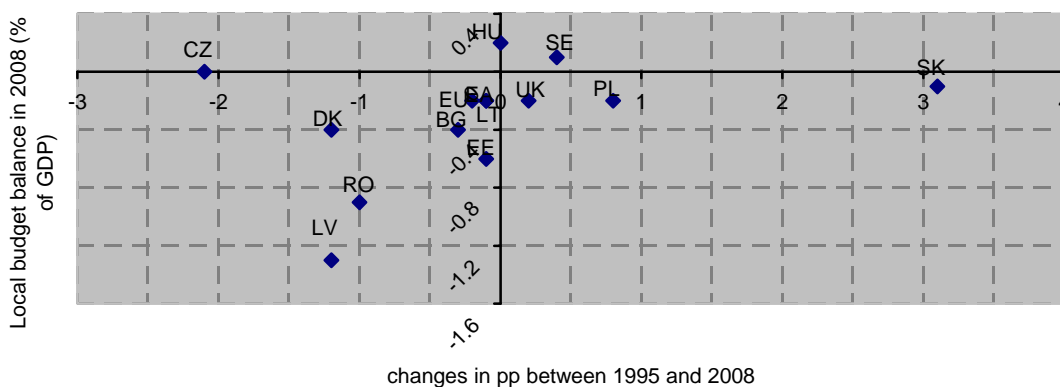


Figure 10. *Dynamic of local budget balance in non-Euro area, during 1995-2008*

4. Conclusions

Local finance has an increasing role in all European public financial system. The revenues and expenditures of local communities grew year by year by introducing new budgetary lines or raising the existing ones.

Implementing generally valuable rules for local governing (especially those provided by the European Charter of Local Self-Government) helped local finance to consolidate its presence in economy. Encouragement of local financial sector was necessary to assure a better quality public service offered to citizens. The proximity of local authorities to citizens can be maximized by permitting local communities to manage their own public financial resources.

Decentralization supposed to change the structure of local expenditures by diversifying the domains in which local communities can decide the allocations. The resources for financing the majority of expenditures of the new domains are assured by central budgets. In this way the impact on local balance is relatively small, the imbalance being took over by central budgets.

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SPECIFIC FEATURES OF REGIONAL ECONOMIC DEVELOPMENT FINANCING IN THE FINANCIAL CRISIS CONTEXT

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***Abstract.** This paper focuses on investigating the regional funding desirability and contribution to the development of a nation in the current crisis context. We were also interested in the impact of this source of financing on the public budget. The novelty of this topic lies in the fact that the particularities of regional funding and its implications in the accumulation of budget revenues is being presented for the first time.*

Keywords: funding; crisis; regional development; resources; budget.

JEL Codes: P25, H00.

REL Codes: 13A, 16H, 16J, 16E.

1. Introduction

The economic decline which currently affects our country is directly linked to the financial crisis experienced by developed countries that have significantly exposed their bank assets. The unfavourable international context causes the collapse of the credit market (which has exploded in recent years) in our country as well the blocking of the funding of the private sector. The consequences of these phenomena are the following: the reduction or bankruptcy of many businesses, failure to pay their taxes and duties to the public budget resulting in lack of payments towards the budget sector. Motivated by the desire to find new sources of financing in the context of the current crisis, we turned towards European Union grants, which can contribute to overcoming the difficulties triggered by reduction of budgetary revenues. We believe that this paper is important in the context of the financial crisis, manifest in Romania as well, which has disastrous effects on emerging economies that are dependent on massive imports of capital from the foreign markets.

2. EU Grant – an opportunity to compensate the reduced budgetary revenues in times of crisis

Given the economic and financial conditions of the current crisis, the object of analysis is to what extent funds from the European Union in the form of grants grant can compensate for the compression of the national economy.

2.1. Financing development – terminology and content

In order to be able to conduct the study we had to start with the analysis of the term „financing”, which caused us to define it in its broad and wide sense:

- in its wide sense, it refers to any action aimed at providing the funded entity with the cash funds necessary to meet a purpose (Kirişescu et al., 1998, p. 141).
- in its broad sense, it means the allocation of non-refundable funds from the state budget or from other sources.

In our opinion, the wider sense of „financing” refers mainly to the fact that it includes the use of money held definitively and with refundable character.

From the research conducted, we found that financing involves a minimum of two parts: the issuer or financier, which possesses financial resources, and the debtor or the recipient, which requires more funds than its possibilities. What also needs to be mentioned in the funding process, in addition to the purpose of the financing, is the term for which financing is granted. We believe that the general funding purpose is the economic and social

development of society through: rehabilitation/development of infrastructure, creating jobs, improving living standards, increasing competitiveness of products and services, helping people in need. The economic progress is influenced by factors such as natural resources, the quantity and quality of human resources, economic sectors share of GDP structure, the level of technical-scientific research, infrastructure development.

The analysis of EU states experiences determined us to maintain the assumption that funding should be allocated primarily to infrastructure that has impact on the development of other economic sectors. But in these years of crisis, there are these infrastructure projects (transport, environment, telecommunications and energy) that are the most affected. The investment in people through education, training, social policies and enabling a permanent connection between research and innovation is not insignificant. But all this requires funding sources that in the context of a financial crisis have been much reduced.

2.2. The need for funding regional economic development

Development finance as grants from EU funds is usually present at the regional level. This emerged from the need increase and develop regional economies, so that companies are able to take advantage of easy financing for their projects, but also deal with the requirements arising from structural changes that occur at the macroeconomic level. The new economy based on innovation and knowledge, on environment and risk prevention requires investments in infrastructure, but also in research, innovation and sustainable regional development. Regional development financing appears to be essential for creating new businesses and implicitly jobs, by making business incubators (business nurseries) as well as industrial or technology parks to circumscribe national objectives. This type of funding is absolutely necessary because in many regions there are companies with great potential that can develop and increase standards of living for the inhabitants of the area. Although, it is assumed that businesses should be easier to find funding for their projects because there are subsidiaries of financial institutions in the territory, they are not willing to fund projects of local interest.

Regional development funding is absolutely necessary in the public administration sector, as it improves and modernizes it, making it more transparent and efficient. From the analysis of regional financing needs for regional funding we concluded that this is a requirement for the implementation of state economic policy for development and modernization of small and medium-sized companies, for creating and upgrading infrastructure, for achieving social policy, for the modernization of cities and villages and technology implementation.

Research on the link between grants funding and budgetary sources, in the current crisis, has led to the veracity of the hypothesis that this type of financing is the only one that can compensate for financial resources lost due to the restriction of economic activities at national level. The fact that the economic recession is present today in Romania but also in other developed countries of the world, triggers wide debates on new sources of funding aimed at reducing the revenue in order to cover government budget, we consider that turning to regional financing is of great interest.

2.3. Specific features of regional funding

Data analysis and the study of socio-economic processes allowed us to highlight the regional funding features as well, as a first in the history of research studies.

1. Regional economic development financing is focused, as its name suggests, on territorial issues. Specifically, in the case of regional development funding, it is destined to serve only that region or area, but by this transfer national objectives are also had in view. Furthermore, in specialized literature (Mosteanu, 2003, p.92) it is said that Romania's regional development is „a comprehensive, complex and lasting process” on the basis of which are standing „a coherent set of objectives, priorities and methods to achieve its policy objectives of regional development”. Thus, if we consider that regions are integral parts of national

economies, the impact of these investments can be found at the macroeconomic level in the form of budgetary revenues.

2. Regional economic development financing requires co-financing by the beneficiary. Regulations of the EU grant funds for regional development require that the maximum contribution that Romania can benefit from the operational program to be 85% for all resources. Co-financing will be provided under the National Strategic Reference Framework from the state budget and local budgets and from local authorities. At the same time, there could be the possibility that, due to low financial capacity to provide financing, many projects can not come alive although they would be required.

3. Another feature lies in targeting funding towards the development of certain segments of the economic and social activity. Funding the development of regions consists in public investment in local and regional infrastructure (transport, environment, schools, hospitals, telephone networks, Internet, etc.) in support of business and increase employment, training human resources and social services. All these investments are aimed at the promotion of sustainable and balanced economic and social development of regions and nations default, creating jobs, protecting the environment, increasing adaptability of workers and develop their cultural heritage and tourism.

4. Regional economic development financing requires primarily the use of local revenue. Regional development means that in states with a regionalized structure (France, Spain) and decentralized administrative system, local authorities have the capacity of local and public interests separate of the public interests of their own state. However, because in Romania regions are not legal entities, specialized in regional problems, not autonomous in the budget plan as well as other entities (prefectures, county councils, municipalities) they lack the resources, relying solely on funding from public or community budget. However, through the activities that these grants generate, budgetary resources may be thickened.

5. Regional economic development financing is also customized by the fact that it is done after completion of certain phases of running the project. This requires that territorial goals are beyond the financial possibilities of the institutions or legal persons in the region. In order to access the regional projects, making payments prior to the transfer of granted funds, to carry out the investment is expected from the applicant, before the funds claims are verified and reimbursed. In our opinion, the development of regional projects is hampered by reimbursement after the carrying out of the investment. This situation leads to the emergence of the idea that those who have ideas, but no financial resources to implement them are not supported by regional development funds.

6. Earmarking differentiation of grants on regions is another feature of regional development funding. Different assigning is due to the fact that their needs by categories of activities and actions are different from one area to another and thus from one region to another. However, regional development finance should follow precisely the reduction of economic and social disparities between areas of the state, despite the fact that their achieved income and related taxes have an impact on the nation's wealth.

2.4. Conclusions

In the final part of this research study we conclude that in the context of the current economic crisis, the funding allotted by the European Union in the form of grants may represent much more than an opportunity, supposing that banking portfolios will necessitate time to remit their risky assets, which will imply limited resources and undoubtedly delay in crediting. These non-reimbursable funds can serve different purposes: developing and modernizing small and medium sized companies, as a lever in creating and modernizing infrastructure, support for developing cities and villages in achieving their social policies and implementing technologies. We believe that the use of these funds would effect firstly in an increase of budgetary resources, and implicitly of potential costs. Moreover, we consider that

the sole financing source that could compensate for the current compression of economy and of cash returns comes from these non-reimbursable funds.

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EUROPEAN UNION'S INCOMES STRUCTURE AND EXPENSES ORIENTATION RETROSPECTIVE AND PROSPECTIVE STUDY

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***Abstract.** This article analyses the way in which the collected incomes and the effective expenses of the European Union evolved, both totally and partially, in the period 1958-2008. Using the interpolator and extrapolar methods, there have been realized forecasts of the collected incomes and the expenses paid by the European Union for the next five years, getting some extremely important results. We can remark that the increase rhythm of the budgetary indices amplifies and the execution level of the European Union's budget increase.*

Keywords: own resources; expenses; forecast; interpolation and extrapolation.

JEL Code: F36.

REL Code: 20.

1. Introduction

European Union's budget is at present in a period of fundamental reorganization, influenced by the changings of the economic policies priorities, due to the successive extensions, the increase of dependence on the energy, the international migration of work force and the climatic changing.

In this paper, we analysed the evolution and the structure of the collected incomes and the effective expenses of the European Union for the period 1958-2008 and we presented the main weaknesses of the own resources system, as well as the fundamental changings the European Union's budget passes through.

On the basis of the datas referring to the collected incomes and the effective expenses of the European Union for the period 1980-2008, datas collected from the annual reports of the European Court of Auditors, we tried on the basis of a mathematical function to forecast for the next five years the collected incomes and the effective expenses of the European Union.

2. The structure of the European Union's incomes

The effective incomes of the European Union are formed by own resources assuring almost 99% of the financing of the European Union's budget and of other incomes categories, such as different taxes, incomes resulting from the institutions' managing operation, resources resulting from the penalties applied to the competitor's policy, the incomes collected from certain services assured by the European Union, interests resulting from payment delay and commission and any overflow from the past years. The statutory resources of the own resources system are established by means of the six Decisions of the European Union's Council, being unanimously adopted and ratified by all member states. The total sum of own resources necessary to the financing of the European Union's budget is determined by the

difference between total expenses and other incomes and cannot overcome 1.24% from European Union's GDI.

At present, the structure of own resources of European Union's budget is the following:

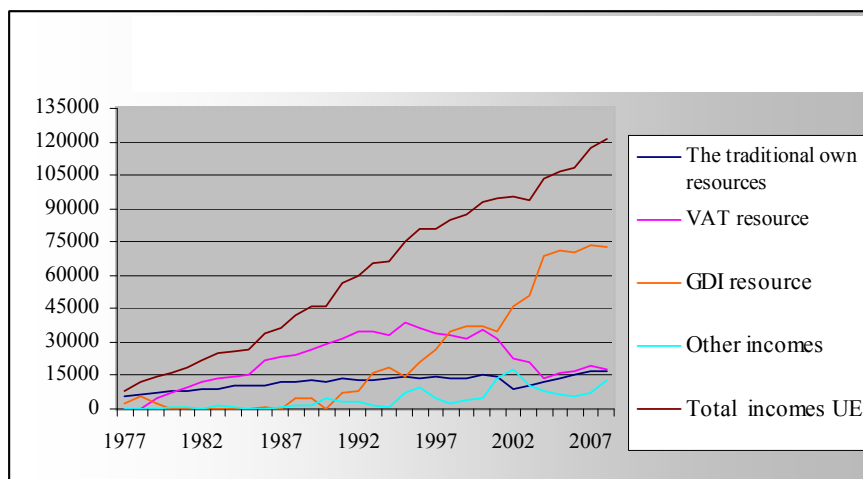
- *agricultural sampling* and additional taxes prescribed by the common organisation of the markets in the field of sugar and glucose, which are levied for the importation of different agro-food products from the third countries for the purpose of raising the price to the community's one and levied for the overbid products.
- *customs taxes*, resulting from the common customs tariffs on the customs values of the merchandise imported from third countries; they are collected by customs authorities of each member state, they are deposited to the European Union's budget except from a deduction of 25% representing receipt fee.

The first two categories are known as "the traditional own resources".

- *VAT resource*, represented by the payment by a member state of a sum equal to the harmonised VAT base multiplied by the uniform rate. Uniform rate is equal to the maximum rate minus a correction factor representing the reduced payments effectuated by Great Britain.

- *complementary resource according to GNI*, resulting from the application of a uniform call rate on each member state's GNI, established each year, while a budgetary procedure, according to the level of other budgetary incomes. This kind of resource has been created in 1988 in order to counterbalance the reduction of VAT resource, for the purpose of assuring budgetary balance, so that the total receipt may cover the entire expenses prescribed by the budget.

In the graphic below it is presented the evolution of the incomes collected by the European Union in the period of 1977-2008⁽¹⁾:



Source: datas worked out by the authors according to the Annual Report of the European Court of Auditors.

Figure 1. The evolution of the incomes collected by the European Union in the period of 1977-2008

From Figure 1 one can remark that along the time GNI resource has become the main resource of European Union's budget, representing 60.05% from the incomes of the European Union's budget in 2008, in comparison with 11.02% in 1988. Otherwise, since the introduction of GNI resource, the resources resulting from VAT have registered a continuous decrease from the total incomes percentage, representing 14.8% in 2008, in comparison with 57.53 in 1988. The rate of traditional own resources has also continually decreased from 68.65% in 1977 to only 14.21% of the incomes in 2008. In 2013, GNI resource will represent 74% of European Union's budget, in comparison with 13% resulting from customs taxes and agricultural samplings and 12% resulting from VAT resource.

During the period 1958-1970, Community's budget was exclusively financed by the contributions of member states. The Decision of European Union's Council from the 21st April 1970 introduced for the first time a system with own resources, composed by agricultural samplings, customs taxes and VAT resources, for the purpose of financing totally the Community's budget since the 1st January 1975. Customs taxes and agricultural samplings were collected by each member state's national administration, after taking the rate of 10% corresponding to the expenditure of perception. The resources resulting from the VAT owed by each member state were obtained by the application of a fixed rate of 1% on the calculation base of VAT, on community level (Lechantre, Schajer, 2003, pp. 139-140).

The period 1975-1987 shew that this original system of own resources was inadequate, at least for two reasons:

- Traditional own resources knew a continuous decrease from 68.65% (in 1977) to 33.44% (in 1987), because of the progresses realized with the reduction of customs taxes as a result of GATT negotiations, but also as a result of internal production increase of agricultural products;
- The resources resulting from VAT lagged in this period because of the slow economic increase and of the decline registered by the consumption expenses of member states.

The combined effect of the two factors exercised a considerable pressure on the own resources just in the period when the community needs were in increase due to the new adopted policies and the welcoming of new members.

The European Union met at Fontainebleau in 25-26 June 1984 brought a temporary solution for these budgetary difficulties, increasing the maximal rate applied to the resources resulting from VAT from 1 % to 1.4% and there has been established a reformatory mechanism of budgetary imbalances applicable since then only to Great Britain. The European Council established that the budgetary imbalance suffered by Great Britain shall make the object of reform in terms of an annual restitution of 66% from the difference between the installment of Great Britain to the Community budget (bigger) and the expenses payed by EC on the territory of Great Britain (lower). This reimbursement is financed by the other member states of EC, according to their GDPs pro-rata in the Community's GDP (Jacques Le Cacheux, 2005, pp.13-20).

The fundamental reforms, known as "Delors I Package" , which determined the character of the actual system of own resources and dedicated the reformatory principle of budgetary imbalances, were adopted in June 1988 by the European Council at Bruxelles. The main reforms forecast the introduction of a new own resource based on the member states' GNP, assigned to take into account of the contributive capacity of the member states. The global effect pursued by the introduction of this resource of balance of community's budget was to make EUs taxation system much more progressive, relating each member state's contribution to its level of prosperity⁽²⁾.

In the third decision regarding the own resources from the 24th June 1988, the European Union's Council keeps the existent reformatory mechanism, but it makes also modifications, respectively it maintains Germany's participation to the financing of the British reform and reduces the participation rate of Spain and Portugal until 1991.

The fourth decision regarding the own resources from the 31st October 1994 invites the European Commission to review the problem of budgetary imbalances. On the basis of the European Commission's report from 1998 and the proposals formulated by certain member states, the European Council from Berlin reached in May 1999 an agreement regarding a new reform of the own resources system. Adopted in 2000 and coming into force at the beginning of 2002, after its ratification by the national parliaments of the member states, the fifth decision on the own resources system reduces the maximal rate of the calculation base for VAT resource from 1% to 0.5% and increases the rate of expenditure perception on the

traditional own resources from 10% to 25%. The member states' rate in the Community's GNI was 1.24%.

The sixth decision of the European Council regarding the own resources system from June 2007 reduces the maximal rate on the calculation base for the VAT resource from 0.5% to 0.3%, the calculation base for VAT being unable to exceed 50% from the member state's GNI. For the period 2007-2013, the maximal rate for the VAT resource is established to 0.225% for Austria, 0.15% for Germany and 0.1% for Holland and Sweden and two member states benefit from the reduction of their contribution based on GNI: 605 million euro for Holland and 105 million euro for Sweden.

In essence, the actual own resources correspond actually to some simple financial transfers of the member states to the European Union's budget, when the VAT resource and the GNI resource represent 73.31% from the total sum of the European Union's budgetary income. Briefly, contrary to the ambitions of Rome Treaty's authors, the financing of European Union's budget is now assured by the disguised national contributions.

3. The European Union's expenses orientation

Important as the absolute value (over 100 billion euro/year), the European Union's budget is reduced when expressed as percentage from European Union's total public expenses (under 2.5%). The European Union's budget excited periodical political crisis, but in the same time it functioned as a stability vector for EU development, being drafted as some successive financial settings since the beginning of the last century's 80s.

The first budget of the European Economic Community was very reduced, covering exclusively the managing expenses. In 1965, the payments for common agricultural policy immersed 13.98% from the budget and increased to 70.2% in 1985. Since 1988 the expenses proportion for common agricultural policy in total expenses registers a continuous decrease from 66.82% in 1988 to 47.03% in 2008. By 2013, the proportion of traditional agricultural expenses will decrease to half (32%), as a result of a decrease in real terms in the actual financing period.

Only 3.51% of the community budget was spent for cohesion policy in 1965, a rate that never knew but a slight increase until 1980. The Single European Act put a special accent on the economic and social cohesion and determined the significant increase of structural expenses. The amount of money dedicated to structural actions increased already to 30.4% in 2006 and will represent 43.7% from European Union's budget in 2013, having at least two third destined to the cohesion and increase of work force employment.

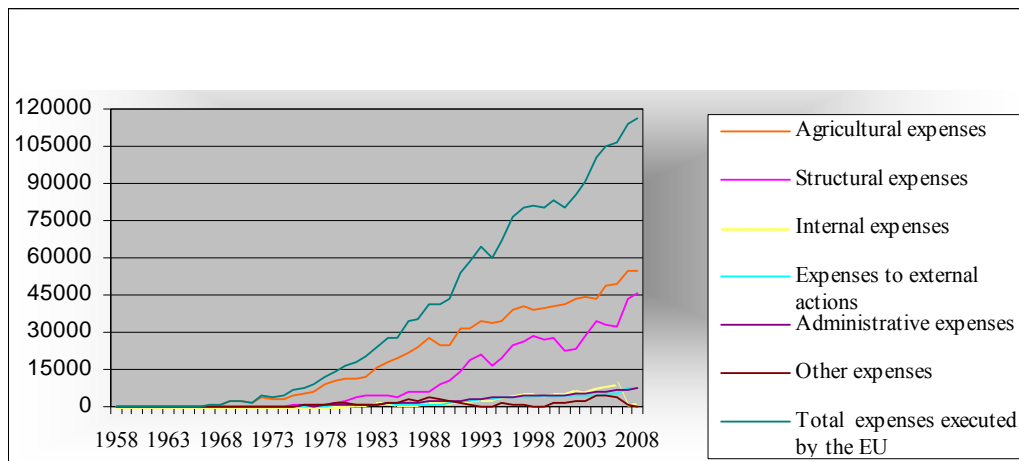
The financing for other policies (research, security, justice, internal policy, external actions) was initially very limited. In 1988, only 7.3% of the budget was reserved to these domains, but due to their increased importance in the last years, they immersed 13.33% from the European Union's budget in 2006.

The expenses of the European Union's budget represent the object of some multiannual forecasts approved at the Interinstitutional Agreements called „financial perspectives” marking the maximal size and the European Union's foreseen expenses structure. However, the financial perspectives cannot be assimilated with a pluriannual budget, because they remain indispensable, both the annual budgetary procedures by means of which shall be established the effective level of expenses in some caps and, especially, the allocation of these expenses between different budgetary lines.

The financial setting for the period 2007-2013 is the fourth financial perspective approved at the Interinstitutional Agreement, after Delors I Package (1988-1992), Delors II Package (1993-1999) and the Agenda 2000 (2000-2006). The political agreement reached at the European Council on the 17th December 2005 at Bruxelles forecasts a total volume of community budget for the period 2007-2013 of 864.3 billion euro, the equivalent of 1.048% of member states' GNI, including the 10 new member states, as well as Romania and Bulgaria

which adhered on the 1st January 2007. Most of European Union's incomes are destined to the common agricultural policy (369.8 billion euro) and to the regional development policy (308 billion euro). The 10 Central and East-European countries refused consequently the proposal which weren't favorable, defending their interests and received totally 157 billion euro.

In the graphic below it is presented the evolution of the used payment credits of the European Union's budget in the period 1958-2008:



Source: *datas worked out by the authors according to the Annual Report of the European Court of Auditors.*

Figure 2. *Evolution of the expenses executed by the European Union in the period 1958-2008*

The main expenses categories executed by the European Union's budget are: agricultural guarantee and regional development expenses, structural expenses, internal expenses, administrative expenses, expenses destined to the financing of external actions (Minea, Costaş, 2006, p. 300-301).

Agricultural guarantee expenses occupy the first place since 1962 in European Union's general budget, being destined to complete the supporting funds for the member states which are agricultural producers in the community space, to which the Union engaged itself to assure a certain level of prices on the products offered by them on the market. The evolution of the proportion of agricultural guarantee expenses in the total amount of European Union's budget is spectacular: from 13.98% in 1965 they increased to 91.54 % in 1970, in 1990 they decreased to 57.76%, in 2000 they continued to decrease and in 2008 they reached 47.03%. After the reform of common agricultural policy in 1992, the expenses structure destined to the agricultural guarantees has changed, the old measures of granting support were replaced by a subsidiary system in agriculture, defined by premiums given directly to the farmers and breeders.

Structural expenses are on the second place in the European Union's budget, their weighting in the total budgetary expenses evaluating as follows: from 3.51% in 1965 they increased to 24.7% in 1990, reaching 33.11% in 2000 and continuing to increase to 39.14% in 2008. They are destined to the granting of help to the undeveloped regions from economic development point of view, to the supporting of professional reclamation of the regions in decline, to the conforming of workers to the industrial changings, fight against unemployment, etc. In the last decade of the last century, the structural actions head especially for Greece, Ireland, Spain and Portugal.

The internal expenses aim mainly at the supporting of some programs destined to the youth, to the assurance of the energy at the level of community espace, harmonization of internal markets, research and technological development. From the multiannual analysis of European Union's budget it results that these expenses registered a slight increase from 2,6% in 1977 to 5.98% in 1995, reaching 8.46% in 2006.

The expenses destined to external actions regard the financing of the activities that the European Union initiates and deploys for the purpose of developing the collaboration with the countries out of the community, both those from the center and East-Europe and the states from Asia, Latin America and Africa. These expenses increase normally because of political reasons. The evolution of the weighting of these expenses in the total amount of the community's budget is the following: from 2.51% in 1977 they increased to 5.15% in 1995 and since then they keep remaining relatively stable.

The administrative expenses are immersed in most of their part by the European Commission. In the period 1968-2000, the effective of officials in the community organs tripled, reaching from 9000 to about 30000 officials. These expenses represented in the last 15 years about 6% of the European Union's total expenses.

The expenses policy at community level, as well as national and local level, must guarantee the citizens the confidence that these are concentrated on their own priorities and the funds confided to the European Union are well spent. European Union's expenses policies for the period 2007-2013 conferred a new priority to the objectives of increase and engagement of work force, as well as to the new political orientations such as freedom, security and justice. The optimization of European Union's expenses implies the choice and the concentration of the resources in those parts where they can produce the most significant benefits.

4. The analysis of the European Union's budgetary indicators by means of interpolation method and the realization of forecasts by means of the datas'extrapolation

On the basis of the datas collected from the Annual Report of the European Court of Auditors for the period 1980-2008 regarding the expenses and the incomes of the European Union's budget, we realized interpolations in order to find the best function to describe their evolution. To realize the interpolation, we used WolframAlpha based on the soft Mathematica.

AIC = Akaike criterium is used in case of comparison of two or more econometric models. Its calculation relation is the following: $AIC = -2L/n + 2k/n$, where L means the logarithm of the plausibility function, n represents the number of observations, k represents the number of exogenous variables. One chooses that econometric model for which the obtained value is the lowest.

BIC = Bayesian criterium (or Schwartz criterium) is also used in case of comparison of econometric models. Its calculation relation is the following: $BIC = -2L/n + (k \times \ln n)/n$, where the formula's factors have the same meaning with that from the Akaike criterium, and at the same time one chooses the econometric model with the lowest value.

R = coefficient correlation, it shows at which level are the variables correlated, the maximal value may be 1; the closer a value is to 1, the higher is the correlation.

Calculation of the interpolation function for the expenses made by the European Union in the period 1980-2008

Table 1

Least-squares best fits:

$$0.563249 x^4 - 33.6106 x^3 + 659.824 x^2 - 1139.67 x + 18\,247.2 \text{ (quartic)}$$

$$8.71486 x^2 + 3333.49 x + 10\,619.2 \text{ (quadratic)}$$

$$0.184328 x^3 + 0.420102 x^2 + 3434.72 x + 10\,345. \text{ (cubic)}$$

Fit diagnostics:

	AIC	BIC	R ²	adjusted R ²
quartic	559.564	567.768	0.989885	0.988199
linear	563.461	567.563	0.985771	0.985244
quadratic	564.795	570.264	0.986094	0.985025

Source: calculations realized by the authors using www.wolframalpha.com

On the basis of informational criteria, one chooses the fourth grade equation as being the one clearing out the most correctly the evolution of the expenses function realized by the European Union, this having the highest value of the correlation coefficient, as well as the Akaike criterium; regarding the Schwarz criterium the differences are too low in order to be able to take a decision according to this criterium.

Calculation of the interpolation function for the income collected by the European Union in the period 1980-2008

Table 2

Least-squares best fits:

$$0.597236 x^4 - 38.1768 x^3 + 797.594 x^2 - 2092.51 x + 19\,724.6 \text{ (quartic)}$$

$$-2.34264 x^3 + 98.4007 x^2 + 2757.9 x + 11\,345.6 \text{ (cubic)}$$

$$-7.01826 x^2 + 4044.48 x + 7859.71 \text{ (quadratic)}$$

Fit diagnostics:

	AIC	BIC	R ²	adjusted R ²
quartic	539.546	547.75	0.995519	0.994773
cubic	555.207	562.044	0.991762	0.990773
linear	555.422	559.524	0.990473	0.99012

Source: calculations realized by the authors using www.wolframalpha.com

On the basis of informational criteria, one chooses the fourth grade equation as being the one clearing out the most correctly the evolution of the incomes function collected by the European Union, this having the highest value of correlation coefficient; in the case of Akaike criterium and Schwartz criterium these have the lowest values.

Calculation of extrapolated values for the budgetary incomes and expenses of the European Union for the period 2009-2013

Table 3

Forecast years	2009	2010	2011	2012	2013
Effective incomes of the EU	121138	127771	135580	144770	155567
Expenses realized by EU	118755	126644	135887	146695	159291

Source: calculations realized by the authors using www.wolframalpha.com

On the basis of the extrapolations realized for the period 2009-2013 we can remark the followings:

- European Union's budget will continue to increase, taking into account the actual global economic situation, as well as the European Union's ambitions to become a global player and the changing of its economic policy priorities, corroborated with the reform the European Union passes through at present;
- in the last years, the degree of execution of European Union's budget increased and taking into account the method of establishment of European Union's budgetary indicators, one may conclude that the last years brought an accelerated increase realized by the European Union, a better use of credit payments, reducing the European Union's budgetary exceedance;
- due to the actual trend of quicker increase of the expenses than that of the incomes we can forecast that from the beginning of 2011, the level of expenses will overrun the level of incomes, registering thus a budgetary deficit. But taking into account the fact that the contribution of member states according to GNI is established in accordance with the expenses remained uncovered by the other categories of the European Union's incomes and is adjusted along the budgetary year, we can only suppose that the uniform call rate applied to the member states' GNI will be increased in order to balance the European Union's budget.

5. Conclusions

The European Union's budget is at present in a fundamental reorganization phase, dependent by the changings of the economic policy priorities, necessary to correspond to the evolution of some endogenous factors, like the expansion and increase of the integration, or some exogenous factors, like the increase of the grade of dependence on the energy, international migration of work force or climatic changings.

The two main income sources: the own resources based on VAT and GNI contain many characteristics of the national contributions, are provided by the national treasuries and are sometimes presented as expenses in national budgets. As a consequence, the member states have often the tendency to judge the community policies and initiatives in the terms of profit in comparison with national contributions, instead of evaluating first of all the global value of realization of some policies at European Union level.

In May 2006, an agreement between the European Parliament, the Council and the Commission has been reached, according to which the Commission had to realize a fundamental review of European Union's budget, covering all the European Union's expenses (especially those related to the Common Agricultural Policy) and the own resources of the European Union (inclusively the compensation favorable to England). There is, no doubt, the review of the Common Agricultural Policy expenses is a preliminary condition for any major reform related to the European Union's expenses. But this review remains impossible as long as no compromise is made between the member states sustaining the Common Agricultural Policy and those opposing to this policy. The European Commission will examine the way in which the budget functions and in which it can get the best balance between continuity and response to new challenges, as well as the best method to provide the necessary resources for the financing of the European Union's policies and in case it functions how it must be applied in a Union with 27 member states.

The report of the French deputy Alain Lamassoure, regarding European Union's future own resources, which was approved by the Members of European Parliament on the 12th March 2007, proposes a reform in two phases:

- *the first phase: the new system will be based on the Gross National Income: each member state will contribute to it with about 1%. The abolition "of any budgetary privilege for any member state" will be a key element for this period and will include the abolition of the "British cheque" until 2013.*

- *the second phase foresees the gradual introduction of an authentic system on own resources, to replace from 2014 the national contributions.* This system will may include taxes already existent in the member states, for example the rate of participation to VAT payments or the rate from the taxes on energy consumption. Other options would be the taxes on financial transactions, on transport, on telecommunication services, „eco” tax. The fiscal sovereignty will keep belonging to the member states.

We consider that it is absolutely necessary to reduce the contributions weighting based on GNI in the total amount of community resources. We also believe it is essential to eliminate the veto right of the member states, which threaten to use it in order to shape the community decisions according to their national interests. These profound changings will probably need the amendment of the treaties.

The European Union's budgets from the period 2000-2006 and even more that from 2007-2013 are characterised by two new features. On one hand, it takes place a fundamental changing between the financing objectives and the available funds. On the other hand, the European Union didn't take into account the positive correlation between the dimensions of the community budget and the integration expansions. All European Union's expansions made necessary the significant increase of its budget, because they implied the emergence of some new objectives claiming for financing. This thing can already been observed after the adhesion in 1973 of Great Britain, Danemark and Ireland. Even the expansion in 1995, when the three developed countries adhered: Austria, Finland and Sweden, it had as effect the increase of the expenses and incomes of the European Union's budget. The European Union's budget for the period 2007-2013 seems to be even less generous, the increased attention being focused on the maintainance of the future and of the Community's objectives (Eulalia Rubio, 2008, p. 24).

Besides, the fundamental dilemma of the Union's future budget hasn't changed at all. The key question is whether it is possible to create and to finance a competitive European Union from 1% of the member states' GNI in the XXIst century.

The analysis of political circumstances, in which the future budgetary negotiations will be signed up, shows the fact that the re-examination has few chances to end with a large budgetary reform if it is treated as a political debate on the Union's priorities regarding the expenses. Besides the debate on the expenses, the budgetary re-examination must also follow the institutional reforms from the point of view of structure and way of functioning of the European Union's budgetary system.

Notes

⁽¹⁾In different incomes we also included the excess from the previous year and the correction in favor of England. At the same time, until 1981, the sums are expressed in EMU, since the 1st January 1981 in million ECU and since the 1st January 1998 are expressed in million EURO.

⁽²⁾The last years, the calculation of national contributions to the EU budget isn't done anylonger as reported to the GDP, but to the GNI.

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ESTIMATING TAXATION RATE BASED ON BLANCHARD'S APPROACH*

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***Abstract.** Estimating an optimal taxation rate represents a much debated topic. But, embodying the perfect market conditions, reaching out the equality between marginal rates of substitutions, in order to estimate the optimal taxation rate, is impossible to fulfill by any economy. Therefore, it could be considered as being a more suitable approach for any practitioner, to estimate the taxation rate following Blanchard's approach. The findings of this paper reveal that during 2000-2007 Romanian government should had imposed some fiscal adjustment measures in order to assess sustainable fiscal policy on long term.*

Keywords: fiscal sustainability; intertemporal budget constraint; fiscal adjustment; effective taxation rate; fiscal policy.

JEL Codes: E62, H21.

REL Cod: 8K.

1. Introduction

There are studies which emphasized the negative impact of taxation on economic growth (See in that sense Engen, Skinner, 1992). Therefore, estimating a taxation rate to avoid the distortions induced within economy (See for instance Milesi-Ferretti, Roubini, 1998, Mendoza, Tesar, 2003) represents a much debated topic within literature mainstream. There are studies which approach this aspect from Pareto efficiency point of view (Diamond, Mirrless, 1971a, 1971b, Stiglitz and Dasgupta, 1971, Atkinson, Stiglitz, 1976), or from fiscal equity point of view (Musgrave, 1963, Rosen, 1978, Plotnick, 1980, 1981, Lambert, 1990, Gravelle, 1992). But, according to Moșteanu and Stoian (2005), embodying the perfect market conditions, reaching out the equality between marginal rates of substitutions, in order to estimate the optimal taxation rate, is impossible to fulfill by any economy. Therefore, it could be considered as being a more suitable approach for any practitioner, to estimate the taxation rate based on Blanchard's approach (Blanchard, 1990), which lies upon the theory of fiscal sustainability and intertemporal budget constraint (IBC). The use of IBC to estimate a taxation rate resides at least in the following aspects: IBC represents a simpler way to estimate a taxation rate because it does not rely on restrictive assumptions, and is not subject to utility maximization that could give a more theoretical taxation rate than a practical one.

Taxation rate estimated using Blanchard's approach could, also, represent that particular rate which allows for running of sustainable fiscal policy. It is not an optimal taxation rate, but when effective taxation rate lies above it or below it, it could be considered as a signal that fiscal policy should adjust. Moreover, Auerbach and Hines (2001) considered that fulfilling IBC minimizes the distortions induced by taxation within economy, and therefore fiscal system could be an optimal one. In addition, Moraga and Vidal (2004) emphasized necessity of assessing intertemporal budget constraints in order to assure sustainability on long term, and the positive impact of sustainable fiscal policies on economic growth.

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The aim of this paper is to estimate a taxation rate based on Blanchard's approach, by taking into consideration Romania's case, in order to reveal the needs for fiscal adjustments. The rest of the paper is structured as follows. In Section 2 it is presented Blanchard's approach for estimating taxation rate along with the model of intertemporal budget. Section 3 consists in empirical estimation of sustainable taxation rate based on historical data during 2000 and 2007, and Section 4 presents the main concluding remarks of this paper.

2. Theoretical background of Blanchard's approach for estimating taxation rate

Taxation rate estimated following Blanchard's approach is not an optimal rate. It is not the result of a utility maximization model. It represents that particular taxation rate which allows for identifying the periods when fiscal policy is not sustainable on long run, if it departs from effective taxation rate. An effective taxation rate situated above the sustainable taxation rate or below signals the moments when fiscal adjustments measures have to be taken. Blanchard's approach for estimating that particular taxation rate lies upon the theory of fiscal sustainability. In that sense, Blanchard (1990), and Blanchard, Chouraqui, Hageman, and Sartor (1990) consider that fiscal policy is sustainable when (i) public debt does not explode, nor governments are forced to increase taxes, decrease spending, monetize fiscal deficit or repudiate public debt, or (ii) public debt, as ratio of GDP, converges to its initial level, or when government can run the same set of public finance policies for undetermined time (Horne, 1991).

Based on the fiscal sustainability model, public debt, at a moment, depends on the current primary deficit and on the public debt accumulated from the past; including interest payments on government borrowings (see equation 1):

$$\frac{db}{ds} = g - r + (i - y) \times b \quad (1)$$

where:

b = total amount of public debt as ratio to GDP;

g = non-interest government expenditures (including transfers and capital expenditures) as ratio to GDP;

r = government revenues (only from taxes) as ratio to GDP;

i = real interest rate for government borrowings;

y = real growth rate;

s = time.

Taking into account the expectations at moment t on equation (1), the intertemporal budget constraint (IBC) is represented by the following relationship:

$$\int (g - r) \exp^{-(i-y)s} ds = -b_0 \quad (2)$$

The fiscal policy is said to be sustainable if the present discounted value of primary balance $(g-r)$ equals initial debt, b_0 .

Based on equation (2), Blanchard (1990) found that sustainable taxation rate (t^*) is equal to present discounted value of spending plus interest net of growth times initial debt (equation 3):

$$t^* = (i - y) \int [g + (i - y) \cdot b_0] \exp^{-(i-y)s} ds \quad (3)$$

Considering that the estimation will be made for medium term of n years, and $(i-y)$ are not to large and are constant, then sustainable taxation rate over the next n years, t_n^* , will be equal to the average value of government spending (as ratio to GDP) over the next n years, $E_n(g)$, plus the interest rate net of growth time initial debt (see equation 4):

$$t_n^* = E_n(g) + (i - y) \times b_0^{(1)} \quad (4)$$

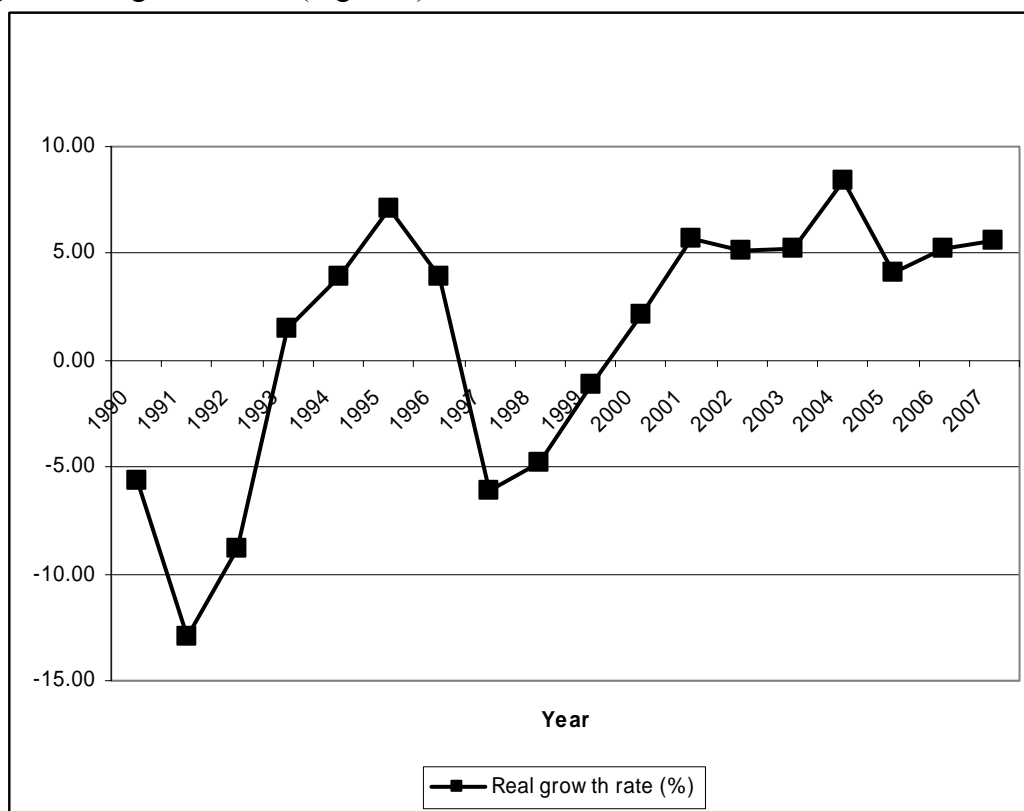
Generally, if the gap between Blanchard taxation rate and effective taxation rate is positive, it is necessary for government to react, by reducing government expenditures/increasing government revenues. If the gap is negative, this situation imposes expenditures to rise, or taxation to be reduced.

Estimation of Blanchard taxation rate relies on expected values of government spending over the next n years and, therefore, it should be chosen the most appropriate term. In that sense, Blanchard (1990) recommended the use of three years, and Blanchard, Chouraqui, Hageman, and Sartor (1990) recommended five years to be taken into account when estimating the sustainable taxation rate. In fact, it should be chosen the longest span of time for which such projections are available (Blanchard, 1990).

3. Estimating Blanchard taxation rate for Romania's case

In Romania's case, there is only one previous study referring to the taxation rate following IBC. Obreja and Braşoveanu (2005) found that taxation rate during 1997-2003 was, in most of the cases, bigger than the effective taxation rate which imposed many fiscal adjustment episodes. The main critics related to this study refer to choice of real interest rate, i , and real growth rate, y , used by the authors in order to estimate the sustainable taxation rate, which are not the most appropriate in this case.

Stoian, Câmpeanu and Roman (2006) showed that applying intertemporal budget constraint for historical data in Romania's case is very difficult when taking into account the fact that, during 1990-2005, Romania experienced many cases of negative real interest rates and negative real growth rates (Figure 1).



Source: IMF⁽²⁾

*For 1997, 1998, 1999, when real growth rates were negative, real interest rates⁽³⁾ were, also negative.

Figure 1. Real growth rate (%)

Moreover, it is very important to establish the initial debt level. When fiscal policy is sustainable, public debt is stationary which means that is a mean reverting process. In that case, it could be chosen the average value of public debt. But, when empirical tests reveal no

sustainability of fiscal policy, like in the case of Romania (Stoian, 2007) and a random walk movement of public debt, which would be the most appropriate value of initial debt? Romania, also, represents a particular case, due to the fact that at the beginning of transition, Romanian government did not possess any borrowings, which meant that the initial public debt is zero. In this situation, taxation rate would be equal the average of projected values of government primary spending over the next n years. But this scenario is not entirely realistic.

This paper aims in estimating the a taxation rate following Blanchard's approach, for Romania's case, and compare it with the effective taxation rate⁽⁴⁾ to reveal the gap between the two taxation rates and the needs for fiscal adjustments. The estimation relies upon equation (4), but does not take into account the projected values for primary government spending over the next n years. The Blanchard taxation rate is estimated annually based on annual past data recorded for each year within 2000-2007, considering the annual effective debt level as initial debt level. Even if this rate is not estimated using expected values for government expenditures, real interest rate and growth rate, it could be useful to see if fiscal policy run by Romanian government was sustainable over these years or fiscal adjustments measures should have been taken in order to avoid the distortions within economy. The results are presented in the table below.

Table 1

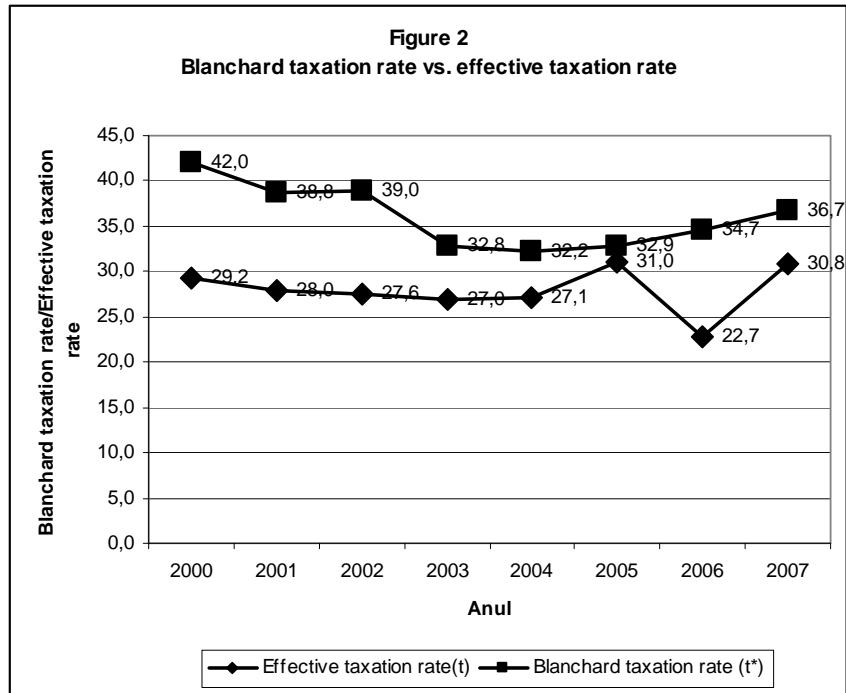
Blanchard taxation rate estimation (t^*)

Year	$b_{0,t-1}$	y	i	g	t^*
2000	22.1	2.10	-16.7	36.1	42.0
2001	24.7	5.70	-15.2	35.4	38.8
2002	26	5.10	-10.2	37.1	39.0
2003	25	5.20	-6.9	32.0	32.8
2004	21.5	8.40	-3.6	32.2	32.2
2005	18.8	4.10	-2.2	32.4	32.9
2006	15.8	5.20	-0.36	34.5	34.7
2007	12.4	5.6	2.56	36.5	36.7

Data available from IMF (y), European Commission (g, i, b_0), National Institute of Statistics (for inflation rate)
 b_0 : the initial debt level was considered the debt level from previous year (as ratio to GDP)
 g : annual primary government expenditure (as ratio to GDP)
 i : real interest rate estimated as difference between implicit interest rate (European Commission⁽⁵⁾) and inflation rate

Estimated Blanchard taxation rate could give us useful insights on what should had been the taxation rate in order to cover the primary government expenditures from that year and interest payment related to the debt stock from previous years. Comparing Blanchard taxation rate with effective taxation rate, it reveals that during entire period of time Blanchard taxation rate was higher then effective taxation rate, and taxation rate gap was positive (see Figure 2).

Given the level of primary government expenditures each year during 2000 and 2007, the real interest rate for public debt stock and growth rate, the results above shows that effective taxation rate should had been higher in order to assess sustainable fiscal policy on long term. The gap between Blanchard taxation rate and effective taxation rate reveals the fact that Romanian Government should had imposed some fiscal adjustment measures, in the sense of increasing government revenues or cutting government expenditures.



*Effective taxation rate (t) was calculated as ratio to GDP of tax revenues on data available from IMF and Ministry of Public Finance.

Figure 2. Blanchard taxation rate vs. effective taxation rate

In the case of adjusting fiscal policy by increasing taxation, the main issue is how much high has to be the new taxation rate in order not to distort the economy and to lead to fiscal evasion or to free-rider behavior of contributors. In that sense, if Romanian Government decides to run some fiscal adjustment measures by increasing taxation rate, it has to consider the maximum level of increasing taxation. According to Stoian (2008), the non-prohibitive overall taxation rate estimated based on Laffer curve is about 31%, as ratio to GDP (Figure 3).

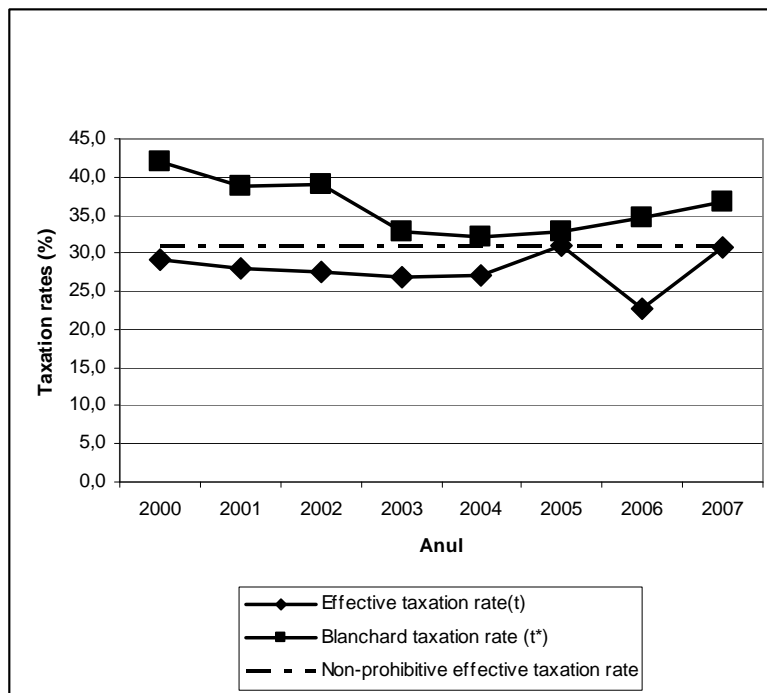


Figure 3. Fiscal adjustments

As could be easily noticed from the figure above, Blanchard taxation rate would have been situated above the non-prohibitive taxation rate. In this case, applying fiscal adjustments based on increasing taxation would have been difficult. Another scenario could have taken into account an improvement of the collection rate of fiscal revenues in order to run sustainable fiscal policy on long term.

4. Concluding remarks

There are many studies aiming in estimating an „appropriate” taxation rate. In that sense, there are two categories of studies: (i) studies which approached taxation issues from Pareto efficiency point of view and (ii) studies which approached this topic from fiscal equity point of view. Estimating an optimal taxation rate is very difficult due to the restricted assumptions under which operates each mathematical model. Therefore, estimating a taxation rate following Blanchard's, represents an easier method for most of the economies.

Based on historical data related to Government expenditures, real interest and growth rate during 2000-2007, it was estimated Blanchard taxation rate for Romania case, and compared with effective taxation rate. The findings of this paper reveals that during the period of time taken into consideration, Romanian government should had imposed some fiscal adjustment measures in order to assess sustainable fiscal policy on long term. Adjusting fiscal policy by increasing taxation should take into account the maximum level of increasing. For Romania's case, this level could be set at 31% as ratio to GDP, according to the estimation based on Laffer curve. Higher taxation rate near to the non-prohibitive overall taxation rate could lead to sounder fiscal policies on long term.

Notes

⁽¹⁾ Generally, theory for sustainable taxation rate states that real interest rate differs from real growth rate. But when the two rates are equal, then sustainable taxation rate is given only by primary government expenditures.

⁽²⁾ The data for real economic growth rate and real interest rate are available from: IMF Country Report No. 98/123, November 1998; IMF Country Report No. 04/220, July 2004; IMF Country Report No. 04/221, July 2004; IMF Country Report No. 06/168, May 2006; IMF Country Report No. 06/169, May 2006, www.imf.org.

⁽³⁾ According to IMF, and European Commission methodology average interest rate on public debt is estimated as nominal interest expenditure divided by previous period debt stock. Average real interest rate on public debt is estimated as difference between interest rate on public debt and inflation rate.

⁽⁴⁾ Effective taxation rate is effective taxation rate estimated as ratio of fiscal revenues to GDP.

⁽⁵⁾ The data for implicit interest rate is provided by European Commission database.

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LOCAL BUDGET PROCESS AND LOCAL ECONOMIC DEVELOPMENT

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***Abstract.** The local budget process is in close connection with the economic development of the territorial-administrative units, firstly because the former implies the collection of budget revenues based on which local authorities provide public services to citizens and ensure the provision of such services by third parties. Also, through the implementation of expenditure, local government creates and maintains a favorable climate for local citizens and local traders for them to thrive and stimulates the creation and expansion of business agents, with direct impact on citizens, by increasing their income and creating new jobs. Also, the existence of good local public services can make that area more attractive for citizens and business people willing to settle in that territory. In the context of the local budget process for the achievement of the common objective of local economic development, local authorities focus the human, intellectual and financial resources in the private sector and local bodies, setting out short, medium and long-term plans and strategies.*

Keywords: local budget; local budgetary process; public expenses; development strategy; local economy; economic development.

Jel Codes: H72, H83.

Rel Code: 13 G.

1. Introduction

This paper tries to emphasize the relationship between local resource management activities through the local budget process and economic development of territorial-administrative units.

Local authorities use in the mechanism of design and implementation of local budgets a variety of financial instruments for economic development of communities. Given the current economic situation and limited resources, the key drivers that have a direct impact on local economic development are:

- providing tax incentives;
- using European funding programs;
- leverage based on the use of buildings and land ownership of public property;
- promotion of public private partnership;
- an accurate and rigorous foundation of economic expenditures within local budgets.

2. Local economic development

Local economic development is a broad concept and consists in the process of diversification and development of economic and social activities across an area starting from the mobilization and coordination of existing resources and energies. Local development is an expression of local solidarity, generating new social relations and revealing the will of the inhabitants of a region to exploit local resources.

From the perspective of local economic development, local companies have a critical role for the following reasons:

- as a result of property restitution, local authorities have become owners and managers of businesses with substantial market presence;
- local authorities have a variety of tax tools and levers to directly support new and existing businesses;

- local authorities have access to information and agency networks that can be used to support businesses and attract investment;
- local authorities as providers of services can often help new businesses and existing ones by organizing and providing local services for special needs (Nemec, Wright, 2000, p. 419).

The primary objective of local economic development is to remove obstacles to economic development and to improve the efficient functioning mechanisms of the market. Other objectives relate to direct effort to provide assistance to existing business sector, encouraging the opening of new businesses by identifying the latest needs of people, attract investment and raise local infrastructure development. To achieve these objectives and fulfill the ultimate goal what is needed is to operate strictly in the directions of economic development in the locality, having in perspective economic growth and improvement of the quality of life on that given territory. The main element in the economic development of a locality is the proper setting of priorities by identifying modern trends which change very easily. This is very important at local level, if this is wanted to be a full participant in the market. Competition plays a very important role and therefore those localities which take into account the current market conditions will be more successful.

The way local authorities act under the current economic changes – by action understanding the level of public and private investment in a particular location – depends on a variety of factors which can be grouped into three main groups:

- the first group includes economic, political and social, at national level. Most of them are outside the influence of public authorities.
- the second group of factors includes local configuration, scope of activities, physical and social infrastructure and other strengths or weaknesses of the administrative-territorial unit.
- the third group refers to the local response to changing circumstances, how those responsible organize themselves, how they performed and administer their programs.

The last aspect, the formulation and implementation of development policies, as well as the competence of concerned institutions falls within the sphere of influence of local authorities and represents a starting point of the activities meant to improve the competitiveness of the locality. Implementation of local development policies depends on a number of factors within the sphere of influence of the local authority, which, properly exploited, can lead to achieving development goals. They are:

- infrastructure (roads, public utilities, air or water transport, telecommunications, tourist infrastructure, etc.);
- available buildings and land (free land for the location of economic activities, available buildings, programs to renovate the existing buildings, business centres);
- human resources (skilled labor, retraining programs suited to market, long-life training);
- financial support (local, regional, national, European);
- management support and dissemination of knowledge (advisory services, dissemination of information, etc.);
- living environment (housing quality, services, natural environment, criminal reports);
- organizational ability (organizational structures, economic cooperation, involvement of the private sector).

Local economic development is achieved through the joint efforts of the public sector, the private one and the community under the coordination of local authorities.

Although the influence of central government on local development is still significant, its role will gradually be limited to macroeconomic stability, legal and institutional national framework regulation and income distribution. With the decentralization and devolution of public services, local government influence is increased.

The most important tasks regarding the support of local economic development by local government include:

- analysis of the local economy;
- project management;
- local budget process management.

3. Analysis of local economy

Local government should organize a database on the community economic situation. To achieve this purpose, local government collects economic and social information, which will include current economic activities, information on economic and human potential in that locality, etc. The database created will outline the economic profile of that locality. Effectively using the information collected, local authorities highlight the strengths, weaknesses and dangers of the local economy (negative influence of external factors) that may occur in the local economic development. That data will be used, especially in the substantiation of expenses for the local economy. Sizing economic costs is required for both knowing how to cover them and for determining the efficiency of the use of those resources. Expenditure efficiency of economic activities is determined and followed on the basis of the analysis method of cost-benefit or cost-effectiveness. This requires clearly defined objectives to be achieved, identification of potential resources and technical resources that could be taken into account in the designed alternative solutions.

Also, to analyze the economic efficiency of these expenditures, indicators of effective use of resources by the same processes are established. With their help, forecasts or results achieved in a previous period are compared with periods for which that analysis is done, identifying the specific causes which led to the achieved results and implying the measures to be taken to improve them.

Substantiating expenditure implies establishing their level for a period of time (one year – the duration of a financial exercise). In order to establish the level of local economic costs relating to a period of time (one year) specific standard instruments are used. Thus, the costs of raw materials, materials, fuel and power indices or coefficients of specific consumption and the extent of their use are established in relation to the number of units of finished products that can be obtained.

In determining the preliminary expenditure for the base year, the exact numbers after the last statement of accounts are taken into account as well as the expenses which are expected during the year for which determinations are being made. The preliminary calculation of costs takes into account the planned expenditure for that period, the orders and contracts under execution, material supply opportunities.

To develop and review proposals for the current year, from the preliminary execution of the current year's expenditure on actions that cannot be maintained in the plan are subtracted, and the costs for operations and units that lasted less than a year are reunified, thereby achieving the starting expenditure basis for the units and actions existing at the end of the base year.

4. Project Management

Another important function of local government concerns the management of programs and local economic development policies. The existence of consistent local economic development strategies is the best guarantee for the optimal use of resources allocated for development of infrastructure, business tourism, etc.

This includes design, implementation, monitoring and evaluation of programs and policies. A successful strategic planning primarily involves providing financial support in achieving objectives. Identification of prioritized projects is a major problem for local government. Local government can provide services directly or may sign contracts with the private sector to ensure their provision. Public sector efforts should not replace private sector

where the latter sector wishes and applies the necessary investments. Local government can financially support local development projects. Even insignificant investments made by local government will signal to potential investors that local authorities are engaged in development projects.

For the North-East Region, the Regional Development Strategy was developed which has in its structure aims and directions of intervention in the sphere of economic development. Thus, within it will be funded expenses for the following objectives:

- upgrading the local infrastructure and regional road transport;
- modernization of stations and rail network;
- modernization of air and water transport infrastructure;
- rehabilitation and modernization of the environment;
- development of energy infrastructure;
- investment to support the creation of SMEs and micro-enterprises and to develop the existing ones;
- advisory services for regional business development;
- technological research, development, innovation and development;
- investment in tourism and tourism potential promotion.

5. Management of local budget process

Local development is achieved through effective management of local government, where a special place and role has the development and implementation of local budgets. The progress of the community is assured by the ability of local leaders to make the most successful decisions according to the new economic and social conditions. In its quality of leader, local government must know very well the human, intellectual and financial resources of the community in order to achieve its objectives.

As part of a country's consolidated budget, local budgets have a complex role, which stems mainly from the general role of the state budget. Thus, local budget acts as a financial resource mobilization and redistribution at local level agent according to the respective tasks of each administrative-territorial units. Closely related to its financial role is its economic role, given that in this way a closer correlation between public expenditure decisions and the real cost of resources involved is established. Since local governments have a series of economic tasks – building local infrastructure, extension of water supply, provision of public lighting, transport organization and management of subordinate units in the local utility – it is assumed that financing these utilities from the local resources provides more efficient resource management and eliminates bureaucratic steps. Also, the theoretical assumption of efficacy of expenses is connected with the opportunity of reshaping taxes and contributions of citizens, traders, according to the advantages enjoyed by each of them from public utilities. Such a correlation in practice, of course, cannot be done with accuracy, but the local community's needs assessment can be more easily made, their expenses being covered by the effort of local community and the allocations from the central budget.

Local authorities use in the mechanism of design and implementation of local budgets a variety of financial instruments for local economic development. Given the current economic situation and limited resources, the key drivers that have a direct impact on local economic development are:

- tax incentives;
- using European funding programs;
- leverage based on the use of buildings and land ownership;
- business incubators.

5.1. Tax incentives

Tax incentives and other financial incentives to specific individual companies are used only if the general conditions of a given local jurisdiction are bad for business compared to

other places where they could move. Priority in policy should be directed towards general taxation and expenditure policies which favor economic development before attempting to specific financial leverage.

Local authorities usually have the power to provide facilities or waivers regarding local tax rates which they can be use as a means to support new or existing businesses. By reducing the tax burden on local businesses, local authorities may seek to protect existing jobs, finance recruitment in or leave free cash reserves, enabling businesses to expand or invest in new capital. However, the benefits of local businesses given by tax incentives must be based on previous revenue costs of local authorities and its impact on local services.

Local authorities offer tax incentives to businesses providing local employment opportunities, especially for those currently unemployed or who have been unemployed for a longer period of time. When a local authority connects the granting of a facility to with the creation of a position, it must ensure that the position will continue to exist in the foreseeable future, preventing the creation of temporary positions by unscrupulous businesses to obtain certain facilities.

Another reason for granting tax incentives is to encourage companies to start new businesses or to take investment programs aimed at increasing their overall productivity and long-term viability.

The Tax Code provides that City Council can approve exemption from tax on buildings and land, owed by legal entities that have as objective regional development. Paragraph 6 of Article 286 of the Tax Code⁽¹⁾ provides that „Starting with the 2008 fiscal year⁽²⁾, the local council may exempt from the tax on buildings and land, owed by legal entities, under the condition of developing state aid schemes with the objective of regional development...” Thus, for exemplification, in Suceava county, the Vatra Dornei Local Council was receptive to such provisions and gave that incentive to several companies in Vatra Dornei which have requested it. The two companies from Vatra Dornei that have benefited from this facility built modern hotels, at European standards. The most important thing for administration is that due to these facilities as well two blocks of small flats on Florilor Street, which were hygienically not suitable for living, have been transformed into modern motels appreciated in Vatra Dornei. It is a large investment made by a company in Vatra Dornei, which had the courage to purchase these blocks, invest in them and bring them to modern standards of service. Although earnings from the local budget apparently decrease with these amounts, in reality, by creating new jobs and paying taxes, local budgets do not suffer over time; on the contrary, regional development contributes to increased amounts collected by the local budget.

The tax code provides other incentives too, as following:

- tax on buildings and land tax are 50% less for those buildings and their land owned by legal entities, which are used exclusively for tourist services for a period of maximum five months during a calendar year;

- tax on buildings is reduced by 50% for newly built buildings owned by consumer or craft cooperatives, but only for first five years of acquisition of the building;

- tax on buildings, land tax, tax on vehicles, the fees for issuing certificates, notifications and approvals and other special taxes under the tax code are reduced by 50%, according to Government Ordinance no. 27/1996 on granting facilities to persons residing or working in some villages in the Apuseni Mountains and the „Danube Delta” biosphere reserve;

- elements of public railway infrastructure, including land on which they are located, and land for this purpose, are exempt from building tax, land tax and tax for construction permits.

Local authorities may also consider providing tax incentives for local businesses to increase their capital, labor or cash reserves. Such facilities are provided in response to short-term problems of the companies and are temporary.

Whatever the reason for granting tax incentives, it is clear that granting them should always be based on the principle of extension (if using tax incentives will achieve some benefits otherwise not possible). In many cases, however, proving that is very difficult.

Opportunities for attracting economic development through tax incentives are relatively limited, requiring the use of this and other mechanisms as well.

5.2. Using programs funded by European programs for several investment objectives

In addition to providing indirect subsidies to companies through tax incentives, local authorities play an important role in providing information on other sources of financial support, thus acting like information points for local companies interested in them. The information must be collected by local governments and should regard the availability of funds, eligibility criteria, terms and conditions required and application procedures.

Romania participates as a full member in Cohesion Policy, Common Agricultural Policy and Common Fisheries Policy of the EU and benefits for the programmed period 2007-2013, of an indicative financial allocation of about 30 billion euro.

Structural and Cohesion Funds (CSF), or Structural Instruments are financial instruments that the EU acts through in order to remove economic and social disparities between regions and to achieve economic and social cohesion.

The priority objectives of the Structural Funds for 2007-2013 are: convergence, regional competitiveness and employment and European territorial cooperation. The total amount of Structural and Cohesion Funds allocated to Romania for the period 2007-2013 is 19.668 billion euro, of which 12.661 billion euro are Structural Funds under the Convergence objective, 6.552 billion euro are allocated by the Cohesion Fund and 0.455 billion euro allocated for the objective European territorial cooperation. Investments of structural instruments, related to the Cohesion Policy, will be supplemented by Common Agricultural Policy and Common Fisheries Policy funds. Romania will benefit in 2007-2013 from the European Agricultural Fund for Rural Development and European Fisheries Fund, with a budget of around 12 billion euro.

5.3. Leverage based on the use of buildings and land ownership

The level at which the property of local communities should be used in order to promote local businesses clearly depends on the size of the owned property. In general, the following options should be considered (Nemec, Wright, 2000, p. 421):

- property as guarantee;
- property as capital;
- contracts for property rent.

Local authorities can offer property as guarantee for loans made by local companies. Similarly, local authorities can offer to be as guarantor for loans that need legal guarantees. Use of property or guarantees is a significant risk and local authorities should think better before offering their property like that.

If a company needs a particular guarantee regarding the ownership of a property that the local authority is able to satisfy from its own portfolio that property may be offered in exchange for part of the that company's capital. Having a direct part of the capital of the company, local government shares with it the ownership and profits, but also risks.

In cases where a firm has a particular need regarding a property, which the local government is able to satisfy from its own portfolio, an alternative is renting property by that company. To support companies, local authorities set the rent at a level below market price or rent divides it, giving the possibility of saving money to the company. Another alternative is "holidays" rent, which means an initial period of months or years when the rent is less than the one on the market, but then is increased in several stages in order to achieve parity. Leases are actually a form of rent subsidy which aims to support businesses.

5.4. Administered area for activity for new businesses

Administered areas for activity (business incubators) offer a wide range of initiatives whose focus on provision of suitable land and reasonable rents went first towards helping small businesses grow and expand. In addition, an important attraction of business incubators is that they provide shared resources and facilities management that new businesses could otherwise hardly afford. A number of such services can be mentioned, such as security, maintenance and repairs, cleaning, administrative services and common facilities, for example conference rooms, receptions, business services, warehousing services, payroll and billing services as well as shared equipment, including computers, fax machines and photocopiers.

Some local activities are clearly intended to allow local authorities to support economic activity in their areas. The question which arises is whether the economic development functions of local authorities could somehow be strengthened in future.

There is criticism according to which local governments should have no role in financing economic development because it is believed that local authorities have no role in stabilization. It must be said that local governments have access to fewer tools than central governments. But if the central government has responsibility for development, this may be the case for local governments as well. Local authorities can facilitate coordination of stimuli with planned programs and local support can always help.

Notes

⁽¹⁾ Law nr. 571/2003 regarding the Fiscal Code with the ulterior modifications.

⁽²⁾ Newly introduced provision by OUG no. 106/2007.

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FINANCING METHODS FOR THE ROMANIAN LOCAL PUBLIC ADMINISTRATION AUTHORITIES

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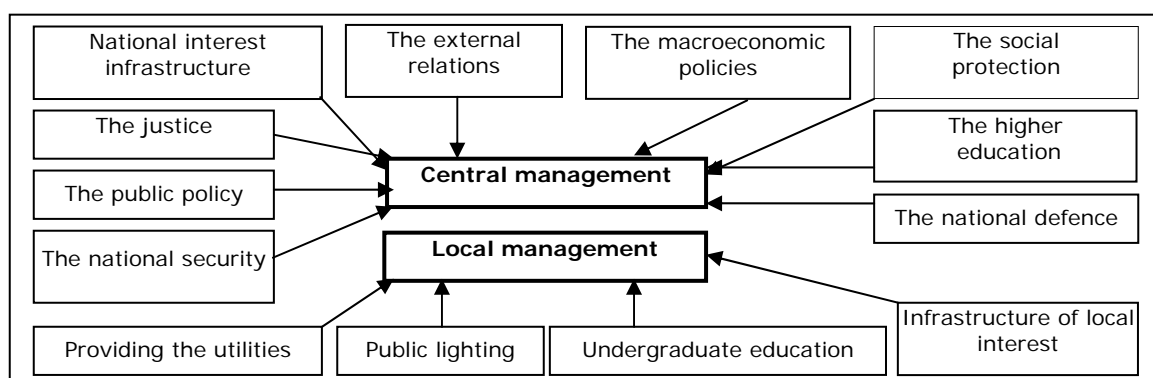
Abstract. During the last decade we have seen that the central authorities have transferred certain activities to the local ones, which are able to have a better covering for certain needs of the citizens, who live in their region. The aim of this article is to investigate which are the ordinary and borrowed finance resources for the local budgets and to find diversification solutions. A satisfactory financing creates the premises that the local public administration authorities are capable to offer high quality public goods and services, having an effective management of the public money.

Keywords: local finance independence; local public debt; municipal bonds; local communities rating; local public institutions.

JEL Codes: H71, H74.

1. Introduction

Because of the arising difficulties in the balanced distribution by central authorities of the public goods and services required by their citizens, there were established local authorities, who know better the needs of a small territory in areas, such as: the utilities provision, the public lighting, the public undergraduate education, the infrastructure projects of local interest and so on. However, the government continues to manage strategic issues, such as: the national defence and security, the justice, the external relations maintaining, the macroeconomic policies, an important component of public policy, the public higher education, the infrastructure projects of national interest and most of the funds for the social protection.



Source: Our own findings.

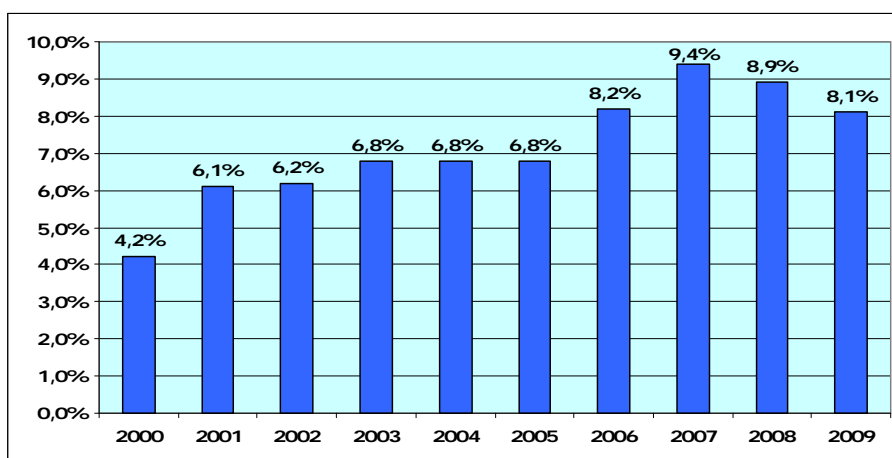
Figure 1. The providing manner of public goods and services

Local authorities are bounded territorial entities, that constitute a state, but they have their own management, such as: the communes, the towns, the cities, the sectors of Bucharest Municipality the local councils, the county councils and the General Council of Bucharest Municipality, as deliberative authorities, the mayors, the sectors' mayors and the general mayor of Bucharest Municipality as executive authorities, briefly local public authorities⁽¹⁾.

Financing Romanian local authorities is made mainly using the current resources: their own revenues, income tax shares, VAT amounts and grants, and secondary by loans. We will examine each of the financing methods, and we will propose their improvement and diversification.

2. Local budgets financing by current sources

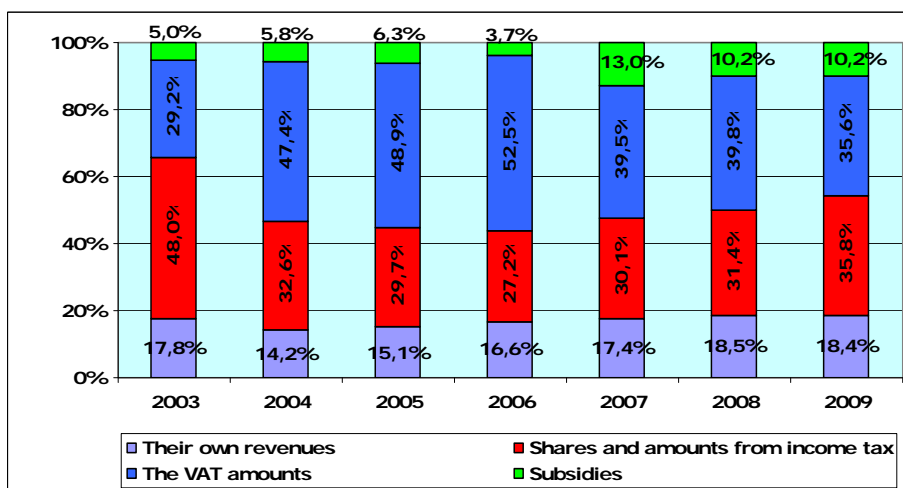
The local government responsibilities will increase, as they have to administer certain domains that were previously centrally managed. This trend will continue in the future as the decentralization is a long process, as highlighted Văcărel, Bistriceanu, Bercea, Anghelache, Moşteanu, Bodnar and Georgescu (2003, p. 570), *modern democratic states are interested in applying the principle of public services' decentralization, by sending in law enforcement more power and competences to the local government powers*. Certain responsibilities decentralization can be achieved only if local authorities have a real financial autonomy, whilst ensuring adequate financing resources. These authorities' revenues have increased both in absolute size and as a share of GDP.



Source: Our own findings based on data from the Ministry of Public Finance.

Figure 2. The evolution of the local budget revenues in GDP share during the period 2000 – 2009⁽²⁾

The share of local budget revenues in GDP has in general an upward trend, from a minimum of 4.2% in 2000 and a maximum of 9.4% in 2007, reaching 8.1% in 2009. Once Romania joined to European economic structures, the indicator increased mainly due to the amplifying subsidies received by local government authorities.



Source: Our own findings based on data from the Ministry of Public Finance.

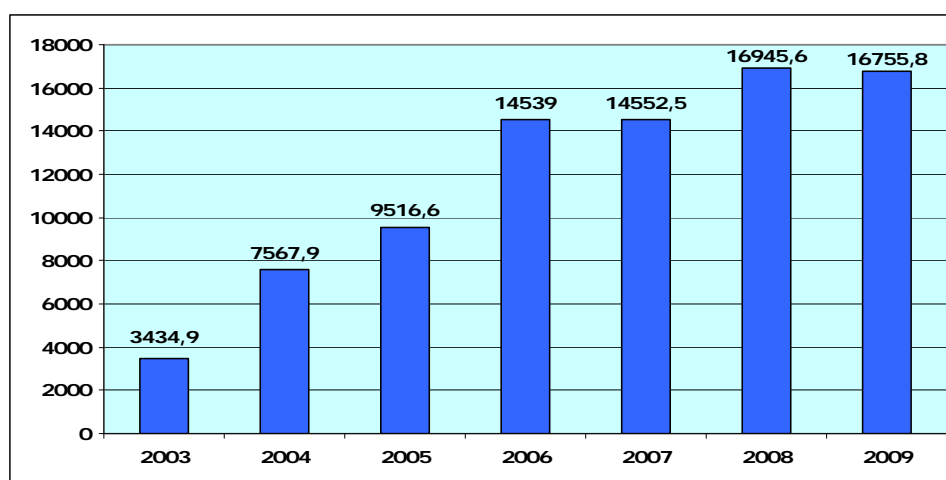
Figure 3. The local budget revenues structure during the period 2003-2009

Between 2003 and 2009 the local budgets revenues came in descending order from: (i) the VAT amounts, (ii) the income tax shares and amounts, (iii) their own revenues⁽³⁾ and (iv) subsidies.

2.1. Financing the local budgets from VAT amounts

The VAT amounts weight in all the local budgets revenues has varied between a minimum of 29.2% in 2003 and a maximum of 52.5% in 2006, decreasing to 35.6% in 2009.

According to the report regarding the macroeconomic situation in 2009 and its projection for the period 2010-2012, in 2009 the VAT amounts has been allocated as follows: (i) 68.7% to the villages, towns, municipalities, sectors and Bucharest Municipality budgets, (ii) 11.9% to the county budgets, (iii) 11.8% to balance the local budgets, (iv) 4.3% for infrastructure development and sports facilities in rural areas program, and (v) 3.3% for county and village roads.



Source: Our own findings based on data from the Ministry of Public Finance.

Figure 4. The VAT amounts granted to the local budgets evolution during the period 2003-2009 (million lei)

The VAT amounts

granted to the local budgets increased by 393.3% in nominal terms, from a minimum of 3,434.9 million lei in 2003, to a maximum of 16,945.6 million lei in 2008, reaching to 16,755.8 million lei in 2009. These amounts are used by the local authorities, for financing: the undergraduate education, the personal assistants for people having severe disabilities, the welfare organizations for people having disabilities, the welfare and home heating aid, the individuals records services, the child protection system, the cultural and religious institutions and free zones management under its authority.

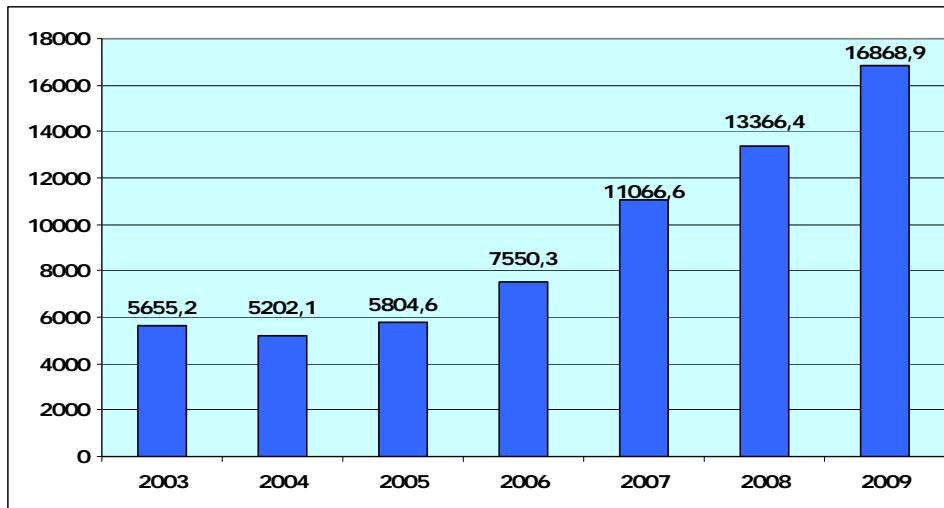
We believe that the index evolution was due to the decentralization of certain activities previously managed by the government, while ensuring their financing.

2.2. Financing the local budgets by income tax shares and amounts

The income tax shares and amounts weight in the local budget revenues has fluctuated between a maximum of 48% in 2003 and a minimum of 27.2% in 2006, increasing to 35.8% in 2009. Since 2006, the local budgets financing from income tax is done only by shares. The income tax shares haven't set certain purposes to be funded, that is an opposite situation to the VAT amounts.

Thus, the income tax rates granted to the local budgets are these⁽⁴⁾: (i) 47% to local budgets of the villages, towns and municipalities, on the area which they operate as tax payers, (ii) 13% to the local budget of the county and (iii) 22% to the county capital city treasury to balance the villages, cities, municipalities and county local budgets.

The income tax shares granted to the Bucharest Municipality are these: (i) 23.5% to the Bucharest sectors local budgets, (ii) 47.5% to the Bucharest Municipality local budget and (iii) 11% to the Bucharest Municipality Treasury to balance the local budgets of the sectors and Bucharest Municipality. We recommend that the local government authorities gather businesses which open on their territory branches having at least five employees, since they are enforced to register within 15 days as income taxpayers to the territorial financial administration. It is the mayor duty and benefit to examine systematically the tax payers' registration and to submit the deficiencies to the territorial financial administration. If the mayor detects unregistered business branches within the city, he fines the legal person, but the town will not receive the income tax that was paid in the past.



Source: Our own findings based on data from the Ministry of Public Finance.

Figure 5. The income tax rates and amounts granted to the local budgets evolution during the period 2003 - 2009 (million lei)

The income tax shares and amounts granted to the local budgets have increased in nominal terms by 198.3%, from a minimum of 5,655.2 million lei in 2003, to a maximum of 16,868.9 million lei in 2009. The income tax is transferred to local budgets in five working days from the end of the month in which it was collected in the state budget, thus ensuring regular revenues to the local budgets. For example, the income tax for October is transferred to the state budget by November 25, and then 82% of it will be transmitted to the local budgets before December 8.

The income tax shares distribution to balance the local budgets is accomplished using two criteria: (i) 70% depending on the income tax per capita and (ii) 30% depending on the county surface. These amounts are reduced with the degree that the income tax was not collected, multiplying them by the subunit coefficient, determined as ratio between the amount of local taxes, rents and fees received in the previous financial year and the amount of local taxes, rents and fees receivable in the previous financial year⁽⁵⁾.

Given the income tax high amounts granted to the local budgets, we consider that the executive authority should improve the local taxes collection, to have a degree that the income tax was not collected as low as possible. In this respect, local public authorities have set up their enforcement structures⁽⁶⁾ for the tax payers who didn't pay the taxes or they have given these enforcement tasks to specialized companies.

2.3. Local budgets financing of their own revenues

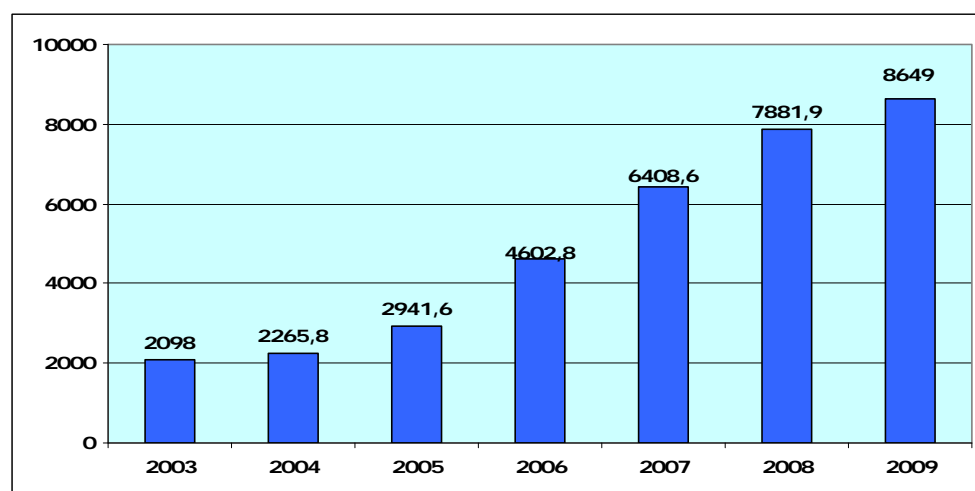
The local budgets own revenues weight in their total revenues have varied between a minimum of 14.2% in 2004 and a maximum of 18.5% in 2008, decreasing to 18.4% in 2009. There are not set certain destinations for the local budgets own revenues, that is a similar

situation to the income tax shares. The local budgets own revenues consist of: local taxes and duty accessories, profit payments from local subordination legal persons and other revenues⁽⁷⁾.

The local taxes are: the building tax, the land tax, the car tax, the tax for certificates, notices and authorizations issue, the advertising tax, the entertainment tax, the hotel tax and other local taxes.

Regarding the local budgets own revenues (Moșteanu, Lăcătuș, 2008, p. 53-54) state that in the financial literature is determined the Hunter index, that *reflects the revenues controlled by local governments percentage in the total local revenues*. In a similar context, Dincă, Dincă and Ialomițianu (2009, p. 1) state that *a Hunter index (which quantifies the degree of local decentralization) that is close to 1 should be the aim of the fiscal decentralization in Romania*.

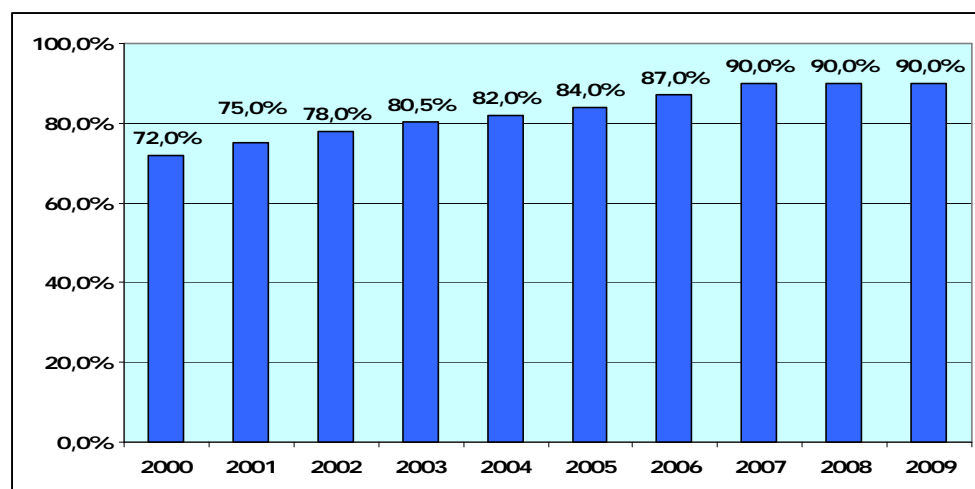
We believe that a method to have a higher Hunter index is that in the future the individuals' income tax should be charged locally.



Source: Our own findings based on data from the Ministry of Public Finance.

Figure 6. The local budgets own revenues evolution during the period 2003 - 2009 (million lei)

The local budget own revenues have increased by 312.2% in nominal terms, from a minimum of 2,098 million lei in 2003 reaching to 8,649 million lei in 2009. This indicator progress is due to the increasing collection of local taxes from a minimum of 72% in 2000 to a maximum of 90% in 2009.



Source: Our own findings based on data from the Ministry of Public Finance.

Figure 7. The local taxes collection evolution during the period 2000 - 2009

By increasing the buildings taxable value with 5% for each 50 square meters, larger than 150 square meters of developed area, the local government authority seeks to have an additional taxation for the buildings owned by individuals. Similarly, the tax unit of the car increases significantly as their cubic capacity growth. We state that the unit of taxation is 200 cm³ and the tax units' number rounds up to the next whole. Next, we will determine the tax for two cars:

The determination of the car tax

Table 1

Working hypothesis	Cubic capacity	Tax units number	Tax unit	Total tax
Car A	1599	8	7	56
Car B	1601	9	15	135

Source: Our own findings based on data from the Ministry of Public Finance.

The car B tax is 141.1% higher comparing with the car A tax. There are certain ceilings regarding the cubic capacity (1600 cm³, 2000 cm³, 2600 cm³ and 3000 cm³) over which the tax unit increase significantly, reaching up to a maximum level of 120 lei. We propose the use of this progressive calculation system to all the local taxes. Also, we recommend the elimination of certain local taxes that Romanian citizens consider abusive, such as: the barrier tax, the transit tax or the quiet tax.

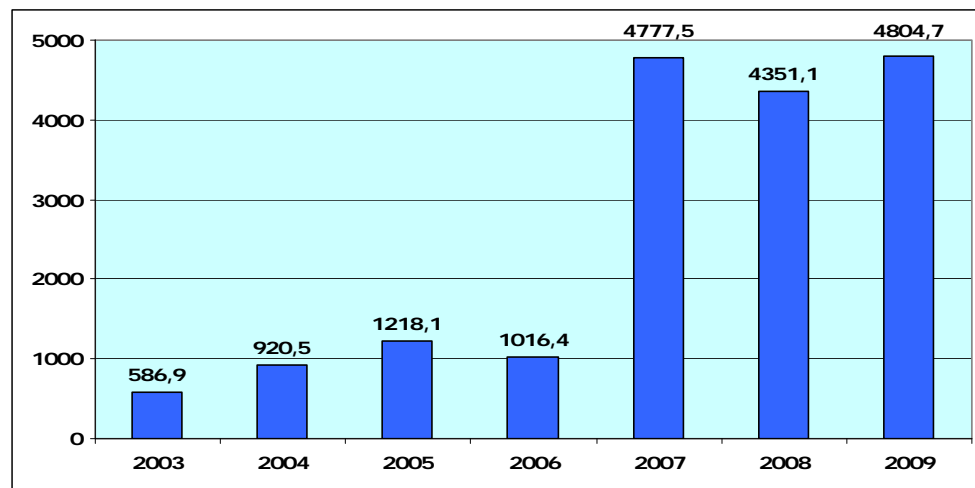
The deliberative authorities may increase⁽⁸⁾ maximum 20% the standard amount of the local taxes. The exceptions are: (i) cargo vehicles having a maximum authorized mass less than 12 tonnes, (ii) combinations of cargo vehicles having a maximum authorized mass less than 12 tons, (iii) legal tax stamp, (iv) tax stamp and (v) non-judicial tax stamp. We propose these exceptions eliminating and the maximum 20% increase for the standard values of all local taxes.

We recommend the increase of the self-financing institutions, that are subordinated to local public administration authorities by land and gyms rent, by setting up school workshops, by using the canteens to get revenue, etc. The wholly financed institutions from their own resources can use these amounts to stimulate the employees by providing meal vouchers.

2.4. Financing the local budgets by subsidies

The grants weight in the local budgets total revenues has varied between a minimum of 3.7% in 2006 and a maximum of 13% in 2007, decreasing to 10.2% in 2009. In 2009 the subsidies granted to the local budgets came from: (i) 98.6% of the state budget – mainly for people having disabilities, to cover capital costs of undergraduate education units and (ii) 1.4% of the unemployment insurance budget, to finance the programs designed to fill temporary jobs.

The subsidies received by the local budgets have increased 718.7% in nominal terms, from a minimum of 586.9 million lei in 2003, reaching to a maximum of 4,804.7 million lei in 2009. The subsidies had the highest increment of all local budgets current financing resources, especially after Romania accession to the E.U.

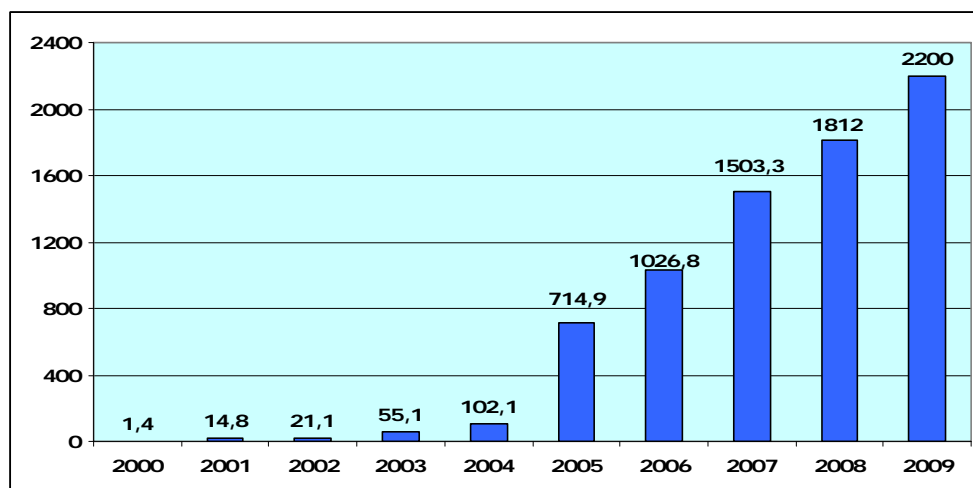


Source: Our own findings based on data from the Ministry of Public Finance.

Figure 8. The subsidies granted to the local budgets evolution during the period 2003 – 2009 (million lei)

3. Borrowing money to finance local budgets

In the financial practice, there are situations when current revenues available to the authorities are not enough, as Zipf (2000, p. 112) state, when *a municipality needs more money than it receives from taxes and other regular incomes, then it has the opportunity to borrow money depending on the future tax revenues*. In consequence, the local and county councils, and the General Council of Bucharest Municipality are able to approve the loans contracting or guaranteeing, and their stock consist of the local public debt. The local public debt⁽⁹⁾ represents all the administrative units obligations in a certain moment, and it is derived from refundable financing acquired on contractual base or guaranteed by the local government. In the perspective of the need to pre-finance and co-finance the European funds specific objectives, it has become common that the local authorities borrow money from the financial market; therefore the local public debt had an exponential trend over the last decade.

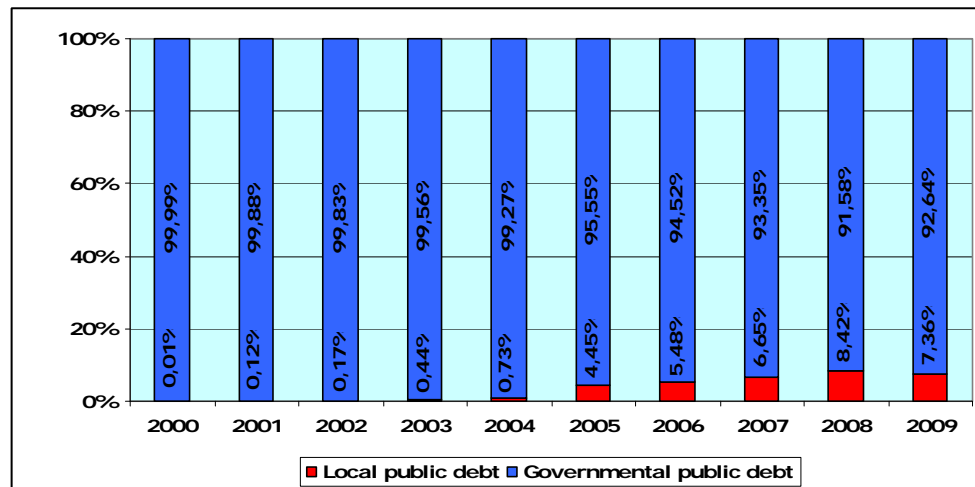


Source: Our own findings based on data from the Ministry of Public Finance.

Figure 9. The local public debt evolution during the period 2000 – 2009 (million euro)

Since 1993 the local authorities were able to borrow money⁽¹⁰⁾, but the local public debt was only 1.4 million euros in 2000, rising to about 2,200 million euros in 2009, in the perspective of new government tasks transfer to them. Because Romania has opened its

capital account, the debt recording is no longer done according to the creditor residence, but it is done according to its manager: the government or the local authority.



Source: Our own findings based on data from the Ministry of Public Finance.

Figure 10. The public debt structure by its manager during the period 2000-2009

The local debt weight in all the public debt increased from 0.01% in 2000, reaching at 7.36% in 2009. Because of this advancement, Campeanu, Stoian, Miricescu and Gyorgy (2009, p. 61) states that *the local authorities, having a significant debt stock, should set up a specific management structure, which cooperates with the specific department: the Treasury and Public Debt General Directorate from the Ministry of Economy and Finance.*

The local public authorities can borrow money and provide warranties, so the local public debt service (the amortization of principal, the interests and the fees) should not exceed 30% of its own revenues⁽¹¹⁾. We believe that the local decision-makers must have a cautious approach when they borrow money, to have a sustainable long-term local debt. Miricescu and Campeanu (2009, p. 61) judges that the debt is sustainable *when the public authorities are able to repay the public debt service to the creditors without having future revenues and expenditures adjustments.*

The local authorities have the opportunity to issue municipal bonds on the domestic or foreign financial market. In 2009, the investors traded 31 municipal bonds on the Bucharest Stock Exchange. The Bucharest Municipality had the single issue on international financial market, in 2005. The Bucharest Municipality has borrowed 500 million euros and the maturity was ten years. A harmful aspect of the current financial crisis is that during 2009 there have been the first problems regarding the municipal bonds – two local governments (Băile Herculane and Oravița) delayed the interest payments. We consider that the investors should take into consideration the default or delay risk for the municipal bonds. For an additional protection against the risks, an used practice in the developed countries is the municipal bond insurance, which guarantees, as Zipf (2000, p. 129) declares, *that the insurer will pay the insured bonds interest and principal at their maturity, if the issuer doesn't pay in time.* The insurance increases the bonds demand, because usually the insurers have high ratings (AAA or AA), so the investors will be motivated to buy.

Since 2003, the financial advisory company Bucharest Equity Research Group rates the municipal bonds issuers. The calculation method is similar to the system used by the major rating agencies and it is based on public information. The issuers score is situated between minimum 1 and maximum 3, and it is two decimal determined. A ranking between minimum D and maximum 3A corresponds to each score. There are 10 rankings. The bonds yield and risk are strong correlated. The bonds risk is summarized by the local community rating or ranking. As Anghelache (2004, p. 227) states *in principle, the risk of a loan granted to a local*

public authority is lower than in a company issuing bonds case. The yield of the municipal bonds issued on the Bucharest Stock Exchange is generally calculated as an average of the deposit⁽¹²⁾ and loan⁽¹³⁾ interests on six or three months plus a certain percentage and rarely⁽¹⁴⁾ as the bank credit interest on six or three months plus a certain percentage. The first municipal bonds issue had the maturities between two and three years, but in time they reached a maximum of 20 years, following their success among investors.

The Romanian state motivates the investments in municipal bonds, giving to the individuals the advantage that their interests are not taxed. This taxation advantage isn't available for the individuals and for the legal persons – which have independent commercial activities.

The post-accession European funds offer a pre-financing up to a maximum of 40% from the winner project value⁽¹⁵⁾. In this situation, it is required that the local authorities dispose the money difference, for a period between three and five months. The municipal bonds are not appropriate for a short period, so we propose that the cities borrow money from the commercial banks. There are huge differences between the loans interests and fees, so the local public authorities should examine the credit offers from several credit institutions.

Regardless of the selected way to borrow money, we recommend that the local authorities have an effective management of these funds in order to be able to meet their debt service. The unpleasant payment incidents are not desirable, because the creditors will be reluctant to lend more money to that municipality.

4. Conclusions and recommendations

The Romanian local authorities financing is achieved mainly by consolidated transfers from the state budget. Their own revenues weight in all the local budget revenues is low, as they reached to 18.4% in 2009. In order to increase the local authorities financial autonomy, we propose: (i) the companies incentive to open the branches having at least five employees, (ii) the companies tax registration verification, to correct any deficiencies, (iii) the local taxes collection increase, through the enforcement structures, (iv) the individuals income tax collection by local institutions, (v) the generalization of the opportunity to increase all the local taxes standard values a maximum of 20%, (vi) the self-financing improving for the locally subordinated institutions and the staff motivation, (vii) the extension of the progressive calculation system for all the local taxes. We recommend the eradication of certain local taxes that we consider abusive, such as: the barrier tax, the transit tax or the quiet tax.

In addition to the current finance sources, the local authorities issue municipal bonds on medium and long term and they borrow money from the banks on short and medium term. The public policy makers must choose the most favourable borrowing strategy, as they use effectively the money and to meet the debt service, for avoiding the payment incidents.

In the circumstance of the tasks decentralization, the local authorities' responsibilities will increase and they will diversify the funding resources to effectively manage the public money.⁽¹⁶⁾

Notes

⁽¹⁾ According to the 2nd article from the local public finance law no. 273/2006, published in the Official Gazette no. 618 from 18 July 2006.

⁽²⁾ The local budgets revenues and the local public debt in 2009 were approximated by the Ministry of Public Finance.

⁽³⁾ According to the 5th article from the local public finance law no. 273/2006, published in the Official Gazette no. 618 from 18 July 2006, the local budgets revenues are composed by: taxes, contributions, other payments, other revenues and income tax shares. In this paper we will use the approach from the report regarding the macroeconomic situation in 2009 and its projection for the period 2010-2012,

which divide their own revenues in: (i) the revenues collected by the local authorities and (ii) income tax shares.

⁽⁴⁾ According to the 32nd article from the local public finance law no. 273/2006, published in the Official Gazette no. 618 from 18 July 2006.

⁽⁵⁾ According to the 33rd article from the local public finance law no. 273/2006, published in the Official Gazette no. 618 from 18 July 2006.

⁽⁶⁾ The tax revenues are deleted after five years, starting on January 1st of the following year after their generation, excepting the tax evasion cases.

⁽⁷⁾ For example, local authorities' revenues acquired from their commercial spaces, houses or parking places leasing.

⁽⁸⁾ It is the local council decision.

⁽⁹⁾ According to the 2nd article from the Government emergency ordinance no. 64/2007 for public debt, published in the Official Gazette no. 439 from 28 June 2007.

⁽¹⁰⁾ The public debt law no. 91/1993, published in the Official Gazette no. 3 from 10 January 1994.

⁽¹¹⁾ According to the 63rd article from the local public finance law no. 273/2006, published in the Official Gazette no. 618 from 18 July 2006.

⁽¹²⁾ ROBID.

⁽¹³⁾ ROBOR.

⁽¹⁴⁾ It is the case of small towns, as the village Aninoasa and the city Năvodari, etc.

⁽¹⁵⁾ Usually the pre-financing is 15% of the winner project.

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SOME REMARKS ON THE „EVALUATION PROBLEM” IN COST-BENEFIT ANALYTICS

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Abstract. *According to the common definition, cost-benefit analysis (CBA) estimates and aggregates the monetary equivalent of present and future social costs and benefits regarding public investment projects (PIP), discounted and compared, aiming at deciding their opportunity. Monetary evaluation problem is more complex within the public sector, because market prices might not appropriately reflect social costs and benefits, relative to the evaluation undertaken by companies, where project benefits (revenues) and cost (payments) are both calculated at market prices. The purpose of this paper is to review and compare the fundamental pros and cons of various valuation methodologies used in CBA regarding PIP.*

Keywords: welfare economics; allocative efficiency; monetary evaluation; cost-benefit analysis.

JEL Codes: A20, D61, D62.

REL Codes: 13B, 13C, 13J.

1. A critical overview on the theoretical foundations of CBA

Cost-benefit analysis (CBA) estimates and aggregates the monetary equivalent of present and future social costs and benefits, from citizens' point of view, regarding public investment projects (PIP), in order to decide whether the projects in question are in the public interest. (Moșteanu, Iacob, 2007b, p. 7-13).

A PIP is a present allocation of economical resources that in the future will turn into output. Using CBA, decision factors allocate resources for a project, provided that the marginal social benefit exceeds the marginal social cost.

It is said that CBA, as a method of valuating PIP, is much more advanced than corporation profitability analysis, but is not "accurately applied" (Mendez, 1992). But, on the other hand, what some authors (Formaini, 1990) criticize is *the actual meaning* of the values used in the two contexts: *market prices*, derived from transactions based on the voluntary options of the market actors, according to their preferences demonstrated by their actions (corporation profitability analysis), or, *pseudo-prices* (before the "prices" being "approximated", the great issue still remains the theoretical impossibility to demonstrate their social utility, since the resources raised for PIP are coercively extracted through taxes and not through voluntary payments), respectively.

CBA is an association of concepts and techniques derived from *neoclassical economic theory*, especially from the branch called *Welfare Economics*. A great number of CBA concepts originate in mid XIX century Europe, the idea of this economic accountancy belonging to a French engineer, Jules Dupuit (1844), he being also the one that defined the *consumer supply* concept, crucial in CBA. Alfred Marshall then enriched the conceptual „tool kit”, in the context of the development of marginalist type – analytical methods. He build up on the idea of *externality* (that appears every time a person's actions influences another, in a negative or positive way, without the first person having to pay a cost or receive a benefit (Moșteanu, Iacob, 2007a)) from A. Marshall, arguing that there is a difference between private and public production. Pigou emanated the idea according to which the state can, with

a mixture of taxes and subsidies, correct the market failure – meaning to internalise the externalities (*pigouvian taxes*, used to correct negative externalities, were named so in his honour).

But such a way of seeing the social welfare in Marshall-Pigou tradition was subjected to criticism from that part of economic theory that does not consider that founding economic analysis on the idea of „objective utility” (*cardinally measurable, intersubjective comparable, insertable in intersubjective efficiency calculations*) represents a legitimate scientific option; see here also the contributions of *Public Choice School* or of *Ronald Coase*, but especially the ones of Austrian School of Economics, maybe the most conscientious and persistent in criticizing the old „Welfare Economics” (Rothbard, 1979).

The purpose of this paper is not a critical evaluation of the CBA paradigm scientific foundations, presently being subject of debate between various schools of economic thought.

We start from the premises that this way of building the arguments regarding the social utility of resources allocation in a PIP (especially CBA) is *given*, supported by the *opinion* that the public authority is entitled and has the means to provide goods and services which markets are not tempted to offer.

Given the existence of PIP and of the CBA analytical instruments, we aim to do a comparative analysis of the methods used in valuating judgements with respect to social costs and benefits, trying to find those situations in which one method or another is more suitable to justify a PIP necessity, *given certain information being at the decision factors service* (the public authority).

As *operational* principle, CBA is easily understood, being a mixture of aggregating, discounting and comparison accounting operations, but the same thing can not be said about *social costs and benefits, per se* – meaning there are difficulties in finding their *appropriate* value –, which measuring is a hard work job, that requires a large set of information and specialists from many fields.

2. Valuating social costs and benefits

In the case of a project, *only increases in the costs and benefits*, i.e. the marginal costs and benefits should be *compared*. To reach a conclusion regarding the usefulness of a PIP, the entire costs and benefits, positive or negative, must be expressed in a *common unit of measurement*, the most convenient being *money*.

The impact of a project consists of the difference between the situation in which the project would be implemented and the situation in which it would not be. In other words, the alternative to the project must be explicitly specified and considered in project evaluation. This approach, otherwise fundamental in CBA, is known as *the with and without the project approach* and brings to the fore the concept of *opportunity cost*, which represents the value of materials and production factors to be waived when these are transferred from other uses. In the absence of a PIP, resources such as land, labour and capital would have alternative uses. These could be used, instead of building a dam, for example, to increase the volume of goods for current consumption. The value of these goods represents *the opportunity cost of the dam*. *The project benefit* is given by the value of the future increase in electricity volume exceeding what might have been produced in the absence of the project. The benefit represents the amount that consumers are willing to pay for additional electricity. *The evaluation of this amount is made by using market prices if the increase is small, either by using consumer surplus, if the alteration of the result is substantial*. Because of the negative demand function slope, as the volume of the good increases, *the willingness to pay* (price consumers are willing to pay for the outcome) for the additional units becomes smaller than the market price. The opportunity cost must be calculated even if explicitly monetary transactions do not take place. For example, if a lathe can be sold for 2,000 monetary units, but the owner uses it to make a something, the opportunity cost of the lathe is 2,000 monetary units, even if there has been no monetary transaction.

2.1. Valuating costs and benefits at market price

The dominant view in economics (neoclassical one) is that if the economy would be functional and perfectly competitive, then the market price of an asset should reflect, simultaneously, both the social marginal cost and the marginal value to consumers. Given this context, market prices can be used to assess PIP, since the state uses resources and produces goods and services that have a market on which supply and demand meet.

But the problem is that all markets present imperfections, such as monopoly, monopsony, externalities, public goods, taxes, unemployment, etc. creating a situation in which the market prices may not reflect the marginal social costs and benefits, thus representing only an approximate measure. By using market prices, the *consumer surplus* would be ignored (market price represents the minimum social benefit produced by the project outcome, and, in fact, consumers would be willing to pay more than they do in fact - this is „surplus”), it being an important element in certain cases.

It would be ideal to use market prices for evaluation because they provide the necessary information at a reduced cost. It is believed that, in the absence of any obvious imperfections, market prices can be used to determine the costs and benefits.

2.2. Valuating costs and benefits when market prices are distorted

Even if sometimes there are market prices, these may be, for some reason, "distorted". In this situation, the analyst has the task of estimating prices in the absence of distortion and then use these adjusted market prices, also called *social prices*, *real prices* or *shadow prices*. The shadow price of a good is the default marginal social cost. Shadow prices are used to estimate social costs and benefits also where there is no market, and, consequently, there are no prices for certain goods and services.

If the analysis is done by the private sector, for a firm does not matter if the market prices are distorted or not, these prices being a good unit measure for its costs and benefits. However, for the CBA in the public sector, shadow prices are used instead of market prices, if the latter are distorted.

The situations in which the shadow prices may substantially differ from the market prices are: (i) when the currency is wrongly valued because of the exchange rate control; (ii) when wages are kept artificially at a high level by the unions' pressure or by legislation, even if there is unemployment; (iii) when there are anti-competitive conditions, monopoly or monopsony; (iv) when taxes or tariffs are applied directly on goods and services, such as value added tax; (v) when the government regulates, controls or subsidizes prices (Treasury Board of Canada Secretariat, 1998).

Shadow price depends on how the economy responds to state's intervention. For example, we will present two situations of distortion on the market, namely *monopoly* and *taxes and subsidies*.

a. Monopoly. We start from an explicit example. In South Africa (Rosen, Gayer, 2008, p. 161), beer production is monopolized by South African Breweries Ltd. Company, and the Ministry of Education in this country wants to buy beer for a controlled experiment, whose purpose is to determine the consumption of beer impact on the performance of high school students. CBA should take note that these resources/inputs are produced by a monopoly. If in the case of perfect competition, price equals marginal cost, in conditions of monopoly, the price is above the marginal cost. The valuation depends on the impact the ministry purchase has on the market. If the production of beer is expected to rise by exactly the amount used in the project, the social opportunity cost is the amount of resources used for supplementary production, specifically the marginal cost of production. If, however, there isn't produced additional beer, the ministry consumption is at the expense of private consumers, which evaluate the beer at the demand price, this price being used in CBA estimation. If a combination of both situations is expected, the most appropriate would be the use of a weighted average of price and marginal cost.

b. Taxes and subsidies. As a general rule, regarding the situation in which taxes are required and subsidies granted (which affects the production of resources used in a PIP), the appropriate measurement of the project's costs depends on the origin of the used resources: new supplies (production increases) or their redistribution from other uses (production remains constant). If a resource is subject to taxation, the price received by the producer is less than the price paid by the buyer, because a part of the collection goes to the state. Taxes increase the cost of inputs for users over the value of the resources consumed for their production, while subsidies have the opposite effect. If the resources come from new supplies, it would be better to use *the supply price of the producer*, which represents the value of the consumed resources, and is equivalent to the price paid by other users minus taxes plus subsidies. If production is expected to remain constant, then the resources are obtained at the expense of other consumers, and proper measurement of cost is given by the inputs value in alternative uses or by the producer's price plus taxes less subsidies (the price paid by the consumer). For a combination of the two variants, the weighted average of the two prices (producer price and consumer price) could be used. It can be noted that the basic principle is the same as in the case of monopoly.

2.3. Valuating costs and benefits when there are no market prices

A program can provide benefits that are not directly measured in money. For example, from a motorway improvement public project can derive benefits, such as time saved by the travellers, increased security and reduced injuries, human lives saved. Furthermore, a public investment in education can result in social cohesion, improvement of vote attendance, violence reduction during demonstrations, increased association with communities, crime reduction, fertility rate decrease, bureaucracy reduction, control diseases, environment protection, corruption reduction. (Wolfe, Zuvekas, 1997, McMahan, 1999, Villa, 2000, Mora et al., 2007).

The question of how these benefits can be measured in money arises. We are going to focus on *the monetary evaluation of time* and *the evaluation of human life*.

a. Monetary evaluation of time. Having in mind the genuine saying „*time is money*”, to accomplish the cost – benefit analysis we have to know how much. In the last decade, in Boston (Rosen, Gayer, 2008, p.150), the „Big Dig” project had been implemented, which intended the construction of new roads and a tunnel to Logan Airport. A main part of this project was a new motorway whose cost reached 6.5 billion dollars. It has been estimated that, once that motorway was build, the trip from the town to the airport would be reduced from 45 minutes to 8 minutes. It is here where the great challenge of measuring saved time emerges.

i. A way to estimate the time value is to make use of *the income – free time theory* (Rosen, Gayer, 2008, p.163). People who have control over the number of labour hours would work until the individual valuation of free time equals the net hourly income. If the valuation of free time is greater than the income, there would be less work, cutting down the leisure marginal benefit. But if free time valuation is lesser, people would work harder and the leisure marginal benefit increases, because the free time diminishes. In a perfect labour force market, that allows independent adjustment of working hours, the time value is always the income, even when a fraction of the saved time due to better conditions on the motorway is used for recreation. Gruber (2005, p.199) names this method *the market – based method* and the tool used is the net income. Although this approach is useful, it has two major limits. Firstly, people cannot freely adjust the working hours and the leisure time and, secondly, not all free time values are equivalent. To avoid more time on the motorway, a person who dislikes driving is ready to pay a sum of money that exceeds the net income. But, it is possible that the time opportunity cost for a person that used to love driving on the weekend doesn't matter, because he didn't work then anyway. Additionally, during the summer, the working place can be equipped with air conditioning, facility the employee doesn't benefit from at home. This can mean a greater valuation of the time spent at the office than the net income. Moreover, it

can be valued the fact that there is a comfortable environment. In such wise, the complete satisfaction from the job exceeds the income. The value of the free time is composed of that complete satisfaction, not only the tangible part, the income being lesser than time saved total benefit.

ii. A more direct method for valuing the time saved is *the survey-based method*, also known as *the contingent evaluation* (Gruber, 2005, p. 200), according to which a survey is undertaken and the respondents are asked to give a value to an option that doesn't have to be picked at that moment or to an option that momentarily doesn't exist. The method has the advantage it can be used for evaluating a public good when there are difficulties regarding the financial evaluation of the efforts (there is no market price to be used as a benchmark). After the survey, the individual preferences are aggregated in order to set a value for the efforts. The shortcoming of this approach is that it can lead to a great number of different responses, because isolating the question and changing the order of words in the question influence the answer and when the importance and the problems varies, there are difficulties regarding the right evaluation (Diamond, Hausman, 1994).

iii. If the previous method was aiming at determining the value of the time saved using questionnaire about a hypothetical situation, *the method of valuating the time saved based on human actions* (Gruber, 2005, p. 201) takes into account the preference suggested by the consumers' actions. It starts from the premises that sometimes people can lie, but their actions, which result from maximizing the utility, tell the truth. If a person prefers a house closer to work by a few minutes, in comparison to another house and is willing to pay more for the first one, it means that she appreciates the time saved and the price difference between the two houses can be considered the value of the few minutes saved. The comparison is based on market evaluation, which reveals individual preferences. This is being valid when the price difference is given only by the time saved (besides that, the houses being identical), without taking in account other attributes, like location, neighbourhood quality, the house design.

iv. Another method for valuing time saved is to analyze *the choice from different means of transportation that imply different time travel* (Treasury Board of Canada Secretariat, 1998). People can commute to work by bus or by train. The train travels faster, but it is more expensive. Figuring out the sum of money they are willing to pay extra to travel by train, it can be estimated how much they are willing to pay to reduce commuting time, giving this way a value for time. Obviously, other features, like income, influence people's choice regarding means of transportation.

b. Evaluation of a human life. This is the most difficult aspect of the cost-benefit analysis.

i. The first method of valuation is *the market-based method* or *lost earnings method*, which refers to determining the present value of the future cash-flows (Rosen, Gayer, 2008, p. 164). If a person dies because of a certain project, the cost for society is exactly the expected present value of the earnings that person would have achieved. This approach is most frequently used in court to determine the compensation the victim's relatives should receive. The problem with this method is that using the income as future cash-flows, each moment that is not spent working is not valued, the method being rejected by most economists.

ii. The second method is *the survey-based method* that questions individuals in order to find out how they value their own lives (Gruber, 2005, p. 205). This of course is a puzzling question, a more general approach being addressing questions regarding aspects that can change the probability of death. Certain public investment projects don't really affect people's lives, but on the other hand modify the probability of death. For example (Rosen, Gayer, 2008, p.164.), it is not known that cancer research can save lives and all that can be said is that it can reduce the probability of death. The reason this distinction is so important is that although people consider their lives have an infinite value, they constantly accept death probability increases for limited sums of money.

iii. The third method for valuing the human life is based on *the risk preference*, depending on the choice made (Gruber, 2005, p. 205). Some jobs have a death probability greater than other. Bringing into comparison two workers who have identical qualifications for the job, regarding education, experience, etc., but one has a more risky job, it is expected this last worker has a bigger income to compensate the higher death probability. The difference between the two wages is known as *compensatory payment* and based on this and the increase in the death risk, the value of human life can be determined. If a person is willing to accept an additional payment of X monetary units a year to work in a dangerous industry, like mining, where the chance of having a deadly accident is higher by the p probability than in a similar working place in a less riskier industry, then it can be said that the value of life is X/p (Campbell, Brown, 2003, p. 285). Different studies have reached different results, but a gross estimation based on these studies evaluates human life between \$4 million and \$10 million (Viscusi, 2004). Although the interval is large, it is not totally useless, those estimates being used to eliminate absurd projects. For example (Rosen, Gayer, 2008, p. 165), rules regarding commercial aircrafts floor illumination in cases of emergency cost approximately \$ 900,000 per life saved, clearly passing the criteria. This method's limitations are represented by the fact that a series of assumptions are made. It is considered that people have all the information and are able to identify the risks and express their risk-award preferences.

iv. Another method for measuring the human life refers to *the governmental preference* (Gruber, 2005, p. 207) and this new approach is not based on the values given by each person, but encounters, on the other hand, the existing governmental programs and how much it is spent for saving lives. The fact the government is prepared to spend great sums of money for public safety suggests the public sector values human lives at a very high level.

v. The Canadian Government (Treasury Board of Canada Secretariat, 1998) uses a *method based on statistics*, which takes into account the numbers and the nature of the accidents, calculates the treatment costs and the income-loss costs, extrapolating afterwards for all the injured population.

Even though the majority of people state that there cannot be established a price for a human life saved, this being priceless, unfortunately, the world has limited resources and the only question in this situation is if there are being used rational means for setting up the prices.

3. Conclusions

The CBA objective is to identify and quantify all potential impacts of PIPs (financial, economic, social, environmental, etc.), in order to determine the costs and benefits of the project. Results will be aggregated and it will be concluded whether the project is appropriate from the society's point of view, as a whole, and whether it deserves to be implemented. If the inputs/outputs related to a PIP are traded on the market, and the market is perfect or does not present significant distortions, determining costs and benefits does not present any problem. But, most of the time, the market includes imperfections, or there are situations when the market is completely absent, cases in which prices should be adjusted, using shadow prices. One of the CBA problems is the fact that the aggregation of many components of cost and benefit is sometimes intuitive, and for other components even intuition may not suggest measurement methods. CBA can be applied in environmental or agricultural projects, construction of dams and highways, implementing educational programs, programs on health systems, in reducing crime or unemployment, etc. The field that received the most attention regarding studies based on CBA is public transport. Lately, it can be observed that environment projects, such as pollution control, fishing management or parks construction are given a great importance. It may also be used to analyze the effects changes in government policies can induce, such as taxes, subsidies or regulations.

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EFFECTIVENESS OF COHESION POLICY IN REDUCING REGIONAL DISPARITIES. DIVERGENCE BETWEEN NATIONAL AND REGIONAL CONVERGENCE

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Abstract. *The aim of this paper is to reveal once again the how important is the aid offered by the European Union to the Member States as European funds. Rationally used, these funds will lead to the regional convergence and to socio-economical and territorial cohesion.*

Furthermore, I showed the factors leading to discrepancies within regions of EU's area and how long it will take till these discrepancies will decrease, maybe being half.

Keywords: cohesion policy; beta convergence; sigma convergence; absolute convergence; conditional convergence.

JEL Codes: G000, H5, H7.

REL Codes: 6E,8Z, 10B, 10G, 10I, 18B .

Cohesion policy on regions benefiting from the structural funds, had a powerful impact on all regions covered by Objective 1. As work-methodology, there were used the studies of specialized literature (literature review) and the reports of habilitated international institutions.

Thus, there was a slow process of beta convergence, an increase in GDP per capita, increasing from 69% in 1989 to 71% in 2001, compared to EU average. It can also be observed a sigma convergence process, because in all EU regions income dispersion has decreased slowly.

The highest increase in GDP per capita was recorded in regions with lowest GDP per capita in the reference year, in concordance with the introduction of structural funds support for Objective 1 regions (as shown in Table 1). Beta convergence occurred both in the regions covered by Objective 1, and between them and the rest of the EU.

In the period 1988-1994 to 1980-1988, there was also a convergence process sigma, for the first regions, and a process of divergence between the years 1994-2001.

Beta and sigma convergence in EU

Table 1

	Number of regions	GNP per capita (% growth rate)	Beta convergence (% per year)	Sigma convergence
1980-1988				
EU regions 15	197	2.0	0.5	0.94
Objective 1 regions	55	1.9	0.4	0.87
Other regions	142	2.0	2.1	0.92
1988-1994				
EU regions 15	197	1.3	0.7	0.97
Objective 1 regions	55	1.4	3.1	0.94
Other regions	142	1.2	0.8	0.95
1994-2001				
EU regions 15	197	2.3	0.9	0.97
Objective 1 regions	55	2.6	1.6	0.92
Other regions	142	2.1	0.0	0.96

Source: European Commission , *Third cohesion report*, 2004.

The richest areas around big cities are located in the „center-north” of the European Union (Hamburg, Brussels, Luxembourg, Paris, Milan). The triangle defined by the North Yorkshire towns – France-Comte – Hamburg exists an excessive concentration of economic activity, which generates about 47% of EU income, although only covers 15% of the Union.

In the „peripheral-south” there are situated the poorer regions (Greece, Italy, Spain, Portugal). Among EU-15 regions there is a slow process of real convergence, studies showing that only half of the gap to be reabsorbed 38 years are required. In Belgium and the United Kingdom national convergence (within EU Member States) is nonexistent. For Italy, France, Sweden one can speak rather about process of economic divergence (Ederveen, 2002). In regions of France the increased disparity between them is explained by the region's sustained growth. Comparisons in terms of unemployment levels show greater differences. For example, unemployment in the eastern lands of Germany is 20% against a national average of 8%. And in Italy, there are regions with unemployment rates of 20% (Mezzogiorno, Calabria) although the unemployment rate is 7%.

An emphasis on regional disparities in income was due to EU enlargement in a first phase to 25 members, given that average GDP per capita of new Member States is approximately 60%⁽¹⁾. Thus, according to Eurostat data (2006), GDP per capita of the richest regions in 2003 (Inner London West, UK, 477% of the EU-25) is now 23 times the the poorest (Latgale in Latvia, with a GDP per capita by 21% in average), compared to only 13 times in EU-15 (reference is Tâmega region of Portugal, with average incomes 37%). In 2003, Warsaw, whose income exceeded the 40% EU-25, was considered the richest region in the new Member States.

Distinction between absolute and conditional convergence can be achieved by testing the convergence of EU-15 regions, namely those of the new Member States (NMS). Conditional convergence refers to the analysis of heterogeneous regional structural parameters that will influence differently the stationary equilibrium of the economy. Building regression of income convergence requires consideration as endogenous variable the logarithm of GDP (which approximates the rate of growth) and the exogenous variable, logarithm of initial GDP. Add other country-specific exogenous variables (relating to investment, education, etc)

Such a regression was estimated by Paas and Schlitte (2006), based on regional data between 1995 and 2003, as follows:

$$\ln\left(\frac{GDP_{i2003}}{GDP_{i1995}}\right) = \alpha_0 + \alpha_1 \ln(GDP_{i1995}) + \sum_{j=1}^n \alpha_{2j} \times c_{ji} + \varepsilon_i,$$

where $c = 1$, if region i belongs to country j ; if ot, $c_{ij} = 0$;
 ε – error; $\alpha_0, \alpha_1, \alpha_2$, estimated coefficients.

The annual rate of beta convergence is obtained by calculating $\beta = -\ln(1 - \alpha_1) / T$, where T is equal to 9, ie the number of years analyzed.

In Table 2 are the results of estimating regression in cross section. It suggested a process of absolute convergence between EU-25 regions (in number of 861), speed of convergence is about 2%, in accordance with the value obtained by other empirical studies. Accordingly, existing gaps would be reduced by half in about 35 years. Beta coefficient was 1.8% for the 739 EU-15 regions in conformity to those laid by Paas and Schlitte (2006). In the new Member States its value was only 1.4% in average per year (Table 2). The estimate of conditional convergence shows no convergence for EU-25 and one of 0.9% for EU-15. The trend of regional divergence is characteristic for the new Member States with a rate of about 1.5% per year. It follows that the process of catching-up of these regions is influenced by structural features specific to each region.

Estimation of beta convergence within the EU-25

Table 2

	UE-25	UE-15	NSM
Absolute convergence	$\alpha_0 = 1,583$ $\alpha_1 = -0,13$ $\beta = 2,0$	$\alpha_0 = 1,473$ $\alpha_1 = -0,119$ $\beta = 1,8$	$\alpha_0 = 1,258$ $\alpha_1 = -0,092$ $\beta = 1,4$
Conditional convergence	$\alpha_0 = 0,553$ $\alpha_1 = -0,02$ $\beta = 0,3$	$\alpha_0 = 0,876$ $\alpha_1 = -0,058$ $\beta = 0,9$	$\alpha_0 = -0,646$ $\alpha_1 = 0,112$ $\beta = -1,5$

Source: Paas and Schlitte, *Regional income inequality and convergence process in the EU-25*, HWWA Discussion Paper, nr. 355, 2006.

Studies in the EU-15 show a decrease in terms of income disparities between countries. However, when examining the evolution of GDP per capita at regional level, it is found that inequalities are important and persistent. Regional development gaps remain in most countries the EU-15, even though regions with lower income (compared to Europe) have benefited from structural funds. Thus, there is a center-periphery structure internal self-sustained by the faster growth agglomerations (around capitals, financial centers) compared to the other regions (Table 3). Development inequalities were reduced for the Nordic countries (Denmark, Sweden, Finland), as a result of active labor market policies (workfare) and the system of national redistribution.

Periphery-center structures for EU-15

Table 3

Belgium, Ireland, France, Austria, Portugal	Faster economic growth of regions around the capital
Germany	Significant differences between East and West
Spain	The existence of regions based on agriculture and which recorded a lower level of development
Holland	Central regions vs. peripheral regions
Great Britain	Divergent evolution of North-South, the economic dominance of South-East
Italy	Income gap between North and South
Greece	Isolated from the rest of Europe; the existence of regions based on agriculture

Source: European Commission, 2006.

National economic growth in the countries of Central and Eastern Europe is maintained by forming regional clusters. Because of relatively rapid growth of the regions surrounding the capitals, the center-periphery structure is quite pronounced. Reasons why some differences are triggered between the less developed areas and developed in the early stages underlying the growth process of the Member States are:

- Employment migrate selectively;
- Preference of capital to richer areas that have an increased randament;
- Intervention of the Government in terms of maximizing the growth rate in developed regions;
- In the early stages there may be a neglect of inter-regional relations, in the situation when the social and technological changes are slowed down.

It can be concluded that in the situation of the economies that recover from the development gaps, the rate of growth is the effect of the emergence of a relatively few growth poles.

Williamson assumes that the change of direction that occurs in the model of inter-regional inequality occurs when a country's development progress is registered. Highlighting regional differences (from D1 to D2) is caused by increasing income per capita national level (from y_{01} to y_{02})⁽²⁾. Over time, in areas where national economic growth may appear evident dis-economies, which can lead to migration of capital to areas where high yields of the factors (factor costs are lower) are identified; regional differences (from D2 to D1) are reduced by reallocating factors of production. The place of economic divergence is occupied by the convergence; thus reduced development disparity between the poorest areas.

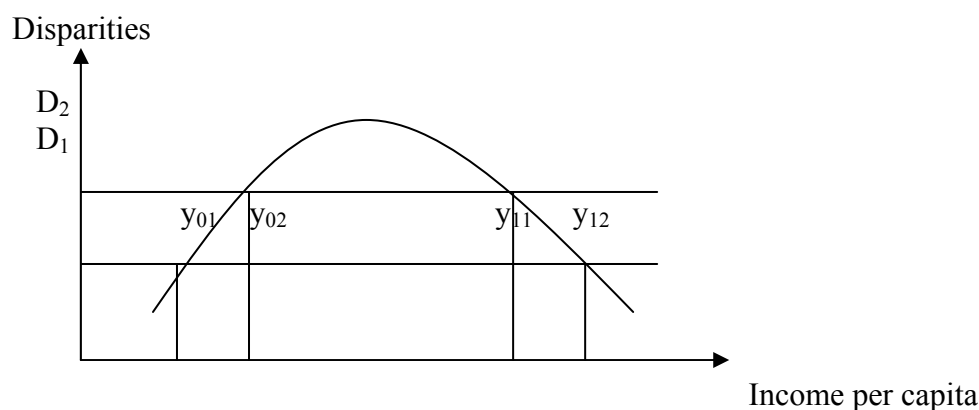


Figure 1. Relationship between national development-regional disparities

Regional disparities are arranged in the form of the U curve, in the situation of countries that are found in the recovery of gaps. Hypothesis proposed by Williamson applies only to developed countries because, despite the lack of economic growth, other countries are going through a trend in regional divergence.

Arbitration made between regional and national convergence can be illustrated with a model implemented by the European Commission. Considering two cases: no regional policy (1) and regional policy (2) of an economy consisting of four zones: A, B, C, D, income for each being one unit with a study period from 1950 and 2050. In the first situation, the region has increased since 1951 at a rate of 2% per year, resulting in revenue of 7.2 units in 2050 [$1(1+2\%)^{100}$]. It is found that areas B (1971), C (1991) and D (2011) in 20 years give start to the process with a rate of 2% which is increased by a factor β ($= 0.025$). On these factors are dependent regions B, C and D and will reach the area A in 2050.

The growth rate which is due to raise in the income gap is greater as the region begins to recover later. This rate is called by Lucas „last come first”. Largest figure (about 0.4) of the coefficient of variation is achieved in 2010 for an income that is measured for a income of 2.5 units which is measured like the inequality of regional income..

The second case involves a demonstration of regional policy. When area A is achieving a growth rate of 2%, it will pay a fee⁽³⁾ that will help the development of the regions B, C and D. The gaps to be recovered from other areas are for the years 1961, 1971 and 1981 at a rate of growth of 2% plus a factor that is the gap income relative to area A. In 2050, the income is 5.8 units, and the coefficient of variation of income is 20%, the highest value being in 1980. If no redistribution policies long-term results are higher⁽⁴⁾. Not the same can be said about a regional policy which leads to reduction of income inequality over the medium term. To a lower growth process are specific lower inequalities of development between the areas.

Cohesion effectiveness is affected by internal center-periphery structures whose impact is not measured in the same way for LDCs and developed countries of the European Union. LDCs seek the catching up of the gap in national economic development. Boosting national economic growth where there are significant internal development differences is the

role of cohesion policy. The purpose of cohesion policy for countries with a high level of GDP is to boost economic development and to catch up the gap in the undeveloped areas.

Notes

⁽¹⁾ In 2003, 60% from NUTS3 regions (regions with a population lower than 800.000 inhabitants) of New Member States had an average income lower than half from the EU-25 income. Just few regions (7%) had a GDP per capita higher than 75% from EU-25 average.

⁽²⁾ In 1965, Williamson proposed to be created the regional instruments regarding the reduction of development disparities, that can be explained with four factors: labour migration, capital flows, governmental policies and interregional relation.

⁽³⁾ This fee is interpreted as a previous infrastructure investment that could reduce the congestion and allows a higher increase in A region.

⁽⁴⁾ The average income for the middle of the period is higher for 2nd simulation (2,2 units) compared with the first simulation (1,9 units). Region A has a better situation in the first simulation (2,7 units) compared with the second one (2,2 units). The income for B region is approximatively the same. After 2032, the income of all regions will be higher than these ones from first simulation.

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THE ROMANIAN MUNICIPAL BONDS –A CHALLENGE FOR LOCAL PUBLIC FINANCE AND FOR INVESTORS

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***Abstract.** This paper aims to present the municipal bond market development in Romania in the context of financial decentralization and to emphasize its importance for local development but also for the safety of the portfolio investment.*

Keywords: local government; financial decentralization; resources; municipal bonds; risk; Stock Exchange.

JEL Codes: H74, G11, R11.

REL Codes: 13G, 11B.

1. Introduction

The Romanian local public administrations suffer a complex process of decentralization, marked by legislative changes. The gain of the financial independence seeks complementary sources to support local objectives than the classical ones, such as taxes and fees or transfers from the state budget. In this context, the local authorities have assumed the risk of a loan from the capital market, making the foundations for the municipal bond market. If initially this market was in shadow, especially on its second level, after 2008, the investor's interest on those kind debt securities substantially increased. The reason is represented by the attractive rate of interest offered in minimum risk conditions, in a uncertain market conditions.

2. Literature review

The analysis of the Romanian municipal bond market is still in its early stages, whereas local bond segment is not yet fully developed as number of issues, performance and in terms of their attractiveness to the investors. Romanian literature has addressed this issue, but the studies are more oriented towards the connection between decentralization and the local municipalities appealing to the capital market to attract additional resources. In this regard, we noted a positive trend over the past seven years, especially after the adoption of the Tax Code. The municipalities are becoming more interested to earn financial independence (Bolos, 2006). Although they have two possible alternatives to the traditional financing, the bond or the bank loan, starting 2001 we note the preference of the municipalities for bond credits (Mosteanu, Lacatus, 2009).

The issuing conditions and the necessity to gain the investors' trust made the municipalities more attentives the way they collect and manage the resources and the expenditures. So, the accent consists in efficiency and efficacy. This way the local financial decentralization and the municipal bond issue became interdependent (Mosteanu, Lacatus, 2009).

3. Research methodology

The present study is based on statistical data on municipal bonds listed on the Bucharest Stock Exchange and financial data recorded on locally budgets. Statistics are processed and interpreted, with the separation of conclusions on the evolution of the bond segment listed on Bucharest Stock Exchange and its importance to local government, but also for the portfolio investment, in a financialand economic crisis.

4. The municipal bonds issue and its problems

In the last decade, Romania has made big changes in the local public administrations. The increasing transparency on the allocation and use of state budgetary sources locally (due to local public finance law from 2006) but also the changes to tax legislation by the Tax Code generated the significant increase of the degree of local government independence. They have bigger possibilities to collect revenue but also the free use of balancing amounts, in relation to their local particular needs. Regional economic development, next to the constructive changes in legislation, have made possible to increase local decentralization. This context was conducive to winning local financial independence, meaning the free decision on funding sources for local targets.

In addition to financial resources, local government authorities are entitled, by law, to other kind of incomes than the ordinary ones (in taxes), that may be sometimes insufficient. One of these additional sources is the internal or the external loans, used only for locally investments objectives or for local debt refinancing (Mosteanu, 2008). These loans may take the form of bank loans or bond issues. If by 2000, local authorities have did not use too much loans, their share in total revenues of local budget has increased last years, which is reflected by the development of local debt (Table 1).

The local public debt, between 2000-2008

Table 1

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
Local public debt expressed as percent of DGP (%)	0	0	0	0.10	0.10	0.90	1	1.30	1.64

Source: the Romanian National Bank web adress, www.bnr.ro

Analyzing the local budgets, we observed a preference for municipal bond loan, avoiding extra costs involved for a bank loan and legal barriers in access to it.

Legislative developments in the public area⁽²⁾ have given to the local public administrations endorsement, supported by the increased financial independence, to finance the projects of local interest by bond issue. But the access to such a source of funding required municipalities to assume the management of issues as:

1. Guaranteeing the bonds – municipal bonds are not guaranteed by the state, but are guaranteed only by equity and own revenues of local budgets (Mosteanu, 2008). The fact that these loans are reimbursed solely from local resources increased the local public administrations attention in how are collected own revenue, in their size and how judicious expenditure are made. It is true that some municipalities were unable sometimes to make payments to their loans and had to resort to fixed assets or new issues. But this kind of situations draw a signal regarding the need for efficiency and efficacy in forecasting and making local spending, in balance, both in volume and time, with the deadline for receipt of local revenues. Therefore, the issue of municipal bonds imposed the increasing of financial decentralization and a better management of public money, although originally it was an effect.

2. Local public administrations can not appeal on any kind of loans if the total annual debt, That meaning both the ratio of borrowed capital account and the specific fees and related charges, exceed the cumulative limit of 20% of the local specific income, excepting the cases approved by special laws⁽²⁾. Limiting the debt of local government warns local authorities on how to manage resources and costs and increases their attention to the efficiency and the opportunity of investing in the community. Meanwhile, by this restriction,

the state is trying to prevent an overload of the local budget through debt and the wasteful spending of public money, thus avoiding the insolvency of local administration.

3. The municipal bonds involve certain risks for the city, namely the liquidity risk, the bankruptcy risk and the market risk. It is very possible that municipalities may not have available in due time the necessary sources that are required for the redemption of bonds or the payment of coupons, or even local governments are not creditworthy. Thus, municipalities have to resort to new loans (as happened recently), limited by law, assuming the risks of change of interest. With regard to market risk, we can discuss about the variability of the coupon rate offered as to pay for municipal bond loan. It is dependent on changes in credit and debit interest on the interbanking market, so that the financial obligations of municipalities are changing. If we consider issues relating to its maturity, in growing, the uncertainty about the future payment responsibilities on behalf of bonds increases.

4. The legislative instability that hamper the launch and the management of this kind of local loans and modify the municipal bonds attractiveness on tax principles.

5. The bonds evaluation. The issuance of municipal bonds is conditioned by the publication of the issue prospectus which offers a set of informations concerning the issuer and the issue such as: issuer name, the intermediant, the supply value, the price of bond, the maturity of bond, the paying agent, the depositary, the distribution group, the interest, the legal form and nature of the loan, the method of repayment, the taxation, the listing on a regulated market, the applicable law, the risk factors, the financial information about the issuer, the selling restrictions, etc..

A prospectus must provide relevant information on the calculation of the coupon and the table of repayment bond covering both the time of payment of these coupons and principal repayment date. Issuer's financial data are a very important part of the issue prospectus because here there are details of the local budget revenue and spending on a historical time horizon of at least three years, so the potential buyer should be able to take a picture of solvency and financial liquidity. It also offers the issuer's balance sheet to be put in light the local government assets and liabilities, needs and obligations. Finally, prospectus identifies the objectives of the municipal bond loan, which may be an investment breakdown or the need to cover the budget deficit (in exceptional circumstances). Investment objective description can often be an incentive for the investors from the region. Also the prospectus offers a detailed analysis of local debt.

All this are absolutely necessary to achieve the investor's trust in the city financial capacity, so that, finally, the municipality can get hold of those amounts absolutely necessary for the locals development.

The risks brought by a bond loan are asking big problems to investors, even the prospectus is providing transparently the financial dimensions of local government, it does not provide an easy language interpretation. Therefore, it may refer the need of rating for the issuing cities to reflect synthetically the types of risks assumed and their size. Local ranking in terms of their financial credibility, as public information, would assist municipal bonds primary market but the secondary one also. So far however, only listing a bond loan on the Bucharest Stock Exchange comes as a guarantee of the credibility of the concerned municipality.

The choice of the local government to list a bond issue is the result of rational decision (Reeve, Herring, 1986, pp. 65-76). This decision involves assessing the costs and benefits of receiving a rating mark, as listing requires some evaluation conditions. Self-selection of municipalities in the unlisted class is the result of two phenomena: the unlisting is chosen precisely because the issue has features very weak and the rating is not advantageous at all, and in the second case, the cost required for the rating needed in listing is too high compared to possible benefits. Therefore, the fact that a municipal bond issue is not listed to Stock Exchange does not necessary provide the conclusion that it is not qualitative. This category

includes cities which prefer not to list the bonds on the Stock Exchange but to use a selling strategy based on social factors, psychological and cultural rather than financial one.

5. Statistical analysis of municipal bond market

In Romania, the issues of municipal bonds began in 2001, in the context of the legislative changes that increased the financial independence of local government. The Predeal gave the start, deciding to obtain the necessary lei 500,000 to improve a ski resort by the issuance of 50,000 municipal bonds, with a one year and half maturity, which paid investors with a coupon that exceeded with 3 percent the average interbank interest. Subsequently, the example was followed by municipalities as Zalău Breaza, Alba Iulia, Bacău and Târgu Mureș, which saw the local financial assets as an easy and cheap source of financing local investment projects, compared to the classic bank loans. In the years that followed, we see a growing number of municipal bonds issue, so far, we have listed on the Bucharest Stock Exchange 58 of such securities, of which 26 are in full swing⁽³⁾.

We start our analysis by reflecting the overall situation of regulated capital market where are traded municipal bonds, namely the Bucharest Stock Exchange. After a pretty intense activity developed by the year 2007, the Stock Exchange went on a downward path in terms of value traded, marked by the spread of financial and economic crisis globally. Transactions have become fewer and fewer on the background characterized by indexes that reached the historically lowest levels. The investors, on a feeling of panic, abandoned the investment in shares considered risky, and they changed the profile, preferring investment in deposits, real estate or bonds. On the Romanian capital market, we noticed a special interest for bonds issued by state, namely to those issued by international financial institutions (the International Bank for Reconstruction and Development).

The municipal bonds issues number evolution on the Bucharest Stock Exchange

Table 2

Year	No. of Trading sessions	No. of Trades	No. of Bonds Traded (volume)	Turnover (RON)	Average Daily Turnover (RON)	No. of Bond Issuers	No. of New Listings of Bond Issues
2001	17	5	45	481,42	28,32	2	2
2002	247	10	59.050	782.679,31	3.168,74	4	2
2003	241	39	187.870	17.135.351,82	71.101,04	10	8
2004	253	1.116	530.466	289.794.851,55	1.145.434,20	22	16
2005	247	394	397.101	127.369.058,79	515.664,21	19	6
2006	248	570	3.917.457	985.517.592,79	3.973.861,26	19	5
2007	250	268	6.652.467	794.335.510,65	3.177.342,04	22	11
2008	250	552	1.214.353	231.929.950,72	927.719,80	50	3
2009	216	859	2.517.831	1.031.953.236,12	4.777.561,28	58	12

Source: <http://www.bvb.ro/TradingAndStatistics/GeneralStatistics.aspx?tab=1&m=0>

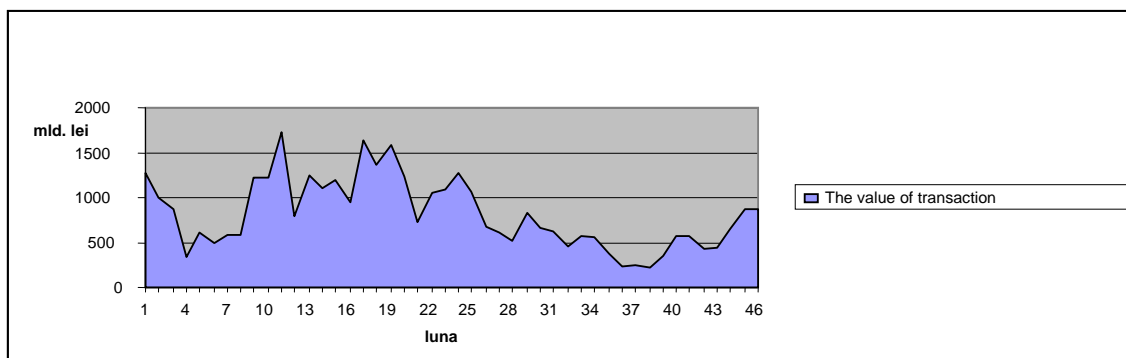
After the fall of the Stock Exchange, registered at the end of last year, for 2009 and 2010 sees a slight reversal, both for the number of transactions and value traded, which was pretty hard hit, especially in the second half of last year. Thus, as can be seen in Figure 1, after the end of 2008 the value traded on the Bucharest Stock Exchange reduced suddenly to 50%, from March this year the transactions have returned somewhat to normal, exceeding the monthly lei 300 billion.

In Figure 2 it can be seen that the market has kept fairly liquid throughout all the period of our study but it is obvious a decrease of the number of transactions in the context of

a quite pronounced volatility. We may observe at the same time an animation of the capital Markey activity in early 2009, signs of the return of the investors hope.

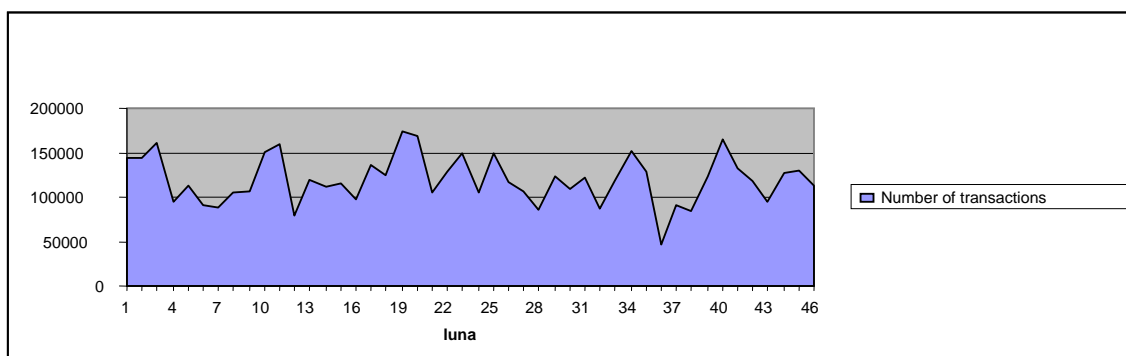
But, unfortunately, negative values of stock market indexes⁽⁴⁾ which have marked the stock exchange more than one year (2007-2008) leave a bad interpretation of the above analysis, offering the signal that investors had more selling stock intentions. A higher bid, which was not greeted as a request generated declining prices and large transactions. This situation seems to have taken a positive turn this year, as a sign that the incresement of the value traded and of the number of transactions, coupled with an increase in the exchange, reflects the multiplying of the buying offers.

In the last 6-9 months, the investors have become increasingly interested in investing in bonds, because, while they offer a more modest pay, they are more reliable in terms of capital recovery. If in previous years the transactions with bonds on BSE seemed to be totally accidentally, since 2008, their share in total value traded on the stock exchange has become higher, as reflected in the Figure 3. If in the Romania's economic boom period (subsequently proved to be artificial) the share of value traded for the bond market sector was modest and variable, since this year, when the investors' interest increased, as the financial crisis has made them more prudent. So they turned to safer assets, those who won over 25% as market share in some time periods. An excellent result was recorded in October 2009, when the share value of bonds traded reached even 41% in total value traded in the market.



Source: <http://www.bvb.ro/TradingAndStatistics/Bulletins.aspx>

Figure 1. The value of the transactions made at BSE between 01.01.06-01.11.09 (billion lei)



Source: <http://www.bvb.ro/TradingAndStatistics/Bulletins.aspx>

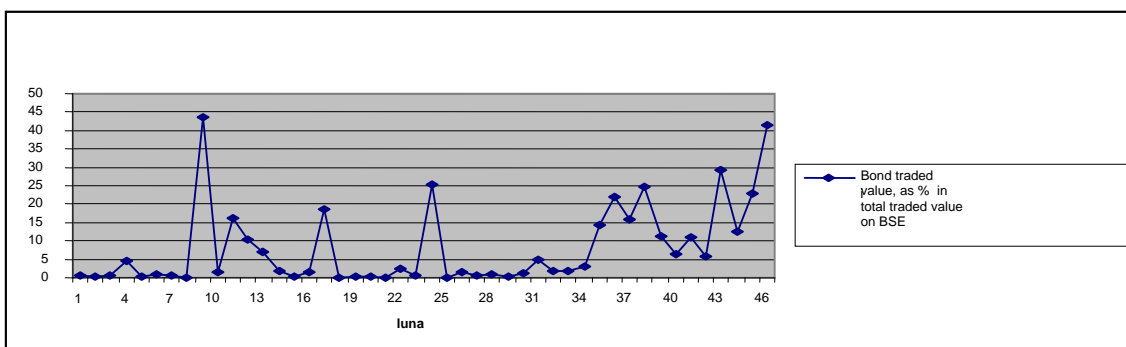
Figure 2. The monthly transactions number registered at BSE between 01.01.06-01.11.09

If bonds generally have not enjoyed the success on capital market, neither the municipal bonds have not better faith, as this market segment is still in its infancy in Romania and the issuing municipalities can not afford a strong promotion. Local government generally keep out to list these titles to save itself from a unfavorable rating qualificative and listing costs, in the context that investors are less informed about these kinds of assets and even skeptics. Although listing on BSE is a first signal that the issuing municipality is credible,

however, investors have been reluctant, in the conditions that that local decentralization process is taking its first steps and it is very possible that funding sources needed to repay these debt securities not to be safe.

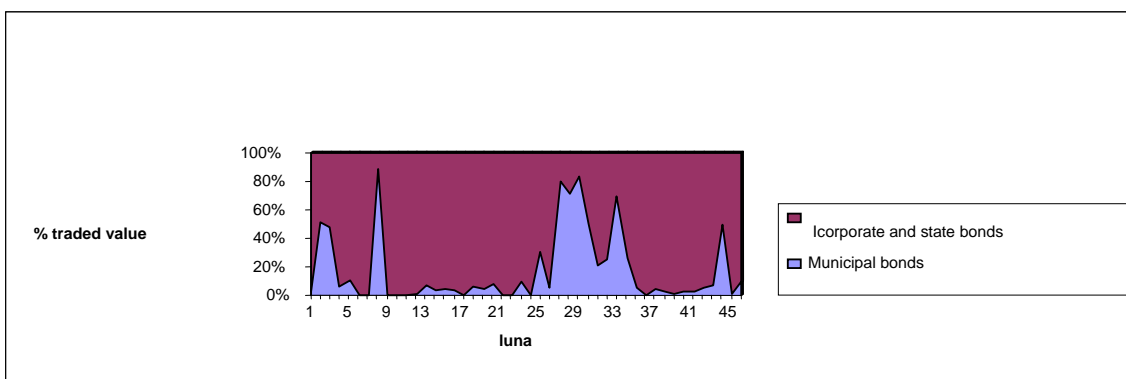
The value traded for municipal bonds may be considered as insignificant in the capital market but it has made real progress. However, if we refer to the bond market, we should note a reversal in this segment, after the sudden decrease registered in the second half of last year. Thus, after values of even 80% in the bond segment, the traded value for municipal bonds fell below 1% at the beginning of this year. Currently, in terms of traded value, the market for bonds issued by local governments show signs of growth, as we may see in the Figure 3.

The same conclusions are obtained by studying the situation of financial transactions with this kind of assets, for the same period. Thus, if by 2006 we can notice a great number of transactions, since the second half of 2008,, we can remark a consistent increasement. Of course, the fall of the capital market in economic and financial crisis conditions has had repercussions on the municipal bonds sector, but by comparison to the starts, the number of transactions still remains at very good leves and the values traded have exceptional size certain times. We noticed so that the share of value traded on themunicipal bond market on total value traded in the market exceeded 0.5% since the second half of 2008, in the conditions that previously it was quite insignificant.



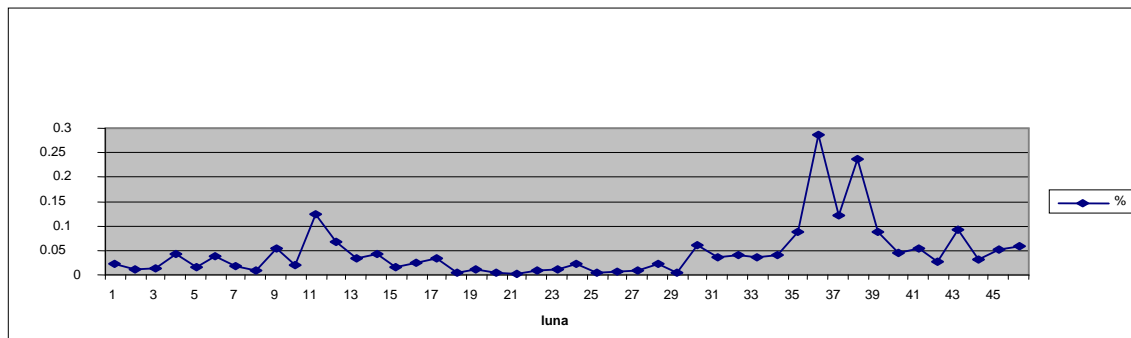
Source: <http://www.bvb.ro/TradingAndStatistics/Bulletins.aspx>

Figure 3. The percentage of the bond traded value in total traded value on BSE, between 01.01.06-01.11.09



Source: <http://www.bvb.ro/TradingAndStatistics/Bulletins.aspx>

Figure 4. The traded value for municipal bonds in the bond market sector, between 01.01.06-01.11.09



Source: <http://www.bvb.ro/TradingAndStatistics/Bulletins.aspx>

Figure 5. The percentage of the municipal bond transactions in total bond transactions on BSE, between 01.01.06-01.11.09

6. Conclusions

Economic and financial crisis continue to generate greater funding and liquidity problems. Local public administrations, in a full process of financial decentralization, must face locally needs that can be satisfied by own resources, with economy of means and costs. Loans seem to be an additional source of the traditional one from taxes. But the banking system blockage makes impossible the access to the classic banking loan. The only alternative is the capital market, so the issues of municipal bonds are rising. This year took place 12 municipal bond issues of significant value. Most of these local loans aim to obtain the amount necessary to repay previous loans and this is a sign that local authorities have serious problems on supporting the community budget balance. The legal limits on the debts of municipalities, the risks they assumed, the evaluation and access on secondary market problems, bureaucracy, all these require to the issuing city to pay special attention to this form of financing, in a national context completely unfavorable.

Moreover, the same economic and financial crisis has had a favorable impact on the municipal bond segment listed on the Bucharest Stock Exchange. The economic, political and legislative uncertainty has oriented the investors characterized by risk aversion to debt securities. The volume, the value and the number of transactions increased in 2009, reaching historic levels, even in a market that generally has not captured the interest, on the speculative historical context of Bucharest Stock Exchange.

Notes

⁽¹⁾ Law No. 273/2006 of Local Public Finance, published in the Official Gazette No.618/18.07.2006; Law No. 313/2004 of public debt, published in the Official Gazette No. 577/2004; Regulation No. 5/2003 of public sales offer of securities and other financial instruments; Regulation on issuers No.1/2006 seeing securities transactions;

⁽²⁾ Tatiana Mosteanu et al., „Budget and Treasury”, Third Edition, Universitara Publishing House, Bucharest, 2008;

⁽³⁾ Law No. 273/2006 of Local Public Finance, published in the Official Gazette No. 618/18.07.2006;

⁽⁴⁾ Reeve, J.;Herring, H. (1986), „An examination of nonrated municipal bonds”, *Journal of Economics and Business*, vol. 38, Issue 1, pp. 65-76;

⁽⁵⁾ <http://www.kmarket.ro/emisiuni/emisiuni.php>;

⁽⁶⁾ <http://www.bvb.ro/IndicesAndIndicators/indices.aspx?t=4&m=BSE&i=betc&o=&d=11/20/2009>, <http://www.bvb.ro/IndicesAndIndicators/indices.aspx?t=4&m=BSE&i=bet&o=&d=11/20/2009>

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- <http://www.bvb.ro/TradingAndStatistics/Bulletins.aspx>

THE IMPACT OF THE GLOBAL CRISIS ON PUBLIC EXPENDITURE IN EDUCATION

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***Abstract.** After eight years of growth in developed countries, the current financial and economic crisis brought significant change in the economic landscape. The growth rate fell dramatically all over the globe, with direct implications on public finance.*

Although, at the moment, we can not clearly estimate the impact of the economic crisis on public expenditure in education, the available data reveal that the educational sector was severely influenced by the global downturn.

The present paper analyzes the current state of Romanian education and makes some suggestions on improving the impact of the crisis, taking in considerations lessons we learnt from previous economic crises.

Keywords: global crisis; public expenditure; education; public intervention; Romanian education.

JEL Codes: E44, H52, I22.

REL Codes: 4D, 8H, 13C.

1. Introduction

The current economic and financial crisis is expected to have a major impact on education in most of the countries of the world. Although it is too early to evaluate the extent of the crisis, its effects on public finance of education can already be observed.

The present paper is composed of three parts. The first part makes an analysis of the current economic crisis and its impact on public finance, using data available in October 2009.

The second part discusses the main arguments for public intervention in education, in view of clarifying the dependence of the educational system on central and local public transfers.

Since state budgets are under constant transformation we can not fully evaluate the importance of the crisis for public finance, the third part makes some observations on past economic crises, at the same time, trying to draw some lessons that can be useful in the present.

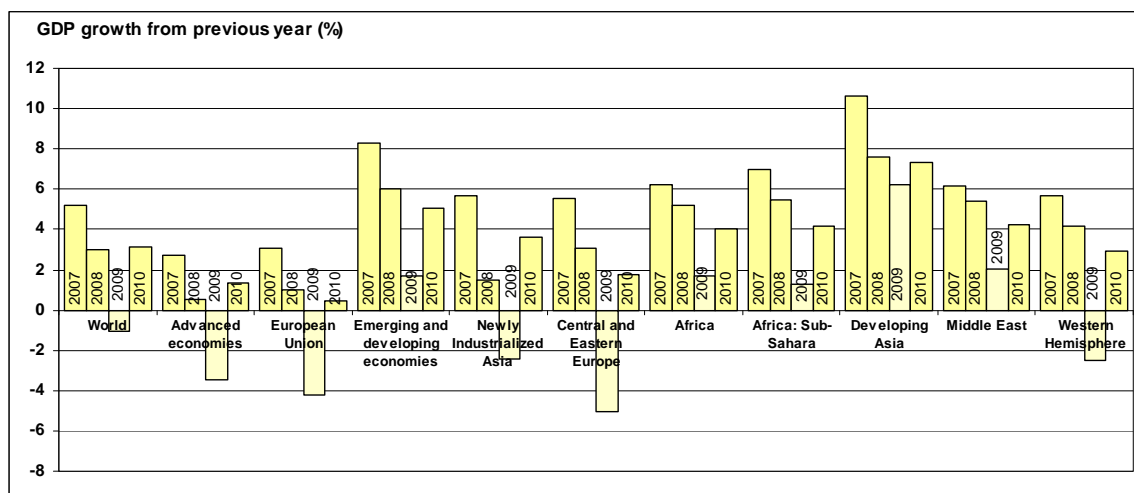
The last part of the paper presents the current state of the Romanian educational system and also some observations on the effects of the crisis that already manifested in our country.

2. The effect of the crisis on economic growth and government finance

The world is currently dealing with an unprecedented economic and financial crisis. The present crisis is different from past ones; first of all, because of the way it started – as a negative effect of the irresponsible behavior of developed countries. Relaxation of conditions for granting mortgage loans in USA, the transformation of loans in financial assets that were sold and resold so that the risk was not eliminated but passed on to the last buyer, are some of the main causes for the crisis.

Another significant distinction, especially from the structural crisis of the 1980s, is related to the specific moment when it triggered – after a period of eight years of strong economic growth in developed countries. Furthermore, the present crisis expanded rapidly because of the high degree of financial globalization and soon hit the majority of the world's states.

The effects of the crisis on world economics are great, statistics of the IMF predicting a decrease in the world's Gross Domestic Product for the year 2009 comparative with the previous year (-1.05%), for the first time after the second World War. Developed countries will be far more affected than developing countries, as a contraction of 3.63% is expected for advanced economies while the growth rate in developing countries will decline sharply.



Source: IMF World Economic Outlook Database, October 2009.

Figure 1. GDP growth from previous year (%)

Not all countries will be affected equally. The effects of the crisis will propagate through certain channels to which the states have more or less access. The major economic agencies identify the following channels of propagation (UNESCO, June 2009, p. 9):

- Falling Foreign Direct Investment (FDI);
- Declining commodity prices (it will harm countries which rely heavily on exports of non-oil commodities, although oil-importing countries may benefit from lower prices. On the whole the balance is expected to be negative);
- Lower government revenue as a result of heavy reliance on trade taxes;
- Shrinking remittances (as a result of declining activity in developed countries);
- Diminishing official development assistance flows to the extent that aid initiatives and disbursements are correlated with activity level in donor countries.

Lower commercial activity and decreasing economic growth have an impact on fiscal revenues of countries all over the world. Thus, it will lead to a stronger pressure on state budgets, especially if private capital flows are rapidly diminishing. As a result, the economic and financial crisis will result in lower government investments, affecting education as well.

3. Public power and education

The value of education for the society is unquestionable. Since ancient times it has been seen as a treasure in itself, rather than a source of wealth. With time, theories and models were developed that made it possible to quantify the benefits of education, thus demonstrating the importance of investing in education.

Public intervention in education has also a long history: „there is a long and honorable tradition from Adam Smith to Alfred Marshall which assigns to publicly supported education

a major role not only in promoting social peace and harmony, and self improvement, but in the process of wealth-creation itself.” (Vaizey, 1962, p. 23).

Economic literature identifies several arguments for public intervention in education (Tilak, 2005). First of all, education is considered a public good and it has a variety of positive externalities (decline in population growth, reduction of poverty, a better distribution of income, reducing crime, rapid adoption of new technologies, strengthening of democracy, insuring civil liberties, etc.).

A different theory considers education to be a merit good whose consumption should be encouraged. The state, as it is more informed toward the benefits of education, should be wiser than the individual as in investing in human capital.

Thirdly, state intervention is desired to resolve the equity problem. Ensuring equality of opportunity in education for all individuals, indifferent of race, social, financial or cultural status, is considered to be one of the functions of the modern state.

Another argument in favor of public finance in education deals with the imperfection of the capital market and asymmetry of information. In many developing countries the capital market is not fully developed and students find it difficult to make loans in order to finance their own education, as investments in human capital are considered to have high risks.

In addition, the education is a sector which is subjected to economies of scale, or increasing returns to scale – average costs of providing education declines as enrolments increase. Furthermore, universities, scientific equipment and libraries cannot be used on a reduced scale. Therefore, it is more efficient for the government to provide it.

The educational sector is dependent on public funding. Although, in the last years, public and private partnerships have increased on a global scale, in most countries, public funding of education is far more substantial than private funding.

Public and private funds participation to education finance as percentage

Table 1

Funding (%)	EU-27	BE	BG	CZ	DE	FR	IT	HU	PL	SI	SK	UK
Public	87.5	94.4	84.8	88.9	85.2	90.9	92.3	90.5	90.5	87.0	85.2	75.3
Private	12.5	5.6	15.2	11.1	14.8	9.1	7.7	9.2	9.5	13.0	14.8	24.7

Observation: Data on Romania is not available.

Source: Key Data on Education in Europe (2009).

The predominance of public funding, especially in terms of reducing household incomes due to the current economic crisis, leads to a greater reliance of schools to transfers from local or central administration. Lower fiscal revenues will impact school budgets, student scholarships and, of course, teachers' salaries, as they represent the biggest part of the expenditure on education.

A World Bank report (April 2009) identifies other possible effects of the crisis on the education sector. One effect could be the increase in public school enrolments as students will prefer public to private schools, being unable to pay their taxes. Also, budgets reductions will probably result in a cut in administrative costs and the delay of education reforms or, on the contrary, it will force the system to find more efficient ways of resource allocation, exerting pressure for the formulation and implementation of reforms.

4. Lessons from past crises

Many states are in the process of modifying their budgets, including education expenditures, so they can face the global crisis, while others are still negotiating budgets. As a consequence, it is too early to observe the full impact that the economic crisis on public spending in education. Still, we can look back at the economic crises of the past to analyze their effects on education and to find some lessons that could help us in the present situation.

In the 1980s, third world countries dealt with a crisis that made them take drastic measures to counteract fiscal imbalances, to reduce public debt and keep inflation under control. The main economic policies were set on reducing the budgetary deficit, which in the absence of public revenues meant diminishing public expenditures. This measure was critiqued by most of the international agencies, as they considered that it will have adverse effects such as increase of poverty and reduction of government provision of public services, like education. Finally, reducing the budget for education led to a decrease of quality in public education and the development of private education, with serious consequences on equity in education and a gradual deterioration of public primary education, due to the increasing share of higher education in education spending (UNESCO, June 2009).

In a presentation for the Future Forum, Nicholas Burnett, the assistant director for Education at UNESCO, discusses the main implications of the Asian crisis of the 1990s on the educational sector. The Asian countries also dealt with cuts in education budgets but, unlike the previous crisis, the demand for public education increased due to the fact that students dropped out of private schools but also because reduction of salaries on the labor market led to a decrease in the opportunity cost for education.

Lessons to be learned from past crises:

- Promoting education progress even in hard times by steering efforts and investments toward priority sectors;
- Identifying and helping the groups of the population that are likely to be hurt the most by the crisis, thus reducing absenteeism, school abandonment, preventing child labor;
- Ensuring that the teachers are paid their rightfully wages on time in order to maintain the quality of the educational system.

5. The state of the Romanian educational system

According to a report of the Ministry for Education, Research and Innovation, in 2008, the percentage of public expenditure on education, as a % of the GDP, was declining. However, higher education received a larger amount of funds. Thus, the share of expenditure for tertiary education has been, in the years 2007 and 2008, approximately one third of total expenditures on education, compared to about 22% in 2006. According to data from the Ministry, there were 4 million thousands lei allocated for the 49 state universities in Romania in 2008, half of which (1,947,266 thousand lei) were meant for paying teachers salaries and administrating activities. Still, the Ministry anticipates that the decline of GDP in 2009 will lead to a decrease in state funds for education, even though their share in the GDP will be a littler higher that the previous years.

According to Education International, in April 2009, the budget for education for Romania had already suffered a 10% cut (approximately 700 million lei), which led to delays in teachers salaries. Moreover, national scientific research competitions, whereby universities are able to compete for additional funding, have been suspended for 2009. Additionally, budgets for research projects currently in progress have been severely reduced by 70 percent.

The Romanian educational sector was severely affected, as 19,000 people were let off in 2009. What is more, the government is looking for a cut in expenses so that it can reach 15.5% in November and December. Measures of the Ministry of Education consists of sending teachers on forced leave without pay at Christmas, or the alternative measures of reducing working hours, without affecting the teaching standard norm. Thus, teachers will receive in December and January lower wages with the amount of 2,000 lei on average.

6. Conclusions

The current economic and financial crisis is very different from the past crises, mainly because it originated in the developed and not the developing world. Due to globalization, it rapidly expanded to the entire globe, affecting the GDP growth rate and also the level of public funds allocated from the public budget to the economic sectors.

We consider that the full impact of the crisis on public expenditures in education cannot be measured yet, as the necessary statistical data are missing, due to the constant modifications of state budgets.

An analysis of the current state Romania public system reveals, however, that it was strongly affected by staff reductions, delays or reductions in salaries for teachers and reduced funds for administrative or scientific activities.

Drawing lessons from past economic crises, we propose as future measures a stronger focus on education at all levels and its links with the labor market, providing funds to priority activities and aid for population groups that are likely to be hit the hardest by the crisis.

Acknowledgements

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THE LOCAL DEVELOPMENT AND THE DECENTRALIZATION PROCESS IN THE CONTEXT OF THE FINANCIAL CRISIS

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***Abstract:** The theme presented is of a great importance for the European countries, especially for Central and Eastern Europe countries. The development, understood as a result of change, has to be accepted as a basic component of the social-economic development. The experience of several EU countries, regarding their regional development policies, was the main feature we took into account when starting the analysis. The research we made for Romania began by studying the EU policies concerning development and decentralization. The article aims at offering a coherent approach, at getting to useful results in order to give an impulse for future studies.*

Keywords: fiscal decentralization; local development; social and economic innovation; central and local public administration; public services (goods).

JEL Code: H 73.

REL Codes: 13 C, 16 H.

1. Introduction

As a result of the financial crisis, the public sector development and the local public expenditure efficiency issues concern more and more specialists, economists, politicians, media and the scientific world as a whole. Among the main notions of regional development policies, decentralization is accepted as a process of approaching final decisions to the local or regional level. At the same time, innovation is another relevant notion characterized by many economists as a particular instrument, close related to change and, why not, to the risks and uncertainties of any activity.

The human society responds to the risks factors by offering a strong scientific prove of how decision is made; it is considered that decision is based both on mathematical and statistical quantitative analysis, but also on other different factors which can influence several types of decision. Next to the quantitative analysis, a qualitative analysis is also useful because it highlights the consequences, the risks and the efficiency of a specific decision.

The notion of local development is underlined by some economists as a process highly influenced by innovation and entrepreneur. It involves multiple structural changes to increase the local community's living standards through improving the capacity to adaptability and stimulating innovation.

Using Romanian statistical data offered by special organisms, information regarding some aspects of the social-economic development, the paper highlights some economic facts related to the regional discrepancies and to the absolute need to promote and apply jurisdictional strategies of development.

We started writing this paper after carefully studying the specific literature, different reviews and articles, which describe regional discrepancies and the financial crisis effects upon these differences between regions. We have also read books in which we found new aspects of the regional development phenomenon since 1990 up to 2009, all these information giving us an appropriate background to continue the research. We consider that by permanently referring to the successfully policies applied in other EU member countries, not only that we are able to make comparisons, but it gives us the opportunity to adopt a closer approach towards the specific features of the Romanian public sector and to establish the most relevant objectives for our economy, as each country has its own customs and characteristics

(which are not worldwide available). By emphasizing all these aspects, we understand why local development assumes adaptability to new: human resources organization, processing data and evaluating the results, finding the resources to finance the change and progress of society. From a methodological point of view, we have used methods of analysis and synthesis. Nevertheless, ranks and scores were also used for creating a hierarchy between Romanian jurisdictions and regions in terms of the development degree.

Actually, the local development level depends on the available financial, human and information resources, on the local public efforts to create and co-ordinate local partnerships.

The first part of our research paper deals with the regional policy and development from theory to practice, a short evolution of the most important notions. We described the EU policies concerning the public central and local sector, and also the welfare gains and losses of decentralization. The next chapter presents the main features of the Romanian local growth, the different social, financial and economic degree of development between jurisdictions and also some models of local growth that might be taken into account.

The last part includes several conclusions and proposals that give a few solutions to cope with the economic crisis and to remove its negative influence upon the economic development of the country.

2. Features of the regional development

Regional growth dimensions are conceived taking into consideration the diversity of nations, their different history, the differences of their cultural, economic and social background and other peculiar regional aspects.

The notion „region” does not refer only to that national area regionally marked. It can also be used to an international level to define multinational regions of neighbouring countries which are bounded by commercial transactions, economic partnerships or by a common culture and tradition etc. (Scandinavian countries, South-East Asian countries). Furthermore, contemporary international development dimensions are characterised by globalization and integration, aspects that enforced countries to find homogeneous ways of structuring regions from different national areas. For instance, the EU Statistic Agency created the Nomenclature of Territorial Units for Statistics (NTUS) with the purpose of creating a unique classification codes guide for the regional statistics of the European Union.

2.1. European dimensions of regional development

According to the “Regional Community Charter”, the region is defined as a territory which forms, from a geographical point of view, a distinct unity or a similar assembly of areas characterised by continuity, in which the population possesses certain common elements and is dominated by the desire of keeping their individuality and develop it in the future, with the purpose of stimulating the cultural social and economic process. The region represents the direct central subordinated administrative level (Bădescu, Alexandru, 1997).

The specific literature emphasizes the reasons for the existence of regional policies at the EU level throughout the following issues:

- A. the improvement of regional economic and social policies in the poorest regions;
- B. the necessity of co-ordinating the regional development, both for the EU countries as individuals and for the EU as a whole;
- C. the remove of social lags by reducing the unemployment rate and by increasing revenues.

Nowadays, the financial incentives given to poor regions are very often used. Their general purpose is to stimulate investments and, therefore, these regions borrow money, receive subsidies, take advantage of low interest rates for the loans, tax exemptions, several economic facilities, subsidies for employing work force etc. (regional development agencies guide, 1998).

The most important instrument for implementing regional policies is the Regional Development Fund, created upon the principle of receiving funds from the central public budget, from the local public budgets of each region, from the private sector or from international financial institutions.

It is recognised that there are two main types of regional growth:

A. The policy initiated at the central level – it was put into practice in a stable economic climate and it involves a governmental redistribution of funds. Unfortunately, these policies did not bring about the expected results because the outcome is sometimes divided into several pieces or because central taken decisions do not take into account the specific needs of that jurisdiction and its inhabitants.

B. The policy given at local level – underlines the influence of local communities in initiating local development with the resources collected by the local public administrations.

As a consequence of the elements presented so far, we believe that it is necessary to emphasize the welfare gains and losses of both a centralized and decentralized system.

On the 22nd of May 2006, a New Legal Rule concerning decentralization was adopted. It describes decentralization as the process of transferring financial and administrative competence from the central public authority to the local one or to the private sector.

Besides decentralization, there is another notion with a great impact – local autonomy. Local autonomy represents the right and the ability of local authorities to offer the local communities that they represent the solutions to their specific needs. The local authority is represented by local councils as deliberative authorities and mayoralties as executive authorities (Văcărel and collective, 2006).

2.2. The welfare gains and losses of decentralization

The welfare gains and losses of decentralization are often considered by reference to those deadweight losses that result from centralization (Oates, 1972). Assume that the population of a particular nation-state is divided into two distinct localities. A local public good is to be provided in each locality, and it is assumed that there are no inter-jurisdictional spill-over. The cost is to be shared equally by residents. The figure below illustrates the demand for the local public good of two „representative” individuals, one from each locality. D_A represents the demand of individuals in locality A, and D_B represents the demand of individuals in B. The marginal costs of providing this particular local public good G are assumed to be constant. The price each individual is asked to pay is shown as P in the diagram.

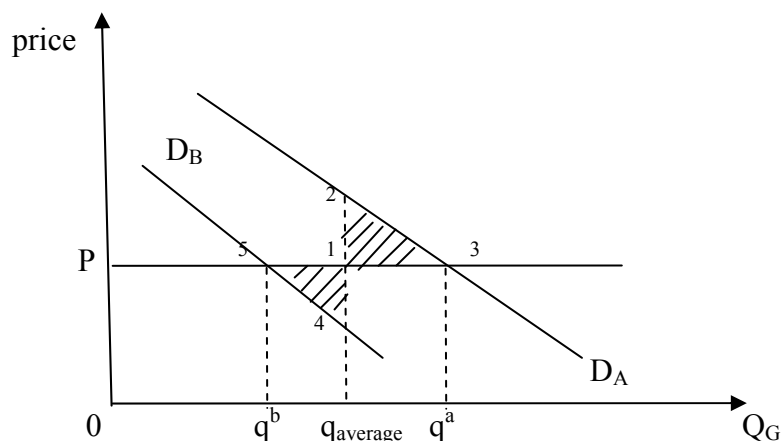


Figure 1. The welfare loss of centralization

In this diagram, if a centralized regime provided a single uniform level of the good ($q_{average}$), the level of output provided could be shown as a compromise between the demands of the individuals in each locality. Such a quantity is lower than the amount that would be

demanded by the representative individual A, but more than would be demanded by the representative individual B. Inevitably, welfare losses are experienced by each of these two individuals. The losses are shown as triangles 123 and 145. Triangle 123 indicates the loss that arises because individual A does not consume as much as he would choose if there were no need to compromise. He would gladly pay $q^{23}q^a$ for the additional units $q_{average}q^a$, but these would cost only $q_{average}13q^a$ to be made available. Triangle 145 indicates the welfare losses that are experienced by individual B because he is consuming more than he would otherwise choose. He pays $q^{b51}q$ for the additional units $q^bq_{average}$ but he values them at only $q^{b54}q_{average}$.

If each area could provide itself with just the quantity of the good that it requires, these deadweight losses could be avoided. Decentralization permits each locality to provide itself with the quantity of the good it prefers. This illustrates the decentralization theorem, which is described by Oates as follows: „For a public good – the consumption of which is defined over geographic subsets of the total population and for which the costs of providing each level of output of the good in each jurisdiction are the same for the central government or the respective local government – it will always be more efficient or at least as efficient for local government to provide the Pareto-efficient levels of output for their respective jurisdictions than for central government to provide any specified and uniform level of output across all jurisdictions.”

At the same time, tax payers will be better informed upon the public resources that are being spent. Starting from this idea, we could add that local politicians are elected by the inhabitants of that specific region and not appointed „by the central system”. This aspect leads to the creation of a mechanism throughout the population could easily „punish” or „encourage” their political „performance”. Besides offering the specific goods in the desired quantity, decentralization also involves a higher degree of transparency of the public administration: there will not be any losses of financial resources between the central and the local level. Furthermore, centralization implies that local authorities will always be dependent on the additional resources transferred by the central administration to the local ones. In other words, they are going to be inefficient if constraints are lighter and the degree of subordination to the central level will get worse to the prejudice of those who expect the complete, convenient and without waste use of resources. Public services consumers also expect and take into account another economic issues regarding the provided public goods, i.e. the utility maximization.

Often, decentralization doesn't bring the desired efficiency through the redistribution policies. When individuals are described as being flexible in moving from one jurisdiction to another, a local economy that collects higher taxes will lose its residence; these inhabitants with higher wages and multiple possessions will feel „encouraged” to settle down in that jurisdiction where taxes are lower in order to preserve their financial welfare.

3. Features of the regional development in Romania

The social and economic development of Romania proved to be a hard and long process of transferring different factors and incomes.

According to Law nr. 315/2004 regarding the regional development in Romania, there are organized eight regions of development where local growth policies might be implemented.

3.1. Discrepancies of economic and social development between regions

The discrepancies are the result of several factors such as: different rate of growth between districts, the decrease in terms of importance of the specific features of each area; the different level of infrastructure development. All these lags between jurisdictions became a reality, creating patterns over time (Landaburu, 1997) in areas like: traditional industrial areas where the metallurgy of iron and steel sector, coal industry and textile field suffered a decline; countryside areas, characterized by large surfaces, some isolated and others with a low

percentage of people working in the agriculture sector; they have to tackle also another severe issue – highly polluted rivers and soil.

The analysis we made in Romania highlighted the following results for some relevant indicators⁽¹⁾ which give us „the global development index”:

- N-E and S areas, i.e. Botoşani, Vaslui, Teleorman, Giurgiu, Călăraşi and Ialomiţa, have the lowest degree of development;
- The higher level of growth appears to be found in Western and central Romania, i.e. Timiş, Cluj, Sibiu, Braşov and, of course, Bucharest;
- As a result of changing ownership in many companies belonging to several fields of activity, there were recorded changes in terms of labour and work force - excessive migration;
- The highest levels of the unemployment rate in October 2009 were recorded in Harghita (9.3%), Argeş (9%), Buzău (8.9%), Bacău (8.3%), Dâmboviţa and Prahova 8.2% and other 25 districts with a higher rate than the national average (7.1%). The lowest unemployment rates are to be found in Ilfov and Bucharest with 2.1%, Timiş (4.2%), Constanţa (5.2%), Bihor (5.4%), Satu Mare 5.6%, 5.9% Cluj, Maramureş 6.1%, Arad 6.3%, Botoşani 6.5% and Vrancea 6.9%. The average rate of unemployment was in October 2009 of 7.1%, while in September 2009 was 6.9% and 4% in the October 2008. There were a total of 653,939 persons unemployed in October, women 288,556 (44.13%).

The results obtained from this study confirm what many specialists recognised in the past: „Demographic changes due to the decrease of healthy born children and death, the economic changes and the productivity increase, as well as social changes do not know any region, race, culture or religion impediments”.

We can develop a more relevant analysis if we study some regional coefficients of the eight Romanian regions (NTUS 2). According to the data offered by the Romanian National Institute of Statistics, in 2007, we discovered the following:

The analysis of regional development in 2007 in Romania

Table 1

Region	Rate of occupied population (%)	GDP/inhab. RON/inhab.	Phone subscriptions /1000inhabitants	Highway density /100km ²	Railway density /1000 km ²
N-E Region	61.3	9114.2	562.8	36.5	44.1
S-E Region	54.7	11627.7	561.8	30	48
S Muntenia Region	60.5	10908.3	539.2	35	36.4
S-V Oltenia Region	59.3	10460.4	355.3	35.9	33.9
W Region	59.6	14960.4	423.8	32.2	59.4
N-W Region	57	12647.2	524.3	34.8	49.1
Central Region	55.1	13549.2	552.4	29.9	29.5
Bucharest-Ilfov Region	62.4	28325.7	814.2	48.9	153.2

These results show us that the Bucharest-Ilfov Region has the best values. Major differences from other regions appear especially in terms of GDP/inhabitant and railway density/1000 km². West, North-West, North-East and South Muntenia Regions are placed above the national average, while Central Romania, South-West Oltenia and South-East have worse results regarding the five values (for this hierarchy we gave scores – 1 for lowest to 5 – highest).

Finding the appropriate solutions for Romania in this period of time – characterised by economic and financial crisis, after 3 years since its integration in the EU structures – is absolutely necessary. Creating the specific regional development policies, as part of another complex process – decentralization –, will stimulate local initiative and entrepreneurs.

3.2. Models of local development

Creating the „perfect” society, satisfied by the public sector, depends both on the government and central administrations activity and on local administrations. In the last decades, several models of local development were implemented; they had one of these theoretically basis:

1. The inputs development in those fields where raw materials were abundant and had a low cost;
2. The Keynesian approach, orientated towards stimulating demand and public investments.

Models of local development

Table 2

Urban dynamics	Rural areas	Techno poles	Industrial districts
Economic change provides advantages to the investment management in the large urban areas. The most important factors that influence investors are infrastructure and the financial services.	The partnership between small towns and villages in implementing development projects in agriculture.	Techno poles represent a scientifically based form of development that highlight the research activity in creating new technologies.	Industrial districts are industrial structures; their main goal is to take advantage of the resources and to stimulate innovation and technological reports. Resources and local communities support are essential for their existence.

Local initiative is the first element one can think about, a criterion which underlines the local resources necessary for the welfare of local communities. Local initiative uses at high capacity all the available human, information and financial resources, creates jobs, factories and enterprises, stimulates innovation and entrepreneur.

The experience gathered by the developed countries proves that there are factors that can influence the success of local economic initiative. Among these stimulating factors are:

- changes in the primary, secondary and tertiary sectors; these sectors influence the development at local level in terms of work force distribution;
- fiscal consolidation which allows the decrease of interest rates and contributes to the creation of an attractive climate for the private sector;
- new informational infrastructure that creates and develop efficient services.

4. Conclusions and proposals

The downward trend of economy from the last year produced a lot of damage in many European districts and regions. The most difficult problems were the increasing unemployment rate and the drastic fall of revenues.

The crisis will probably continue to produce effects in Europe and, therefore, economists will have to find answers to overtake it. Many conferences and debates analyzed and will analyse this crisis, among them, the most famous is the Annual EU Conference which in 2009 took place in Brussels. The conference represented one of the greatest events of this type and it highlighted the possible measures that are to be taken in order to stimulate economic growth at central and local level and it offered also the opportunity for all the European countries to think together, to develop partnerships and to other available solutions. At this conference, each country discovered how the others used so far the communitarian funds for regional development, funds, which for 2007 – 2013 rise at 347 billion euro (European Comity, Regional receipts of success, 2009).

In Romania, since 1989, multiple changes were made, many of them producing strong impacts upon people and our national economy. For instance, EU regional policy is mostly concerned with implementing an internal development theory which takes into account factors

like innovation, human capital, financial capital, institutional infrastructure. All these contribute to a higher productivity. Since 2000 worldwide economists created some studies based on econometrics (especially the European Investment Bank), studies that prove that sometimes EU policies are not as efficient as they should. All EU regions are developing, but lags are still present. In this case, theory becomes a politic and economic risk factor as wealthy EU countries could postpone or even seriously decrease the structural funds paid into the communitarian budget.

So far, Romania depended on the direct foreign investments and on the intensive use of labour force. It is very difficult, especially during crisis, to find and create technological innovation so that the country gains a long-term competitive advantage. Nevertheless, on short term, even if we succeed to recover from this crisis, we can not strongly develop unless we have well prepared and skilled human capital and technological innovation. We should wonder whether it is useful to spend money only on infrastructure. Anyway, countries that invested only in infrastructure had to make a compromise as they did not succeed to develop very much or to earn a competitive advantage. The same thing happened in regions. It is well known the example of Navara and Galica, two regions in Spain. Both started from the same level. The first one took care first of the human capital and then of the infrastructure and the second one the other way round. The result is that the first one is nowadays more developed than the other (Ionescu, 2009). In the same way, we can make a comparison in Romania between West and North-East. The last one, although has a better road infrastructure than the West Region, did not manage to reduce the development lags. We can explain this by the weak human capital and the reduced social capital from North Moldova.

Romanian social capital is in almost all regions fragile and seriously deteriorated. The social capital is measured by the degree of direct or non-governmental human participation in the social, politic and economic change. This type of capital is very important for implementing a set of policies which define a development pattern to follow.

All in all, we have two options. We could follow the traces and models that other created, i.e. EU, IMF (International Monetary Fund) or WBG (World Bank Group) or we could create ourselves a model where the human resources (and not the state) are the most important, in this way removing, step by step, all the risks that have a negative influence upon the degree of development of a country or region.

Notes

⁽¹⁾ the 17 indicators that are included in the „global development index”: GDP/inhabitant, unemployment rate, highway density/100km², railway density/1000km², phone subscription/1000inhabitants, places in hospitals/1000inhabitants, percentage of educated children and teenagers (attend classes) from the total population of a certain age, total volume of running water given to a person a day, percentage of accomodations with running water in their total, rate of migration, human pressure index, demographic vitality index, urban population percentage, personal vehicles/1000inhabitants, the percentage of over 12 years old population with more than primary school finished, extraregional migration, child death rate.

⁽²⁾ Data collected from the NAOLF (ANOFM) site regarding the number of unemployed persons and the unemployment rate both at national and regional level – information recorded on October 2009

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TENDENCIES IN FUNDING EUROPEAN HIGHER EDUCATION

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***Abstract.** Since 1065, when the first university in Europe was founded – University from Parma, higher education has been in a continuous reformation, both from educational politics point of view and from funding mechanisms point of view. Therefore, this study aims at presenting the main funding models for European higher education, in order to a future design of a funding model able to maximize the efficiency for using and/or distributing public funds for tertiary education.*

Keywords: higher education; public expenditures; funding formulas; funding agencies.

JEL Codes: H52, I22.

REL Codes: 4B, 4D, 13C.

1. Short history of funding higher education in Europe

European higher education has been considered from the beginning as a common good, but the first European universities were addressed to that category of persons who had the necessary knowledge. This category consisted mainly of nobilities' children who had access to education, in private.

Starting with the XIX century, higher education is available for every child, regardless of the financial situation of his family.

After 1900, in European countries, the funding was in a great extend based on public resources, be it directly (offering a place in school, financed from state budget, scholarships for learning in the country or abroad, preferential access to national transport railway), be it indirectly, through a series of programmes that offer financial support (like supporting health insurance for the students or their parents, cutting of tax collecting from persons whose children joined the classes of a higher education institution, etc.) (Cretan, Lacrois, 2009).

2. Particularities of European higher education funding mechanisms

The particularities of European higher education funding mechanisms have been inventoried in a series of EU member states, representative from the point of view of problems referred to in this article. In this matter, these states haven't been accidentally chosen and the reasons of this choice are: firstly, all of them are EU member states and have as a common goal establishing the European higher education zone; secondly, these countries have relatively different public funding and, not least, the analyses covers states that invest in higher education below and above 1% of GDP.

Therefore, in 2006, public investment in higher education, in England, reached 1.1% of GDP, percentage that matched the European average. From the point of view of funding higher education, Greece is the country that has the larger percentage of public funding in tertiary education, of about 98%, compared to the European average of 80%. In 2006, Greece invested 1.4% of GDP in public funding of the higher education. In EU, Spain allocated for public funding of higher education 1% of GDP, in 2006, being below the European average. Denmark invested, in 2006, 2.3% of GDP in public funding of the higher education, being a leader in EU. In the same year, France invested, as percent of GDP, in funding the higher

education from public funds little above the European average, approximately 1.2% and Romania invested only 0.8% of GDP.

2.1. Funding higher education government agencies and/or authorities

a) In *England*, a great part of the spending for higher education is granted by the Higher Education Funding Council for England (HEFCE) from funds allocated by the Department for Innovation, Universities and Skills (DIUS). Among the functions of the Higher Education Funding Council for England there are: the distribution of the public funds to universities for teaching, researching and similar activities; funding programs for supporting higher education development; supervising the use of public resources and the management of the universities' resources; and also ensuring the quality of the teaching.

b) In *Greece*, the main funding sources are the state budget and the Public Investment Programme based on national and European funds. Moreover, Greece is in the category of states that don't have fees for higher education, except for Hellenic Open University. While public expenditures for education from the state budget are directed mostly to operational expenditures, such as employees' salaries, free manuals or scholarships, the funds from the Public Investment Programme are used for infrastructure and equipments. Until the new higher education law comes into effect, transferring sums coming from the state budget from one year to another is not allowed, but starting with 2008 this action is permitted only for planning revenues by higher education institutions on a four year period. Also, the new law adopted by the Parliament will reduce the control of the Ministry for National Education and Religious Problems over managing the financial resources. In this matter, each university will have a four year plan for academic development, highly connected with public funding.

c) In *Spain*, although until 1985, university funding has been the Government responsibility, a partial decentralisation of higher education generated the funding of the universities largely by regional authorities. Still, funding the student assistance system (grants and loans) and university research remain the central government responsibility, except for the Basques, where the local Government is responsible for funding the student assistance system. In the first stage, subsidising universities was done based on negotiations between universities and regional authorities, depending on the number of students. A few years later, they switched to funding higher education on a multiannual budget that would also consider the quality feature of education (Crețan, Lacrois, 2009). Today, in the great majority of the 17 autonomous communities (Andalusia, Aragon, Asturias, Balears Islands, Basques, Canary Islands, Cantabria, Castalia-La Mancha, Castalia-Leon, Catalonia, Extremadura, Galicia, La Rioja, Madrid, Murcia, Navarra, Valencia) there are being used models for funding higher education based on performance. One of the first communities which implemented funding higher education from their own sources was Valencia, which adopted a multiannual system of funding universities from their own resources.

d) In *Denmark*, there are three ministries that govern the higher education system: the Education Ministry, which supervises short-term higher education institutions, the Cultural Ministry, which administrates higher education institutes from the cultural field (arts, film, and theatre), and the Danish Ministry of Science, Technology and Innovation, which rules over the Danish universities activity.

e) In *France*, like in the most EU member countries, the state is the main source for higher education, through the ministry in charge.

f) Regarding the methods of distributing public funds for higher education in Romania, the Ministry of Education, Research and Innovation and the National Council for Funding Higher Education are responsible for that. Moreover, with respect to the methods of distributing public funds for research on competitive grounds, the criteria are set by the two institutions that activate in this field, namely: the National Authority of Scientific Research and the National Council for Funding Higher Education.

2.2. Funding models for higher education's systems

Analysing the higher education funding systems in the six countries, it can be noted that public subsidies for higher education are in the form of: *global budget allocations with a high autonomy*, meaning they can be spent according to their own priorities (in England, Spain, Denmark and Romania); *global subsidies with budget projects*, that need approving from public authorities (in France) and *subsidies according to budgetary categories* (in Greece).

Regardless of the way subsidies are given, all the states focus on the increase of transparency of the higher education public funding through an objective distribution of the funds between higher education institutions using *funding formulas* whose criteria differ, more or less, from one country to another.

a) In *England*, public funds reach the universities after signing a funding contract between the universities and HEFCE, which states a series of conditions universities have to comply with, in order to receive the funds. Mainly, these conditions regard to efficiently use of funds and for destinations they have been approved. Furthermore, HEFCE can conduct studies concerning the resource management of a university. On the other hand, universities can access private funds in the form of loans, but they have to guarantee to the council that their repayment would not influence the funding integrity of the institution.

With respect to a series of factors, each higher education institution is given a fraction of the whole public funds. This sum is received by universities in the form of subsidies which they can spend according to their own priorities, but respecting the council's regulations, respectively, to finance teaching, researching and similar activities. Every three year, the Government sets the level of public expenditures for each department.

The Higher Education Funding Council for England (HEFCE) introduced a new method for distributing the public funds for teaching, to universities, from the university year 1998-1999. The old method for distributing public funds gave stability to higher education institutions, but in certain cases the funding level differed from one university to another based on historical considerations rather than educational ones, and sometimes universities were not preoccupied by efficiently using these funds. The objectives of the new method of distributing public funds are related to transparency, predictability, efficiency, flexibility and accuracy.

The distributing method of public funds for teaching has four stages. First of all, there are calculated *the standard resources* for each higher education institution having in mind the number of full time students and the influence of some factors regarding the profile group. The standard price is the equivalent education institutions receive in the exchange of providing educational services for a student in a profile group, in this moment being four such groups: medicine, engineering science, profiles that regard laboratory work and all other profiles. Secondly, there are calculated *the allocated resources* to higher education institutions and which are based on the level of allocated resources to the institution a year before, which are adjusted with the inflation rate according to estimated level of university's resources coming from studying fees. The third stage refers to comparing the level of standard resources with the level of the allocated resources, so that the percentage difference shouldn't be greater than 5%. The last stage calculates the subsidy given each university, noting that for universities that exceed the tolerance limit (5%) the funding or the number of students is adjusted.

b) With regard to the allocation method of budgetary funds, in *Greece*, the system is based on a calculating formula which correlates the sums of money with the university's operational expenditures and which do not condition the funding volume to the existence of a performance indicator, but to a series of criteria. Among them we can find *operational expenditures*, obtained by multiplying the number of students with the studying indicator for different profile groups, *research operational expenditures*, that are correlated both with the number of permanent teaching personnel from the previous year and the number of the

teaching personnel hired for a determined period and *administrative operational expenditures*, correlated with the number of departments in each higher education institutions. For each expenditure category a specific coefficient is applied. To this amounts allocated by the budget, a special funding is added for the spending a university cannot plan. Moreover, along with the new university law from 2007, public funds are allocated according to reaching the objectives of the institutional strategic plans, and the quality indicators concerning institutional results will be taken into account for public funds distribution.

c) In *Spain*, the components of the subsidy initially received by universities from the regional communities were: *elementary funding*, which were correlated with the number of students and the cost of courses for each profile group, *the funding targeted at objectives*, that had in mind an eventual reduction of allocated funds in case the reduction of abandon rate or other objectives didn't fulfil, and *the funding targeted at quality*. Later, once the funding of education based on multiannual budgets was implemented, the subsidies' components have changed. Thus, universities have *fixed funding*, *elementary funding*, *compensatory funding costs* and *objectives funding* (Mora et al., 2007).

Fixed funding means that the same sum of money is given to universities and covers around 1.25% of university funds. Elementary funding, which represents over 54% of the total public funding, can be adjusted every year for each higher education institution, according to the number of graduates or the inflation rate. To determine the level of subsidy per student there are not taken into account the revenues the universities obtain from schooling fees or from their own revenues. Compensatory funding costs refer to the funding occurred from legal changes that generate additional costs or reduce the university's own revenues. With reference to funding targeted at objectives, there have been set 15 objectives, whose achievement has been measured by 31 indicators whose extreme values resulted after negotiations between universities and regional Governments (Ministerio de Educacion y Ciencia, Consejo de Coordinacion Universitaria, Financiacion del Sistema Universitario Espanol, Comision de Financiacion, 2007).

d) Regarding tertiary education funding, the Education Ministry in *Denmark* uses the „*taximeter*” principle, which correlates the level of funding with the number of students who pass the exams. In this matter, financing the teaching activity is based on the historic costs principle, costs which differ from one profile group to another. Having in mind that the subsidy is not divided on activities and that universities enjoy their autonomy, higher education institutes have their liberty in distributing those funds depending on their own necessities. Additionally, the taximeter – the cost to the state for a passed exam – has three parts, namely: the cost for teaching activities and for needed equipment, the administrative costs and the costs of practical activities.

This system of funding the teaching activity in higher education has been continually analysed, but it seems it doesn't take into account the quality of the education. The fact that the Government finances the tertiary education based on the number of students who pass the exams brings forward a reduction of the valuator's standards or may lead to a decrease in the education quality.

Nevertheless, the Danish state guarantees, through the Danish Agency for Sustaining Education, funds for continuing the studies to all Danish youth or who come from EU member states and are over 18, regardless of their social status, but with different levels subsidy, depending on the income of each individual. Moreover, the Government offers a subsidy to cover the students' daily costs, through a system of subsidies and state guaranteed loans. For 2009, the highest level of the subsidy for students who live with their parents was 2,574 DKK per month, and for the students who live alone the subsidy reached the level of 5,177 DKK per month. Concerning the state guaranteed loans, this value reached 2,649 DKK per month (The Danish Students' Grants and Loans Scheme).

In Denmark, the performance contracts signed between the state and the higher education institution settle the strategic objectives, the means and zone interests of the

universities, divided in four main categories of activity: education, research, information dissemination and information exchange. Noted that these contracts have been recently introduced and they don't have legal power, they only represent a first condition for public funds allocation, and do not have the possibility to administrate the public allocated funds. Today, the universities' results in comparison with the performance contracts don't have any influence over the level of public funds that universities receive. Government strategies have the purpose to coordinate public funds allocated to universities with a general evaluation of results and the way the qualitative objectives have been fulfilled. The quantitative indicators included in the contracts established on the universities' results regarding the students' mobility, the number of the graduates, the patents and the usage of research results, the published research studies, the external means and foreign researchers can be used in this idea (Higher Education Governance in Europe. Policies, Structures, Funding and Academic Staff, Eurydice, 2008).

e) Regarding the subsidies for universities, in *France*, these are global, but have to be spent in compliance with the budgetary categories presented to the sponsor. Moreover, higher education institutions have to send for approval to competent authorities the budget project before using it. However, starting with 2007, the universities enjoy their financial autonomy.

Distributing the subsidies between universities assumes calculating the subsidy volume depending on the number of students from the previous or the current year, together with other indicators which depict the volume of the university's activities such as the surface of the building from campus.

In the process of allocating public funds for financing higher education, a contract is being signed between the state and the higher education institutions, on a four year period, based on a series of performance criteria the university has to fulfil; in this manner the contract states both the objectives – the quality of the education and the research – and the performance indicators used in evaluating the results.

With respect to funding the research activity, the performance contract enumerates a series of selecting criteria for research projects based on competition. These criteria refer to: the number of articles published in selected publications, the number of Ph.D. candidates, using the research results in the teaching activity, etc.

It can be said that, in a great extend, higher education in France is free, even if the principle of private contribution for paying moderate fees applies.

About the students' assistance system, these are mainly social and are given depending on the parents' income. By their nature, the state assistance is classified in two great categories: *budgetary assistance* and *fiscal assistance*. Budgetary funds allocation is based on *direct* or *indirect funding assistance* accorded to students. Direct funding assistance refers to scholarships, studying loans and other types of allocations. Scholarships are given relative to social criteria (depending on the family's income), to education criteria (for example, master scholarships), and to excellence criteria (won by contest by well-learning students who want to continue with tertiary education). State budget allocations refer to assistance for social accommodation, given by the National Assistance Funds for Accommodation, and to personalised assistance for accommodation given to students. Indirect assistance for students refers to taxes reduction for the students' family (Crețan, Lacrois, 2009).

f) In *Romania*, the funding formulas are the only method used for calculating public subsidies given to higher education institutions. The present performance criteria are not focused on the students' results, but on the quality of the teachers and the managing body. However, within the strategy for higher education in Romania, during 2002-2010 there are plans to take into account each university's position in a national general hierarchy, based on its results, in order to allocate public funds (Higher Education Governance in Europe. Policies, Structures, Funding and Academic Staff, Eurydice, 2008).

In this manner, higher education institutions annually sign a contract with the Ministry of Education, Research and Innovation, based on which they receive a global subsidy that has

two components: *elementary funding* and *complementary funding*. The strategic plan of the contract has to include the strategic objectives of each institution, its studying programs and the strategies that will be adopted in teaching, researching, human resource managing, partnerships, funding, management and quality insurance strategy.

Public funds distribution for elementary funding is done by a formula that has both a quantitative and a qualitative component. For 2009, from the total elementary funding, 70% is exclusively allocated depending on the number of students, and for the remaining of 30%, quality indicators are taken into account. Regarding the quality indicators that influence the level of budgetary allocations, for 2009 has been used a set of 17 indicators, assembled in five categories: teaching personnel (8.5% of the elementary funding), the impact of scientific research over the teaching process (9% of the elementary funding), equipments (3.5% of the elementary funding), management (9% of the elementary funding) and permanent education – a new indicator, that in 2009 was 0% of the elementary funding and which starting with 2010 will be used in calculating the elementary funding, taking into account the number of permanent education programmes developed by universities or other similar criteria (Eurostat, Key Data on Education In Europe, 2009).

Complementary funding is designated to cover the social expenditures for students, subsidies for accommodations and meals, urban transport facilities for students, funds allocated depending on priorities for investments and major repairs and funds allocated by competition for scientific research.

3. Conclusions

After presenting the characteristics of higher education funding mechanisms from public funds, we can conclude that in all six member states the higher education system has been reformed, in some of them the reform being continued even today.

Regarding the main funding mechanisms that apply in the analysed member state, we can see that it has been adopted the increase in transparency for higher education public funding through an objective allocation of funds between higher education institutions using funding formulas whose criteria differ, much or less, from one country to another. In this respect, Greece, France and England use as *input* in their funding formulas the number of students registered in the previous or the current year in a higher education institution and other indicators for the volume of educational activities, such as the surface of the buildings from university campus, the number of personnel of such institutions, etc. In Romania, it matters the number of state funded places that are offered by the university. In Spain, these inputs are chosen by each regional community and in Denmark there are no criteria for inputs in the funding formula. Regarding the results of educational activities – *output*, in the funding formula, Denmark and England take into account the number of students who pass the exams, who finish the studying year. Greece uses as performance criteria the evaluations results of higher education institutions, in Spain each autonomous community sets its own method for allocating public funds to universities and in Romania it is taken into account the level of knowledge of the teaching body and the management and the educational services quality.

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DIFFICULTIES IN THE QUANTIFICATION OF HUMAN CAPITAL

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***Abstract.** In our opinion, the quantification of human capital is a complex process faced with difficulties.*

The research starts with the standard measure of human capital – the number of years of schooling – and elaborates a brief analysis of the shortcomings of its quantification. Among these, there are highlighted the differences in the quality of schooling, unreflected by the number of years of schooling, the difficulty of quantifying symbolic capital and informal education, the role of cognitive skills and that of the innate ones, etc.

By the research undertaken, the authors advocate for supporting a new paradigm for the conceptualization and quantification of human capital in order to provide a better foundation of educational policies.

Keywords: human capital; quantification; difficulties; education; educational policies.

JEL Classification: I21, I29.

REL Classification: 13B,13J.

Introduction

Starting from the theoretical roots of human capital, the research identifies, first, how this concept evolved. Based on this analysis, there are highlighted some major difficulties to quantify human capital, which dominate the methodologies and philosophies to quantify this important factor of production.

The research starts from the standard measure of human capital – the number of years of schooling – and undertakes a brief analysis of the shortcomings of its quantification. Among these, we emphasize differences in the schooling quality, not captured by the number of years of schooling, the difficulties of quantifying symbolic capital and informal education, the role of cognitive skills and the innate one, etc.

Regarding the quality of schooling in general, human capital measures do not take into account how it is reflected differently in the training of individuals. In other words, we can note an erroneous dissociation, at least in literature of human capital, between the quality of schooling (internal efficiency of education) and the outcomes of education on the individual and society (external effectiveness). A unilateral approach, however, is incomplete. Identifying and exploring the links between the two types of efficiency is important for educational policy, given that the two are mutually interdependent, because the quality of education – internal efficiency – is a key determinant of educational effects – external efficiency.

Regarding the fact that there is not only formal education made in schools, but informal one, a new problem of how to quantify it emerges: how we measure the relevant symbolic human capital (understood primarily as social values and norms associated (Voicu 2005)?

Moreover, similar limitations in the quantification of human capital are discussed by turns in our study, although the ones mentioned are certainly not an exhaustive list.

1. The emergence of the notion of human capital

For economists, the concern for the study of education is relatively late, starting from the second half of the twentieth century, based on the core theory of human capital formulated by Becker in the year 1964 in his work „Human Capital”.

The emergence of the concept of human capital comes in the context of economic concerns for the smooth operation of production factors, including labor. The term „human capital” was hardly acceptable because of the fact that it was perceived as denigrating to the human being. The concept of human capital involves consideration of individual factors of production and the expenditure associated with his development a type of investment.

According to Kiker, since the 1700s, economists as William Petty (1691) assign monetary value to human beings, with the first attempts to estimate the national human capital, improved further by Ernst Engel (1833), Theodor Wittstein (1867), William Farr, Dublin and Alfred Lotka (1930).

A human capital approach stands out also in Smith's work, that draws attention on the relation between income and educational background/training of existing staff categories. They consist of „common labor” and „skilled labor”, the latter being obliged to undertake apprenticeship training, to which he allocates time and money. Another category, whose education is more expensive and demanding, is that those who study art or liberal professions (Chiswick, 2003, p. 5), underlining the idea that education has its own costs and revenues that are to be recovered.

Jean Baptise, John Stuart Mill (1909) and other classical economists associate knowledge and skills with human capital, in the sense that they assign it economic value, although it is not included in their economic models, „these economists, who practically defined capital as inputs (generated by human activity) do not include human beings in the category of capital” (Kiker, 1966, p. 486).

Regarding the investment in people, Pigou lays optimum levels of it and differentiates between private and social effects. In the book „Wealth and Welfare” (1912) he showed that the training offered by companies to employees is well below the social optimal level based on the following reasoning: „since employees can change employers, and this could deprive them from the investment made, net private product may fall considerably below a social optimal product. Consequently, social profitable spending in training people do not bring a corresponding private profit” (Chun, Yijiang, 1996, p. 505).

Another specialist of the time, Alfred Marshall, denominates human capital „personal capital” and locates the origin of the economic importance of the individual in Enlightenment philosophy: „Enlightenment brought the desire to increase the welfare of a nation, moving the emphasis from investing in material goods to investment in personal capital” (Marinescu, 2001, p. 89).

But, the one that includes without reserves the individuals aptitudes in human capital, contributing to the reinforcement of the paradigm in which „human resources” are important in increasing the wealth of a nation, is Irving Fisher.

Even so, the main contributions to the development of human capital theory are attributed to Becker. As he confesses, they were initially motivated to propose a suitable way of calculating the rate of return (recovery) of investment in secondary and higher education. His studies were focused on explaining some empirical phenomena insufficiently or unsatisfactorily studied by that time, such as:

- that the revenue decreases with age
- the fact that the unemployment rate tends to be negatively correlated with skills
- that firms in developing countries tend to be more paternalistic with employees than those in developed countries
- that the division of labor is limited by market size, etc.

The pioneer of the economics of development, WA Lewis (for his work he received the Nobel Prize together with Theodore Schultz, in 1974), also brought his contribution to the

shaping of the idea of human capital in the article „Economic Development with Unlimited Supplies of Labor”, (1954). Addressing the issues of growth rates, Lewis believed that the profitability of investment in a country depends on "its natural resources and human and material capital amount already invested in it" (Lewis, 1954). Therefore, difference in productivity of a country are due, along with other factors, to differences in the workforce. It varies in terms of cultural heritage, attitudes toward work and social relationships. For economic development, Lewis proposes increased investment in workforce training.

Keeping track of the concept, we observe that it was formed by the understanding of the economic value of individuals, their knowledge and skills and it continued its

2. Studies regarding the quantification of human capital. Difficulties in the quantification

Simultaneously with the development of the theoretical concept, the first empirical studies explicitly devoted to the study of income from practicing various professions, emerged, especially in America, and elaborated mainly by the representatives of the Chicago School.

But calculating the internal rate of return on investment in education has its theoretical basis in the studies of Becker on human capital, where the level of participation in education is a optimization of the investment decision in schooling. Moreover, it is assumed that individuals will educate themselves up to that point where the present value of expected benefits of education will equal that of a direct and indirect costs of education. By the mechanism of schooling, education is expected to increase the productivity of individuals and therefore they may require higher incomes in the labor market.

Actually, the study of internal rate of recovery of investment in education represent a main direction of research in the economics education, observing more than an extension of the interest area of study, an advance of computing techniques.

The revival of the interest for calculating the internal rate of return on investment in education is relatively recent in contemporary approaches to the economics of education was driven mainly by developments in microeconomics and macroeconomics in the 1990s.

Microeconomics studies of the labor market explain the differences in the level of education of workers, based on exogenous and random factors, such as geographical distance from the school. Furthermore, studies in macroeconomics have tried to verify the assumption that the level of education is related to the GDP growth rates in the different countries and have begun to incorporate education as an input of the production functions. The internal rate of return of investment in education (IRRIE) is measured as the rate that equalizes the benefits of education with its cost.

In the latest study on the subject, made on 21 OECD countries, with a mixed methodology, for a period between 1991 and 2007, the benefits of an additional year of university education, and under a mixed methodology, concluded the following:

a) The internal rate of return of investment in education (IRRIE), varies between 4 and 15%, depending on the country and time period;

b) The average internal rate of return of investment in education between countries is about 8%, being relatively homogenous regardless of gender.

But the most common form of quantification of human capital is the average number of years of schooling, followed by: the rate of schooling or adult literacy, share of population with higher education in total population, the rate of early school leaving rate, rates of continuation of studies and gender ratios (the ratio between the average duration of studies between women and men).

The number of years of schooling is an imperfect measure of human capital, mainly because of the quality of schooling, that may vary (at this point the relation internal-external efficiency of education appears). For example, one can not compare a school in the centre of Bucharest with a school in the rural area from a poor region of Romania, in terms of quality of

education. However, measuring human capital in years of education will assign the same positive value to individuals with an equal number of years of schooling, independently if they are from the poor region or the capital city.

On the other hand, in international comparisons between countries, the number of days of an educational year may vary over time and between countries, which distorts estimates of IRRIE.

Another important question arises in the number of years of education. Human capital is often identified with the educational or symbolic capital – understood primarily as social values and norms associated (Voicu, 2005). Educational capital is obtained in both formal and informal education. The first type is attested by diplomas, the second however, is obtained by own efforts or simply by interacting with the society, and it is not formally certified. Therefore, the capital stock that informal education produces is difficult to estimate, being measured in some studies by measuring individuals' skills of working with the computer in small businesses. However, its exclusion from the total human capital reduces the benefits of education.

Due to problems of conceptualization and quantification of human capital, which just partially explain the positive effects of education, there are used alternative measures, as the level of knowledge. For this, the general skills and knowledge of adults are being evaluated, in international tests such as the International Adult Literacy Survey - IALS. Such quantification formulas are based on the idea that those what is rewarded on the labor market is knowledge acquired by individuals, since the number of years of study is irrelevant, given the great diversity in quality education.

The OECD model of quantifying the way in which cognitive knowledge is valued on the labor market is developed as „life skills approach” and starts from the premise that education affect abilities, which in turn affects income. The skills measured by the OECD are:

The OCDE model of *life skills*. The set of evaluated abilities

Prose literacy - the knowledge and skills needed to understand and use information from newspapers, fiction texts and texts

Document literacy - the knowledge and skills necessary to find and use information contained in official forms, timetables, maps, etc.

Numeracy - knowledge and skills necessary mathematical solutions

Problem solving - knowledge and skills necessary for object-oriented thinking and action in which no routine solutions are valid

Source: *Learning a Living. First results f the adult literacy and life skills survey*, OCDE, 2005.
<http://www.oecd.org/dataoecd/44/7/34867438.pdf>

In the *life skills* model there are included other variables such as labor market experience, gender, community size, parental education and native language. One of the major findings of the study is that different labor markets in different countries reward knowledge differently. In this context, the effects of education can not be studied and understood properly outside the socio-economic and cultural context in which individuals live. The study also shows that education policies can not be universal, and the way of rewarding education and knowledge vary. However, this approach brings to our attention the risk of dissociation of education from knowledge – a cornerstone in the study of education – particularly in the current period in which an increasingly easy access to all levels of education, including higher education has the effect of decreased emphasis on knowledge itself in the benefit of the

importance of the diploma. The one who opens the study of cognitive abilities in the economics of education equation is Glewwe. The main argument proposed by him (Glewwe, 2002, p. 449) is that there is a direct relation between cognitive skills acquired and revenues and skills, that have influence on several variables and not just on productivity. Glewwe argues that the use of cognitive skills instead of the number of years of schooling can reduce the ability bias.

An important research in the economics of education is related to determining the endogenous or exogenous nature of the schooling decision.

In models where education is an exogenous variable, it will be a factor whose value is independent of other variables in the system. In the case of the economics of education, it will be considered independent of the general economic level, innate abilities, etc. Education as exogenous variable is by definition independently of other variables in the model. It may become an endogenous variable by incorporating additional variables regarding to which it has a causal relation.

The assessment of the influences of endogenous factors (the endogeneity bias) on education is an important concern in the studies of economic education. One of the factors that influence endogenous schooling decision are innate abilities; not including them into the models that estimate the IRRIE is known as the „ability bias” and refers to the possibility that the decision of schooling, and therefore the size of its positive effects, are explained also by the higher proportion of innate abilities of individuals and not only by the studies undertaken.

Indeed, one of the difficulties encountered in attempts to quantify the economic and social value of education is that educated individuals are the result of interaction of many factors, from the knowledge acquired in familiar and social environment, personal wealth (wealthier families can more easily get access to education), native intelligence, luck, motivation, etc.

One of these factors is labor market on which the services offered by a person are traded, in the sense that these elements have influence on the pay scale. The labor market may be more or less syndicated (for many sectors, wages are obtained by union negotiations with employers and government) and age, gender and race are still elements of discrimination practiced. Salary is not always proportional to productivity, which indicates a significant omission of human capital theory. This can not make the proof that incomes are explained only by the number of years of schooling.

Another factor that was not taken into account by the theory of human capital in estimating the benefits of education is unemployment, although studies show that education reduces the possibility of unemployment and the income of an individual depends on this possibility.

Another factor that distorts the results of RRIE is reported of Ashenfelter, Harmon and Osterbeek, known as the so-called „publication bias”: the more the researchers expect their studies to be published, the higher positive correlation between schooling and income growth occurs, which overestimates the influence the effects of education.

The difficulties of quantifying RRIE are mostly the same making difficult the conceptualization and measurement of human capital, and specific aspects of measuring costs of education and income appear.

Regarding costs, they are relatively easy to estimate, as they include teaching staff salaries, maintenance costs of premises, etc. An exception is however the opportunity cost, with a large share in the total investment costs in education. This is because the incomes and the other things students give up are equally difficult to measure. However, this component should be included and it is not negligible. The problem is one of heterogeneity, given the fact that each individual has a particular situation and it is difficult to standardize how it should be quantified in monetary terms, because the opportunity cost may include more aspects than the renouncement to a job.

There are problems of quantification of revenue too. In developing countries, a large part of individual incomes come from the agricultural sector, in which individuals work on their own. It is difficult to calculate the income of those working on their own and whose economic activity involves several individuals, as members of a family working together. One can collect data about team's incomes, but the team level analysis creates problems because education often vary between team members, raising problems of measuring it (Glewwe, 2002, p. 467). Moreover, working hours may vary depending on many issues, most obviously seasonal agricultural work. These are the main reasons why most studies refer to developed countries.

Other sensitive dimension of data on education is given by the differences in education systems, which makes that statistics vary. UNESCO database, for example, rely on a variety of studies, but collects data with certain deficiencies, some of the most important being that the rate of enrollment is calculated at the beginning of school, despite the subsequent abandon and students studying abroad are not taken into account.

Also related to the problem of heterogeneity of human capital, in the estimations of the effects of education, there is a lack of a differentiated approach to different categories of population. A responsible approach in the economics of education has to differentiate on how disadvantaged segment of population respond to education, compared with general population. There is consensus that the return on an additional year of education is higher for the first segment of population than for the second. Therefore, studies that focus on long-term effects of preschool programs on children from disadvantaged families show that they reduce crime and increase the income level of those in this category more than they do it for , the other segments of the population.

Conclusions

Research carried out highlights some major difficulties to quantify human capital, which dominate the methodologies and philosophies to quantify this important factor of production. The calculation of the internal rate of return of investment in education has its theoretical basis in the studies of Becker on human capital, where levels of participation in education are an optimization of the investment decision in schooling.

But the most common form of quantification of human capital is the average number of years of schooling, followed by: the rate of schooling or adult literacy, share of population with higher education in total population, the rate of early school leaving rate, rates of continuation of studies and gender ratios (the ratio between the average duration of studies between women and men).

Regarding the quality of schooling in general, human capital measures do not take into account how it is reflected differently in the training of individuals. In other words, we can note an erroneous dissociation, at least in literature of human capital, between the quality of schooling (internal efficiency of education) and the outcomes of education on the individual and society (external effectiveness).

The difficulties of quantifying the internal rate of returns on investment in education are largely the same and make it difficult conceptualization and measurement of human capital, plus the specific aspects of measuring costs of education and income.

Notes

⁽¹⁾ The Dillingham Commission represented a special committee of the Congress formed in 1907, for the study of recent immigration to the United States. The Commission concluded in 1911 that immigration from Southern and Eastern Europe represented a serious threat to American society and has resulted in quantitative limiting taking into account geographic areas too (the one in Asia was prohibited).

⁽²⁾ The survey is conducted during 1994 to 1998, on the following countries: Bermuda, Canada, Italy, Norway, Switzerland, U.S. and Mexican state Nuevo Leon. In Bermuda and Italy the recovery rates of knowledge are higher than those corresponding to education. An additional year of education does not bring revenues unless it is accompanied by knowledge. In Canada, the United States and Norway, the labor market rewards both knowledge and corresponding education. But there are also well-qualified individuals with lower earnings, which explained the importance of other variables on the revenue.

⁽³⁾ Starting from the „economics of discrimination” (Becker), in 1972 „the static theory of discrimination” emerges, by the contribution of Edmund Phelps and Keneth Arrow, according to which that disadvantaged groups are subject to risks of instability higher than other groups. The conclusions are consistent with the theory of segmentation, in that that it highlights the need to treat differently the groups and individuals acting on the labor market, mainly due to the current phenomenon of discrimination.

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FROM THE TRANSITION DIFFICULTIES TO THE CHALLENGES OF THE ECONOMIC AND FINANCIAL CRISIS: STATE AID IN CENTRAL EUROPE

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***Abstract.** The paper focuses on one of the most important and difficult economic aspects of the Central European countries in their efforts of European integration and macroeconomic stabilization, namely the State aid situation, analyzing the role and significance of State aid from the necessity of building market-based competition structures to the particular relevance of State aid in the context of the economic and financial crisis.*

Keywords. Central Europe; horizontal aid; sectoral aid; competition; market failure.

JEL Codes. E62, F36, H23.

REL Codes. 7H, 10B, 13C.

Introduction

In terms of economic theory, it is recognized that the main justification for state intervention in the economy is to correct or compensate for situations of market failure in order to achieve a set of more or less explicit objectives such as increasing economic efficiency, supporting economic competitiveness and strengthening social cohesion. However, the only objective which is expressly stated by the Treaty establishing the European Community and which is confirmed by decisions taken by the European Commission refers to maintaining undistorted competition in the Community economic environment, validating the assertion that „State aid control in the EU is more interested in State aid negative externalities on the economies of the partner State Members” (Ganoulis et al., 2001, p. 290).

State aid in Central and Eastern Europe

While in Western Europe, State aid policy is an economic reality confirmed by the integration experience in the second half of the XXth century, in Central and Eastern Europe the concept of „State aid” has particular significance mainly determined by the political, economic and social context. In this area, the transition was accompanied by structural changes that led the passing from resource allocation through a system of central planning to one based on market mechanisms, being necessary the development of private initiative in a political and economic environment marked by the major role of the State, both as a public authority and as an economic agent, that could intervene in the market to discriminate in favor of businesses in a variety of ways (e.g. direct subsidies, tax allowances, writing-off or rescheduling of enterprise debts to banks, reducing penalties for delayed payments to the state, providing soft loans for specific activities or sectors, etc.). In this respect, State aid „discipline” by EU model was justified, on one hand, in legal terms, as a result of the European Agreement obligations (Article 64), and, on the other hand, in terms of opportunity, in order to avoid sudden shock of transition to higher demands on granting state aid and reduce, where possible, the negative effects of subsidies before accession, but which have artificially strengthened the position of the beneficiary on the internal market.

Also, the related literature considers that there are close links between State aid control and the reform process support for sustainable macroeconomic stabilization, with consequences in the tax-budget and even monetary field (Negrescu, Oprescu, 2004, p. 52-54), which confirms the importance of State aid control as a structural instrument in the effective functioning of market economy and the major responsibility that lies with policy makers in managing State aid in the current economic and financial crisis.

Methodology

The main objectives of the paper consist in the comparative analysis of State aid situation in the five countries of Central Europe that joined the EU in 2004 (Poland, Czech Republic, Slovakia, Slovenia and Hungary) to highlight common aspects and differences and in the analysis of the relevance that transition experience has had on the current State aid situation in the context of the economic and financial crisis.

In the construction of a theoretical model in order to shape the evolution of the main categories of State aid in the countries considered, we assume that State aid is influenced by the value of GDP per capita at purchasing power parity standard (PPS), taking into account the fact that the latter is a basic instrument for measuring the overall economic performance of a state. Although this indicator has certain limits on its relevance in determining the standard of living in an economy, we chose to relate this indicator to State aid evolution (horizontal aid and sectoral aid) because we consider that the mechanisms of state intervention in the economy depend on the overall growth in a country and also on the components of the indicator considered (GDP is the sum of private consumption, public consumption, investment and net exports).

In this respect, the quantifying model of State aid evolution related to the amount of GDP per capita in PPS is as follows:

$$State_aid_{(t+1)} = C(1) + C(2) \times GDP_PPS_{(t)} + \varepsilon$$

In this formula, State aid in period (t+1) is a function of GDP expressed in PPS in period (t) plus ε as residual element which represents the error degree. The independent variable is lagged by a year because State aid is a policy instrument that can be used proactively.

Data on State aid is divided into two categories both being tested separately:

- horizontal aid as a percentage of GDP,
- sectoral aid as a percentage of GDP.

Regression function is tested for each of the states considered for the period 2000-2007 in order to analyze the existing links between the State aid in current period and the economic growth process of the previous period.

One of the most important problems occurring on data collection was the lack of continuity of the statistics regarding State aid, in particular for the period prior to 2000 and for the period after 2007.

State aid – quantitative considerations

During the transition to a market economy, signing the European Agreements by Central European states was a factor of external pressure which endorsed, in terms of quantity, reducing the overall level of aid together with a structural, qualitative change, regarding redirecting it towards horizontal objectives, according to the existing philosophy of the European Commission „less but better targeted State aid”.

Total State aid* (million EUR)

Table 1

	2000	2001	2002	2003	2004	2005	2006	2007
EU-15	43657.9	47081.3	52450.0	43282.7	44931.1	45948.2	47691.1	45405.9
Poland	2092.6	1529.4	1046.3	6392.9	2259.5	949.4	1265.9	1260.8
Czech Republic	1738.4	1491.0	3448.6	2505.8	328.3	466.9	600.9	766.6
Slovakia	159.5	147.9	132.3	178.5	231.2	254.8	207.5	222.8
Slovenia	230.6	218.0	127.5	165.8	150.2	136.9	152.6	114.8
Hungary	815.6	794.7	915.4	995.6	705.3	1038.8	870.3	879.4

* Total State aid for industry and services (less agriculture, fisheries and transport).

Source: European Commission.

In absolute terms, State aid followed an overall decreasing trend, except Slovakia and Hungary, due to external conditionalities, but also because of internal requirements for achieving a competitive market economy, being relevant the catalyst role that European Agreements have played in building administrative capacity, legal framework and on effective implementation of the State aid European rules.

In relative terms, State aid as a percentage of GDP followed a trend of progressive approaching the EU average, although in some countries (especially Hungary) its level remains quite high. In this respect, a comparison between the dynamics of State aid in Poland and Hungary is relevant, taking into account the fact that in 1996, State aid as a percentage of GDP was 1.6% in Hungary and 2.6% in Poland respectively. In the following period, Poland has managed, through a combination of effective fiscal policies, to reduce this level to 1% in 2000 and 0.4% in 2007, similar to the EU average, while Hungary has experienced an increase to 2% by 1998, succeeded only partially by reducing this level to 1.1% in 2000 and 0.9% in 2007.

Total State aid * as a percentage of GDP

Table 2

	2000	2001	2002	2003	2004	2005	2006	2007
EU-15	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4
Poland	1.0	0.6	0.4	3.0	1.0	0.4	0.5	0.4
Czech Republic	2.4	1.9	3.9	2.9	0.4	0.4	0.5	0.6
Slovakia	0.6	0.5	0.4	0.6	0.7	0.8	0.6	0.5
Slovenia	0.9	0.8	0.5	0.6	0.5	0.5	0.5	0.3
Hungary	1.1	1.0	1.0	1.1	0.8	1.1	0.9	0.9

* Total State aid for industry and services (less agriculture, fisheries and transport).

Source: European Commission.

State aid – qualitative considerations

In terms of objectives, State aid may be classified into horizontal and sectoral aid. Horizontal aid is, in principle, the least distorting type of support because it affects all or most firms in the same way, applying on research and development, environmental protection, small and medium enterprises (SMEs), promoting employment, training of employees. It also includes aid for rescuing and restructuring firms facing financial difficulties („temporary difficulties”), although this type of support differs from those mentioned above because it may have a strong distorting effect on competition.

State aid to horizontal objectives as percentage of GDP

Table 3

	2000	2001	2002	2003	2004	2005	2006	2007
EU-15	70	67	67	80	79	83	84	80
Poland	69	31	39	15	24	70	85	89
Czech Republic	14	19	12	12	85	100	100	100
Slovakia	78	43	50	72	61	60	95	76
Slovenia	75	56	84	81	69	87	88	84
Hungary	28	43	53	39	54	48	48	53

Source: European Commission.

Data on horizontal aid should be interpreted cautiously, given the fact that those from national authorities are different than those provided by the European Commission. In addition, it is important to stress that in some countries, aid for rescue and restructuring has

reached significant levels, but was reported to belong to another category (most likely employment), thus explaining the very high levels recorded by horizontal aid in the last part of the period. However, it is worth noting the program initiated by the Czech Republic in 1992 regarding the support of SMEs, particularly through Ceskomoravska yarucni a rozvojova banka (CMZRB), financial institution that had a significant role in further horizontal aid development. On the other hand, in Poland there was a rather low interest for horizontal aid in the first period, simultaneous with a high level of rescue and restructuring aid, trend also similar in Slovakia and Slovenia (Balcerowicz, 2003: p .226).

State aid to SMEs (million EUR)

Table 4

	2000	2001	2002	2003	2004	2005	2006	2007
Poland	1.8	15.2	32.7	36.5	9.9	78.0	88.9	172.1
Czech Republic	130.2	131.8	202.3	62.9	57.0	90.7	108.4	171.0
Slovakia	6.4	0.9				3.1	19.3	11.1
Slovenia	28.3	11.3	7.1	16.5	4.2	10.2	30.4	2.8
Hungary	23.8	59.7	107.4	42.2	41.6	40.9	31.4	27.0

Source: European Commission.

State aid – results of econometrical models

Data provided by the European Commission regarding horizontal aid only partially confirms a link between economic growth of states considered (measured by the value of GDP per capita at purchasing power parity standard) and the evolution of horizontal aid (quantified as a percentage of total aid). Moreover, in Slovenia and Hungary, the negative sign of the independent variable suggests that increasing the level of GDP per capita in PPS led to a decrease in the overall level of horizontal aid as a percentage of GDP. Correlation coefficient (R-squared) and adjusted correlation coefficient (adjusted R-squared) recorded the highest values for the Czech Republic, followed by, in descending order, Slovakia, Slovenia, Poland and Hungary, the last having a negative value adjusted correlation.

The link between horizontal aid and the value of GDP per capita in PPS

$$\text{Horizontal_aid_percentage_GDP}_{(t+1)} = C(1) + C(2) \times \text{GDP_PPS}_{(t)} + \varepsilon$$

Table 5

	Intercept	Intercept probability	Independent variable	Independent variable probability	R-squared	Adjusted R-squared
Poland	-1.050567	0.3931	0.027159	0.2843	0.223271	0.067926
Czech Republic	-1.125044	0.1779	0.021316	0.0822	0.484927	0.381912
Slovakia	-0.227096	0.5988	0.009996	0.2230	0.278974	0.134769
Slovenia	1.296624	0.0876	-0.010641	0.2043	0.298666	0.158400
Hungary	0.513497	0.3067	-0.000736	0.9243	0.001994	-0.197607

Source: author's own calculations based on data from European Commission.

Inverse relationship between GDP per capita in PPS and sectoral aid level is validated by the negative values of the independent variable, while the correlation coefficient and the adjusted correlation coefficient values are greater than those calculated for horizontal aid, suggesting an increased relevance of the link between the two indicators.

The link between sectoral aid and the value of GDP per capita in PPS

$$\text{Sectorial_aid_percentage_GDP}_{(t+1)} = C(1) + C(2) \times \text{GDP_PPS}_{(t)} + \varepsilon$$

Table 6

	Intercept	Intercept probability	Independent variable	Independent variable probability	R-squared	Adjusted R-squared
Poland	15.51522	0.2466	-0.240013	0.2670	0.237795	0.085354
Czech Republic	25.88881	0.0291	-0.339663	0.0336	0.628115	0.553738
Slovakia	1.035341	0.0343	-0.015214	0.0625	0.532824	0.439389
Slovenia	1.898364	0.1005	-0.021108	0.1195	0.413117	0.295740
Hungary	1.250813	0.2378	-0.012166	0.4603	0.113320	-0.064016

Source: author's own calculations based on data from European Commission.

Unlike horizontal aid, sectoral aid has distorting effects on competition and resource allocation in the economy because it favours a limited number of firms in certain sectors, operating discrimination against firms or sectors that have not benefited from this support. In general, sectoral aid was prevalent during the transition period and aimed at restructuring the economic sectors affected by the privatization and modernization systemic transformations as in the Central and Eastern European states. In this respect, sectoral aid is not intended to correct or compensate for market failure situations, having questionable effectiveness due to the fact that they are often given under political influence, which prevents beneficiaries to engage in real restructuring and prolongs the agony of companies unable to operate effectively in the market in an independent way.

State aid – considerations in the context of the economic and financial crisis

Referring to the situation of State aid policy in the context of the crisis, Neelie Kroes, competition commissioner, said in February 17th, 2009 that „we must be flexible in procedures but not in principles,” thus suggesting the need for qualitative approaches of the public funds management, provided that the effects of the crisis have spread rapidly throughout the financial sector into the real economy, both in developed market economies and in developing countries. Faced with these challenges, the European Commission felt the need to temporarily change the mechanisms for granting aid, appealing in this respect to Article 87 (3), (b) in order to declare the aid which aims to „remedy a serious disturbance in the economy of a Member State” compatible with internal market. Therefore, the Commission adopted the „Temporary Community framework for State aid matters to support access to finance in the current financial and economic crisis”, providing additional tools to combat the effects of credit contraction on the real economy (de minimis aid, public or private subsidized loans, guarantees, etc.).

In the context of the new challenges of the crisis, the countries of Central Europe have proved vulnerable due to the inheritance of structural deficiencies from the transition period, one of the most important concerns being the effectiveness and sustainability of the market-based competitive mechanism. In quantitative terms, it is indisputable that the aid has increased considerably, but the objectives and actual or potential effects of granting aid on the distortion of competition are also of equal importance. Moreover, the main objective of State aid must continue to be the correction of market failures and the enhancing of long term competitiveness, while maintaining the principle of undistorted competition in the EU internal market.

Although it is too early to be able to make predictions about the lasting consequences of the crisis and substantial changes that have occurred or will occur in the relationship between state and the private sector, both from a theoretical and empirical perspective, we believe that public support correctly sized and oriented according to market needs can be a positive factor to unlock the lending process and boost investment needed to produce long term benefits.

Conclusions

To summarize, it may be noted that competition policy and state aid policy are interdependent so as to ensure the proper functioning of the market and the inevitable correction of market failures that may occur in the economy. Although regarding the transition period, State aid policy has left many issues unresolved or partially resolved, as for example, the quantitative and qualitative compatibilization with the situation in Western Europe or the link not strong enough between the process of economic growth and the effective redirecting of State aid from sectoral to horizontal objectives, State aid policy can be a very important component of the public policies in order to solve current problems in a new economic and social context defined by the challenges of international economic and financial crisis.

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ROMANIA'S FISCAL POLICY DURING THE CURRENT CRISIS: PRESENT AND FUTURE PROSPECTS

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***Abstract.** Fiscal policy is an important government tool for managing the economy, its instruments having impact on aggregate demand, resource allocation, and income distribution. This article is focused on the Romanian fiscal policy during the global crisis, providing an overview regarding the circumstances that lead to fiscal imbalances and analysing the fiscal response to the current crisis. The conclusion is that Romania has conducted an inconsistent and ineffective fiscal policy, contributing to macroeconomic imbalances and to increasing fiscal pressure on business environment. Therefore, a medium-term fiscal framework has to be implemented, in order to ensure fiscal sustainability.*

Keywords: fiscal policy; budget deficit; fiscal measures; fiscal imbalances; government revenues and expenditure.

JEL Codes: E62, E64, E65, H20.

REL Codes: 8K.

1. Introduction

Fiscal policy is an important tool for managing the economy having the ability to affect the total amount of output produced, which is GDP. Its ability to affect output by affecting aggregate demand makes it a potential tool for economic stabilization. Governments have available various instruments to promote their main objectives, like as allocation of resources, stabilisation of the economy, redistribution of income, and economic growth. It must be realised that, at times, while the instruments have changed, the main governmental objectives have remained the four listed above (Tanzi, 2008: pp. 17-18). Government spending is the most traditional instrument. Both the level of public spending and its structure or composition are important and can be considered as separate instruments. Taxation is the other obvious instrument, which comprises at least four potential and separable instruments, such as the level of taxation, the structure of taxation, tax expenditures and tax incentives.

There are three possible stances of fiscal policy. A neutral fiscal policy implies a balanced budget where government spending equals tax revenue. Government spending is fully funded by tax revenue and overall the budget outcome has a neutral effect on the level of economic activity. An expansionary fiscal policy involves a net increase in government spending (higher than the tax revenue), through a rise in government spending or a fall in taxation revenue or a combination of the two. A contractionary fiscal policy occurs when net government spending (lower than the tax revenue) is reduced through either higher taxation revenue or reduced government spending or a combination of the two.

2. Romania's fiscal policy: recent developments

The Romanian economy experienced an economic boom during 2003-2008, associated with the process of accession to the EU. Growth averaged over 6.5 percent per year, reaching 7.1 percent in 2008. A large part of the domestic absorption boom was driven by private investment: with EU accession prospects becoming more certain, capital flows, particularly foreign direct investment, were attracted by perceptions of lower investment risk that made

Romania a favourable investment location (The World Bank, 2009, pp. 6). On the other hand, Romania's growth model has implied unsustainable and large external and fiscal imbalances, the domestic demand-driven economic boom coming at the expense of rising imbalances. High external borrowing has led to a rapid build-up of external debt. The rapid expansion of financial intermediation, combined with steadily increasing income expectations, has led to the domestic demand expansion, but also to a rapid increase in imports. Pauwels notes that a negative income balance, linked to profit repatriation by direct investors and interest payments was offset by current transfers, including mainly remittances and EU funds (Pauwels, 2009, p. 1). Widespread foreign currency lending has increased households' and companies' balance sheet exposure, and high private sector waste was exacerbated by rising fiscal deficits. Accordingly, the current account deficit widened from 5.8% to 12.3% of GDP, between 2003 and 2008, the fifth highest among EU Member States.

Accompanying real GDP growth, inflation peaked at 6.3% in 2008, much higher than the forecasted 5.4%. Moreover, years of procyclical budgetary policy have led to a sizeable deterioration in the underlying fiscal position, with the structural deficit rising from 1.7% of GDP in 2005 to 7.22% of GDP in 2008. Between 2005 and 2008, government spending doubled in nominal terms, and the public share of economic activity rose from 32% of GDP to 37%. The public sector wage bill also more than doubled because of both large wage hikes and additional government employment (IMF, 2009b, pp. 10-11). This doubling of government spending was not matched by a corresponding increase in the amount and quality of public services (The World Bank, 2009, pp. 7).

In the Q4 2008, the effects of the financial and economic crisis began to spread into the Romanian economy. These effects have arrived with a lag, and the real consequences were such that Romania has faced a very sharp and disruptive economic slowdown. The largely foreign financed domestic demand boom and overheating pressures came to a sudden end at the beginning of the fourth quarter of 2008, following the significant tightening of international capital inflows, due to the increased investor risk aversion to domestic vulnerabilities and the decelerated disposable income. Hence, domestic demand contracted by almost 2% y-o-y (year-over-year) in the fourth quarter, compared with an average increase of 14.5% y-o-y in the first three quarters. Financing conditions have also worsened, leaving the government unable to finance a large deficit at reasonable cost. Accordingly, the public finance position at the end of 2008 considerably deteriorated and the monthly deficit of the general government budget recorded the largest level in the past years, although the economic growth in 2008 was the highest in the EU.

The deficit was of 4.9% of GDP, based on the cash methodology (from 0.8% of GDP in 2005), and of 5.4% of GDP, according to ESA 95 methodology. This level surpassed the maximum threshold of 3% of the GDP set by the Stability and Growth Pact, and it was more than double compared to the official target of 2.4% of GDP set in the budget rectification from March 2008. The significant deviation was mainly due to weak budgetary planning and execution, which resulted in substantially higher-than-planned current spending, notably in public wages and social transfers (European Commission, 2009a, p. 247). In addition, overly optimistic revenue projections did not materialise and a sudden drop in revenue collection in the last two months of the year owing to the economic slowdown added to the worse-than-expected outcome. 70% of the deficit was created in the last two months of 2008, being financed on short-term basis with up to 3-month maturities, leaving a legacy of precarious financing of the deficit. It became obvious that the core risk to Romania's fiscal policy in 2009 would be financing the populist measures (such as pensions hikes) approved in the run-up to the November 30 election. This combined with the tendency for a procyclical fiscal policy substantially elevated the risks faced by Romania at the end of 2008 and into 2009.

Against this background, we conclude that managing the economic boom has proved difficult for Romania: macroeconomic imbalances have widened, due to a persistent excess of consumption and investment over disposable income and relatively high inflation has come

up. Fiscal policy has contributed to the imbalances by more than spending revenues from higher growth (which led to larger fiscal deficits). Unfortunately, Romania has missed the opportunity to create buffers under the continued-boom scenario as a protection against a possible sharp slowdown (Fernández-Ansola, Jaeger, 2008). In our opinion, higher revenues from the continued economic boom should have been saved to create room for a fiscal expansion in case that inflows and the economy slow down significantly. A sharp-slowdown scenario has put strong pressure on the fiscal position, in the context that this was already weakened by inconsistency, due to a large number of taxes and their frequent changes, resulting in an increased fiscal pressure on business environment.

3. Fiscal measures in response to the deeper-than-expected recession in 2009

The financial crisis and its spill over to the real economy through currency, trade, financial and confidence channels has made the task of rectifying imbalances ever more urgent. To rebuild investor confidence, the new government needed to urgently reverse Romania's expansionary fiscal policy and pass a credible fiscal consolidation budget for 2009 (Pauwels, 2009, p. 1). The credibility of any fiscal consolidation strategy has to be accompanied by starting the implementation of a medium-term fiscal framework and by restructuring fiscal expenditure towards productive investment.

The 2009 budget adopted in February 2009 is, in our opinion, the first response against the effects of the financial and economic crisis and the severe recession of the Romanian economy. It contained several measures to lower the deficit, this being a key tool of the efforts to regain market trust and stop the country from plunging into a financing crisis. Its main coordinates were: (i) freezing the public sector wages, reducing the various bonuses and eliminating 137,000 vacancies; (ii) cuts in expenditure for goods and services, subsidies, and capital spending that was usually of a non-investment type; (iii) limiting pension increases to inflation; (iv) a 3.3 percentage points rise in the pension contribution rate; and (v) a bringing forward of the schedule to increase excise taxes. On the other hand, the government planned a substantial increase in public investment in 2009 compared with 2008: (i) EUR 10.2 bn allocated to public investments, and (ii) adopting public-private partnerships legislation to increase investments in infrastructure. Specialists considered that, even though the government was set to a higher funds absorption than in previous years, the objectives for 2009 might be considered too ambitious (Molnar, Manea, 2009a, p. 2). Given the need for fiscal consolidation, only a limited set of fiscal stimulus measures has been adopted aiming at supporting businesses, a good functioning of the labour market and supporting household income: (i) extending the auto park renewal by increasing the premium and the number of cars included in the programme; (ii) increasing the capital of two state owned banks (CEC Bank and Eximbank); (iii) ensuring the minimum social pension of RON 350; and (iv) extending the period for unemployment benefits by three months.

We conclude that the relatively austere 2009 budget was based on fiscal responsibility, but after several years of unrestrained wage growth, it was not enough to correct Romania's external imbalances and to ensure its access to enough cash to plug its vast current account deficit. Moreover, the deficit target of 2 percent of GDP proved to be overly optimistic. We argue through some conclusive figures of the budget execution for the Q1 2009: the budget deficit was of 1.5% of GDP, the budgetary revenues have declined 5.5% y-o-y, and the public expenditure has increased by 14% y-o-y. Under these circumstances, the Romanian Government has tried to seek emergency short-term solutions, in order to diminish the fiscal imbalances and to shore up investor confidence. Therefore, the second quarter of 2009 has begun with a budget adjustment, reflecting the more constrained economic and financial environment, and redirecting expenditure to priority areas (investments and social protection). The exchange rate was rectified to RON 4.3/€1 from RON 4/€1, and budget deficit amounted to 4.6% of the GDP, the public budget being based now on a 4% economic shrinkage. To fit

into the budget deficit it was necessary to make an adjustment amounting to 1.1% of the GDP, by reducing expenditure and by increasing revenues, from introducing the lump tax and eliminating some cases of VAT reduced allowances and deductibilities.

The Romanian authorities designed an economic program, intending to cushion the effects of the sharp drop in capital inflows while addressing the country's external and fiscal imbalances and strengthening the financial sector. Regarding the fiscal policy, the action plan aims at reversing the deteriorating fiscal path with significant expenditure cuts and additional revenues. Planned fiscal reforms are designed to contain future expenditures pressures, improve the budgeting process, and enhance the efficiency of tax collections and government operations over the medium-term. The program was the basis of the request addressed to the International Monetary Fund (IMF) for the Stand-By Arrangement for Romania, the authorities admitting their failure in managing the public finances. As the country entered recession, an easing of fiscal policy to cushion the downturn was unfortunately no longer possible, with spending already too high for medium-term sustainability and the limited government's ability to finance a large deficit (IMF, 2009b, p. 6). Under these circumstances, the authorities decided to seek external financial support. The European Union, the IMF, the World Bank, the European Investment Bank and the European Bank for Reconstruction and Development responded by making available to Romania medium-term financial assistance of up to EUR 20 bn (almost EUR 12 bn available in 2009, 7 bn in 2010 and 1 bn in 2011). The multilateral financial agreement has reduced the risk premium for Romania, and the fall in CDS (credit default swaps) quotations has increased opportunities for cheaper access to external funding from capital markets (Molnar, Manea, 2009b, p. 2).

Unlike the cases of Hungary and Latvia, where the support packages responded to an acute crisis situation involving problems at systemically important banks (OTP in Hungary and Parex in Latvia), the financial assistance to Romania had a precautionary character and was designed to ensure continued macro-financial stability (European Commission, 2009b, p. 13). John Lipsky, First Deputy Managing Director and Acting Chairman of IMF, argued that „the joint financial assistance (...) will provide reassurance to markets that Romania's external obligations will be met” (IMF, 2009a). Additionally, it should ease short-term funding pressures and enhance medium-term economic prospects, sending a strong signal of the international community's confidence that, with the consistent implementation of the agreed program, Romania should weather the difficulties and emerge with a better-balanced and more flexible economy.

In the Letter of Intent, the Romanian authorities outlined the rationale for adopting the economic program, comprising fiscal consolidation and reform measures in the area of fiscal governance, structural reform and financial sector supervision, for which they seek financial support, and described the economic policy objectives. To attain these objectives, the program seeks to: (i) strengthen fiscal policy further to reduce the government's financing needs and improve long-term fiscal sustainability; (ii) maintain adequate capitalization of banks and liquidity in domestic financial markets; (iii) sustainably reduce inflation; and (iv) secure adequate external financing and improve confidence (IMF, 2009b, pp. 1). The fiscal strategy was based on a series of measures to produce longer-term savings and improve the quality of public finances via public sector reforms. The Romanian authorities contemplated actions in several areas: (i) restructuring the public sector to reduce government employment, together with a reform of the wage system; (ii) pension reform; (iii) implementation of a Fiscal Responsibility Law and the medium-term budgetary framework; (iv) public enterprise reform; (v) restructuring the financial relations with the local governments and self-financed entities to assure greater financial accountability; (vi) improvements in tax administration; and (vii) streamlined social assistance programs (Government of Romania, 2009, pp. 4).

During the second quarter 2009, the data for Romania showed that the economic downturn deepened, as the economy shrank by 8.8% y-o-y, surpassing the 6.2% decline of the previous quarter. This translates into a poor outlook for tax collection as corporate and household earnings

continued to suffer. Despite the efforts to correct fiscal imbalances, to improve the tax collection and to control expenditure in the central government, the budgetary execution for H1 2009 has shown that the total budgetary revenues have declined 5.1% of GDP (y-o-y) and the public expenses have increased by 5.6% of GDP (y-o-y). Although, almost EUR 9 bn was allocated to investment spending in 2009 (7% of GDP), after the first six months only 33% from the annual programme had been spent. While civil engineering construction projects have increased in the first five months of 2009 in Bulgaria, Czech Republic and Poland, Romania's infrastructure investments have declined by 15% in annual terms (Molnar, Manea, 2009b, p. 2).

In the late August, the Romanian Government endorsed a second budget rectification for 2009. Weakened economic conditions, absent further measures, deteriorating growth, lower revenue yields, and overruns in current spending, notably wages, have pushed the deficit to 7.3% of GDP (a new target agreed with the IMF) from the previous 4.6%, with a 4.3% inflation rate and an economic contraction between 8-8.5%. After the adjustment, the budget revenues in 2009 are forecast to stand at 31.6% of GDP, and the budget spending to stand at 38.9% of GDP.

Though the IMF has raised Romania's budget deficit target in 2009 to 7.3% of GDP, the government is still struggling to stabilise the fiscal account. Budget savings (around RON 5.5 bn) are planned to be achieved through other initiatives: sending public sector workers on unpaid holiday (for 8 days in November-December, a shorter period than the previous announced 10 days), eliminating overtime pay, as well as reducing spending on goods and services. While tightening fiscal policy has sustained foreign investor risk sentiment, the risks to political stability has raised as unemployment increased and real incomes fall alongside the reduction in public sector pay. There is still likely that the required deficit target to be exceeded.

Regarding the effectiveness of fiscal measures, our opinion is that some of them have put more pressure on people and business, contrary to the recommendation of European Commission contained in the European Economic Recovery Plan (EERP) to „protect employment and promote entrepreneurship” (Commission of the European Communities, 2008, p. 10):

- To reduce its loss of revenues from Romania's quite large grey economy, the government imposed a minimum tax on companies' turnover. We believe that improving the tax collection would have been more effective, as the lump tax led to self-liquidation of many small firms, increased unemployment, and reduced private initiative;
- Increasing the social charges, referring to the contribution to social security, higher with 1% for employees and 2.3% for companies;
- Large delays on VAT refund for exporters, which result in their lack of liquidity;
- It was decided that from Q2 2009 reinvested profit would be exempt from tax, yet the decision was revised and postponed until Q4 2009. We appreciate that the positive effect of such a measure is very low as many companies will register losses in 2009;
- Sending public sector workers on unpaid holiday for 8 days, which is completely against the European Commission's recommendation, contained in the EERP: "the top priority must be to protect Europe's citizens from the worst effects of the financial crisis" (Commission of the European Communities, 2008: pp. 10). Another commitment to cut the expenditures by 0.6% of GDP will entail a high number of fired employees, by mid-2010.

Under these circumstances, according to the CESifo World Economic Survey published in August 2009, the assessment of the volume and structure of Romanian policy measures to fight financial and economic crisis was 1.3 (WES scale: 9 – fully sufficient; 5 – more or less sufficient; 1 – not sufficient) (Stangl, Nerb, 2009, p. 7).

4. Gradual recovery and correction of fiscal imbalances; short-term prospects

In the H2 2009, first signs of economic recovery started to appear, initially driven by export demand. The decline in industrial production and exports has been moderating and m-o-m private credit developments turned positive after several months of negative growth. The forecast assumes these trends will consolidate over the coming quarters (European

Commission, 2009c, pp. 138-140). The recovery of domestic demand is expected to follow with some delay given still rising unemployment and decelerating wage growth. Against this background, pressures on the exchange rate have eased. Real GDP growth is expected to turn positive by the Q1 2010 leading to a moderate 0.5% real GDP growth rate in 2010, gradually accelerating to 2.5% in 2011. The recovery, however, will remain shallow because of a continue need for fiscal adjustment, diminished capital inflows, at least in comparison with the pre-crisis period, and the continued high rate of unemployment.

The outlook is, however, subject to exceptional uncertainties and risks. As it is shown in the Country Partnership Strategy for Romania issued by the World Bank in 2009, the recovery depends on global events, and on addressing structural challenges through a credible and sustained reform effort. In the near term, output could be further compressed through balance sheet effects arising from a further national currency depreciation and higher-than-expected inflation, especially if capital outflows are larger than anticipated.

The widening output gap, the declining domestic demand and the recent stabilisation of the exchange rate have significantly eased inflationary pressures over recent months. As the economy returns to a more sustainable growth path for a transition country, external balances are expected to remain in negative territory. As the projected rates of increase in imports exceed those in exports, both the trade and current account deficits are forecasted to go up by one quarter of a percentage point between 2009 and 2011. However, despite good progress, the political crisis made impossible the implementation of some crucial components of the policy package: submitting the 2010 budget to the Parliament, undertaking the actions needed to trim the 2010 deficit to the 5.9 percent of GDP deficit target, approving the Fiscal Responsibility Law and Pension Reform by the Parliament. As it is noted in the European Commission's Autumn Forecast (2009c: pp. 138-140), risks to the 2010 budget are mixed: on the one hand, the adoption and full implementation of the Unitary Wage Law would contribute to gradually reducing the size of the public wage bill to 7% of GDP by 2015. Similarly, progress on key structural fiscal reforms (Pension Law and Fiscal Responsibility Law) would contribute to the fiscal consolidation process. On the other hand, the current political gridlock may weaken or delay the fiscal consolidation and structural reform efforts.

In order to increase external competitiveness and to lower the current account deficit and inflation, Romania has to implement a medium-term fiscal framework, in order to ensure fiscal sustainability. The authorities have proposed a series of fiscal reforms to contain key expenditure pressures and improve the budgeting process, which should allow the government to streamline the budget process, provide discipline in budget planning, and ensure fiscal sustainability over the medium term. Key features of these reforms include: (i) a framework for improved multiyear budgeting; (ii) limits on intra-year budget revisions; (iii) fiscal rules on expenditures, public debt, and the primary deficit; (iv) establishing an independent fiscal council; and (v) a framework for managing guarantees and other contingent liabilities.

One of the greatest risks to medium-term fiscal stability is the *current pension system*, which is expected to run large deficits in the coming years. The current pension system indexes pensions to wages, allows for discretionary pension increases, has a low retirement age, and excludes certain groups of public employees from pension contributions. The Pension Reform will gradually move pension indexation to consumer prices; contributions will be phased-in for the excluded groups; and the gradual adjustment of the retirement age will continue beyond the current schedule to bring it more in line with advanced economies.

It is also necessary to *revise the composition of expenditure* to increase the share of growth-enhancing spending by reducing and redirecting state aid to horizontal objectives and to keep wage developments in line with productivity growth. Another objective has to be the *intensification of the measures for decreasing the tax evasion* in areas such as bakery, beverage and tobacco industry, tourism, hotels and restaurants, commerce, in order to improve the tax collection. Regarding the *payments areas*, the public authorities are already focusing on a number of corrective measures at the local and central government levels: (i) clearing all

arrears accumulated so far in 2009 by end-September 2009 and the entire stock of remaining arrears by end-2010; (ii) imposing conditions for access of local and self-financed government entities to central government guarantees and additional transfer payments on satisfactory performance in reducing or eliminating such arrears; and (iii) initiating a review of the commitment control systems with a view to strengthening it during 2010.

5. Conclusions

During the last few years, the fiscal policy in Romania was expansionary, procyclical, with fiscal management lacking in medium term orientation and leading to an accumulation of significant macroeconomic imbalances reflected by the budgetary and current account deficits and a high inflation rate. These high external and fiscal imbalances increased Romania's exposure to the global economic downturn. The lack of consistency of the fiscal-budgetary policy and the budgetary deviation recorded in 2008 facilitated a rapid downgrade of perception, confirmed by the lower ratings granted to Romania by the rating agencies, increased pressures in terms of the national currency depreciation and increased financing costs.

In the absence of a sustainable fiscal stance and waste of money through public spending mismanagement, macroeconomic balance cannot be restored. Therefore, the approach of the fiscal stance should be consistent with the current economic situation, supporting adequate adjustment program (Donath, Cismas, 2009, p. 94). It means putting at the core of the public policy the performance of financed activities and allocating funds based on effectiveness. If the government fails to finance productive investments and continues to channel funds towards loss providing areas, the result will be the deepening of the crisis, instead of using the fiscal tools as levers to boost economic activity. Therefore, in the current economic context, Romania's first priority should be to tackle macroeconomic and fiscal imbalances that pose risks to the sustainability of its medium to long-term growth path.

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FISCAL POLICY AND RELATIVISM: BETWEEN THE FLAT TAX AND THE PROGRESSIVE TAX

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Abstract. *The definite aim of this study is to shed light on the possibility of the economic science to „prescribe” a fiscal optimum, both in which regards the tax regime (progressive versus flat tax) and in which regards the level of taxation. I will thus argue for the necessity of demystifying the ideas that are largely spread in both economic theory and in the public opinion: on the one hand, the idea that the flat tax fiscal regime is the optimum mean against fiscal discrimination and societal wealth redistribution; on the other hand, the idea that the proportional tax rate, the flat tax, is the modern source of economic prosperity.*

Keywords: fiscal policy; scientific relativism; flat tax rate; fiscal optimum.

JEL Codes: B53, D63, H21.

REL Codes: 8K, 13B, 13D.

The „tax as exchange” has been forever the favourite discourse of political elites engaged in and advantaged by the consolidation of state. Illegitimately invoking the „efficiency criterion” the government decides that it has to increase a certain tax or to change the fiscal regime, for the „good of the economy”!! But who is in fact „the economy”? Personally, I do not know this person in order to acknowledge whether the governmental policies hurt it or advantage it. In reality, *the economy* is a system of voluntary interactions between the owners of legitimate property rights. In the architecture of this very system, governmental policies do nothing else than to divide advantages for some and disadvantages for others, and thus the inherently conflicting nature of all the arrangements based on coercion and implicitly lacked of logic and legitimacy.

It is easy to admit that fiscal policies divide the society in two great competing social categories, as John C. Calhoun has proved in his *Disquisition on Government*. Even if, formally, we all have the quality of „tax payers”, from an economical point of view however some of us are more tax payers than the others. I am talking, on one hand, about those that earn their revenues in the private sector (*the net tax payers*), who are dependent on the market, on satisfying the needs of the consumer. On the other hand, I am talking about those that receive their revenues from the public budgets (*the net consumers of taxes*), as well as of those whose revenues come from the „businesses” with the state, that are not subordinated to the market but to the preferences of the state bureaucracy⁽¹⁾.

Actually a lot of economists are attracted by the idea of flat tax. They consider that the system of progressive taxation, through its high margins, taxes in a discriminatory manner, discourages investments, creates unemployment and brakes economic growth. The standard argument for the flat tax belongs to Robert Hall and Alvin Rabushka. They show that the economic advantage of the flat tax stands in the imposition of a lower tax level, aimed at offering incentives for savings, capital formation and entrepreneurial activity, which would in turn bring about an increase in economic performances. This does not mean that flat taxes can eliminate the depressive effect that, in general, any tax rate exerts over production⁽²⁾.

In today’s economy which is increasingly characterised by the intensification of the globalization phenomenon, both employment and capital migrate towards the jurisdictions in which the fiscal weight is as small as possible. This *fiscal competition is the institutional phenomenon that raises serious barriers against the state’s power of taxing and regulating.*

Paradoxically, in the end, the market is – as we can see – the one that establishes constraints to the state⁽³⁾, not the constitutions, or, equally false, the political persons and the governmental bureaucracy.

In this context, for the object of our analysis two phenomena are significant: (1) the systematic reduction of the taxation level; (2) the extension of proportional taxation that is the adoption in numerous countries, especially in Central and Eastern Europe, of the flat tax system. There are numerous illustrative examples in order to consider that in this respect we are talking about a global tendency.

For example, for 26 OECD member states, the average of the biggest three profit tax rates has decreased from 41% in 1986 to 32% in 2000. Even if the IMF has systematically pretended that small taxes are “mean” for the budgetary equilibrium and implicitly for the economic performance, it also proves that the economies with lower fiscal rates benefit of more foreign direct investments than those with a higher one. For example in the period 1996 to 2000, four European countries with the most favourable fiscal regimes – Ireland, Netherlands, Luxembourg and Switzerland, which account for only 9% of the European GDP – have attracted 38% of the American investments in Europe. Moreover, Ireland is the state that established the trend towards fiscal relaxation in Europe through reducing the general tax level from 35% in 1989 to 22% in 2001, the net profit tax being actually of just 12.5%. It is notable that through consequently implementing the pro-market policies, Ireland became the country with the second per capita income and with the lowest tax level in the EU.

In the same time the fiscal reforms started to be affected, more and more often, of the “fiscal revolution” of the flat tax. Estonia was the first European country to adopt, in 1994, a flat tax of 26%. Following suite was Latvia, in 1995, and then Russia, in 2001, and Ukraine in 2003. Actually, nine countries in Central and Eastern Europe have proportional tax rates, with rates being differentiated or not between the *tax on individual income* and the *profit tax*, as follows: Estonia – 24%, respectively 24%; Georgia – 12%, respectively 20%; Latvia – 25%, respectively 15%, Lithuania – 33%, respectively 15%; Romania – 16%, respectively 16%; Russia – 13%, respectively 24%; Serbia – 14%, respectively 14%; Slovakia – 19%, respectively 19%; Ukraine – 13%, respectively 25% (Edwards, 2005). Professor Alvin Rabushka from Stanford University, one of “the parents of the flat tax” appreciates that this is just the beginning. It is still to be seen to what extent these tax rates will resist the European Union pressures to hamper fiscal competitiveness, since the European harmonization looks more and more like a fiscal cartel.

In this context, two comments are relevant.

First of all, in order to increase the business environment’s appeal through reducing taxation and in this way to also decrease the basis of taxation, the flat tax is not the only solution. It is true that almost all the proposals for introducing the flat tax envisaged, at least at declarative level, the decrease of fiscal weight borne by the tax payers. However, it is equally true that the decrease of fiscal weight can take place through the level of progressive taxing too. How can we imagine that today’s American politicians, and a lot of others, would be eager to return to the fiscal model existent at the beginning of the 20th century? In the United States, the introduction of the federal income tax, in 1913, had marginal rates ranging between 1 and 7%⁽⁴⁾.

Secondly, we have to say that the beginnings of taxation can be traced back, from a historical point of view, in the form of „flat tax”. For centuries, until the social-democratic invention named the „welfare state”, the redistributive state, taxation took place as a flat tax. For example, in the feudal Europe in which the feudal pact defined the social reports between landlords and peasants, the taxation was the confiscation of a specific proportion of the agricultural production from the peasants. This process seems to represent the fiscal ancestor, much milder, is true, of today’s flat tax. More than this, the „revival” of the flat tax in our days does not change the coercive nature of taxation.

Let's remind the fierce controversies that took place in the last years in Romania regarding the „fiscal revolution” of the flat tax. Progressive taxation versus flat tax, this was the new dilemma that challenge the imagination of both economic analysts and mass-media commentators. Moreover, the majority of the political class and of state representatives, that learned relatively easy how democracy works, promised that this change would bring about the economic boom and the prosperity to which Romanians were dreaming about.

The entire public debate thus becomes focused on the concerns to show the superiority of a specific fiscal arrangement. In other words, what fiscal system is better, the one which is progressive, or the flat tax? In this sense I will show that the „choice” between progressive and proportional taxation is in fact a false problem. Let's first of all see which the mainstream opinion is regarding the flat tax and the main arguments invoked in favour of this.

In concordance with the popular conception, when answering the question „What is the flat tax?”, Daniel Mitchell (2005) describes this fiscal regime as being a „simple, honest one [...] that treats all tax payers equally”. However, recognizing a plus of administrative simplicity does not justify the economic and ethical sharing of the other attributes of the flat tax.

As we have already seen, economic theory and political philosophy teach us that, from a scientific point of view, we can argue that any tax, whatever its level or nature, is a *fair* one. What, and for whom, can something be honest in an action which is not based on the free agreement, but on violence and coercion? Thus it would implicitly result that it is fair, that it is ethical that the one that is opposed to any requirements of the state over the outcome of his work to be imprisoned on these grounds. This would mean that any decision (to be read „dictatorship”) of the majority is an ethical, correct one. In reality we find ourselves in the impossibility to scientifically validate state's actions, both through the illusory argument of efficiency and through that of ethics (Marinescu, 2005). Thus, no fiscal regime can treat “all tax payers equally”⁽⁵⁾, so no fiscal regime can pass the neutrality test.

In the midst of these debates over the nature of the fiscal regime, „specialists” neglected the essential element: the general fiscal weight. The true problem does not regard the taxation method, being it progressive or proportional, but the fiscal arrangement which „socializes” the least private property. In other words, in the context of the fable used as a motto, we have to be interested more in the number of feathers that are taken away (*the general level of taxation*) not in the manner of taking them away (*the nature of taxation*). It is thus a thing that is related not only to ethics, but complementary, to efficiency.

Numerous famous economists, among which Friedrich Hayek and Milton Friedman, as an example, argue that the flat taxation rate has important advantages resulting from the lack of discrimination between individuals, discrimination that is inevitably made by the progressive taxation rate. It is like you would pretend that the uniform expropriation would be more ethical than the discriminatory one; in the last instance, for a healthy flight of the goose, for favouring its prosperity, it is important for it to be left with as many feathers as possible.

In which regards the source of economic prosperity, arguments cannot be reduced only to the common numeral of the „flat tax”: the real source of prosperity does not lie in itself in the flat rate, but in *reducing the level of taxation*. The fact that in general the flat tax is associated with a lower level of taxation does not mean that, necessary, the proportional taxation attracts a decrease in the fiscal weight. The establishment of a flat tax, for example less than 20% does not have any value in itself. We can imagine flat taxes established at 50% or even above this level – this is what is taken from the tax payers in the present welfare state from Occidental Europe.

This is the reason for which a progressive taxation with tax rates ranging in between 1% and 7%, as in the beginning of the 20th century United States, is preferable to a flat rate of 16%. Thus, depending on the general taxation level, the progressive fiscal regime can be more favourable to capital saving and to investments than the proportional one. It is the same thing

with saying that the budgetary deficit *can* be more advantageous for the economic progress than the budgetary equilibrium. Certainly, it depends on what is level of the budget at which the deficit is realised, respectively the level at which the budgetary equilibrium is realised: for example a deficit of 1% of GDP – when the budget represents, let's say, 20% of national production – is a situation preferable to a budgetary equilibrium which would manifest at a level of 60% of the same national production.

To conclude, the decision of government officials to tax progressively or proportionally is irrelevant from a scientific point of view. The problem is in fact one of non-scientific nature, being about an exclusively political decision. However, through the complicity of „scientists” the political problems – regarding the maintenance or the gain of political power – fraudulently gain scientific pretences. What can be scientific in building up policies that offer institutional incentives for some at the expense of others?

The economic calculus argument shows the relativist, arbitrary character of whatever fiscal policy. What is the reasoning on whose basis the government proposes a flat tax rate of 16%? Why not 16.5% or 20% or 10%? Which are the calculations that are generally used in establishing the tax rate? Is it about that optimum tax rate that makes the economy “work” best?

The fiscal options of governments that adopted the flat rate show us the great diversity of the tax rates used. Fuelled by electoral problems, everywhere we assist at successive reforms of national fiscal systems through which politicians seek to give value to the economic conjecture in which they find themselves. Thus, the choice of fiscal regime cannot be subordinated to an objective scientific reasoning based on the universal laws of economic science. This option is a political one, as professor Alvin Rabushka recognizes in an interview given after Romania announced the adoption of the flat tax rate starting with the 1st of January 2005⁽⁶⁾.

In the end the option for a certain fiscal regime is not and cannot be an objective, scientific one. It is not about ensuring the „good functioning” of the economy or about reducing the costs of collecting the taxes, as the fiscal authorities often advocate. Only in the sphere of private property there may be an interest for saving costs because only under market conditions the irrationality is penalized through losses and eventually through bankruptcy. Unfortunately, we cannot image how a government can go bankrupt due to... high tax collection costs!

Some economists consider that as long as the reasoning of taxation is that of providing the means for financing public goods, then the fiscal regime should be subordinated to the necessity of providing these goods. For example, Richard Epstein shows that taxation has to be rather proportional than progressive due to the fact that people do not benefit of public goods other than progressively.

However, if the „public goods” logic of reasoning is continued until the end then the solution should be another one. Its deduction is based on the very economic nature of public goods: their utilisation of a person does not reduce the availability of these goods for other persons belonging to a community. Thus, we can pretend by using the attributes of non-exclusivity and non-rivalry of public goods that no one benefits to a higher extent than others of national security and defence, public lightning, radio waves spectre, etc.

In this situation, a „more correct” financing of public goods couldn't be a unique tax as a lump-sum tax? The answer is yes since the usage of public goods is not made progressively or proportionally with the income of each person⁽⁷⁾ but *identically* by everybody. How can we thus compute under these conditions the taxes that the government should extract from everybody? Nothing simpler than this: by dividing the production costs of the public goods to the number of persons that belong to that community.

The public choice theory shows that the rules of the democratic game give incentives to the government officials to maximize the advantages resulting from increased public

spending, sometimes at the expense of economic development, as economic history shows. This is the reason for which governments spend the maximum of resources they are capable to cash and even more, through systematically creating deficits and public debts. Anew the fiscal regime is inevitably subordinated to the discretionary budgetary needs and to the political interests, in a world in which the majority of economists continues to illusory talk about „optimum”.

There is no such thing as an „optimum” regarding the relative dimension of the public sector. The admirable argument of Ludwig von Mises regarding the impossibility of economic calculus in socialism represents the basis of this explanation, since the public sector is indeed an „island of socialism”. In the absence of markets and prices, the allocation of „socialized” property through state budgets is a political one, decision whose viability with respect to people’s needs is impossible to verify. The size of the public sector *cannot be given dimensions* by using „productivity calculations” (economic ones), but it can be manipulated depending on the interests and the political programs that are thought to be winning (electoral calculations).

Notes

⁽¹⁾ Through an exemplary logical exercise, M. Rothbard (1970, pp. 141-62) proves the impossibility of any fiscal regime to be neutral. He shows that governmental bureaucracy falls into the category of net consumers of taxes, because it *cannot pay taxes*. It is an inherently impossible fact for a minister, for example, to pay a tax on its wage as a minister *as anybody else does*. If the minister has a gross salary of, lets say, 4000 Ron a month and gives back to the government 16% from the gross amount, this does not mean that he is paying taxes „as anybody else does”. It is in fact a simple accounting regulation between the government bureaucrats and the state budget, having the value of 640 RON/month. This has no economic importance: what really matters is that the respective minister obtains 3.360 Ron/month from the fiscal collections of the state budget, taken from the net tax payers.

⁽²⁾ Talking about the taxation problem, the representatives of *supply* economics argue for the introduction of a fair tax rate!!! Without showing which tax rate can be fair, they appreciate that such a tax rate would contribute to (1) stimulating production and (2) providing some maximal fiscal revenues for the government. However, these two aims of fiscal policies are virtually incompatible. The increase in tax collections cannot do anything else but to attract the extension of the role of the state in an economy, which would contradict the „liberal” program of development to which the supply economists adhere. This approach did not bypass Romania; together with the introduction of the flat tax rate, the finance minister showed that a decrease in taxes is the best way for increasing the state budget. What a liberal politics!

⁽³⁾ Even the nature of the market is the one that imposes these constraints. The market means *private property rights and, implicitly, freedom*. Thus, the market appears as the natural institutional arrangement of social order, of civilization and prosperity.

⁽⁴⁾ As James Gwartney and James Long show („Is the Flat Tax a Radical Idea?”, *Cato Journal*, vol. 5, no. 2, 1985, p. 407-32), at least one senator voted against the introduction of the tax, because he was afraid that one day the marginal rates will reach a level of 14%, that is a level considered to be restrictive. In the same context, as I have shown in „Institutions and prosperity”, the French economist Paul Leroy-Beaulieu argued in 1888 that taxing national production with 12% is too much and susceptible to hamper economic growth and liberty. Four decades later, even Keynes pretended that a fiscal rate of 25% represents the maximum degree of tolerance. However, they have not seen anything that was to follow in the second half of the 20th century.

⁽⁵⁾ The equal treatment of all individuals in a society would exist only if all individuals in the society would gain their revenues through „economic means”, that is through their affirmation in the division of labour, through production and exchange of legitimate private property rights. However, this condition is incompatible with the very existence of the state: in the virtue of the later, as John Calhoun shows, society is divided in the category of the governed (*the net tax payers*, those that form

the private sector) and the governors (*the net consumers of taxes*, those that account for the public sector). The political governance is nothing more than the existence of the social division of labour that is a social relation between equals. The existence of persons that live on the basis of the taxes that others' pay shows that taxation is incompatible with *the equal treatment of everybody*. Obviously we can imagine an *equal treatment of tax payers*, but not of all of them, but of the net taxpayers that are bound to pay a flat rate.

⁽⁶⁾ „Professor Rabushka shows that certainly, if 16% is too low and thus it does not manage to generate the required income it is more a problem of controlling public expenses than a problem regarding the option for a certain level of taxation”. It seems that, in this conception, the actual fiscal trend is to adapt the level of taxation at the pre-established level of public spending, designed to „satisfy” the majority of the electorate. The Romanian government confirms that the fiscal reform that starts with reducing public spending in order to further on healthily reduce taxation levels has presently become outdated (or non-electoral?)

⁽⁷⁾ Through their nature public goods cannot be „consumed” progressively or proportionally with the income of individuals. Individuals cannot choose, for example, to fall into the scope of armed forces or public lightning in a manner that is progressive or proportional to their incomes, such that to justify progressive or proportional taxation for financing these kinds of services.

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OPTIMIZING THE SIZE OF GOVERNMENT SPENDING BY COFOG STRUCTURE. THE CASE OF EUROPEAN UNION MEMBER STATES

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***Abstract.** The theme of public expenditure has been of great interest in the latest years. Focusing on government size, role of government and the efficiency of the public sector becomes an even more important issue nowadays, when the financial crisis has covered severely almost all economies worldwide. The debate has as starting point the keynesian belief (state intervention overcomes recession periods) but also the division of the economy between the public and the private sector. Goods and services could be provided by the state, but many times the private sector seems to be more efficient. Using a specific econometrical analysis, the authors try to establish the optimal size of the public sector regarding the structure of the expenditures in both old and new member states of the European Union, a level that fosters economic growth and suggest that, following this point, GDP should be left in the hands of the private sector.*

Keywords: public expenditure; economic growth; optimum level; public sector; performance.

JEL Codes: H10, H50, H70.

REL Codes: 10E, 13A, 13B.

1. Introduction

The economic theory provides two main categories of arguments that explain the public sector size in time and among countries. The first category has as starting point the Wagner law, according to which the elasticity of governmental expenditures compared to GDP is greater than 1. As countries become more developed, the demand for public goods raises and is consistent with the increasing ability to collect the necessary funds. On the other hand, the „Baumol cost disease” explains that the percentage of governmental expenditures increases because the raise of public servants’ salaries is higher than their productivity, while the price related to public services demand is relatively non-elastic. The second category of arguments is political. For election purposes, the fiscal policies, especially those concerning the governmental expenditures, tend to be inconsistent in time and focus on greater deficits and greater public sectors. This trend is more powerful if the number of parties forming the government is larger, if the election frequency is greater, and election system is proportional and not relying on majority.

The theoretical studies support the idea that the long-run relation between the size of the administrative sector and the economic growth has a concave shape. When the administrative sector is very small, the long-term economic growth can be accelerated through the capital and labor productivity growth by increasing the provision of public goods. The marginal economic growth is positive but decreasing as the size of the administrative sector increases, and it becomes negative when additional charges harm the benefits resulting from increasing the productivity. The exact position of this turning point remains a key question. The response depends on structural factors, such as the economic cycle, the structure of public expenditures and the fiscal pressure. Using a specific econometrical analysis, the authors try to establish the optimum for the structure of the public expenditures by considering the most important expenditure types according to COFOG classification in old and new member states

of the European Union, which fosters economic growth and suggest that, following this point, GDP should be left in the hands of the private sector.

2. Theoretical framework

Starting with the theoretical framework proposed by Armev (1995), in this being proposed an optimum level of the public sector within the economy, we focused on an econometrical methodology, that is meant to identify the optimal size of government spending for the structure of the public expenditures within the EU-15 countries, respectively in the EU-12 countries. In order to achieve this objective, we have taken into consideration the real GDP growth and the total amount of public expenditures (as % of GDP) according to COFOG classification, for the period 1999-2007.

The subject of the paper is of wide interest, considering the fact that in the last decades, beginning with 60', 70', the level of public expenditure as % of GDP has been permanently growing and the issue of a correct size of public expenditures in GDP has been largely debated. This subject is reviewed with an even more significant frequency during periods of economic and financial crisis, when the issue of management of public funds is of crucial interest. Analysing the historical data, we can conclude that both big governments and also those who had proceeded at reducing the level of the public expenditures, have not reached a maximum level of the economic growth and of social welfare. This is the reason why we state that the optimum level of public expenditures varies within countries due to a range of social and economical factors that influence upon the management of public resources. An economy can function in optimum conditions when there is a mix between the force of the market economy and the public intervention through allocation of public resources.

Taking into consideration the analysis made by Grossman (1987), Scully (1994), Chao and Grubel (1998) or Pevcin (2004), we emphasize on the idea that a generalized optimum level of the public expenditure as % in GDP cannot be reached for more countries on a whole. Though, through the econometrical modelling, considering the past experiences, can be obtained an optimum level, but restricted to the conditions and limitations of the proposed model. An extension of the number of observations, for example, using wider time series, could lead to a change in the proposed optimum level of public expenditures with several percents.

3. Methodological framework

The empirical test regarding the existence of Armev curve can be illustrated by the following mathematical model:

$$Q = f(G, N) \quad (1)$$

where Q measures the output of the economy, G indicates the state intervention in the economy, while N shows the existence of some exogenous factors. We have considered the most adequate indicator for Q the real GDP growth (expressed in %), for G the public expenditure for different functions of the government as % of GDP, while N was ignored.

Consequently, the model can be rewritten with the following non-linear regression:

$$GDP = \alpha_1 + \alpha \times E + \alpha \times E^2 \quad (2)$$

where:

GDP– dependent variable, real GDP growth (%);

E – independent variable, public expenditure on different functions (% in GDP);

Computing the equation 2 as a function, that must me maximized, leads to identifying the optimal level of public expenditure as % of GDP. In order to do that, we proceed to derivation of the function by E and equalize it to zero. We reach the following equation:

$$2 \times \alpha_3 \times E + \alpha_2 = 0 \quad (3)$$

from where the optimum level of public expenditure:

$$E = -\frac{\alpha_2}{2 \times \alpha_3} \quad (4)$$

4. Results

When optimizing the structure of the public expenditures, we have based our analysis on the functional classification of the public expenditures. Following this line of arguing, we focused on the 10 functions of the public expenditures offered by the COFOG classification. It would be desirable to obtain an optimum of public expenditures as percent in GDP for each type of expenditure by considering individual countries. This would represent an exhaustive methodology which would allow deep and complete analysis when trying to improve the structure of the public expenditures. But, our present research tries to identify some general features for the EU member states, this also due to data availability but also because of the length of mathematical demonstrations. *Consequently, we focused on an analysis which considers the EU member states by grouping the states in EU-15 and EU-12. In this way we can observe differences between the two groups of countries, which definitely prove different characteristics.*

Furthermore, we state that of highest interest are those expenditures from the main categories of COFOG classification. These would be the public expenditures regarding economic affairs, public health, public education, social services and also social security and welfare. The other five types of expenditures according to COFOG classification have all been considered as other expenditures and are not part of this research.

We will present downwards the results obtained by computing the optimal structure of public expenditures for EU-15 and EU-12 member states. Therefore we considered the real GDP growth as a dependent variable and the different types of expenditures as % of GDP as independent variables. The time series we have chosen are for the period 1999- 2007 and the data used is from Eurostat statistics. In the following tables there are presented the results of the regressions and the coefficients which we have used for computing the optimal sizes according to relation (4) from the methodology above.

Optimizing public economic affairs expenditures – EU-15				
Dependent Variable: Real GDP growth				
Method: Pooled EGLS (Period SUR)				
Sample: 1999-2007				
Included observations: 9				
Cross-sections included: 15				
Total pool (unbalanced) observations: 134				
	Coefficient	Std. Error	t-Statistic	Prob.
α_2	1.119339	0.077333	14.47435	0.0000
α_3	-0.095880	0.010481	-9.148332	0.0000
R-squared	0.546361	Durbin-Watson stat		1.958532

Considering the econometrical analysis, we can state that the obtained results allow us to continue the research (to maximize the function which reveals the correlation between economic growth (real economic growth) and the economic affairs expenditures (being revealed as % of GDP)). The results are statistically significant, this can be observed by viewing the table above. The optimal size of 5.84 %, which should be reached by the expenditures regarding economic affairs for maximizing economic growth, reveals for the

developed countries from the European Union a confirmation of the economic theories which claim that these countries focus less on this type of expenditures than the new member states (the average of this expenditures in GDP being for EU-15 member states of only 4.33% for the period 1999-2007). *Because of this reasons, we observe from the mathematical function that an increase of this type of expenditures is suitable in order to maximize the economic growth. For the period of time considered and the data being used, for reaching an optimum point, the public expenditures regarding economic affairs should be increased by 1.51%. We could conclude that this result may occur also due to the high stimulating characteristic regarding economic growth of this type of expenditure.*

Optimizing public economic affairs expenditures – EU-12					
Dependent Variable: Real GDP growth					
Method: Pooled EGLS (Period SUR)					
Sample: 1999-2007					
Included observations: 9					
Cross-sections included: 12					
Total pool (unbalanced) observations: 95					
	Coefficient	Std. Error	t-Statistic	Prob.	
	α_2	2.095336	0.154173	13.59080	0.0000
	α_3	-0.208977	0.019733	-10.59022	0.0000
R-squared	0.562187	Durbin-Watson stat		1.640040	

The results are statistically significant, this can be observed by viewing the table above. *The optimal size of 5.01% in GDP, which should be reached by the expenditures regarding economic affairs in order to maximize economic growth is pretty close to the real average of this expenditures for the considered period of time for the EU-12 member states (the average of public economic affairs expenditures for EU-12 being in the time period 1999-2007 of 5.20% in GDP). Considering that usually emergent states allocate a higher importance to this type of expenditures than developed countries do, we could claim that the obtained result confirms this theory and also proposes a slight diminishing of about 0.19%, as an average, for the EU-12 states regarding public economic affairs expenditures.*

Optimizing public education expenditures – EU-15					
Dependent Variable: Real GDP growth					
Method: Pooled EGLS (Period SUR)					
Sample: 1999-2007					
Included observations: 9					
Cross-sections included: 15					
Total pool (balanced) observations: 135					
	Coefficient	Std. Error	t-Statistic	Prob.	
	α_2	1.512203	0.117722	12.84554	0.0000
	α_3	-0.168864	0.020048	-8.423115	0.0000
R-squared	0.628613	Durbin-Watson stat		1.972157	

Considering the econometrical analysis, we can state that the obtained results allow us to continue the research (to maximize the function which reveals the correlation between

economic growth (real economic growth) and the public education expenditures as % of GDP)). The results are statistically significant, as be observed by viewing the table above. The optimal size of 4.47%, which should be reached by the expenditures regarding the education in order to maximize the economic growth, indicates for the developed countries from the European Union a confirmation of the fact that these countries prove a trend of reducing public education expenditures towards a level of 4.5%-5% in GDP. *This trend could have been observed in the latest years especially in countries like Germany, Austria, Netherlands, France, Italy or Denmark (as an example, in Denmark, public education expenditures have been reduced from 8.2% in GDP in 2003 to 7.4% in GDP for the year 2007). This dynamics doesn't necessarily prove less money for education, but it shows that in the latest years private financing of education has largely increased at least in some special fields of education and research. We could conclude on the basis of our results, that maximizing economic growth, may be achieved also by reducing for EU-15 member states the public education expenditures with about 0.98% in GDP.*

Optimizing public education expenditures – EU-12					
Dependent Variable: Real GDP growth					
Method: Pooled EGLS (Period SUR)					
Sample: 1999-2007					
Included observations: 9					
Cross-sections included: 12					
Total pool (unbalanced) observations: 95					
	Coefficient	Std. Error	t-Statistic	Prob.	
	α_2	2.154670	0.314217	6.857258	0.0000
	α_3	-0.215134	0.053542	-4.018015	0.0001
R-squared	0.547051	Durbin-Watson stat		1.883398	

The results are statistically significant, this can be observed by viewing the table above. *The optimal size of 5% in GDP, which should be reached by the expenditures regarding public education in order to maximize economic growth, is pretty close to the real average of this expenditures for the considered period of time for the EU-12 member states (the average of public economic affairs expenditures for EU-12 being in the time period 1999-2007 of 5.40 % in GDP). Anyway, if judging public education expenditures individually, several countries like Romania, Bulgaria, Czech, Slovakia prove to allocate significantly under 5% in GDP towards public education for the year 2007, the last year considered in our analysis.*

Optimizing public health expenditures – EU-15					
Dependent Variable: Real GDP growth					
Method: Pooled EGLS (Period SUR)					
Sample: 1999-2007					
Included observations: 9					
Cross-sections included: 15					
Total pool (balanced) observations: 135					
	Coefficient	Std. Error	t-Statistic	Prob.	
	α_2	1.608485	0.131467	12.23490	0.0000
	α_3	-0.177072	0.018735	-9.451602	0.0000
R-squared	0.552343	Durbin-Watson stat		1.988009	

Considering the econometrical analysis, we can state that the obtained results allow us to continue the research (to maximize the function which reveals the correlation between economic growth (real economic growth) and the public health expenditures as % of GDP). The results are statistically significant, as can be observed by viewing the table above. The optimal size of 4,54%, which should be reached by the expenditures regarding public health in order to maximize the economic growth, indicates for the developed countries from the European Union an optimum level of this type of expenditures under the average obtained in the considered period of 6.19% in GDP. We could state that in this case optimizing the level of public health expenditures in EU-15 states means a reduction of this type of expenditures with 1.65% in GDP.

Optimizing public health expenditures – EU-12					
Dependent Variable: Creșterea reală a PIB					
Method: Pooled EGLS (Period SUR)					
Sample: 1999-2007					
Included observations: 9					
Cross-sections included: 12					
Total pool (unbalanced) observations: 95					
	Coefficient	Std. Error	t-Statistic	Prob.	
	α_2	2.104709	0.245530	8.572105	0.0000
	α_3	-0.207238	0.042250	-4.905073	0.0000
R-squared	0.449121	Durbin-Watson stat		1.731851	

The results are statistically significant, this can be observed by viewing the table above. *The optimal size of 5,07 % in GDP, which should be reached by the expenditures regarding public health in order to maximize economic growth, is higher than the average of this expenditures for the considered period of time for the EU-12 member states (the average of public health expenditures for EU-12 being in the time period 1999-2007 of 4.80 % in GDP). Consequently, we could state that optimizing public health expenditures in EU-12 member states means an increase of this type of expenditures with about 0.27% in GDP. This policy may be opposite the general policy which should be followed by EU member states, as claimed above, meaning a considerable reduction of public sectors. Anyway in the EU-12 member states results show that not public health expenditures should be reduced in order to reduce public sectors, but the other types of public expenditures.*

Optimizing general public services expenditures – EU-15					
Dependent Variable: Creșterea reală a PIB					
Method: Pooled EGLS (Period SUR)					
Sample: 1999-2007					
Included observations: 9					
Cross-sections included: 15					
Total pool (balanced) observations: 135					
	Coefficient	Std. Error	t-Statistic	Prob.	
	α_2	1.016186	0.080151	12.67834	0.0000
	α_3	-0.079800	0.010988	-7.262610	0.0000
R-squared	0.572536	Durbin-Watson stat		1.991699	

Considering the econometrical analysis, we can state that the obtained results allow us to continue the research (to maximize the function which reveals the correlation between economic growth (real economic growth) and the general public services expenditures as % of GDP). The results are statistically significant; this can be observed by viewing the table above. The optimal size of 6.36%, which should be reached by the expenditures regarding general public services in order to maximize the economic growth, indicates for the developed countries from the European Union an optimum level of this type of expenditures under the average of 6.89% in GDP obtained in the considered period of time. We could state that in this case optimizing the level of general public services expenditures in EU-15 states means a reduction of this type of expenditures with 0.53% in GDP.

Optimizing general public services expenditures – EU-12					
Dependent Variable: Creșterea reală a PIB					
Method: Pooled EGLS (Period SUR)					
Sample: 1999-2007					
Included observations: 9					
Cross-sections included: 12					
Total pool (unbalanced) observations: 95					
	Coefficient	Std. Error	t-Statistic	Prob.	
	α_2	1.904091	0.167224	11.38648	0.0000
	α_3	-0.158925	0.020419	-7.783118	0.0000
R-squared	0.591789	Durbin-Watson stat		1.766870	

The results are statistically significant, this can be observed by viewing the table above. *The optimal size of 5.99 % in GDP*, which should be reached by the expenditures regarding general public services in order to maximize economic growth, indicates pretty close for the EU-12 member states a level under the average level of 6.11% obtained for the period 1999-2007. *Consequently, in order to obtain maximum results regarding economic growth a slight diminishing of this type of expenditures is worth. This diminishing is of 0.12% in GDP for the new member states regarding the expenditures with general public services.*

Optimizing social security and welfare expenditures – EU-15					
Dependent Variable: GDPC?					
Method: Pooled EGLS (Period SUR)					
Sample: 1999-2007					
Included observations: 9					
Cross-sections included: 15					
Total pool (balanced) observations: 135					
	Coefficient	Std. Error	t-Statistic	Prob.	
	α_2	0.514181	0.052370	9.818291	0.0000
	α_3	-0.018767	0.002703	-6.941824	0.0000
R-squared	0.585027	Durbin-Watson stat		1.997172	

Considering the econometrical analysis, we can state that the obtained results allow us to continue the research (to maximize the function which reveals the correlation between economic growth (real economic growth) and the social security and welfare expenditures as % of GDP)). The results are statistically significant, this can be observed by viewing the table above. The optimal size of **13.63%**, which should be reached by the expenditures regarding social security and welfare in order to maximize the economic growth, indicates for the developed countries from the European Union an optimum level of this type of expenditures under the average of 17.93% in GDP obtained in the considered period of time. We could state that in this case optimizing the level of social security and welfare expenditures in EU-15 states means a reduction of this type of expenditures with 4.30% in GDP. In fact, excessive public expenditures allocated towards social security may hinder private initiative and diminish economic development.

Optimizing social security and welfare expenditures – EU-12				
Dependent Variable: Creșterea reală a PIB				
Method: Pooled EGLS (Period SUR)				
Sample: 1999-2007				
Included observations: 9				
Cross-sections included: 12				
Total pool (unbalanced) observations: 95				
	Coefficient	Std. Error	t-Statistic	Prob.
α_2	1.204689	0.090286	13.34297	0.0000
α_3	-0.060113	0.006241	-9.632055	0.0000
R-squared	0.711446	Durbin-Watson stat		1.812517

Considering the econometrical analysis, we can state that the obtained results allow us to continue the research (to maximize the function which reveals the correlation between economic growth (real economic growth) and the social security and welfare expenditures as % of GDP)). The results are statistically significant, as can be observed by viewing the table above. The optimal size of **9.98%**, which should be reached by the expenditures regarding social security and welfare in order to maximize the economic growth, indicates for the new member states from the European Union an optimum level of this type of expenditures under the average of 12.84% in GDP obtained in the considered period of time. We could state that in this case optimizing the level of social security and welfare expenditures in EU-12 states means a reduction of this type of expenditures with 2.86% in GDP.

5. Conclusions

The main result of this analysis reveals the fact that, using specific analysis, public sector can be optimized regarding its size but also its structure. Our specific results prove important differences existing between EU-15 and EU-12 member states.

As far as concerns the EU-15 countries, the results suggest the fact that beside the expenditures regarding economic affairs all the other categories of public expenditures should be reduced in order to maximize the economic growth. We could see the fact that the expenditures with social security are the ones which require the most important diminishing. By analysing the expenditures for EU -12 member states, there could be seen different results, meaning that optimizing the structure of public expenditures means reducing expenditures differently from developed countries or even increasing public health expenditures.

For further analysis we state the fact that studies for each single country could be done in order to obtain the optimal structure of public expenditures in such cases. In those analysis for achieving significant results, it is also important to consider longer time series.

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EU'S STRATEGY FOR SUSTAINABLE DEVELOPMENT AND ITS INDICATORS

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***Abstract.** Sustainable development has now become a target on a global scale. Based on the commitment made at RIO (1992), the European Union in recent years adopted an integrated strategy in order to assume an active role in efforts to adopt the principle of sustainability in economic policies.*

The Union proposes that, thus enabling an evolution towards a society more prosperous and fair, ensuring a cleaner environment, safer, cleaner and offering a quality of life better. „Sustainable development has become today, at least at the political level, declarative, a goal of society as a whole, therefore a basic principle of all the economic and social life”.

Keywords: sustainable development; economic prosperity; social cohesion; implementation; political objective.

REL Codes: 10J, 20F.

Introduction

The concept of sustainable development (sustainable) was crystallized in time, over several decades, the depth of scientific debate at the international level and has become political precise values in the context of globalization.

Sustainable development has become a political objective of the European Union since 1997 through its inclusion in the Maastricht Treaty. In 2001, the Gothenburg European Council adopted the Strategy for Sustainable Development of the European Union, which has been an external dimension to Barcelona in 2002.

In 2005, the European Commission initiated a process of review of strategy, publishing, in February, a critical assessment of progress since 2001, which point and several courses of action to follow in the future. The document highlighted some trends and unsustainable, with negative effects on the environment, which could affect the future development of the European Union and climate change threats to public health, poverty and social exclusion, depletion of natural resources and erosion of biodiversity. Following the identification of these problems, in June 2005, Heads of State and Government of the European Union countries adopted a Declaration on the guiding principles of sustainable development, incorporating the Lisbon Agenda, revised the economic growth and creating new jobs as an essential component of autocomprehensive objective of sustainable development. After extensive consultation, the European Commission presented on 13 December 2005, a proposal to revise the strategy of Goteborg in 2001.

As a result of this process, the EU Council adopted on 9 June 2006, renewed Strategy for Sustainable Development, for an enlarged Europe. It is designed in a unified strategic vision and consistent with the overall objective of continuous improvement of quality of life for present and future generations by creating sustainable communities, able to manage and use resources effectively and to exploit the potential for environmental innovation and social economy to ensure prosperity, environmental protection and social cohesion.

EU Strategy for Sustainable Development completed the Lisbon Strategy is intended as a catalyst for those who develop public policy and public opinion in order to change behavior in European society and the active involvement of decision makers, public and private, and the citizens in developing, implementing and monitoring the objectives of sustainable development.

Responsibility for implementing the strategy lies the European Union and its Member States, involving all the institutions at community and national levels. It emphasized, also the importance of close working with civil society, social partners, local communities and citizens for achieving sustainable development.

For this purpose, identified four key objectives:

- Environmental protection through measures to decoupling economic growth from negative impacts on the environment;
- Equity and social cohesion, respecting fundamental rights, cultural diversity, equal opportunities and combating discrimination of any kind;
- Economic prosperity by promoting knowledge, innovation and competitiveness to ensure high living standards and jobs plentiful and well paid;
- Fulfilling the EU's international responsibilities through the promotion of democratic institutions in the service of peace, security and freedom, and the principles and practices of sustainable development worldwide.

To ensure the integration and linking components balanced economic, ecological and socio-cultural aspects of sustainable development, the EU shall following principles:

- Promote and protect fundamental human rights;
- Solidarity within generations and between generations;
- Nurturing a democratic and open society;
- Information and involvement of citizens in decision-making;
- Involve the business and social partners;
- Consistency of policies and governance at local, regional, national and global;
- Integration of economic policies, social and environmental impact assessment through consultation and stakeholders;
- Using modern knowledge to ensure efficiency and investment;
- Implementing the precaution if uncertain scientific information;
- Applying the "polluter pays" principle.

Issues content of the EU focuses on a number of crucial challenges 7 and 2 cross-sectoral areas. Many of the targets agreed in the EU are set in percentage or numerical expression, with strict deadlines for implementation, and binding on all Member States.

EU Strategy also sets out the specific procedures for implementation, monitoring and tracking actual reporting every two years, the European Commission and Member States on commitments. Next term to review progress and review priorities of the EU by the European Council is in September 2009, with the Member States to report on the implementation of national strategies at the latest in June 2009 (as Romania has undertaken to complete its National Strategy for Development Last reviewed by the end of 2008 and then to present the European Commission, the first reporting period of the implementation is June 2011).

Monitoring the development trends and indicators located outside the business before formulating the principles of sustainable development and stated with the definition of sustainable development strategies developed under the aegis of the United Nations and the European Union.

Such monitoring tools were produced by a variety of institutions, from formations or civil society groups of experts or research centers to local administrations, national governments, intergovernmental organizations and international financial institutions. The extent of these efforts, which have intensified in recent years at both national and multinational collaborative formula, reflecting the perceived need to dispose of such instruments, to cover a diverse range of applications and to overcome a number of methodological difficulties. Differences still notable, of how the construction stage of development and the effective use of consistent sets of indicators illustrate the complexity of the task to find compatibility between normative and empirical approaches in fields that integrate the concept of sustainable development: economy, society and the natural capital. In

these circumstances, methodological issues, still in a phase of theoretical background, are taken in the dynamic development of statistical reporting applications.

Agreement of an acceptable set of indicators of sustainable development, including coverage in the national accounts, through specific instruments, environmental factors and social development, is still a matter of priority concern of the Statistical Office of the European Communities (Eurostat), the UN Economic for Europe (UNECE) and the Organization for Economic Cooperation and Development (OECD). Romania by the National Statistics Institute is actively engaged in this process. In the current phase, the National Statistics Institute Eurostat forward a partial indicators integrated into the European system of sustainable development, according to available data. At this stage, the sources of data can be improved through a direct and effective inter-institutional cooperation, especially for quantifying the elements of human capital and social and support capacity of natural ecosystems. The current system used to monitor implementation of the renewed Strategy for Sustainable Development of the EU (2006), explicitly acknowledges the existence of these problems and recommends Member States to review the sources of data sets of indicators in order to ensure quality, the comparison and relevance in relation to the objectives of the EU.

One of the nodal points of the Strategy for Sustainable Development renewed the EU is establishing a process governed by monitoring and reporting to harmonize national requirements of the Member States to the needs of coordination and review at the institutions. It was established to achieve the objectives and instruments for measuring economic performance in relation to social responsibility and environmental standards to be defined through a constructive dialogue undertaken by the European Commission and each EU member state with the business community, social partners and relevant formations civil society.

European Commission, with the assistance of the working group for sustainable development indicators, has been tasked to develop the set of indicators to improve the uniformity of reporting. A first version of this set of indicators has been used for the first evaluation report (2007) of the EU renewed. In its current form, the mechanism for monitoring highlights certain categories of indicators are still at the stage of development. Existing set of indicators is considered adequate to monitor the quantitative targets of the EU, but incomplete or inadequate for monitoring and evaluation of qualitative objectives (eg good governance).

Structure of indicators produced by Eurostat for the first monitoring report of the EU Strategy renewed strategic dimensions associated with each indicator representative (Level 1), a set of indicators for operational objectives subordinated (Level 2) and descriptive indicators of areas of intervention policies related to (Level 3). An additional set of indicators, in addition to this structure (contextual indicators), is included for phenomena difficult to interpret law or whose response to the interventions remain unidentified.

In accordance with decisions adopted by the European Council, EU Member States are required to create forms of institutional support for appropriate coordination of the development and use statistical tools for monitoring and periodic review (2 years) of each policy in a congruent with a systematic effort reporting on the Strategy for Sustainable Development in the European Union. It is therefore a continuous process in which short intervals to review the national strategy and the EU reduce the margin of error on the evaluation of resources needed to implement agreed objectives.

For tracking and verifying the implementation of National Strategies will create and maintain a national system of statistical indicators of sustainable development, harmonized and matching with relevant indicators used in the EU, to monitor progress in relation to the national Strategy for Sustainable Development of the European Union. Collecting and processing information reliable quantified and updated regularly, the aggregate level indicators of sustainable development will enable the measurement of performance in

achieving the targets of the Strategy and fair reporting on the results. It is the operationalization of two types of indicators:

- national indicators of sustainable development, focusing on key priorities expressed by quantifiable targets to allow, while comparing the performance of national and international partners with the Strategy for Sustainable Development EU renewed. This set of indicators will be based on the results of the working group UNECE-Eurostat-OECD and will be updated continuously.

- Indicators of progress of the National Strategy for Sustainable Development of Romania, covering the whole package of policies which it generates, including those not covered by the EU. In this way, all policies are subject to monitoring, policy makers seeking accountability and allowing the public to assess the success of actions undertaken.

All activities related to developing the national system of indicators of sustainable development will be conducted under the direction and control of the Internet for Sustainable Development. In this framework is to establish the mandate, composition and organization of the working group for sustainable development indicators, the time of execution on stage (taking into account the fact that the first period of reporting on the implementation of the National Strategy is the month in June 2011) and the role of conceptual and methodological coordination of the National Institute of Statistics.

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Section II
Macroeconomic stability

**SUB - PRIME CRISIS.
ASPECTS REGARDING THE CRISIS IMPACT IN SOUTH - EAST EUROPE**

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***Abstract.** The works presents aspects regarding the sub – prime crisis and the impact of the crisis upon The South – East Europe countries. The first part approaches the origins of the sub – prime crisis, the deteriorating of the balance sheets of the banks exposed to toxic assets and the globalization of the crisis. In the second part, we analyse relevant aspects of the crisis impact upon The South – East Europe countries. The conclusions refer to the fact that economies in this area were uncovered to the negative effects with a certain delay, but these effects, eventually were more obvious than in mature economies.*

Keywords: bubble; collapse of the market; sub-prime; toxic assets.

JEL Codes: G01, N14.

REL Codes: 3D, 10Z.

1. Introduction

A „bubble”, „balon” in Romanian, is a phenomenon from the investment field, manifested through irrational buying of a security, an industry or a market, based on an over-optimistic market sentiment. Some of the best examples are the „dot.com” sector⁽¹⁾ in USA during 1998-2001 or the „Asian tigers” market⁽²⁾ in the 1990s.

The formidable demand for these segments exceeds the intrinsic value, based on fundamentals, of the subject securities. The market reaches overestimated price multiples, like price earnings ratio.

The market collapse is a generalised phenomenon of stock price falling on almost all the market segments and is governed by panics the same way bubbles are ruled by greed, the two dominant sentiments of the investors on any market. The market collapse is caused by bubbles through a reverse process. Some investors realise that the sky prices are not covered by the intrinsic capability of the security to generate future profits and start to get out the market.

If these short sales are simultaneously and rapidly, in a sort of avalanche, there will be a crash of the prices in the specific sector or market. Sometimes the phenomenon is limited to an industry, see Dotcom crash, or can affect an entire geo-political area, see the Asian tigers crisis (Hong Kong, Taiwan, South Korea, Singapore etc.).

Apart the generalised and long fall of the stock exchange or commodities prices, different markets can be affected, in example the real estate on different market segments: residential, industrial, commercial, being followed by economic depressions.

The financial crises are social and economic phenomena with deep and durable effects, that go along with the stock exchange collapses or other crashes.

2. Sub-prime crisis: origins

The year 2007 is well-known as the year when the sub-prime American crisis⁽³⁾ was ignited, a major event that negatively influenced the international financial markets. Several American credit institutions gave loans to a great number of debtors (hundreds of thousands), physical persons, with a history of payment incidents or with limited capability of reimbursement. The mortgages were used as underlying assets to issue tradable financial credit instruments through the process called securitisation.

Eventually, these instruments were sold, first on the American markets, and later, through intermediaries, on a global level, transformed in complex financial instruments, packaged and re-packaged several times. These assets, later called “*toxic*”, were marked in the balance sheets at historical costs and not marked to market, fact that misled the investors in the securities issued by the institutions exposed to the toxic assets.

A significant exposure to these high risk instruments was proved for financial groups perceived as solid and trustful, such as: the American groups Lehman Brothers, American Investment Group, Citigroup, Merrill Lynch, Bear Stearns, Washington Mutual etc. respectively Northern Rock – Great Britain, Deutsche Bank and IKB – Germany, BNP Paribas – France, UBS and Credit Suisse – Switzerland etc.

In the middle of the year 2007 the rumours that a lot of mortgage debtors cannot pay the loans instalments mined the possibility to refinance the loans and caused several chain effects:

- a liquidity crisis erupted supported by the progressive ending of the interest payments attached to the securitized sub-prime instruments,
- the value of securitized sub-prime instruments begun to collapse correlated with the strong short positions adopted in the market,
- the market value of certain real estate properties significantly declined on global markets.

A lot of financial groups that bought securitised sub-prime instruments were confronted with a severe lack of liquidities, eventually those related to their promised interests. The mediatisation and the fear induced by the crisis forced a lot of investors to secure their fortunes in money markets, gold or any asset perceived as stable. Practically, there was a „*reassessment*” of risk perception of large segments of investors, either institutional or individuals. Even worse, the financial institutions exposed on sub-prime instruments, also had to face the severe collapse of market prices of these instruments.

The disasters were better observed within the balance sheets published during 2008 of these financial institutions. Financial institutions published in 2009 only showed the global dimension of this phenomenon revealing surprisingly bigger exposures on mortgage toxic assets.

3. Sub-prime crisis: global effects

There are several factors that influenced every emergent economy, backed by global causes. These factors affected most of the emergent economies, from China, Singapore or Chile, to Ukraine, Russia, Hungary or Romania, doubting the capability of the assets in these areas to preserve their market value. Mainly we refer to:

- the dramatic change of risk perception of institutional global investors,
- the short selling of the most exposed positions to financial turbulences, primarily those in emergent capital markets or in the real estate industry,

- the abrupt tentative to reduce the financial leverage in the whole banking system, doubled by the growing mistrust within banks and the unexpected raising of the cost of inter-banking loans,

- the gradual slowing of the financing for the business environment, combined with the raising interest rates also for governments and local authorities.

In time, the most affected industries by the economic crises and stock markets collapses were:

- financial sector – the industries: banking, insurance, leasing; it is noticeable the mass bankruptcy banks phenomenon that was met eventually in most of the crisis and originated secondary turbulences waves;

- the investment funds industry, especially those exposed in industries or geo-political areas most affected by the crisis;

- real estate markets in most their segments and the investment vehicles based on real property (in example REITS funds, real estate companies listed on different stock exchanges and so on);

- the long term goods manufacture industries, mainly the automotive;

- other sectors, depending of the type of the crisis and / or the declining of the specific demand: in example e-commerce, metallurgy and so on;

- any industry strongly dependent on external loans and without large profit margins able to absorb the increasing cost of financing.

3.1. Capital markets

The liquidity crisis and the revaluation of the assumed risks forced a lot of financial institutions to give up to significant exposures from emergent to mature capital markets. The short selling of large equity stocks by institutional investors in emergent markets negatively influenced not only developing economies (China, Russia, Brasilia, India, Mexico, Central and Eastern Europe, and so on) but even mature capital markets (USA, UK, Germany, France and so on).

The declining trend was more or less similar on most of the markets. The difference between the emergent and developed markets was a remarkable one: the amplitude of the drop and the volatility are more severe for the emergent than for the mature markets. We present below a comparative table regarding the percentage change of indexes DOW JONES STOXX TMI, euro area⁽⁴⁾, capitalisation 6.325,4 milliard euro VS DOW JONES STOXX BALKAN⁵ TMI, capitalisation 245,1 milliard euro.

The relative evolution DJSTMI(Euro) VS DJSBalkanTMI

Table 1

Index performance	2005	2006	2007	2008	2009
Percent change DJSTMI(Euro) [%]	23.68	18.15	-0.52	-45.81	20.36
Percent change DJSBalkanTMI [%]	50.15	5.49	30.24	-63.32	54.1

Following a more than double growth of the Balkan index in 2005 relative the euro area index and a stagnation in 2006, 2007 was a year of remarkable growth for the Balkan markets while the euro area markets were in a slightly decrease. This one year delay vanished in 2008, when the Balkan index decreased more than the euro area one. It's true that the recovery seems to be quicker for the Balkan index. Let's note also the DJSBalkanTMI 30 days volatility, of 24.17% relative to only 19.9% for DJSTMI(Euro).

The contraction of the global capital markets was supported by the worsening in the position of large American issuers. We will mention some of the most important events:

- Lehman Brothers (LB), the most important independent investment American bank, controlling assets amounting 600 milliard USD, 25,000 employees and a history of 158 years, invoked the protection of the bankruptcy law at the 15th of September 2008. Recently, a lot of analysts consider this day one that gave a new significance to the word crisis, until then investors bearing in mind sub-prime more like a potential but not a real threat. The key assets of LB were eventually sold at near to the ground prices: Capital markets division LB was acquired by Barclays Bank for only 1.75 milliard USD while Nomura Holdings bought LB assets around Europe, Asia and Middle East. The world prized asset management entity Neuberger Berman was sold for barely 2.15 milliard USD to Bain Capital and Hellman & Friedman.

- American Investment Group (AIG), the largest insurance company of the world, was saved from bankruptcy in September 2008, few days after the fall of LB, through a capital injection amounting 85 milliard USD in order to avoid a partial collapse of American private pensions system, with possible massive international consequences. In exchange for the money supplied by The Federal Reserve, the American state obtained a quote of 79.9% as warrants at an interest rate equal to Libor + 8,5 pp. We show in the graphic below the evolution of the returns of the prices of LB and AIG versus S&P 500, a significant American index.



Figure 1. Prices return of LB and AIG VS S&P 500

We remark firstly the sharp decline of the returns of the two companies relatively the lesser decrease of S&P 500. The beginning of the drop for AIG was in November 2007, when first alarmist rumours about company's exposure to sub-prime were released and for Lehman Brothers beginning with February 2008, for the same reasons.

Other important events⁽⁶⁾ in the same line of thought:

- Investment Bank Merrill Lynch (ML), founded in 1914, considered one of the pillars of Wall Street, was taken over and saved in extremis from bankruptcy by Bank of America (BoF) for the minuscule price of 50 milliard USD. ML was a real poison pill for BoF regarding the 98 milliard USD exposures in toxic mortgage assets and FED stimulated

the buyer through a new injection amounting 20 milliard USD, following the previous bailout amounting 25 milliard USD.

- Washington Mutual, the largest savings and loans American institution, originating from 1889, one of successfully survivors of 1929's collapse, managing assets around 307 milliard USD and a network of more than 5400 branches was acquired, in September 2008 by JP Morgan Chase Bank for only 1.9 milliard USD, with a poisonous portfolio of 31 milliard USD losses caused by the sub-prime exposures.

- Within the context marked in the tater 2007 of a negative write-off amounting to 9.5 milliard USD due to its sub-prime portfolio, the investment bank Morgan Stanley, next to the other large investment bank of Wall Street remained functional, Goldman Sachs, solicited to The American Federal Reserve the change in their status from investment banks in commercial holding banks and so on.

3.2. The commodities markets

Not only capital markets have shown large volatilities but also the commodities markets. Let's see the significant moves, negatively correlated with the capital markets (in ex. EURONEXT), of the returns of two major commodities: crude oil (USD/barrel) and gold (USD/ounce).

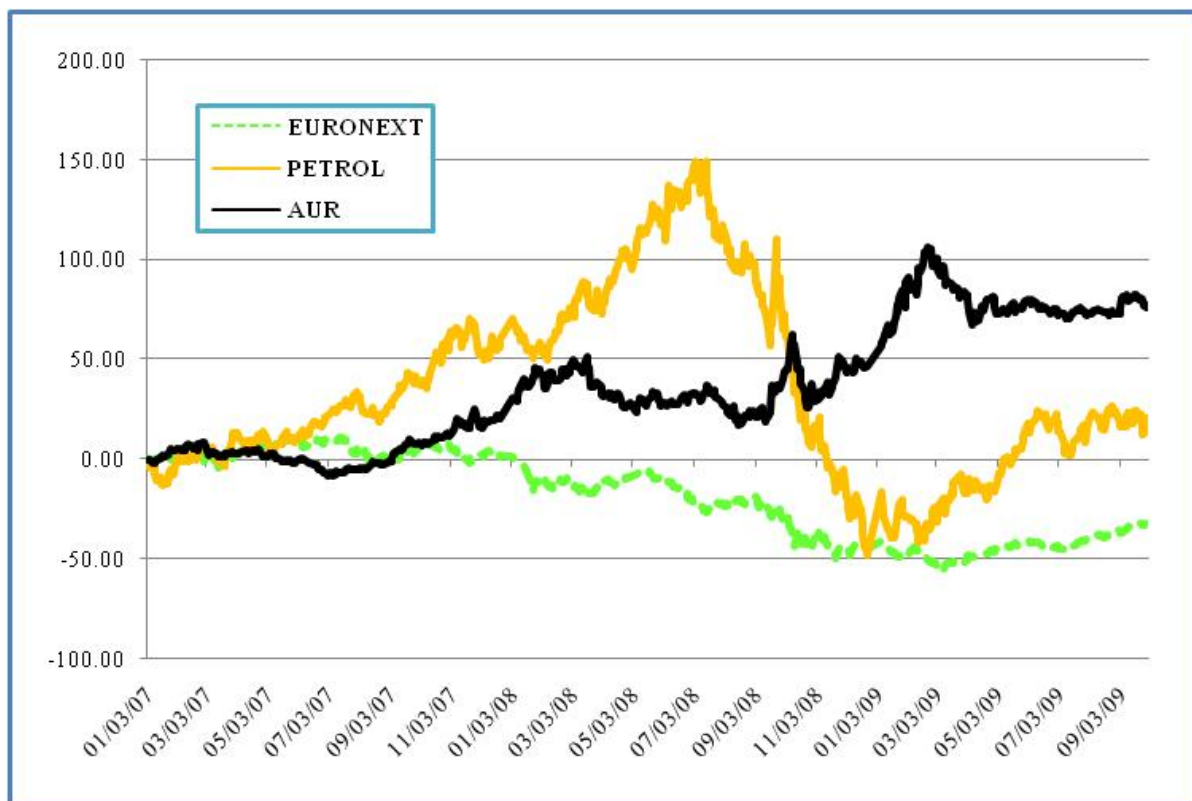


Figure 2. Evolution of Euronext VS Gold and Crude oil

Starting the second half of August 2007, since the beginning of the crisis, the two commodities evolved towards their historical maximums. Crude oil moved as a speculative asset, through the derivatives bets, prior to real oil needs, having the maximum volatility of the period while the gold was a low risk and stable asset, with a minimum volatility.

Globally, the interest of investors for gold constantly increased, the same pace as its price, as one can see in the next graph. This evolution reveals the gold as the optimum investment asset during 2007 – 2009.

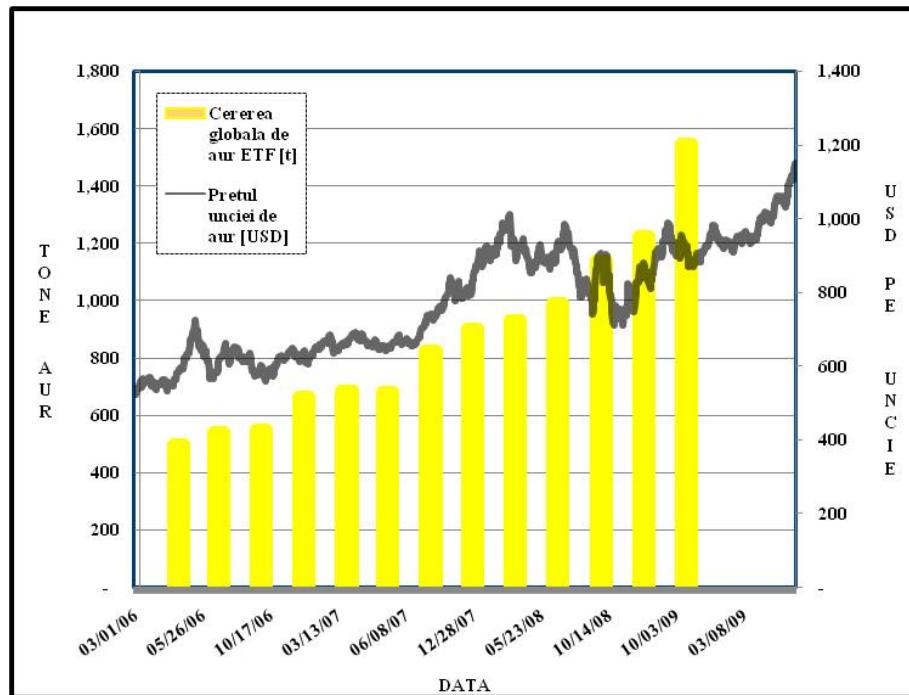


Figure 3. The global gold demand and the price of gold ounce

4. Aspects regarding the impact of the crisis in South – East Europe

Analysing some of the main economic indicators⁽⁷⁾ of South – East Europe's countries (SEE), area in which is positioned Romania in various investment analysis, one can remark some interesting elements. Figure 4 shows the evolution of the average GDP growth rate⁽⁸⁾ in SEE countries relative to European Union (27 countries).

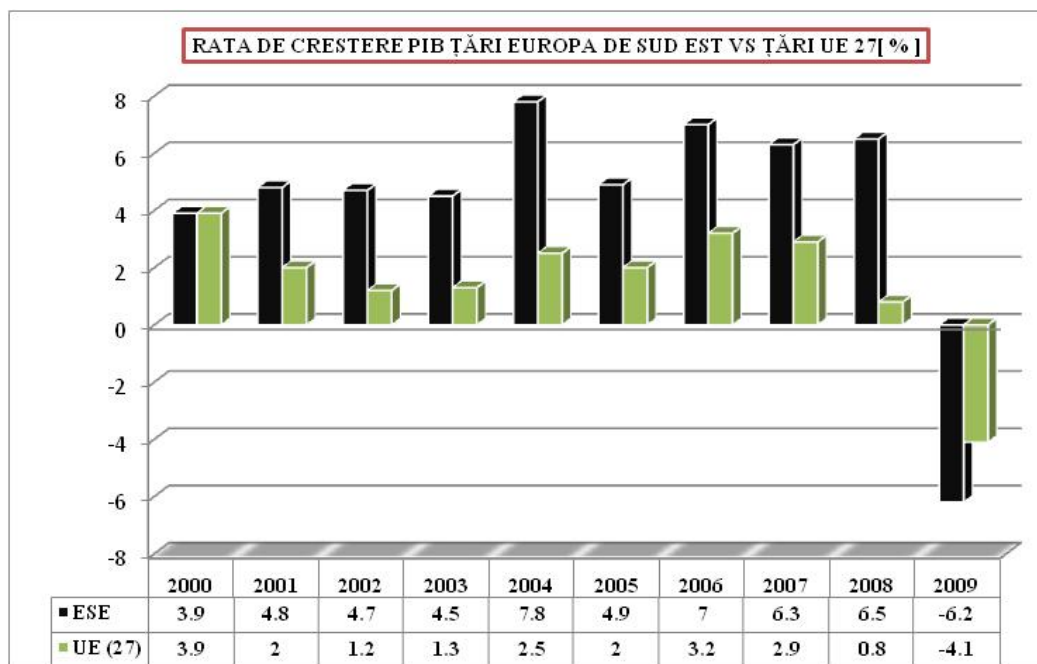


Figure 4. The evolution of the average GDP growth rate SEE VS EU-27

Analysing the foreign direct investments flows (FDI) in SEE⁽⁹⁾ we note some distinctive periods: 2000-2002, characterised by a flat investment flow, limited around 3 milliard USD, 2003-2007 remarkable through its rushed increase of the FDI, from 6.3 milliard

USD up to 27.7 milliard USD, followed by a stagnation in 2008 at 27.9 milliard USD, and by a sudden drop, amounting 49% in 2009, down to 14.2 milliard USD (intermediary data), explicable through the global crisis effects in the European investment environment.

An outstanding figure is the 2008 one, comparable with the 2007 one, showing the constantly level of awareness for the region, even the crisis started to distress Euro Zone, feature surprised in Table 2 below.

The relative evolution between the FDI growth rates SEE VS ExtraEU-27⁽¹⁰⁾

Table 2

FDI growth rates [%]	2006	2007	2008
SEE	82.9%	11.6%	0.8%
Extra EU27	57.2%	95.1%	-48.8%

The same relevance as the GDP growth rate stands for the average annual inflation rate⁽¹¹⁾. We note a rapid downsize adjustment during 200-2002, followed by an almost linear period, around 5%. In 2008 there is a bounce in % of more than 67% compared to the figure in 2007, analogous to the EU27 jump, of 60.8%. In 2009 there is a significant differentiation for the UE estimates, from an average of 3.5% for SEE down to 0.5% (12) for EU-27.

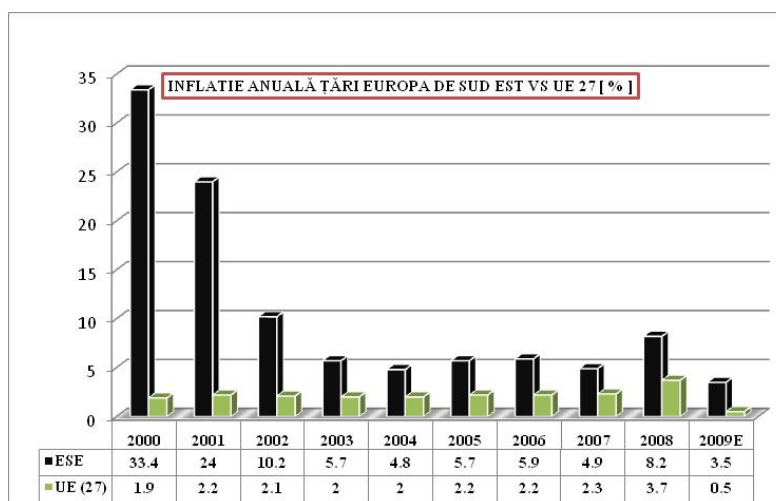


Figure 5. The evolution of the average annual inflation rate SEE VS EU-27

The protectionist tendencies weighty manifested within the second part of the crisis are only another feature of it. Protectionism means, essentially, discriminating the foreign suppliers of goods and services. Centre for Economic Policy Research identified in the paper Global Trade Alert no 1, July 2009, 39 new discriminatory measures for the foreign commercial partners of different countries out of a total of 67 measures observed.

5. Conclusions

5.1. Conclusions regarding the sub-prime crisis

At the origins of many other crises that distressed the world economy were the real estate bubbles manifested in different specific real markets (land, residential, touristic and so on), a similarity vis-à-vis the sub-prime 2007-2009 crisis.

Nevertheless the sub-prime crisis differentiated most of the others through several particular elements:

✓ The imprudent expansion of mortgage loans through American residential market beyond the minimal boundaries of risk management.

✓ The prominent decrease in international trade starting September 2008 going along with the intensification of the crisis turned into a basic factor in transmitting the economic turmoil and this become a worldwide issue.

✓ The securitisation of the mortgages followed by the packaging and re-packaging in more multifaceted financial instruments along with the largely distribution on all available institutional channels contributed to the globalising the crisis costs.

✓ The complexity of these financial products, named now as “*toxics*”, made adequate valuation almost impossible, inclusively regarding the associated risk.

5.2 Conclusions regarding the impact of the crisis in South – East Europe

✓ The East – Europe countries experienced the concurrent consequences of the sub-prime crisis with a one year delay. Eventually the result was far more commanding than the one in the developed economies and the expected recovery will be more time-consuming.

✓ Starting 2001 the GDP growth rates in SEE were constantly higher compared to those in EU27. During 2008 the economic inertia, partially supported by the relative disrupt of this area, with the notable exception of Romania, from the real estate bubble and the unsustainable credit expansion.

✓ The year 2009, brought firstly the contracting in the demand of EU27 partners, which caused the main cause in the SEEs GDP deepening over the plunge of EU27s GDP. SEEs FDI volume within 2008 significantly contributed to the growth of the GDP’s average rate up to 6,5% during this year.

✓ The protectionism has vast negative consequences for the global economic trend causing serious perturbs of the markets and inducing supplementary long term costs. The depressing costs are supported to begin with the transition economies, including SEE.

Notes

¹ See Scott Clark, „*Some lessons from dot-com crisis*”, Birmingham Business Journal, 2001.

² See James Morgan, „*The downward spiral of the Asian tigers*”, BBC News, Special report 1998 Asian economic crises.

³ High risk mortgage loans; statistically, according to Mortgage Bankers Association, one out of five loans granted in USA within 2007 was a sub-prime type.

⁴ Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Island, Italy, Luxemburg, Netherlands, Norway, Portugal, Spain, Swede, Switzerland, Great Britain.

⁵ Bulgaria, Croatia, Macedonia, Romania, Serbia, Slovenia, Turkey and Greec.

⁶ Dash E., Ross Sorkin A., „*Government Seizes WaMu and Sells Some Assets*”, The New York Times, 25.09.2008.

⁷ Albania, Bosnia and Herzegovina, Bulgaria, FYR Macedonia, Montenegro, Romania, Serbia

⁸ According to BERD, „*Transition Report 2009*”, p. 21, <http://epp.eurostat.ec.europa.eu>

⁹ According to BERD, „*Transition Report 2009*”, p. 27, <http://epp.eurostat.ec.europa.eu>

¹⁰ According to It refers to FDI from outside EU27.

¹¹ According to BERD, „*Transition Report 2009*”, p. 23, <http://epp.eurostat.ec.europa.eu>

¹² The average rate of inflation within the last 12 months, October 2009.

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REMARKS ON POTENTIAL GDP ESTIMATION IN ROMANIA

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***Abstract.** This paper is focused on potential GDP and output gap estimation in Romania using a univariate method – HP filter and a multivariate method – production function method that are applied on annual time series covering years 1990-2008. The production function we use is Cobb-Douglas with potential labor computed with the method proposed by Elmeskov (1993). The results indicate for potential output variations between 0.36% and 2% between 1994-2000 and 5%-6.7% between 2004-2008. For output gap, the results point to stronger gaps at the beginning of 1990s' that decrease within range of -2.3% and +2.7% between 1999-2000.*

Keywords: potential GDP; output gap; HP filter; production function method; NAWRU.

JEL Code: E.

REL Code: 8E.

1. Introduction

Except for the last year in which the economy was strongly affected by the financial crises, Romania had an average real GDP per capita growth of about 5.6% between 2000-2008 that placed it among the best performers in terms of output growth in EU but at the same time led to discussions on the existence of a overheating⁽¹⁾ of the economy.

This growth is considered unsustainable by most economists for at least two reasons: the over-employment of the resources cannot be supported on long run, and this growth was achieved based on results from agriculture – extremely volatile to climate conditions- and construction, that is affected by seasonality and depend largely on changes and requirements in the credit market. This is the main reason for which the crises had such a strong impact on the romanian economy, the forecast for 2009 indicating an 8% contraction of GDP.

The strong but unsustainable growth of the economy raises the problem of identifying the appropriate methods for potential output and output gap estimation to support prudential fiscal and monetary policies, capable to reduce inflationary pressure resulting from excessive demand that is usually associated with situations in which the economy is functioning above its potential.

The Governor of the National Bank of Romania was signaling two years ago the fact that: „*The main risks on disinflation sustainability and ensuring medium run price stability are considered to be the persistence until the end of 2007 of a positive gap as well as the possible deepening of the current account deficit as an effect of prolonging the excessive dynamics of internal absorption*”.

In this paper we estimate the potential output and output gap for Romania using two conventional methods proposed by the European Union Council and widely used for this purpose: HP filter and production function method.

The paper is structured as follows: the first section makes a short presentation of main results obtained from empirical studies estimating potential output in Romania, the second part presents the methodology, in the third section we comment the results and the last one contains main conclusions.

2. Previous studies

Although there are an impressive number of articles that study output gap in different countries, there are very few that estimate potential output and output gap in Romania, the most significant ones being the studies elaborated by experts from the National Bank of Romania (NBR) and the National Commission for Economic Forecasting (NCEF).

In the NBR study (Gălăţescu, Rădulescu, Copaciu, 2007, p. 10-14) the authors apply several univariate and multivariate methods for potential output estimation such as: HP filter, band pass filter, unobservable components based on Kalman filter, production function method and SVAR. Their results are robust to different methods and specifications indicating an acceleration of potential output growth from 3%-4% between 2000-2002 up to 6-6.4% between 2003-2006.

In the NCEF study (Ghizdeanu, Tudorescu, 2007, p. 5-9), the authors apply HP filter and production function method and their results show an increase of potential GDP from 2.1% in 2001 to 4.2% in 2005 as well as a forecast of 6.4% for 2009 and at the same time a cut of one percentage point in output gap that would represent 3.5% of potential GDP in 2009 compared to 4.4% in 2005.

3. Methodology

In this study we intend to employ two standard methods for output gap and potential output estimation: HP filter and production function method.

3.1. Hodrick –Prescott filter

HP filter (Hodrick, Prescott, 1997, p. 3-6) is a method that can be easily applied to time series in order to extract a nonlinear trend that is more sensitive to long term rather than short term fluctuations. The method imposed itself as standard for removing fluctuations around trend in business cycles literature due mainly to the fact that it can be applied to nonstationary time series.

HP filter is a univariate method that can be used to decompose real output in two components: potential output and excessive demand. HP filter estimates potential output by minimizing the sum of squared deviations between output and potential output for each moment with respect to a restriction referring to potential output variation.

Let y_t denote a time series that contains real output values for the time horizon considered. The series y_t has a trend denoted τ_t that in fact represents the potential output, and a cyclical component c_t that is the excessive demand. Thus, we can write: $y_t = \tau_t + c_t$.

Potential output or trend is the solution of the following minimization problem that represents HP filter:

$$\min \sum_{t=1}^T (y_t - \tau_t)^2 + \lambda \sum_{t=2}^{T-1} [(\tau_{t+1} - \tau_t) - (\tau_t - \tau_{t-1})]^2 \quad (1)$$

and the output gap or cyclical component, c_t , can be derived as residual or deviation from trend:

$$c_t = y_t - \tau_t \quad (2)$$

Parameter λ that is attached to the restriction shows the potential output sensitivity to short term fluctuations, controlling the smoothing of the potential output series: a low λ indicates a smaller importance of cyclical shocks and leads to a trend that closely follows the

real output series. A higher λ will result in a better smoothing and a higher variability of output gap as differences between real output and potential output gets bigger. For very large λ the trend extracted with HP filter is similar to linear trend. It is common to consider $\lambda=1,600$ for quarterly data and studies show that $\lambda=6.25$ and $\lambda=129.000$ are the corresponding values for annual and monthly data (Ravn, Uhlig, 2001, p. 5-7).

This method is strictly based on historical data describing output evolution and is very easy to use but has the main disadvantage of not considering the influences that other variables of interest may have on the result. Besides, the filter yields good results when applied on data that describe relatively stable evolution, not suffering from strong shocks. If there is a structural break, then the filter will spread the effects around the moment the break occurs (the length of the spreading depending on λ value) and that will result in extracting a trend that is not fit.

3.2. Production function method

Production function method is a standard multivariate method used for estimating potential output as a function of total factor productivity, capital and labor, all employed at their potential level.

Unlike HP filter, the production function method has the main advantage of providing useful information regarding input contribution to potential output but the estimates depend on the techniques employed for input smoothing and require longer time series.

For estimating potential output and output gap we consider the following Cobb-Douglas production function with constant returns to scale:

$$Y_t = A_t (K_t)^\alpha (L_t)^{1-\alpha} \quad (3)$$

where Y_t represents real output, $A_t = e^{\delta + \eta t + \varepsilon_{yt}} = A_0 e^{\eta t + \varepsilon_{yt}}$ is total factor productivity (TFP), K_t represents capital stock, L_t is labor force, α and $(1-\alpha)$ represents capital and labor contributions to output⁽²⁾.

Linearizing (3) yields:

$$\ln Y_t = \ln A_t + \alpha \ln K_t + (1-\alpha) \ln L_t \quad (4)$$

For a given α , the log value of total factor productivity ($\ln A_t$) is derived from:

$$\ln A_t = y_t - [\alpha \ln K_t + (1-\alpha) \ln L_t] = a + \beta t + \varepsilon_{yt} \quad (5)$$

in which small letters denote log values for Y, K, L and $a = \ln A_0$.

The production function for potential output is:

$$Y_t^{pot} = A_t^{pot} (K_t^{pot})^\alpha (L_t^{pot})^{1-\alpha} \quad (6)$$

where $A_t^{pot} = e^{\gamma + \theta t} = e^\gamma e^{\theta t} = A e^{\theta t}$ represents the HP filtered total factor productivity and $K_t^{pot} = K_t c_t^{NAICU}$ is the potential capital stock corresponding to the capacity utilization rate that does not accelerate inflation (NAICU- Non Accelerating Inflation Capacity Utilization Rate) that is derived by HP filtering capital stock.

For potential labor we employ the equation that was proposed by Giorno et al (1995):

$$L_t^{pot} = L_t^S (1 - u_t^{NAWRU}) \quad (7)$$

where L_t^S represents civil active population at time t filtered with HP filter and u_t^{NAWRU} is the unemployment NAWRU rate (Non Accelerating Wage Inflation Rate of Unemployment) that is also HP filtered. Therefore, L_t^{pot} corresponds to the number of people that could be employed if the unemployment rate would equal its natural rate given by NAWRU.

Considering the above mentioned notations, potential output can be written as:

$$Y_t^{pot} = A e^{\theta t} \left(K_t^{NAICU} \right)^\alpha \left(L_t^S \left(1 - u_t^{NAWRU} \right) \right)^{1-\alpha} \quad (8)$$

and the output gap is defined as the difference between real output and its potential divided by potential output:

$$output \ gap \ - \ FP = \frac{Y_t - Y_t^{pot}}{Y_t^{pot}} * 100 \quad (9)$$

The output gap can take positive values (when real output > potential output) and in this case the aggregate demand growth exceeds the aggregate supply growth. This could lead to inflation, thus we call it inflationary gap. If output gap values are negative, then we have a recessionary gap that could lead to deflation.

3.2.1. NAWRU derivation

NAWRU represents the unemployment rate that does not accelerate wage rates. Studies (Layard, Nickell, Jackman, 1991, p. 18) show that, because of labor market inelasticities and hysteresis, the equilibrium rate of unemployment is changing over time. Therefore it is necessary to determine a variable NAWRU and the most used method to calculate it is the one proposed by Elmeskov (1993, p. 94):

$$u_t - u_t^{NAWRU} = \lambda \Delta^2 w_t, \quad \lambda < 0 \quad (10)$$

where u_t is the actual unemployment rate, u_t^{NAWRU} is NAWRU unemployment rate and w_t is the log of gross average earnings. If actual unemployment is lower than NAWRU, that would lead to wage growth rate acceleration and viceversa: an unemployment rate higher than NAWRU will lead to wages growing at lower rates.

We assume that NAWRU changes gradually, thus $\Delta u_t^{NAWRU} \approx 0$. Differentiating equation (10), yields λ :

$$\lambda = \frac{\Delta u_t}{\Delta^3 w_t}, \quad \Delta^3 w_t \neq 0 \quad (11)$$

NAWRU results immediately by replacing (11) in (10):

$$u_t^{NAWRU} = u_t - \frac{\Delta u_t}{\Delta^3 w_t} \Delta^2 w_t \quad (12)$$

NAWRU is then adjusted by applying HP filter.

4. The results

For estimating potential output based on the two methods described above we use data provided by the Institute of National Statistics on GDP, fixed assets at the end of the year, gross earnings, civil active population, civil labor force and unemployment rate for 1990-2008, first three being expressed in real terms.

Total factor productivity was calculated based on the value 0.65 for labor contribution to output, according to the estimations provided by Dobrescu (2006, p. 71).

The production function is:

$$Y_t = 1.97 e^{-0.02t} (K_t)^{0.35} (L_t)^{0.65} \quad (13)$$

and potential output is calculated with:

$$Y_t^{pot} = 1.97 e^{-0.02t} \left(K_t^{NAICU} \right)^{0.35} \left(L_t^S \left(1 - u_t^{NAWRU} \right) \right)^{0.65} \quad (14)$$

Results obtained with HP filter and production function method are presented in Table 1 and the growth rates for both real and potential output as well as output gap are given in figure 1 and figure 2, respectively.

As results point out, both methods yield quite similar values for potential output and output gap. HP filter indicates a negative rate for potential GDP for the first three years (the production function method loses three values due to the differences used for computing NAWRU), followed by a variation within the range of -0.36% and 2% between 1994-2000 for which the production function method reports a smaller variation (from 0.10% to 1.34%). The last four years considered show a growth potential of 5%-6.7% for both methods.

The calculations done with HP filter referring to Romanian output gap indicate the existence of a recessionist gap in 1991 and 1992, with real GDP of about 3% below its potential level. This is followed by a four year period in which real output growth is 3%-6.5% higher than potential growth indicating inflationary gap. Real output falls below potential again between 1997 and 1999 but recovers starting 2000. Between 2000 and 2008 the gaps are getting smaller, ranging within -2.3% and 2.7%, indicating a greater stability of the Romanian economy.

It should be mentioned that there are problems in estimating potential output for Romania that are mainly caused by the availability of short time series only, by structural changes that occurred in the last 20 years, and also by changing statistical methodologies from SEC79 to SEC95 that affects the comparability of data over time.

Moreover, if we look at the data between 1990-2008, we notice that output increases while labor decreases, which means negative values for labor marginal productivity, that do not respect the requirements of neoclassical theory that specifies positive and diminishing marginal productivities for constant and diminishing returns to scale in order to generate a convex production set. However, the convexity restriction of the production set has been relaxed later on since many researchers have obtained empirical results that do not respect the convexity requirement.

Therefore, we calculated the elasticity of production with respect to civil population from empirical data and obtained $\alpha = -0.18$, a value that violates the production set convexity requirement. The production function becomes:

$$Y_t^{pot} = 0.11e^{-0.15t} \left(K_t^{NAICU} \right)^{1.18} \left(L_t^S \left(1 - u_t^{NAWRU} \right) \right)^{-0.18} \quad (15)$$

The results are significantly different than those obtained by using Dobrescu elasticity and HP filter. We notice that potential output is decreasing between 1996-2000 reflecting a decreasing of factor utilization, a decreasing of labor force because of structural changes and migration and a decrease of capital efficiency utilization.

The difference between real and potential GDP for years 2000-2002, 2004, 2006 in favor of real output is explained, in our opinion, especially through imports increases and only partially through overheating of the economy. In order to check for this hypothesis, we considered a relationship between the growth rate of imports and output gap and obtained:

$$\text{for } \lambda = -0.18 \quad r_{imp_t} = 9.66 + 2.36 \times output_gap_t + \varepsilon_t \quad (16)$$

(t) (4.22) (4.34)

$$\text{for } \lambda = 0.65 \quad r_{imp_t} = 8.69 + 3.24 \times output_gap_t + \varepsilon_t \quad (17)$$

(t) (4.11) (4.98)

that shows that a 1% increase of real output above its potential will accelerate the growth rate of imports with 2.36% – 3.24%, depending on the specification used for the production function. In both cases the variability of output gap explains more than a half of the variability of import growth rates.

We have also estimated Okun coefficient that reflects the relation between output and unemployment using the relationship between unemployment gap and output gap proposed by Weber (1995, p. 435):

$$u_t - u_t^{NAWRU} = a \times output_gap_t + b \times (u_{t-1} - u_{t-1}^{NAWRU}) + c \times (u_{t-2} - u_{t-2}^{NAWRU}) + \varepsilon_t \quad (18)$$

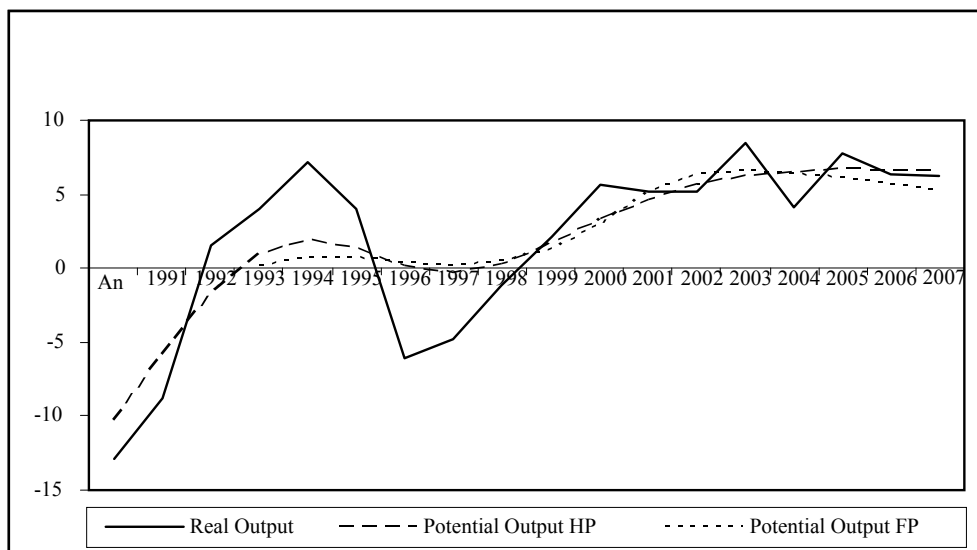


Figure 1. Real and potential GDP growth rates

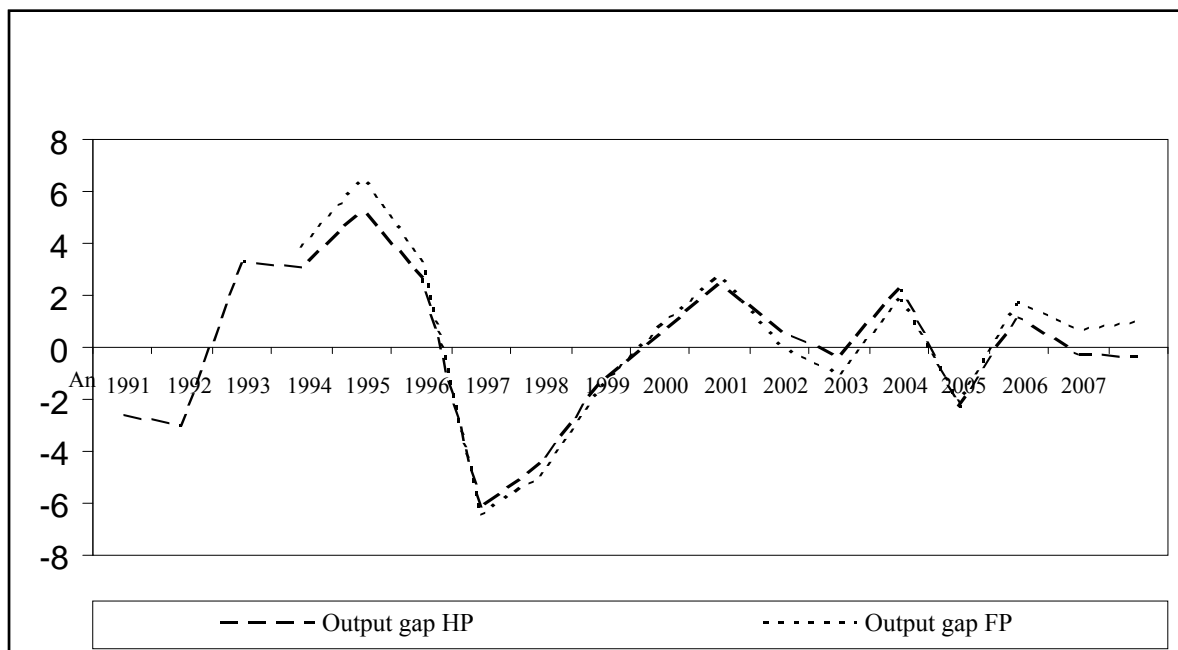


Figure 2. Output gap with HP filter and production function method

Notes

⁽¹⁾ Overheating of the economy occurs when the productive capacities cannot keep the pace with aggregate demand increasing. This situation is characterized by growth rates that are superior to their trend and in which the excessive demand is met by over-employment of resources.

⁽²⁾ Assuming that the price of capital reflects its marginal productivity and wages reflect labor marginal productivity.

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THE ANALYSIS OF MACROECONOMIC CONTEXT FOR EUROPEAN UNION COUNTRIES IN 2009

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Abstract. *The scope of our article is to analyze the characteristics of the actual economic and financial crisis in the EU-27, in the year 2009. We use macroeconomic variables that compose economic macro-stabilization pentagon – the real growth rate of gross domestic product, the rate of inflation, the rate of unemployment, the public conventional deficit over GDP, the public debt over GDP, the current account deficit over GDP.*

Keywords: economic recession; unemployment; inflation; budgetary deficit; public debt.

JEL Code: E6.

REL Codes: 8B, 8E, 8F, 8G, 8K.

1. Introduction

The objectives of the economic policy, which compose the economic macro-stabilization pentagon, are the following:

- obtaining economic growth;
- price stability;
- decrease of unemployment rate;
- sustainability of public finance (sustainable budgetary deficit and public debt);
- decrease of current account deficit over GDP, even a surplus.

Achieving simultaneously these objectives is almost impossible, even in the case of the developed countries. It represents an ideal case, the equilibrium toward the economy tends, but this steady state is obtained only for a short period. In this context, economic policy decisions might chose between this set of objectives, one of them being priorities, the others being sacrificed.

This is the case of the European Union member states in the context of the current economic and financial crises. Obtaining economic growth and protecting the population are considered as priorities, through reduction of inflation and measures for limitation of the unemployment phenomenon. Budgetary deficit and public debt are the state's instruments used for achieving the major objectives. The Maastricht criteria of nominal convergence for public finance are no longer considered in the short run, only in the medium and long run. Decreasing the current account deficit is another issue of these crises, in the context of the decline of the private consumption.

We present some of the crises' definitions and characteristics, especially for economic and financial ones, which are relevant for the current crises:

A financial crisis is a situation in which the supply of money surpasses the demand for money. This means that liquidity is quickly evaporated because available money is withdrawn from banks, forcing banks either to sell other investments to make up for the shortfall or to collapse.

An economic crisis is a situation in which the economy of a country experiences a sudden downturn, usually brought on by a financial crisis. An economy facing an economic crisis will most likely experience a falling GDP, a drying up of liquidity and rising/falling

prices due to inflation/deflation. An economic crisis can take the form of a recession or a depression. Typically, a recession is the situation in which GDP declines for two or more consecutive quarters.

National Bureau of Economic Research (NBER) defines the crises as a significant decline of economic activity for a couple of months, reflected by a decline of GDP, of individual income, of employment, of industrial production and of consumption.

Using annual data published in 3 November 2009 and trimester data published in 13 November 2009 by the European Commission, we tried to characterize the economic context of EU-27 economies using statistical macroeconomic analysis.

2. The evolution of GDP

According with the autumn forecast of European Commission, EU-27, on his average, is getting out from the recession in the third quarter of 2009, even if the year 2009 is equivalent with a -4.1% real GDP rate in EU-27. For the next two years is anticipated a moderate and progressive recovery of GDP in European Union: real GDP growth rate will be 0.7% in 2010 and 1.6% in 2011.

For 2009, all member states, excepting Poland, are expected to have negative real GDP growth rate. For Romania is anticipated a severe contraction of real GDP: 8%, a fourth value, after the Baltic States. In this area of severe economic contraction are situated also Ireland and Slovenia.

Real GDP growth rate in 2009

Table 1

Country	Δ% realGDP	Country	Δ% realGDP	Country	Δ% realGDP
PL	1.2	EA 16	-4.0	BG	-5.9
CY	-0.7	UE 27	-4.1	HU	-6.5
EL	-1.1	NL	-4.5	FI	-6.9
FR	-2.2	DK	-4.5	SI	-7.4
MT	-2.2	SE	-4.6	IE	-7.5
BE	-2.9	UK	-4.6	RO	-8.0
PT	-2.9	IT	-4.7	EE	-13.7
LU	-3.6	CZ	-4.8	LV	-18.0
ES	-3.7	DE	-5.0	LT	-18.1
AT	-3.7	SK	-5.8		

Source: European Commission.

Some countries have obtained positive results for the real GDP growth rate in the third quarter, some of them even in the second quarter: Germany, France, Portugal, Czech Republic, Slovakia, Slovenia, and Sweden.

Real GDP growth rate – quarter to quarter changes

Table 2

	2008	2009				2008	2009		
	Q4	Q1	Q2	Q3		Q4	Q1	Q2	Q3
EA 16	-1.8	-2.5	-0.2	0.4	Latvia	-4.7	-11.0	-0.8	:
EU27	-1.9	-2.4	-0.3	0.2	Lithuania	-1.2	-11.3	-7.7	6.0
Member states					Luxembourg	-2.9	-1.7	-0.3	:
Belgium	-2.1	-1.8	-0.1	0.5	Hungary	-1.9	-2.6	-2.0	-1.8
Bulgaria	:	:	:	:	Malta	-1.1	-1.2	-0.9	:
Czech Republic	-0.8	-4.5	0.3	0.8	Netherlands	-1.0	-2.4	-1.0	0.4

	2008	2009				2008	2009		
	Q4	Q1	Q2	Q3		Q4	Q1	Q2	Q3
Denmark	-2.0	-1.3	-2.6	:	Austria	-1.1	-2.6	-0.5	0.9
Germany	-2.4	-3.5	0.4	0.7	Poland	-0.1	0.1	0.7	:
Estonia	-4.5	-6.0	-3.4	-2.8	Portugal	-1.7	-2.0	0.5	0.9
Ireland	-5.6	-2.3	0.0	:	Romania	-2.8	-4.6	-1.1	-0.7
Greece	-0.7	-0.5	-0.1	-0.3	Slovenia	-4.1	-6.4	0.7	:
Spain	-1.1	-1.6	-1.1	-0.3	Slovakia	1.2	-8.6	1.1	1.6
France	-1.5	-1.4	0.3	0.3	Finland	-2.5	-3.0	-2.6	:
Italy	-2.1	-2.7	-0.5	0.6	Sweden	-4.9	-0.9	0.2	:
Cyprus	0.0	-0.5	-0.8	-1.4	U. K.	-1.8	-2.5	-0.6	-0.4

Source: European Commission.

If we look to cumulative results from 2008 and 2009 of economic crisis on real GDP relative variation, we obtain the following data:

Real GDP growth rate 2009/2007

Table 3

Country	2009-2007	Country	2009-2007	Country	2009-2007
LV	-21.8	UK	-4.0	BE	-1.9
EE	-16.8	DE	-3.8	FR	-1.8
LT	-15.8	LU	-3.6	AT	-1.8
IE	-10.3	EA 16	-3.4	BG	-0.3
FI	-6.0	UE 27	-3.3	MT	-0.1
HU	-5.9	PT	-2.9	SK	0.2
IT	-5.7	ES	-2.8	EL	0.9
DK	-5.6	NL	-2.6	CY	3.0
SE	-4.8	CZ	-2.4	PL	6.3
SI	-4.2	RO	-2.3		

Source: Author's Calculations.

According with this data, Romania is less affected than the majority of EU-27 states. The recession in Romania, in 2009 versus 2007 GDP, is 2.3%, with 1 p.p. less than EU-27 average and very far from Baltic states, Ireland or Hungary economic „performances”. In this analysis, Poland leads with a real GDP growth rate on 6.3%, followed by Cyprus with 3% and Greece with 0.9%.

3. The labor market under pressure

The forecasts are unfavorable for labor market in the next two years: unemployment rate will raise from 9.1% in 2009 to 10.3% in 2010 (the same value for 2011). European labor market was very resistant on economic crisis on short term, due to the very determined policy measures applied in 2009, the past reforms on this sector and the protection of jobs, but the forecast are unfavorable for the next quarters.

According with autumn forecast of European Commission, the reduction of occupational rate in 2009 will be 2.1 p.p. comparative with 2008, and the year 2010 will bring a supplementary reduction of occupational rate with 1.2 p.p. The situation of labor market will be stabilized on the end of 2010 and 2011 year, in the moment of European economies will be stabiles.

Unemployment rate

				<i>Table 4</i>	
Country	2009	Country	2009	Country	2009
NL	3.4	IT	7.8	FR	9.5
DK	4.5	UK	7.8	EA 16	9.5
AT	5.5	BE	8.2	HU	10.5
CY	5.6	PL	8.4	IE	11.7
LU	6.2	FI	8.5	SK	12.3
SI	6.7	SE	8.5	EE	13.6
CZ	6.9	EL	9.0	LT	14.5
BG	7.0	PT	9.0	LV	16.9
MT	7.1	RO	9.0	ES	17.9
DE	7.7	UE 27	9.1		

Source: European Commission.

In all EU-27 member states the unemployment rate was growing in 2009 comparative with 2008: the unemployment is a major and negative aspect of actual economic crisis.

Growth of unemployment rate 2009-2008

				<i>Table 5</i>	
Country	Change	Country	Change	Country	Change
DE	0.4	BG	1.4	CZ	2.5
NL	0.6	FR	1.7	HU	2.7
IT	1	AT	1.7	SK	2.8
BE	1.2	CY	2	RO	3.2
MT	1.2	EA 16	2	IE	5.7
DK	1.2	FI	2.1	ES	6.6
EL	1.3	UE 27	2.1	EE	8.1
LU	1.3	UK	2.2	LT	8.7
PT	1.3	SI	2.3	LV	9.4
PL	1.3	SE	2.3		

Source: Author's Calculations.

Romania has a higher growth of unemployment rate, after the Baltic States, Spain and Ireland. Comparative with EU-27 average, Romania has a 1 p.p difference. The member states that administrated more efficient the unemployment problem were Germany, Netherlands and Italy.

In Figure 1 we analyzed the linear correlation between unemployment and economic growth. The correlation is negative and the coefficient of dependent variable is -0.275 . Based on R^2 signification we can say that 20.61% on the unemployment evolution is due to the evolution of real GDP growth rate.



Source: Authors' Calculations.

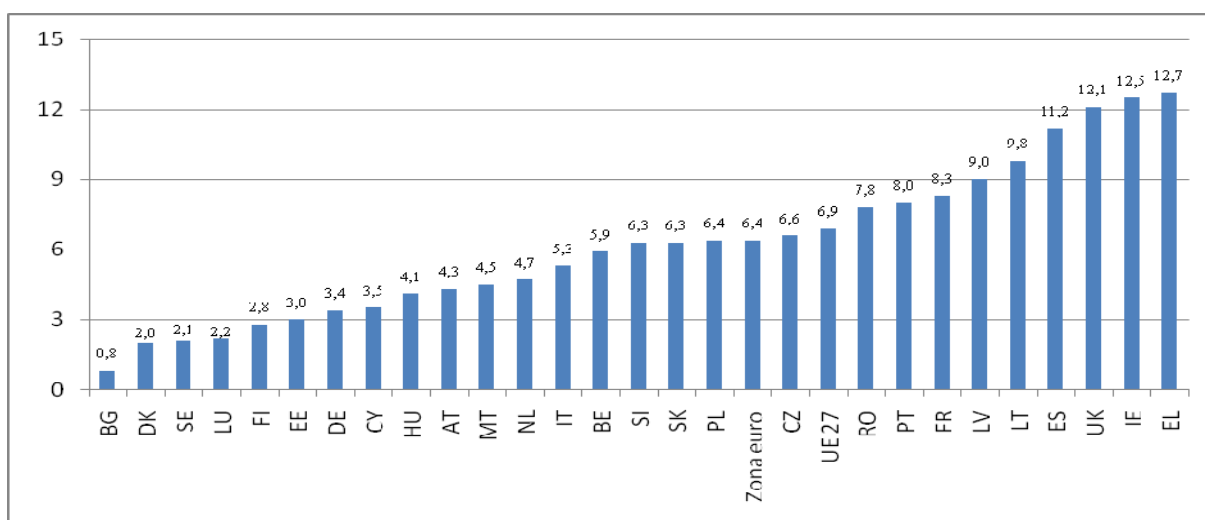
Figure 1. Correlation between unemployment rate and economic growth in 2009

4. The public finances under pressure

4.1. The deficits of public national consolidated budget are growing up

The public finances of member states were strongly affected by the economic crisis. On average, in EU-27, the deficits of public national consolidated budget are growing up from 2.3% over GDP in 2008 to 6.9% over GDP in 2009. For 2010 the forecasts are unfavorable, the deficits of public national consolidated budget will grow up to 7.5% over GDP. In 2011 is expected a level of conventional public deficits equal with the level estimated for 2009.

This deterioration was determined by the automatic stabilizers and by the discretionary policies adopted to support the real economy. Also, this deterioration reflects an abnormal reduction of public revenues, as a reaction of GDP contraction.



Source: Authors' Calculations.

Figure 2. Conventional budgetary deficit over GDP in 2009

Regarding these data we observe that 21 countries from 27 have a highest level of conventional public deficit over the limit of 3% over GDP imposed by the Maastricht Treaty.

For Romania, the estimated value is 7.8% over GDP, with 0.9 p.p. higher than average of EU 27. Romania is in „the top 9” values estimated for EU-27. Deficits over 12% from GDP are estimated for Greece, Ireland and United Kingdom.

The forecasts for 2010 are even more unfavorable, the only country which will respect the limit of 3% from GDP being Bulgaria.

4.2. The public debt are growing

In these conditions, debt public over GDP will continue grow up in 2009-2011. The EU-27 average for this indicator will grow from 61.5% in 2008 to 73% in 2009, 79.3% in 2010 and 83.7% in 2011. The total modification is more than 20 p.p., equal with 1/3 from the value of 2008.

In 2009 the public debt over GDP grows up, comparative with 2008, for all member states of EU-27:

Growth of public debt over GDP 2009/2008

Table 6

Country	$\Delta(\text{public debt/GDP})$	Country	$\Delta(\text{public debt/GDP})$	Country	$\Delta(\text{public debt/GDP})$
DK	0.2	AT	6.5	PT	11.1
BG	1	CZ	6.5	UE-27	11.5
LU	1.5	SK	6.9	SI	12.6
NL	1.6	DE	7.2	EL	13.4
EE	2.8	FI	7.2	LV	13.7
SE	4.1	BE	7.4	LT	14.3
PL	4.5	RO	8.2	ES	14.6
MT	4.7	FR	8.7	UK	16.6
CY	4.8	IT	8.8	IE	21.7
HU	6.2	EA 16	8.9		

Source: Authors' Calculations.

The smallest variation is estimated for Denmark, only 0,2 p.p, comparative with a value of 33.5% for this indicator in 2008. Ireland have the highest variation for this indicator, 21.7 p.p., comparative with a value of 44.1% in 2008. Romania will have a variation of 8,2 p.p., comparative with an initial stock of public debt over GDP of 13.65 in 2008.

From this point of view, Romania is situated at the middle of values of 2009 in EU-27. The value for this indicator is still small for Romania, comparative with the Maastricht nominal criteria, 60% of GDP: in 2011 it is expected that the value of public debt over GDP to be 31.3%, after a three years of accelerate growth.

5. The inflation

The values of inflation rate estimated for 2009 indicates a stability of purchasing power of population in this difficult and very insecure period. Some of the member states will experience a reduction of the inflation rate in 2009: Ireland, Portugal and Spain. Unfortunately, Romania leads this hierarchy, with the highest inflation rate between EU-27 member states.

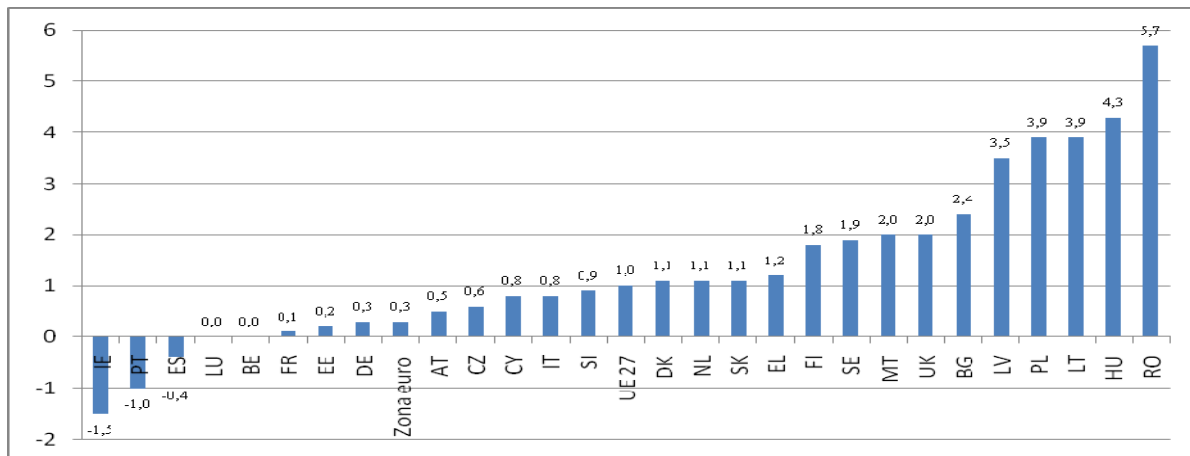


Figure 3. Inflation rate in 2009

All member states will reduce the inflation rate in 2009 comparative with 2008, conserving and increasing the purchasing power of population:

Change of inflation rate 2009 – 2008

Table 7

Country	Δ inflation rate	Country	Δ inflation rate	Country	Δ inflation rate
PL	0.3	MT	2.7	BE	4.5
NL	1.1	AT	2.7	ES	4.5
SE	1.4	UE 27	2.7	IE	4.6
UK	1.6	SK	2.8	SI	4.6
HU	1.7	EL	3	CZ	5.7
FI	2.1	EA 16	3	LT	7.2
RO	2.2	FR	3.1	BG	9.6
DE	2.5	CY	3.6	EE	10.4
DK	2.5	PT	3.7	LV	11.8
IT	2.7	LU	4.1		

Source: Authors' Calculations.

The highest reduction of inflation rate will be unregistered in Baltic States and Bulgaria. In Estonia and Latvia this reduction will be more than 10 p.p. The reduction of inflation rate in Romania will be 2.2 p.p, similar with that unregistered in Finland, Germany and Denmark. The average for EU-27 is 2.7 p.p. and the average for Euro zone is 3 p.p., and this shows very clear that Romania still have serious problems with price stability.

6. The sold of current account

In the context of decrease of consumption, increase of investors risk aversion and the migration of external capitals to their countries, the current account was adjusted by massive limitations of imports and small increase of exports, where it was possible. Romania adjusted its deficit of current account from 12.3% over GDP in 2008 to 5.5 % over GDP in 2009.

The highest adjustments will be made in 2009 in Latvia (from 13% deficit over GDP in 2008 to 6.8% surplus over GDP) and Estonia (from 9.1% deficit over GDP in 2008 to 3.9% surplus over GDP).

Current account – 2008, 2009 (%GDP)

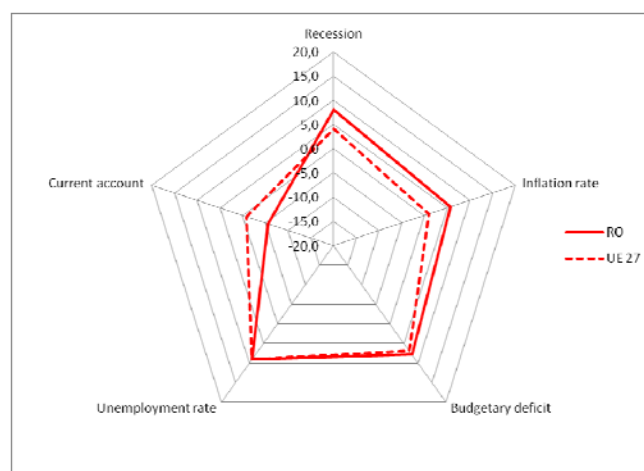
Table 8

Country	2008	2009 estim.	Country	2008	2009 estim.	Country	2008	2009 estim.
BE	0.2	0.6	NL	4.2	3.1	EE	-9.1	3.9
DE	6.6	4.0	AT	3.6	1.5	LV	-13.0	6.8
IE	-5.1	-3.1	PT	-12.1	-10.2	LT	-12.4	0.1
EL	-13.8	-8.8	SI	-6.1	-0.8	HU	-6.6	-1.3
ES	-9.5	-5.4	SK	-6.8	-5.8	PL	-5.1	-1.9
FR	-3.3	-2.3	FI	2.6	1.1	RO	-12.3	-5.5
IT	-3.0	-2.4	EA 16	-0.8	-0.7	SE	8.3	7.8
CY	-18.0	-11.6	BG	-22.9	-13.7	UK	-1.6	-2.4
LU	5.5	9.4	CZ	-3.3	-2.5	UE 27	-1.1	-0.7
MT	-5.6	-3.2	DK	2.2	1.9			

Source: European Commission.

Conclusions

After the comparative presentation of the main macroeconomic indicators and after the analysis of the main characteristics and evolutions of these indicators, in the context of actual economic and financial crisis, we synthesize the comparative analysis between Romania and EU-27 average with a pentagon graph. Romania have the lowest performances of all the indicators, excepting the unemployment rate.



Source: Authors' Calculations.

Figure 4. Macroeconomic context – comparison between Romania and UE-27 in 2009

In this context, the perspectives of European economies of getting out of the current economic and financial crisis are uncertain and the risks are major. Two kinds of risk are the crisis of labor market and the constraints in the investment sector. Also it is possible that bank system cannot support the financing of economic recovery due to internal problems.

On the other hand, the recovery process could be more rapidly if strategic policy measures will contribute more efficient at the stabilization of the financial system and if the global demand will grow beyond the actual expectations.

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Abbreviations and symbols:

EU-27 = European Union after 1 January 2007, with 27 members states

Member states EU-27: AT = Austria, BE = Belgium, BG = Bulgaria, CY = Cyprus, CZ = Czech Republic, DE = Germany, DK = Denmark, EE = Estonia, EL = Greece, ES = Spain, FI = Finland, FR = France, HU = Hungary, IE = Ireland, IT = Italy, LT = Lithuania, LU = Luxembourg, LV = Latvia, MT = Malta, NL = Netherlands, PL = Poland, PT = Portugal, RO = Romania, SE = Sweden, SI = Slovenia, SK = Slovakia, UK = United Kingdom

Euro Zone (EA 16) = BE, DE, EL, ES, FR, IE, IT, LU, NL, AT, PT, SI, SK, FI, MT, CY.

INFLATION CONTROL UNDER THE CONDITIONS OF A CENTRAL BANK WHICH IS NOT INDEPENDENT

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***Abstract.** Starting with the idea that the main monetary problem of a country is to assure national monetary stability and price stability, it is analyzed the possibility to control inflation under the conditions of a central bank which is not independent. It is a distinction between independence of tools and independence of central bank purposes because monetary policy purposes are set up by the legislative, while tools necessary to reach these purposes represent an attribute of Central Bank.*

Finally, we conclude that central bank own decisions influence both the government behavior and private sector behavior.

***Keywords:** price general index; inflation control; conservative banker; central banker; main agent model.*

JEL Codes: E31, E42, E58.

REL Codes: 8F, 8J.

The main monetary problem of a country is to find a monetary system or a rule to give stability of price general index and set up output level (GDP) round its trend.

Along centuries, several solutions for this problem were obtained, such as: rate of gold, silver, bimetal, continuous redefinition of monetary unit, a variety of monetary rule, including the doctrine of authentic bills „100% money”, rules of constant money growth, level of prices or inflation, fixed exchange rates, exchange rates commissions and others. Nevertheless, it is true that „money purchasing power was always instable”. As some machinery functions more efficient than others, similar monetary policies are better than others.

We further propose to discuss the aspects regarding a way which today draw special attention, namely control of inflation under the conditions of a central bank which is not independent. We start from the presumption that central bank should be independent, meaning that those who set the monetary policy should not be under the daily control of the government. In order to be independent, a central bank needs the power to set up interest rates and – in the limits of technical possibilities to achieve – to determine the monetary growth; it should also be free of any government financing demand or of economic private sectors.

Theoretically, two models of independent central banks can exist: conservative central banker, such as Bundesbank in Germany, and central banker, such New Zealand reserve bank. Practically, the elements of both models can be found in most of central banks.

1) in the conservative banker model independence assures that central bank preferences, sooner than those of society prevail under the circumstances when pre-commitment for a lower inflation policy is not possible. Moreover, creating an independent institution with a leadership and management more stable than within policy, the system is more, generally, important estimations should affect monetary policy decisions, therefore, pushing the inflation effect in the direction of solving the pre-commitment. In the model of central conservative banker, central banker supposes to try modeling business cycle and fight against inflation. Practically, bankers go the shorter way regarding the ratio between inflation and output, taking decisions concerning the speed to reduce inflation when it is or is expected

to be over the levels target and speed to increase the money reserves and implicitly, to increase the opportunities during a recession stage.

2) Main agent model more stresses the precise definition of both tasks of central banker and incentives the central bank gives to reach their purposes. Clearly defining the purposes and incentives, this model emphasizes the responsibility of central bank, that consequences should exist if it does not reach the proposed purposes. Elements of agent-principal model are required from all central banks which have various political purposes mentioned in the legislation and whose managers are certainly motivated both by incentives to improve or keep their reputation, as well as by clear rewards.

The two models stress various elements of central bank independence (CBI). It should be clearly distinguished the independence of purposes and of tools. A central bank which has control over monetary policies benefits of tools independence; a central bank which defines its own political purposes holds independence of purposes. Central banker has both independences. Certainly, government tries to choose the correct central banker, but – as in case of Justice Supreme Court – the behavior of central banker can be different after nomination than before. Central banker in main agent model does not hold independence of purpose, but it has independence of tools.

The most important conclusion is that central bank should have independence of tools but not that of purposes.

Purposes of monetary policy should be set up by the legislative and central bank should have liberty to choose the tools necessary to reach those purposes. When the legislative chooses a wrong objective, central bank should fulfill it, therefore to pursue a wrong way. It is also possible that different governing should choose various objectives.

Central bank should present a clear defined purpose or a set of purposes, power to reach them and to take responsibility for them, namely certain consequences exist if proposed purposes are not reached. Responsibility is necessary from two reasons: first of all to set up why central bank should reach its purposes and explain its actions, and secondly to provide a democratic image of a powerful institution.

Types of responsibilities are different: New Zealand model makes the governor responsible in a certain way to the Ministry of Finances, United States model makes responsible the federal agent generally, but not directly to the Congress and German model makes Bundesbank responsible to the public. Taking into account the importance of reputation for the individuals in public life, any way is good; nevertheless, clear, precise responsibility of chosen officials is much more efficient than a vague, general responsibility. Farther, responsibility of officials assures that central bankers, who tend to live at shelter, are exposed to public opinion and thus are not so conservative. Responsibility, under large limits, central bank independence, help to achieve almost the balance of powers between central bank and government.

The most powerful intellectual support of CBI comes from practical results which show that among industrialized countries, average performance of inflation is negative in keeping with central bank independence.

It was proved that relation is not causal. Rather, countries which are under the effect against inflation, for instance because of a hyper-inflation history, develop institutions keeping this situation. This argument will suggest that public education regarding real costs of inflation, is the best way to reduce inflation. Even so, the laws if are not totally relevant to be achieved, anybody wants to reduce inflation, will be advised to support actively the CBI cause.

Strengthening CBI support should be accompanied by the trend to set up as unique task of central bank reaching an inflation rate, a certain zone. Characteristically, inflation aim is for one of two years interval or for few years inflation action duration. Choosing an inflation aim raises few problems: a) if it is better to select a target which is more directly controlled by central bank, such as total growth ; b) if inflation has to be the only target, having in view that monetary policy affects both output and inflation for a short period and if a target of nominal

income is to be specified instead of inflation; c) if a price level is to be set up instead of inflation rate; d) what level and distance a target has to be specified and how it is changed, if it is totally changed; e) if an exchange rate has to be chosen instead of inflation target.

It would be obviously better for central bank to aim a variable policy under its control than closely control a last variable of target, such as inflation rate or nominal output. For a while, it was hoped that monetary control would reach purposes, but as relations between monetary growth and inflation and/or output gradually broke in many countries, it was proved to be possible that no country could rely only on monetary control.

Question that if central bank should pursue a target to be under its direct control instead of a last policy target, such as inflation rate, reaches a key aspect of CBI recent way. Reason to need a central bank is the necessity of centralization, both of capacity and responsibility of monetary policy, as well as a good understanding to fulfill this policy.

A low inflation rate will be achieved with an independent central bank. Nevertheless, independent central bank can control inflation very little if fiscal authorities are out of control. In transition economy, central bank should have independence without responsibilities against chosen officials. In this case, responsibility will be implicit against public opinion or history.

Supposing that an independent bank will have access to all relevant knowledge regarding the development of a monetary policy, so that to reach output and inflation targets or target regarding maximization of society useful function? A quick answer is that inflation is a monetary phenomenon and that is why monetary policy should be based on inflation. This statement is correct, but avoids the fact that it is always a rapid exchange between inflation and output and that selection of monetary policy affects output as quick as inflation.

Both banker-consecutive-central way and main agent way suppose directly or indirectly that central bank will pursue both controls. In main agent model, control of inflation rate is influenced by economy situation, suggesting for instance that shocks of reserves affect control of inflation rate. For instance, in New Zealand, inflation level is automatically correlated with the changes taking place in trade and indirect taxes; it means that inflation, existing as result of these shocks, is adapted so that to reduce their effects over output.

The most powerful argument of inflation control with lower shocks, more exactly than control of two variables, is when responsibility increases if central bank has only one control instead of more controls. Anyhow, output and inflation control can be combined in only one indicator, with nominal GDP (gross domestic product) as good as in another indicator. There are two big difficulties regarding control of nominal income: the first, and the most important, nominal GDP data occur later and are often reviewed; these data occur to be less interesting for the public. Problem of data revision is very important.

In case of inflation control, rather than in case of nominal income control is that inflation rate is interested directly by economic units and that inflation performance is much easier to monitor than nominal income performance. Inflation control gives correct answer of monetary policy for demand shocks and namely that monetary policy should be closely related to the shocks which supervise the increase both of output and inflation. Because of the fact that offer shock leads to higher prices and lower output, monetary policy should supervise less the replication of offer enemy shock under the control of nominal income than under the control of inflation. Thus, nominal income control suggests a good answer of monetary policy regarding offer shocks. This advantage is a compensation of the fact that inflation control takes special measures for offer shocks, as in United Kingdom, Canada and New Zealand. We consider that inflation control is preferable to nominal income control, if control is adapted to offer shocks.

What model is chosen between a control of inflation rate and control of price level? When policy controls level-price way, it should compensate inflation passed shocks during a medium-low inflation period so that it should return to the controlled way. Inflation control supervises something related to price level rather in the next future than in the farther future. Similarly, inflation rate will fluctuate more powerfully during a short period under the control

of price level, as policy fights to return the price chosen way. For instance, under price level control, Bundesbank is also required, today, when it goes closer to 2% inflation rate, to reduce inflation under 2% level as much as possible and as long as it is necessary to eliminate inflation effects over the average of period since 1990. If purpose is to encourage long term nominal contracts, then the control of price level is preferred. However, since important volume of contracts is on long term, since monetary policy generated much more demand under price level control and since benefits of long term contracts benefits will be obtained similarly by allowed indexation, inflation control is preferred than price level.

Inflation control is carried out in two ways. The first is to set up a long term inflation rate control, not a control for the rate. For instance,, Bundesbank has an inflation basic control of about 2%, but it does not specify how it intends to return the control when it exceeds these percentages. Central bank with a much more formal control of inflation typically specifies an inflation zone in a few years. This zone can be changed from time to time. It could be supposed that the control will be credible only if the zone is consequent other policies that could be pursued by the government. While credible need limits the central bank control zone, central bank should at the same time recognize that own decisions will influence the behavior, both of the government and of the private sector.

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CRISIS IMPACT ON THE EUROPEAN BANKING REGULATORY AND SUPERVISORY FRAMEWORK. A MACRO-PRUDENTIAL APPROACH*

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Abstract: *The current financial crisis has reopened debate on the need to improve the regulatory and supervisory framework, both internationally and throughout Europe and led to calls for action from the authorities, aimed, on one hand, to strengthen supervision on financial institutions and, on the other hand, to limit the spread of systemic risk. This study examines, therefore, changes that will occur in the regulatory and supervisory framework and argues the importance accorded to the macro-prudential approach in reforming it.*

Keywords: financial stability; financial crisis; macro-prudential/micro-prudential supervision; systemic risk.

JEL Code: G01.

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1. Introduction

Given the economic and social consequences of the financial crisis that started in U.S. in 2007, and that among the main weaknesses of the financial system highlighted by the crisis were inadequate regulatory framework, neglect of systemic risk and fragmentation of the supervision architecture (Dardac, Georgescu, 2009, p. 4-5), seems obvious the need to improve the mechanisms that ensures financial stability - including the regulatory and prudential supervision framework - the purpose of these changes being to ensure a stable financial system for the future.

As many recent studies argue (Brunnermeier, Crockett, Goodhart, Persaud, Shin, 2009), the current financial crisis revealed the need, in addition to enhanced supervision of individual institutions, to allocate more resources in order to understand the interactions between banks and between banking and other components of the financial system, this *macro-prudential approach* reducing systemic risk.

This study presents, on the one hand, the main characteristics of macro-prudential approach, compared with micro-prudential supervision, and, on the other hand, analyzes the actions of the European and Romanian authorities in reforming the regulatory and supervisory framework and the extent in which they were founded by macro-prudential approach.

2. Macro-prudential approach and micro-prudential approach

Macro-prudential supervision is not a new concept, but, as stresses Borio (2005, p. 10), is „*an old idea whose time came*”, this concept being used by the Bank for International

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Settlements since the 1970s, with reference to the systemic approach to regulatory and supervisory processes. Its definition and analysis on the implications of macro-prudential approach on the architecture of the regulatory and supervisory framework, are, however, addressed in more recent work (Crockett 2000, Borio 2003).

Although the concept is old, many authors have pointed out that the regulatory and supervisory processes in Europe do not contain a significant macro-prudential component (Borio 2005, Borio and White 2004), and the current financial crisis has brought this approach on the forefront of the analysis regarding the need to reform the regulatory and supervisory framework (Brunnermeier, Crockett, Goodhart, Persaud and Shin, 2009).

To argue the need for a macro-prudential approach and to examine the innovations in the European regulatory and supervisory framework in light of this approach, is necessary to clarify some aspects regarding its main features.

Macro-prudential supervision is an approach that ensures the financial stability, its main purpose being to limit risks in the financial system, while the purpose of micro-prudential supervision is to limit the risks of individual credit institutions. Macro-prudential approach focuses on the financial system as a whole and starts from the premise that aggregate risk is dependent on the collective behavior of the institutions which composes the system (Borio, 2003).

However, macro-prudential supervision should not be considered a substitute of the micro-prudential supervision, because a financial system can only be considered safe if its component institutions are healthy. Thus, macro and micro-prudential supervision reinforce each other and are both necessary to ensure financial stability (Ryback, 2006: pp 3-7).

The main characteristics and differences between the two approaches are summarized in the following table:

Table 1

	Macro-prudential approach	Micro-prudential approach
<i>Objective</i>	Limiting systemic risk of the financial system: mitigating the failure of a large segment of the financial system.	Limiting risk of individual institutions: protection of depositors and investors
<i>Implementation of supervisory controls</i>	<i>Top-down</i> : setting prudential control in terms of the probability and costs of systemic distress	<i>Bottom-up</i> : setting and aggregating prudential control in relation to the risk of each institution
<i>Characteristics of risk</i>	Endogenous: Originating in the collective behavior of and interactions between institutions	Exogenous: Given to individual institutions and the disregard of feedback of collective actions
<i>Common exposure to systemic risk</i>	Relevant and important	Irrelevant
<i>Use of instruments</i>	Standard prudential tools and differentiated provisioning and risk assessment	Uniform solvency standards and codes of conduct
<i>Focus of supervision</i>	- A greater weight given to banks and larger and more complex institutions; - Market monitoring; - Countercyclical orientation	Protection of individual institutions

Sources: Crockett (2000), Borio (2003), Chull (2006).

In our view, macro-prudential approach has two main dimensions:

- analysis of risk distribution in the financial system, at some point, the essence of this dimension being to establish correlations between the exposures of financial institutions;
- analysis of the dynamic evolution of aggregate risk, which is linked to the expression of business cycles.

The characteristics of the two approaches, macro and micro-prudential, and the need to use them in ensuring financial stability, must be judged in the light of lessons learned from the current financial crisis. Although the epicenter of the financial turmoil originated in the U.S., the shock waves have spread rapidly throughout the world, affecting both developed and emerging countries through contagion effect.

In other words, the crisis has shown us that in a global economy characterized by increasing volatility of capital flows, market integration and financial innovation, vulnerabilities in a given economy is rapidly spreading to other economies, even if their financial systems are sound.

Also, the crisis showed that the succession of business cycles favor the emergence of macroeconomic risks. Thus, in times of economic growth, almost all financial institutions appear to be robust and in bad times, almost all are vulnerable (Persaud, 2009, p. 5). At the same time, when measuring risk is based on market prices, or on variables related to market prices⁽¹⁾, during periods of economic boom, the price-value of the assets increases and the price-value of risks decreases; on the other hand, in periods of decline and recession, the price-value of the asset falls and that of the risk increases.

Also, during expansion, risk tolerance increases, funding constraints weaken, debt, market liquidity and asset prices are growing, all these elements supporting each other and leading to an overstatement of the financial institutions balance sheet. This contributes to increased systemic risk and crises following periods of economic boom.

At the same time, one of the lessons of the financial crisis is that market discipline, although it has an important role in ensuring an effective financial sector, is insufficient to combat the risks induced by economic cycles.

Given the above, analysis of business cycles should be a major concern for the regulatory and supervisory authorities, requiring a macro-prudential approach.

At the same time, Smaghi (2009, p. 3) believes that the macro-prudential approach must have two main concerns: first is monitoring and analysis of systemic risk and the second is to limit the risks identified, which requires specific tools.

Regarding the first issue, namely monitoring and analysis of systemic risk, the literature captures some key considerations on how they should be made:

- the analysis must include all components of the financial system (markets, institutions, infrastructures) and their mode of interaction;
- macro-prudential risk assessment must take into account the interactions between the financial system and economy as a whole;
- the analysis must consider the continuous evolution of markets and innovation in the financial system.

Regarding the second issue, namely limiting risks, this raises questions about how to implement the macro-prudential approach in the regulations and institutional system. Thus, to limit the aggregate risk and negative externalities, the competent authorities must adopt a set of specific measures aimed to avoid economic cycles and limit contagion in the event of certain failures at an institution or a particular sector of the financial market.

Given the issues mentioned, we believe that the reform of the regulatory and supervisory framework should reflect greater focus on systemic risk and the expansion of micro-prudential supervision with a macro-prudential supervision. At the same time, the institutional framework must be appropriate for the implementation of macro-prudential supervision.

3. Action on reforming the regulatory and supervisory framework in Europe

In Europe, vigorous action were undertaken to manage the crisis effectively, strengthen macro and micro-prudential supervision, coordinate the financial institutions supervision and to reform the current regulatory framework.

The need to reform the current regulatory framework is, in our opinion, a priority and is the natural consequence of following: the ongoing crisis and the causes which generated it, the increasing complexity of financial products and the increasing integration of the single market.

Specifically, the actions of the European authorities aimed at reforming the regulatory and supervisory framework, in response to the current economic and financial crisis, can be divided into:

- initiatives amending prudential regulations;
- changes in the architecture of the supervision system.

3.1. Amendments of the prudential regulations

In response to the financial crisis and to the criticism of the regulatory and supervisory framework (ie neglect of systemic risk, encouragement of financial innovation, promotion of internal models to measure risks, the use of lower risk weights for mortgage loans, the absence of counter-cyclically capital requirements etc.), the European Commission adopted proposals to amend Directives 2006/48/EC and 2006/49/EC (Capital Requirements Directive)⁽²⁾, as follows:

- additional capital requirements for re-securitization operations, which are sophisticated financial instruments that expose financial institutions to significant risks, often difficult to assess;
- disclosure requirements for securitized exposures, to increase transparency and understanding of the financial institutions risk profiles;
- additional capital requirements for trading book, designed to change the assessment of its risks, as to reflect the potential risks resulting from adverse market developments;
- remuneration policies and practices, in this regard supervisors being empowered to punish those financial institutions who encourage or reward excessive risk taking.

All these changes will probably grow significantly capital requirements for financial institutions and strengthen the stability of individual financial institutions, reflecting a micro-prudential approach.

At the same time, in the EU, has been addressed recently, the possibility to initiate other changes affecting:

- additional specific capital requirements for residential mortgage loans denominated in foreign currency. According to European Commission proposals, these capital requirements should apply to loans for which *loan to value* ratio exceeds a certain level, since it indicates irresponsible lending practices;
- elimination of national options to avoid differences in the implementation of European regulations in the Member States;
- dynamic provisioning of expected losses. Thus, financial institutions should provide, in times of economic boom, provisions for expected losses inherent to credit risk, even if they were not yet materialized; in times of economic contraction, these provisions are to be canceled to cover reported losses.

Concrete ways in which dynamic provisioning will be implemented is unclear, different options being expressed in the European Commission. Nevertheless, dynamic provisioning is, in our opinion, the most significant proposal to amend the directives, because it avoids pro-cyclicality and highlights that authorities give a special attention to systemic risk.

We believe that an effective methodology for dynamic provisioning can be inspired by the methodology used in Spain⁽³⁾, as it has allowed banks to use in the bad times, provisions established during the expansion of credit.

We also consider that to be effective, dynamic provisioning should meet the following requirements:

- it should be applied to both balance sheet items and for off balance sheet items;

- it should be applied to both individual and consolidated level;
- it should be based on a common methodology.

In a broader context, is necessary, also, to review the provisions of the Basel II, in order to allow a gradual increase in the level of minimum capital requirements, shocks approach, implementation of a more rigorous liquidity management, elimination of pro-cyclicality and so on.

3.2. Changes in the architecture of the supervision system

Radical modification of the current architecture of supervision system aims, especially, at improving cooperation at European level, and we consider necessary to make a distinction between the two complementary forms of supervision, macro and micro-prudential supervision.

As a result, macro-prudential supervision objectives must be supported by an appropriate institutional framework, and the recognition of this fact by the European authorities is demonstrated by the establishment, in November 2008, of a high level expert group on financial supervision, chaired by Jacques de Larosière.

Based on the report presented by this group⁽⁴⁾, the European Commission proposed the reform of the EU financial supervision framework, which will be composed of two pillars:

I – The European Systemic Risk Council – ESRC, responsible for monitoring and evaluation of potential dangers to financial stability arising from macro-economic developments and those in the financial system as a whole („macro-prudential supervision”). This body shall consist of President and Vice-President of the ECB, national central bank governors and presidents of the three EU supervisory authorities.

The reform at this macro-prudential level is aiming at better integration of financial markets, involving all the central banks of EU Member States and has a dual role: first, to analyze information on the macroeconomic context and macro-prudential developments of all components of national financial systems, and second, to release macro-prudential risk warnings and submit them to the authorities with responsibilities in this area.

Thus, the establishment of ESRC highlights the awareness that the current supervisory framework does not put enough emphasis on macro-prudential analysis, which is fragmented, made by different authorities at different levels and that there are no mechanisms to ensure that warnings and recommendations on macro-prudential risks are translated into concrete actions.

II – The European System of Financial Supervisors – ESFS, composed of national financial supervisory authorities which will work in partnership with three new European Supervision Authorities⁽⁵⁾: a European Banking Authority – EBA, a European Insurance and Occupational Pensions Authority – EIOPA and a European Securities Authority – ESA.

Thus, the establishment of ESFS aims to strengthen micro-prudential supervision, which will remain in the national competence, to facilitate cooperation, ensure uniform application of European regulations, ensure consistent supervisory practices and to ensure coordinated responses to crisis, all these features being functions of the European Supervisory Authorities.

In other words, reform at this level implies the creation of a decentralized and autonomous structure, with the mission to coordinate the effective implementation of standards in the field and to allow better cooperation between national supervisors.

We believe that implementing both pillars of the new supervision system is essential to achieve significant synergies, mutual strengthening, with impact on financial stability and to ensure a connected macro-micro supervision.

4. Actions of the Romanian authorities on reforming the regulatory and supervisory framework

By contagion, the effects of the international financial crisis has extended to the Romanian economy. Although the banking system was not seriously affected, competent authorities have initiated action to manage the effects of the crisis and reduce their impact on the financial system.

Thus, besides the fact that Romania will have to implement the above-mentioned European regulations⁽⁶⁾, the following measures were adopted nationally to improve the prudential regulation:

- amendments allowing different conditions for granting loans secured by mortgages from those applicable to other types of loans⁽⁷⁾;
- amendment of regulations regarding loan loss provisions⁽⁸⁾;
- consolidation of the remedial powers of the NBR in relation to credit institutions in difficulty⁽⁹⁾;
- enlarging the database of credit registers⁽¹⁰⁾;
- establishment of the „Romanian Counter-guarantee Fund”⁽¹¹⁾.

At the same time, NBR, as supervisory authority, has responded to new threats by providing liquidity and tighter supervision of banks. Also, in the central bank was established a department for financial crises management and stress tests on banks have been run⁽¹²⁾.

In our opinion, these actions reflect the concerns of the central bank in line with enhancing micro-prudential supervision and the adoption of a macro-prudential approach, both representing premises of ensuring financial stability.

5. Conclusions

The current financial crisis has highlighted the weaknesses of the regulatory and supervisory framework and led to its reform.

As noted, measures taken by the European and Romanian authorities, aimed at reforming the regulatory and supervisory framework, indicate their concern to strengthen the micro-prudential supervision and the growing importance they attach to the macro-prudential supervision in ensuring stability financial.

Although macro-prudential supervision is not easy to implement, requiring analytical tools for systems risk assessment and monitoring and tools to limit these risks, we believe that the first steps have been made through the creation of the European Systemic Risk Council and the proposals to introduce dynamic provisioning.

Exiting the crisis will be closely linked to the return of stability in financial markets, meaning, after a radical cleaning of the balance sheets of large financial institutions, by marking to market of assets.

We also consider that the current crisis has seriously tested the stability of the euro, especially because the requirements of the Stability Pact was, in this context, forgotten. So far, the euro has been a factor of relative stability for the EU Member States, but the convergence process stopped. If, in the future, financial markets do not return to normality, then the euro will face serious challenges that may threaten its existence.

Notes

¹ Such as marking to market of assets, use of price volatility in evaluating market risk, using credit margins in internal models for credit risk assessment.

² Changes agreed by Member States and Parliament in April 2009 and amendments adopted by the Commission on July 13, 2009.

³ Spain is the only country with a system of dynamic provisioning. This system incorporates two coefficients (α and β) that reflect the historical average estimate of the credit loss for each risk category (α), applied to the increased amount in the loan portfolio and the historical average specific provision for each risk category (β), applied to the total loan portfolio.

⁴ The Larosière Report, published on 25/02/2009.

⁵ which will replace the current Level 3 committees (CEBS, CESR, CEIOPS).

⁶ according to Commission's proposals, national governments would have to transpose the new rules into national law by October 31, 2010 and they will take effect from January 1, 2011

⁷ NBR Regulation no. 2 of 20.01.2009 give borrowers the opportunity to take into account a higher level of debt for credit applicants, if they have a good quality real estate guarantee, according to NBR Regulation no 3 of 19.03.2009.

⁸ under NBR Regulation no. 3 of 19.03.2009.

⁹ Law no. 270 of 07.07.2009 gives to the NBR the power: (a) to require from the significant shareholder of a credit institution in difficulty to provide the necessary financial support, either by increasing its capital, or by granting subordinated loans which are convertible into actions at the request of NBR, (b) to prohibit or limit profit sharing until the financial situation of the credit institution is remedied (c) to suspend the voting rights of shareholders who do not comply with the request for additional financial support of the credit institution.

¹⁰ by Law no. 93/2009, non-bank financial institutions listed in the special register were included as reporting institutions in CRB.

¹¹ by GEO no. 23/2009.

¹² Romanian National Bank - Financial Stability Report, 2009, pp. 7-9.

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THE EFFECTS AND COST OF BANK RECAPITALIZATION IN THE CONTEXT OF FINANCIAL CRISES

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***Abstract.** Worldwide governments perform considerable financial efforts to support financial sector and the re-launch of lending. The mechanisms vary from the guarantee and purchase of troubled assets till injecting liquidity, by buying securities issued in order to increase financial institutions' equity. The emergence of these measures and their desirability, in the context in which it is based on public funds provided by taxpayers, have originated a lot of debate about the necessity, appropriateness and impact of these interventions. Our paper aims to summarize the main coordinates of programs designed to support banks, implemented by the governments, and the specific concerns of restructuring the financial institutions' balance.*

Keywords: financial crisis; troubled assets; recapitalization; competition distortion; recapitalization price.

JEL Codes: F3, G2.

REL Codes: 3H, 11B.

1. Overview of the theme considered

In recent years, the housing and mortgage loans market in the US have recorded exceptional growth. At the core of this trend lies the widespread of the securitization process and the origination of sophisticated structured financial products, which were sold to investors around the world, especially investment banks. The big US commercial banks have increased their share of mortgage loans from 44% in 2003 to 53% in 2007.

As mortgage loans have become nonperforming, the notional value of financial derivatives decreased and financial institutions began to record significant losses. In March 2008, Bear Stearns was on the verge of bankruptcy, but it was acquired by JP Morgan and received assistance from the Fed. With this event, concerns of the US government have intensified and has been developed the Troubled Assets Relief Program. This was a US government program to purchase assets and securities (shares) issued by financial institutions to support the financial system. Also, it represented a large component of the program of actions adopted in the US to withstand the crisis.

The structure of the program highlights the government's concerns on preserving financial system stability, namely:

- ✓ a purchase program of mortgage backed securities (MBS). The purpose of this component is to identify troubled(toxic) assets which will be the subject of acquisition, to statute who will buy them and the mechanism adopted to achieve these objectives;
- ✓ a loan recovery program (which will be implemented at the level of regional banks);
- ✓ an asset insurance program;
- ✓ a program consisting in purchasing shares issued by financial institutions (its purpose is to encourage the participation of private investors to purchase securities issued in order to increase bank capital).

TARP Program defines „troubled assets” as those assets whose purchase is necessary to ensure global financial stability and economic growth. The category of these assets includes the real ones and those resulting from securitization. The most difficult aspect of the program is to price assets with problems, in that it is necessary that the purchase price maintain a balance between efficiency of public funds derived from taxpayers and the provision of appropriate financial assistance the institution needs. In US eight financial institutions have benefited from this program, namely Bank of America, Bank of New York, Citigroup, Goldman Sachs, JP Morgan, Morgan Stanley, State Street Corporation, Wells Fargo and Company.

Government intervention is not limited to the TARP program, but has a variety of forms, as shown in Table 1:

- ✓ government guarantee of credit;
- ✓ reduction of monetary policy interest rates;
- ✓ increase of bank deposit guarantee ceiling;
- ✓ recapitalization, for expanding capital and compensation of losses;
- ✓ purchase of assets to remove toxic assets from the system;
- ✓ banning „short sales” to discourage financial institutions collapse.

In Table 1 it is shown a summary of the type and amount of government intervention in the year 2008, in several representative countries, indicating the importance of recapitalizing financial institutions.

Governmental interventions in developed countries – 2008

Table 1

Action type	USA	UK	France	Germany	Netherlands	Sweden
Liquidity lending guarantees	All senior debt till 2011	250bn GBP short term lending	320 bn euro to guarantee bank lending	400 bn euro to guarantee bank lending	200 bn euro to guarantee interbank lending	205bn euro liquidity boost program
Progressive cuts of the key interest rate						
Generalized increase of the ceiling of bank deposit guarantees	Raised to 250000 USD	Raised to 50000 GBP	EU euro zone minimum of 50000 euro, up to 100000 euro	Complete governmental guarantee	EU euro zone minimum of 50000 euro, up to 100000 euro	Raised to 500000 SKr, including foreign bank deposits
Recapitalization schemes designed for financial institutions	Up to 700 bn USD from 250 bn USD	Up to 50 bn GBP raised for tier 1	40 bn euro fund available	100 bn euro fund	10 bn euro injected into ING Bank. Another 10 bn euro available	15 bn SKr fund
Troubled assets purchase	100 bn USD up to 700 bn USD rescue package	none	none	none	none	none
Prohibition of short selling operations	Ban on 900 companies lifted on 8 th October 2008	A 34 financial companies ban till January 2009	Banned on banks till late December	Banned on banks till end of the year	An 8 financial companies ban till December 2008	An 8 financial companies ban till December 2008

Source: FRSGlobal Centre of risk and regulatory excellence, Comment piece: 2008 financial crisis, author Selwyn Blair-Ford.

The components of the governmental intervention program emphasize an orientation towards banking capital and abandonment of purchasing nonperforming assets; we retrieve the same measures in most countries. Following the decisions taken by the European Commission, the purpose, the size and the conditions of government interventions depend heavily on the particular characteristics of benefiting financial institutions, but also by the financial potential of the authorities supplying public funding. For Romania, the NBR required capital increases for 12 credit institutions, in an amount of 4.15 billion lei. As recommended by the European Commission, credit institutions must hold a prudential solvency ratio above 10%. To respect this level, additional capital needs to be made in two installments (until September 30, 2009 and March 31, 2010 respectively).

Recapitalization of credit institutions in Romania is not achieved by public money; if they won't have sufficient funds, will proceed with the sale of stakes or will request a capital infusion from the parent bank, in the case of banks with foreign ownership. The evaluation of banks capitalization and risk exposure took place in the context of different stress test scenarios. The baseline (a 4% economic decrease in 2009 and an average exchange rate of 4.4 RON/EUR) revealed a good capital adequacy, of 9.7%, throughout the banking system. In the negative scenario (economic decline of 7% and average exchange rate of 4.8 RON/EUR) the average solvency of the banking system is reduced to 8%, requiring a capital injection of 6.7 billion lei. Compared to the estimates made in early 2009, economic developments prove a partial confirmation of the negative scenario.

2. Considerations related to recapitalization schemes as the focal point of measures to end the crisis

2.1. The current state of the regulations in this field

The economic literature devoted on this topic gathers several opinions and viewpoints. Implementation of financial recovery plan in the US and EU countries has brought to the fore the effects of bank recapitalization, subject extensively discussed in the context of the Japanese banking crisis.

This measure is important in the current crisis as it serves for the completion of a substantial number of objectives:

- first, recapitalization of banks helps to restore financial stability and confidence in bank lending. Additional capital is to contribute to absorb losses and limit the risk of banks insolvency. Also, injections of capital generate a higher level of own resources, which leads to the lowering of cost resources.
- second, recapitalization ensures that lending to the real economy won't contract, as it prevents credit restriction. Bank recapitalization involving the state can provide an answer to the problems of insolvent institutions, as a result of a particular business model or risky investment strategies.

Euro system's recommendations in November 20, 2008 show a methodology by which to calculate the rate of return for the capital provided by the state, differentiated by type of instruments used: preferred shares and other hybrid instruments. In accordance with the methodology developed, it should be established a price and allowed to fluctuate within a corridor, whose limits are given by:

- rate of return on subordinated debt (lowest price)
- rate of return for ordinary shares (highest level).

The Commission also recommended that the recapitalization be completed at the current market interest rate. In situations where, by injecting capital, state or other private investors reach a significant stake (at least 30%), then they have to accept a pay agreed with banks to limit the unfair competition. In accordance with the principles relating to the prevention of possible abuse or distortion of competition arising from recapitalization schemes, the recommendation is that capital injections be restricted to a minimum necessary level and, in any case, to not lead to aggressive sales strategies adopted by the beneficiary

financial institutions. For this reason, the price of recapitalization is considered essential to limit distortions generated by competition, and surveillance is necessary to prevent an aggressive business expansion financed by the state. Thus, institutions that received public support should not be privileged at the expense of competitors without public support.

2.2. Possible effects of recapitalization

Of the many effects that are generated by recapitalization, in our opinion, the most important is the distortion of competition, as expressed by European specialists, who examined the recapitalizations operated in Norway, Iceland and Liechtenstein. Thus, banks in these countries could present a competitive advantage over banks in Member States. Access to capital, at a low interest rate, can have a real impact on the competitiveness of banks in the European market.

Another effect is the advantage given to banks with nonperforming assets, which lead to moral hazard and weaken the global competitiveness of the European institutions. Recapitalization effects are not found on the institutions which do not use public funds. The potential effects of financial recovery plans have been investigated by several studies, which found that there are similarities but also differences between them and those adopted in Japan during the years 1997-2003. Authors like Bebhuk (2008), Baldwin and Eichengreen (2008), Veronesi and Zingales (2009) remind us about the Japanese Lesson and the lessons that US authorities would have had to draw and apply them in the current situation. Japanese experience is interesting, because the government has provided several types of interventions, some banks being recapitalized, and others being included in merger programs or capital increase plans, by attracting private investors.

Hoshi, Kashyap (2008) have shown why the injections of capital within the Japanese recovery program did not address the deficiencies of the Japanese financial system, namely:

- recovery programs totaled only 8.7 billion yen, respectively 1% of the assets and less than 2% of the loans;
- even after the nationalization of banks, the authorities haven't forced them to clean their balance sheets of nonperforming assets, so their level increased from 29.6 billion yen in 1999 to 42 billion in 2002;
- as a result of recapitalization, banks have increased the volume of loans granted, being less concerned with strengthening bank capital;
- the main concern of banks was the involvement in the medium and long term business, under circumstances of insufficient capital.

2.3. Lessons drawn from the Japanese experience

The comparative analysis of the Japanese and US crisis features highlights the following elements:

- similarities in terms of macroeconomic conditions of the two countries, in terms of house price indices that recorded significant increases in U.S. (2006) and Japan (1990-1997).
- the acute phase of the Japanese crisis occurred in 1997, when Sanyo Securities Company entered into default and the bank Hokkaido Tokushoku lost the ability to grant loans on the interbank market, declaring bankruptcy (the first bankruptcy after World War II). Yamaichi Securities, one of the leading securities dealers, went bankrupt due to the accumulation of losses from off balance operations, by means of the *tobashi* illegal scheme. Under this scheme, securities companies were hiding the equity losses of a corporate customer, by selling part of the portfolio, at inflated prices, to another customer, whose financial situation was different from the first customer (the securities company couldn't record losses for both customers, at the same time). When the financial statement had to be made for the second client, his portfolio was sold to another profitable client to hide the loss.

In these circumstances, the Japanese government decided not to use public funds to cover losses, but to change accounting rules, so that financial institutions to „embellish” the balance sheets, using nominal or market value of assets. The first measures were adopted in March 1998, through the Financial Function Stabilization Act, through which were used 30 billion yen for the protection of depositors of failing banks and 13 billion to recapitalize major banks.

The bankruptcy of a major bank, Long Term Credit Bank of Japan (LTCB), led to a change of the law, so that it allowed nationalization as a government intervention. In October 1998 it was nationalized LTCB and in December Nippon Credit Bank. Since 1999, Japan witnessed several recapitalizations, by issuing preferred shares, but the success of these measures was limited.

Capital injections programs in Japan (millions yen)

Table 2

Legislation	Date of the capital infusion and the type of the instrument used	Number of recipient financial institutions	The amount injected
Financial Function Stabilization Act	3/1998 – preferred shares, subordinated debt	21	1816
Prompt Recapitalization Act	3/1999-3/2002 preferred shares, subordinated debt	32	8605
Financial Reorganization Promotion Act	9/2003 subordinated debt	1	0.006
Deposit Insurance Act	6/2003 common shares, preferred shares	1	1.960
Act For Strengthening Financial Functions	11/2006-12/2006 preferred shares	2	0.041

Source: Takeo H., Kashyap A.K.(2008) “Will the U.S. bank recapitalization succeed? Eight lessons from Japan”, NBER Working Papers 14401, National Bureau of Economic Research.

From the Japanese experience it come off the effects of government interventions, by identifying the characteristics of corporate customers of banks that have received support. According to the authors Giannetti, Simonov (2009) the effects of the state interventions are found on bank customers, as follows:

- recapitalization increases the amount of lending to bank customers, particularly if they are dependent on bank financing;
- recapitalization has similar effects both if the bank received government support or by private investors;
- the effects are statistically significant, but economically there is a wide debate;
- after the announcement of the recapitalization, the bank's client companies value increases from 1 to 9%;
- following recapitalization, there can be noticed an increase of the volume of loans granted to existing customers, but limited effects on the economy;
- only companies that are heavily dependent on bank financing invest more compared with firms that do not benefit from the recapitalization of their banks.

To sum up, the Japanese lesson can be summarized in the following four strategies of government policy: asset management companies, recapitalization programs, mechanisms to deal with bankruptcies and Takenaka plan. Takenaka Plan, adopted in 2003, imposed a series of measures such as:

- a more rigorous assessment of bank assets;
- a comparative approach of banks to classify loans;

- publication of the discrepancies between public evaluations of banks and the Financial Supervisory Authority;
- prohibition of unrealistic data reporting by banks;
- imposing plans to recapitalize banks.

After the adoption of the plan, five banking groups have been recapitalized, the result being that, in the Japanese banking system, the banks' capital has increased by 15 billion yen in the period 2003-2007 (see Table 3).

Capital in the Japanese banking system (trillion yen)

Table 3

Data	Official core capital	Capital held by the government	Bank assets	Estimated under-reserving
March 1996	27.6	0	846.5	Na
March 1999	33.7	6.3	759.7	4
March 2002	30.2	7.2	756.1	6.8
March 2003	24.8	7.3	746.3	5.4
March 2004	29	8.9	746.7	5.7
March 2005	31.4	8.1	745.9	6.9
March 2006	37.3	5.2	766.9	8.3
March 2007	40	3.5	761.1	9.4
March 2008	34.8	3.1	780.7	10.2

Source: Takeo Hoshi & Anil K Kashyap, 2008. „Will the U.S. bank recapitalization succeed? Eight lessons from Japan”, NBER Working Papers 14401, National Bureau of Economic Research.

2.4. Cost of public funds

Public funds used to provide financial assistance to the credit institutions is a highly debated topic in the context of the banking crisis, and especially in the context of US Treasury plan, which had to pay \$ 700 billion to purchase assets with fair value of \$ 200 billion. The decision to provide liquidity to the market, at any price, from public money, is widely criticized. According to some authors (Blanchard, 2008, Bebcuk, 2008) it is necessary to redefine the governmental action plan, on the basis of three elements:

- purchase of toxic assets at fair market price;
- respect for market discipline and ensuring fair competition between market participants;
- reduction of public funds provided to banks in order to increase capital, by offering subscription rights attached to the new securities issued to existing shareholders.

On that subject, there are notable studies (Andrews, 2009) made on the securities issued by governments in different countries (Croatia, Bulgaria, Estonia, Finland, Hungary), in order to attract funds for bank restructuring. The bond issue, under certain technical conditions, was a solution to provide bank restructuring since the early '80s. For the current crisis were made estimates by the IMF, but also by some authors that have extrapolated the conclusions drawn from previous crises (Reinhart, Rogoff 2009). After the IMF estimates, G12 countries would have to issue securities worth \$ 10,239 billion to cover the cost of the crisis (Table 4).

The cost of the crisis, estimated by IMF (billion \$)*Table 4*

Country	GDP (estimation 2008)	Forecasted deficit (%)	Amount of securities to be issued
Australia	1069	-	278
Canada	1564	14%	219
France	2978	21%	625
Germany	3818	14%	535
Italy	2399	28%	672
Japan	4844	28%	1356
Mexico	1143	6%	69
Spain	1683	6%	589
U.K.	2787	29%	808
U.S.	14330	34%	4872
North Korea	858	13.98%	120
Turkey	799	12%	96
Total	38272	27%	10239

Source: CIA World fact book.

According to the authors that have extrapolated the correlations obtained for the Asian crisis, the real cost of the current crisis will be \$ 15,000 billion in the case of favorable predictions and \$ 33,000 billion in the pessimistic scenario.

Estimation of the crisis cost (billion \$)*Table 5*

	Estimated deficit	Securities issued
IMF's estimation	27%	10239
Rogoff's estimation, optimistic scenario	40%	15309
Rogoff's estimation, pessimistic scenario	86%	33029

According to these estimates in the G12 group, crisis absorbs 1/3 of the savings, given that they are \$ 100 trillion. We can depict the extent to which IMF's estimates are consistent with the ones of the national authorities by analyzing the case of the UK. In this country, government interventions in the year 2008 were of 379 billion pounds, of which 55 billion pounds to recapitalize the banks, total assets being of 8,000 billion. The cost of the crisis in the UK, taking into account all forms of government intervention, was 26.7% of GDP in the year 2008, falling within the estimated average for G12 countries.

Conclusions

Although at the conceptual level, government interventions to save banks, according to the principles of „too big to fail” or „too many to fail” is a form of manifestation of moral hazard, in practice there are some situations that require state intervention. A high concentration of the banking sector, the connections between domestic and foreign financial institutions, costs of bankruptcy of a large bank operating across borders, are just some examples that predispose to the rescue operations of credit institutions with public funds.

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FINANCIAL MEASURES RESPONSES TO THE GLOBAL ECONOMIC CRISIS

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***Abstract.** A specific risk of this period is liquidity risk arising from inexistence of adequate management. A new risk arises from financial measures against the effects of economic worldwide crisis. These measures are dedicated to mitigate the crisis risks but, they may become a real challenge for companies and individuals caused by new competence needed. As a conclusion, the topic of risks in international assignments is becoming of greater importance in the framework of new business environment (for example: subprime loans or financial instruments transactions such as Mortgage Backed Securities insufficient guaranteed) and from general point of view is going to be a major problem for each company and individual involved. Another risk specific to the current situation is generated by anti-crisis measures adopted by governments and companies. Responses from government authorities, although meant to counter negative economic effects, can also represent challenges for economies. This paper focuses on these anticrisis measures that can be separated into two categories: fiscal measures and corporate measures.*

Keywords: risk; liquidity; crisis; financial measures; responses.

JEL Code: H3.

REL Code: 8K.

1. Introduction

Contemporary economies have met risks that are already classics and challenges caused by globalization, cross border transactions, mergers and acquisitions, fierce competition and rapid economic, social and political changes. More recently, the risks attached to the financial crisis as both causes and effects, represent ever more challenges. Thus, all companies and employees and audit firms must keep up, must improve their performance based on risk management. Given this environment of risks and opportunities, anti crisis measures are equally necessary and challenging. This research compares the anti-crisis measures taken by 12 different countries selected based on size, economic development and geographic positioning. Information is gathered from public, government sources. This paper's contribution to similar literature is that it shows the nature of these measures and separates them into fiscal and corporate categories.

2. Anticrisis financial measures

Countries worldwide are taking steps to counter the effects of the global financial and economic crisis. From a tax and fiscal perspective, the approaches taken thus far range from formal „stimulus” packages, to ad hoc measures, to temporary provisions, to accelerating the introduction of planned measures or alternatively scrapping them altogether. The 2009 budgets/finance acts of a number of countries have served as the platform for many provisions – in some instances, the measures specifically target the economic downturn and, in others, they incidentally mitigate some of the effects of the crisis. It appears that, in some cases, planned measures that have gone into effect were not drafted to address the challenges, but, because of the urgency of the situation, have advanced through the legislative process more expeditiously than they might otherwise have done. The following provides a high level summary of responses, through tax and fiscal policies, of 12 countries worldwide (including, Romania) to tackle the crisis. The focus is on implemented corporate, individual income and indirect tax measures, other types of fiscal measures and corporate governance, and proposed

Country	Anti-crisis financial measures	Destination and nature of measures
	<p>employers.</p> <ul style="list-style-type: none"> - A tax credit would be granted (at 21%, up to EUR 147.50 (or EUR 172 for a portable computer)) for the purchase a "pc package" under certain conditions. 	
Bulgaria	<ul style="list-style-type: none"> -A five-year tax corporate income tax holiday for investments in distressed regions (still to be approved by the European Commission) was recently introduced. -Individual tax relief s granted for young families paying interest on home loans. -Some administrative VAT relief has been granted (e.g. reverse charge instead of VAT registration and effective payment/refund claims and changes to the grounds for electronic invoicing without an electronic signature). 	<p>Corporate income tax changes</p> <p>Individual income tax changes</p> <p>Indirect tax changes</p>
Italy	<p>The government approved a decree in January 2009 that addresses the financial crisis, the main features of which are as follows:</p> <ul style="list-style-type: none"> -It introduces the possibility to revalue (or step up) the book value of real estate assets either for book purposes only or to tax purposes as well; and -It makes it possible to realign the additional book value attributed to trademarks, goodwill and other intangible assets in certain cases and reduce the amortization period of such assets by paying a substitute tax. -Another decree issued in February has gone into effect, even though it is still subject to Parliamentary approval. Under that decree, with effect from the tax year in progress as at 31 December 2008, a flat amount of 10% of the IRAP (regional tax on productive activities) charge is deductible from taxable income for corporate income tax purposes. -A decree issued in November (discussed above) provides that compensation paid in 2009 for overtime work and for work related to increases in productivity is subject to a 10% tax up to EUR 6,000 gross. The tax is applied by the employer to employees who did not earn more than EUR 35,000 in 2008. 	<p>Corporate income tax changes</p> <p>Individual income tax changes</p>
Czech Republic	<p>The corporate income tax rate reduced from 21% to 20% as from 1 January 2009.</p> <p>Advance income tax payments for self-employed individuals and companies with up to five employees (as from 1 January 2009) have been cancelled on a temporary basis.</p> <p>The rate of health (sickness) insurance for employees and employers is reduced as from 1 January 2008.</p> <p>The following measures have been proposed and are in various stages of the legislative process:</p> <ul style="list-style-type: none"> The social insurance rates were reduced for low-income employees. Tax depreciation will be calculated on a monthly basis for certain assets (e.g. computers, cars, machines, etc.) acquired between 1 January 2009 and 30 June 2010. There will be a charge in the tax deductibility of lease payments for selected assets (e.g. computers, cars, machines, etc.) acquired from 1 January 2009 to 30 June 2010. There will be faster VAT refunds taxpayers submitting electronic tax returns. The VAT input deduction for passenger cars will be extended. 	<p>Corporate income tax changes</p> <p>Individual income tax changes</p> <p>Proposed fiscal and corporate measures</p>
Finland	<p>The 2009 budget increases and expands the scope of the household credit, and includes measures that were introduced for reasons other than the economic crisis (e.g. lowering the rates of the national income tax table, making an inflation adjustment to the bracket amounts, a new employment</p>	<p>The 2009 budget increases and expands the scope of the</p>

Country	Anti-crisis financial measures	Destination and nature of measures
	<p>income deduction and increasing the pension income allowance). The 17% VAT rate on foods is reduced to 12%. Finland adopted a stimulus package on 30 January 2009 that focuses on bolstering employment, education and research. Included in the proposals are the following: A reduction in social security contributions paid by the employer would apply. There would be a doubling of the depreciation rates for new factories and equipment purchased in 2009 and 2010. Authorization would be available for up to EUR 50 billion in state bank guarantees. An additional EUR 39 million of state funding for R&D is proposed. The national pension fund may invest in the commercial paper of Finnish companies, provided such companies are stable and meet certain size requirements. For the housing sector, the government will subsidize interest on the construction of rental units and increase state aid for repairs and new housing construction.</p>	<p>household credit, and includes measures that were introduced for reasons other than the economic crisis Proposed fiscal and corporate measures</p>
France	<p>As part of a recovery plan announced in December 2008, companies may request an immediate refund of several tax receivables. -All companies can request the tax administration to reimburse the tax credit for R&D expenses incurred in respect of tax years 2005, 2006 and 2007, and in certain cases, the 208 tax credit can be immediately reimbursed. -Companies that close their financial year before 30 September may request an immediate refund of excess corporate income tax if, based on their quarterly payments, they overpaid the annual tax due. -Between 1 January 2009 and 31 December 2009, companies are entitled to a refund (instead of the generally applicable tax credit) arising from the carry back of losses. -Investments made or acquired between 23 October 2008 and 31 December 2009 will benefit from a tax relief from business tax (i.e. they will not be included in the tax base) for the entire term of the investment. Companies whose business tax is already capped can obtain relief equal to 3.5% of the depreciation taken on the relevant assets. -As from 1 January 2009, qualifying small and medium-sized enterprises (SMES) may temporarily take into account losses incurred by their foreign branches and subsidiaries in determining taxable income in France. This temporary deduction provides a cash flow advantage for the French company. The losses will be recaptured once the foreign entity returns to profitability or, at the latest, in the fifth fiscal year following the offset. -The French recovery plan initially put emphasis on investment and companies, but subsequently decided to add measures in favor of household consumption. The president has announced that taxpayers who are subject to the first bracket (income taxable at 5.5%) of the personal income tax progressive schedule will be exempt from paying the two last estimated tax payments (i.e. exemption of 2/3 of the annual income tax). -VAT refunds for all companies will be monthly rather than quarterly, as from January 2009. -The annual minimum lump-sum tax will be progressively phased out. -Restrictions are introduced on the deductibility of golden parachutes (premiums paid to directors as a supplement to statutory redundancy payments) and retirement payments paid to directors of listed companies when their mandate is terminated. Golden parachutes and retirements</p>	<p>Major fiscal proposed measures with effects in results and behavior of economic agents</p>

Country	Anti-crisis financial measures	Destination and nature of measures
	payments will be deductible for corporate income tax purposes only up to a set amount.	
United Kingdom	<p>The following measures have been introduced:</p> <ul style="list-style-type: none"> -Trade losses may be carried back for three years (previously one year). The carry back to earlier periods is capped at GBP 50,000, with the one-year loss carry back unlimited. -Business may defer their corporation and other tax payments providing certain hardship criteria are met (i.e. demonstrate a genuine need for deferral). -A temporary reduction in the standard rate of VAT to 15% was introduced as from 1 December 2008. The rate will return to its original level of 17.5% from 31 December 2009. -A preparatory document for the 2 April 2008 G20 summit suggests that the government may consider an additional fiscal stimulus in the Budget 2009-possibly in the form of further tax cuts. -The proposed 1% increase in the small companies' rate of corporation tax from 21% to 22% was deferred by one year from 1 April 2009 to 1 April 2010. 	<p>Major fiscal proposed measures with effects in results and behavior of economic agents</p> <p>Deferred measures</p>
Romania	<p>A small number of tax measures to address the global financial crisis have been identified in early 2009 by published studies by Deloitte:</p> <ul style="list-style-type: none"> -Beginning in 2009, dividends are exempt from the tax on dividends if distributed and reinvested in the distributing company's own activity, or in the share capital of another Romanian legal entity, for the purpose of securing and creating new jobs. -Also starting 2009, an additional 20% deduction is applicable for qualifying R&D expenses, and accelerated depreciation applies to equipment used for R&D activities. -As from 1 January 2009, interest income derived from term deposits and/or other saving instruments are deemed nontaxable income when derived by individuals. If such individuals are resident in non-EU member states, such income is exempt from withholding tax in Romania. <p>During year 2009 was introduced flat tax (minimum) to companies, tax has been criticized by business. Towards the end of 2009, politicians and governments have proposed various measures but have not resulted in dismissal laws because the failure of government and presidential elections.</p>	<p>During year 2009 was introduced flat tax (minimum) to companies, tax has been criticized by business.</p>
Hungary	<p>-The Prime Minister announced a series of tax proposals that would shift taxation from income to consumption to address Hungary's economic slowdown. It is proposed to increase the corporate income tax rate from 16% to 19% and abolish the 4% solidarity tax on business, resulting in a net reduction in the corporate tax rate of 1 percentage point. Payroll taxes generally would be reduced. Excise taxes on fuel, cigarettes and alcohol would go up and the VAT rate would increase from 20% to 23%. Reacting to the global financial crisis, Hungary withdrew measures to abolish restrictions on interest deductions and an extension of the transfer pricing rules.</p>	<p>Proposed changes measures for tax relaxation</p>
United States	<p>The United States has enacted a series of measures to bolster its financial markets and stimulate its economy. The most recent and broadest in scope, the American Recovery and Reinvestment Act of 2009, signed by the President on 17 February 2009, seeks to address the current economic challenges of the U.S. through a combination of direct federal spending, aid to the states and localities and USD 326 billion in tax relief. The Act's energy tax provisions begin to implement a „green“ economic recovery plan that</p>	<p>Changes in income tax Individual income tax credit</p>

Country	Anti-crisis financial measures	Destination and nature of measures
	<p>includes considerable renewable energy tax incentives and spending initiatives. Additional stimulus measures are expected in the President's first budget proposal to Congress on 26 February 2009. Highlights of the American Recovery and Reinvestment Act of 2009 are presented below.</p> <ul style="list-style-type: none"> - The Act extended the carry back period for net operating losses for small business with gross annual receipts of USD 15 million or less from two years to three, four or five years. - The Act extends for one additional year the 50% bonus depreciation enacted in 2008. Under the bonus depreciation rules, 50% of the basis of qualified property may be deducted in the year the property is placed in service and the remaining 50% recovered under otherwise applicable depreciation rules. - The Act allows some business taxpayers to elect to defer cancellation-of-debt (COD) income when the taxpayer or a party related to the taxpayer repurchases a debt instrument issued by the taxpayer. The deferral period is five years for a reacquisition of a debt in 2009 and four years for those in 2010. After, 20% of the COD income would have to be included in each of the next five taxable years. - The Act extends for one additional year the special provisions (enacted in 2008) allowing corporations to accelerate their use of a portion of their carry forward alternative minimum tax (AMT) and research credits in lieu of claiming 50% onus depreciation. - The Act nullifies (subject to certain grandfathering relief) prior guidance that provided relief from built-in loss (BIL) rules for losses on loans or bad debts of banks after an ownership change. However, the Act grants relief to other taxpayers, so that the BIL limitation will not apply to certain ownership changes pursuant to a restructuring plan required under a loan agreement with, or a commitment for a line of credit from, the Treasury Department under the Emergency Economic Stabilization Act of 2008. -The Act modifies the New Markets Tax Credit by increasing to USD 5 billion (from USD 3.5 billion) the total amount of credit allocation awarded for calendar years 2008 and 2009. - The Act increases (for individual investments) the percentage exclusion for gain on the sale or exchange of qualified small business stock held for at least five years from 50% to 75% for stock issued after the date of enactment and before 1 January 2011. - Other provisions provide incentives to hire unemployed veterans and disconnected youth, delay implementation of withholding on payments to government contractors, provide parity for qualified transportation fringe benefits, extend certain enhanced small business expensing, decrease the required estimated tax payments for certain small business owners and temporarily reduce the built-in gains holding of S corporations. - Under the Making Work Pay Credit, the government will provide an estimated USD 116 billion in tax relief over the next two years. The credit is equal to the lesser of USD 400 for individuals and USD 800 for couples or equal to 6.2% the taxpayer's earned income, and is refundable even if the taxpayer otherwise has no income tax liability. The credit phases out as an individual's modified adjusted gross income increases and is reduced by the amount of any economic recovery payment received by the taxpayer from the Veterans Administration, Railroad Retirement Board and the Social Security Administration, and by a temporary one-time refundable credit paid in 2009 to certain government retirees. The provision applies to taxable years beginning after 31 December 2008, but terminates as of 31 December 2010. 	<p>Measures of social support</p> <p>Other tax incentives and corporate management</p>

Country	Anti-crisis financial measures	Destination and nature of measures
	<p>-The Act provides another temporary patch to the individual AMT at a cost of nearly USD 70 billion. For families, the AMT patch will eliminate a potentially substantial tax increase by raising 2009 exemption amounts to USD 46,700 for individuals and USD 70,950 for joint filers.</p> <p>-The Act also provides a deduction for state sales tax and excise tax on purchase of certain motor vehicles; extends the first-time home buyer credit increases the ceiling to USD 8,000 and removes the repayment requirement; expands the earned income tax credit for low and moderate-income wage earners; increases the fully refundable child tax credit; provides a simplified education credit of USD 2,500 per year for the first four years of higher education expenses (refundable up to 40%) for 2009/2010; and exempts from tax up to USD 2,400 of unemployment benefits for 2009.</p> <p>-The Act includes a number of provisions designed to enhance the ability of state and local governments to issue tax-favored bonds to finance infrastructure and other economic development projects. These bonds fall into two broad categories: (1) tax-exempt bonds, the interest payments on which generally are excluded from the bond holder's gross income, and (2) tax-credit bonds, where interest effectively is paid by the federal government in the form of a nonrefundable tax credit that can be claimed by the bond holder.</p>	
China	<p>An investment package valued at CNY 4 trillion (USD 580 billion) was announced in Nov2008 and the State Council of China recently approved a series of industry-specific stimulus plans covering such sectors as auto, steel, textile, machinery, ship building, information technology, light industry, petrochemicals and nonferrous metals. Financial and tax measures have been issued in detail under the policy framework to provide further implementation guidance with some highlights as below.</p> <p>-To stimulate real estate transactions, the deed tax rate applicable to all first-time individual purchasers of ordinary residential property is temporarily reduced to 1% and individual home sellers/purchasers will be exempt from stamp duty and land appreciation tax. Local governments have also offered incentives or subsidies to boost their real estate markets.</p> <p>-The amended provisional VAT rules that came into effect on 1 January 2009 rolled out a VAT reform on a country-wide basis to establish a consumption-based VAT system that should cut business costs by up to CNY 120 billion. The most fundamental change is that VAT incurred on fixed assets may now be recovered. Also, the VAT collection rate for small-scale tax payers was reduced from 6% (manufacturing or other business) or 4% (commercial business) to a uniform 3%.</p> <p>-Our upward adjustments of the export VAT refund rates were announced in 2008, covering such products mechanical and electrical products, textile and garments, etc., which accounted for more than 50% of the total goods listed under China's tariff system. The latest upward adjustment was announced in February 2009, raising the VAT refund rate for textile products from 14% to 15%.</p> <p>-Customs announced adjustments to the Prohibited Catalogue and Restricted Catalogue for Processing Trade Relief (PTR) with effect from 1 February 2009. More than 1,700 tariff codes that previously were listed in the Prohibited or Restricted Catalogue after the adjustment. The removal, together with a relaxation of deposit requirements on certain PTR business announced in November 2008, reduces import tax costs and eases the cash flow burden for PTR enterprises.</p> <p>-Local governments are providing incentives for specific targets. Shanghai</p>	<p><i>There are the most important measures for stimulate the results and behavior of economic agents to overcome the effects of financial crisis</i></p>

Country	Anti-crisis financial measures	Destination and nature of measures
	issued a notice granting cash benefits to regional headquarters incorporated in Shanghai. Local governments in Southern China have targeted measures to reward PTR enterprises (which are suffering a decline in export sales) for significantly expanding domestic sales.	

Conclusions

With respect to the challenges brought by financial measures - A specific risk related to the current economic crisis period is the risk induced by the measures responding to the crisis, implemented by government and the actual audit clients. Side effects of the crisis though meant to limit the negative economic effects, may constitute new challenges for audit firms. The challenge is to design and implement procedures for rapid response to risks under the risk typology which is new, changes are quick and probability and impact are difficult to assess.

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IMPLICATIONS OF THE CURRENT CRISIS ON LABOR MARKET IN ROMANIA

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***Abstract.** Global markets and transnational companies tend to be reflected in an open global market. The more so, in these conditions, economic and financial developments in a country influence and are influenced by developments in other countries. Romania's labor market is affected by the current economic and financial crisis, which is manifested by the rising unemployment as a result of reducing the volume of activity of many businesses. That is why, overcoming the crisis calls for measures and policies aimed at creating new jobs and taking into account the trends in the country's aging population, migration of young specialists, temporary leave to work abroad.*

Keywords: financial crisis; unemployment; work abroad; active employment policies.

JEL Codes: E24, J21, J61.

REL Codes: 8G, 10G, 12I.

We are living in an era when most of the social and economic life is determined by global processes, in which the cultures, economies and national borders have begun to disappear. Globalization brings a wave of liberalization of capital flows, investment, trade and labor, in the context of intensifying international competition. This makes that the economic developments in a country to influence and be influenced by economic developments in other countries. The more the economic or financial crisis will be felt worldwide.

Whether it is a financial or an economic crisis (caused by financial, political or social reasons), we can talk about installing the economy of a given instability, uncertainty and insecurity about the future. There was a significant decrease in the volume of transactions on the stock exchange, the emergence of mistrust in the financial system, a disorder of market mechanisms.

The crisis has caused and continues to cause effects in different economic sectors, these include job losses. As a result of serious global economic problems, the crisis has spread rapidly in all areas. Currently, many companies from around the world have announced restrictions on the activities as a measure to adapt to turmoil in the market, something which leads inevitably to a large number of layoffs and, in some cases to reduce wage remuneration.

On April 22, 2008 agency Standard & Poor's has published an analysis that Romania, along with Lebanon and Turkey are among the countries most vulnerable to the effects of US mortgage crisis.

Expanding the global financial crisis is based on three effects:

- the contagion effect – refers to imbalances spread from one region to another (especially in the globalized world);
- the effect of cumulative causation – which means that the imbalance occurred in an area overlaps imbalances in other areas;
- the effect of „Flock” – hedge fund managers leave in the same time territories whose scope for gains are reduced.

The signs that showed the beginning of financial crisis in Romania concerned: the depreciation of the leu exchange instability, increased debt, increased current account deficit amid deteriorating trade balance and falling foreign investment, "freeze" credit.

Current imbalances in the labor market

On the labor market in Romania there were some imbalances which were exacerbated by the financial crisis. They concern:

- *labor resources*, which over time have evolved divergent, with a downward trend in recent years due to falling birth rates and aging population;

- *Romania's demographic situation*, both now and in coming years, according to forecasts is a decreasing trend, which will further affect the country's labor resources. Romania's population is declining and that all estimates on its evolution in the future, it will continue to decline, at least until the year 2050. Forecasts show that in the year 2050, 100 active citizens, will be 149 active persons and the population over 65 years will exceed 5 million inhabitants, compared to 3 million, as it is currently. It will have a special impact and decrease the increasingly strong youth population, aged 3-20 years, which will be reduced to 5 million people, as it is currently, at 2.7 million in the 2050.

In time, the effects felt, as a result of population decline will be to specific economic problems, first by lowering labor and on the other hand, insufficient economic resources necessary to support the elderly. A few children today means that future taxpayers will have less income and thus lower or higher taxes.

- tensions in the labor market is interfering with *the legislative-institutional tensions*, have negative consequences in the medium and long term. While the new labor legislation has been improved, in practice it proves insufficient and inconsistent in relation to labor market dynamics. Romania's labor market does not yet have all the legal requirements designed to prevent blockages, distortions or failures and to provide training and its normal functioning. This is in relation to the state of other markets, notably markets and monetary and financial assets, labor market is a derivative.

- *the relation between employment, employees and retirees*, labor market affects the balance in a significant proportion, taking into account the principle that pensions are paid from contributions of those working. The ratio of average number of pensioners and unemployed, on the one hand, and employment and number of employees, on the other hand, expresses the pressure on revenue that is manifested by workers or the rate of dependency. This rate of dependence in Romania in recent years show an increasing pressure on the shoulders of working people, further increasing the number of pensioners (sometimes illegally) and aging. As it is known, in 1989, there were four employees in each pensioner, for today to arrive at a situation where every pensioner is less than one employee.

- the strategic partnership in the labor market is weak and lacking in *organizational matters*. Employment offices and training centers have the capacity to cover all aspects of demand and supply flows, mediation, training, retraining the workforce.

- the labor market in Romania does not face only macroeconomic failures, but also at the microeconomic level. Thus, collective bargaining appears to be an important institution in the labor market, where it is in harmony with trade union organization and harmony with employers.

- another problem facing the labor market in Romania is working to adapt supply to demand in terms of preparation and market needs. In this regard we are considering the degree of coverage of young people in education, educational level of population, *training in accordance with labor market needs*, training continues throughout the life.

- taking into account the current state of *labor efficiency* in Romania, much lower compared with the economically advanced countries, especially compared to EU countries, it must be concluded the need for sustained efforts, well-founded and promoted consistently to substantially increased labor productivity at all levels of manifestation (job, business, economic industry, social and economic sectors, national economy).

- another important aspect is the migration. It is taken into account both migration of gifted young people, in whose training it is invested, but from this investment often Romania

does not have any benefit as many of these young people are not going back to work in Romania. On the other hand, it is taken to account the large number of those who leave to work abroad temporarily, who affect the number of active population in our country.

The effects of the crisis

Nowadays the current tensions in the labor market have increased, affecting the structure and its mechanisms. *Work Demand has considerably decreased* due to reduction of investments, market exit or reduce the level of activity of enterprises, the decline of final goods. Reducing budget shopping has led many companies to produce less, to reconsider any expansion and to lay off a significant part of staff to minimize costs. This leads to *rising unemployment*, given that those working hardly ensure the pensions and welfare. Moreover, work supply offers important structural imbalances: occupational-professional, local, by age group, skill categories.

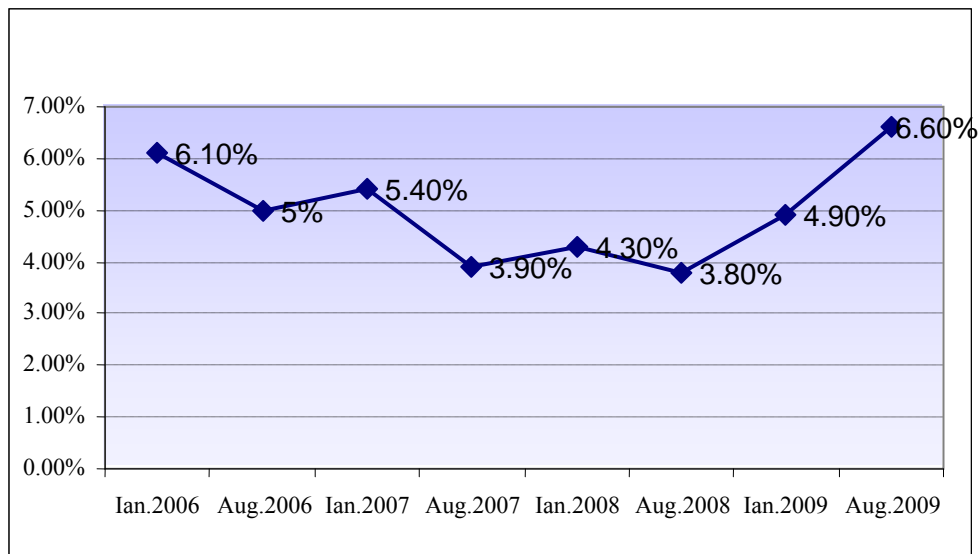
According to The National Institute of Statistics, the staff employed in the month of August 2009 was of 4.4807 million people, with 38.8 thousand persons less than in previous months. Compared to August 2008, the number of employees decreased in most areas of activity, the greatest reductions are recorded in manufacturing (-203.6 thousand persons) and construction (-63.3 thousand people). Also significant decreases were recorded in the areas of wholesale and retail trade, agriculture, mining, transport and storage, real estate. Increasing the number of employees was recorded in this period of health and welfare activities (+ 9.9 thousand people), public administration and defence (6.2 thousand people) and education (1.6 thousand persons).

So, the problem of employment under current conditions is a major one. As investment decline, creating new jobs is an unattainable goal, and this increases the unemployed. The situation is extremely delicate, and what remains to be done by governments is the practical implementation of monetary policy, fiscal and social so that the economic crisis to be braked.

According to data from the National Agency for Employment, registered *unemployed persons* at the end of August 2009 was of 601.7 thousand persons. Compared with August of 2008, the number of unemployed registered at the employment agencies was higher with 256.2 thousand people.

At territorial level, the number of unemployed rose in 38 counties and in Bucharest, the most significant increases are recorded in Vaslui (2958 persons), Dolj (2243 persons), Constanta (1539 persons), Harghita (1535 persons) and Alba(1422 persons). The number of unemployed decreased in three districts, namely: Dambovita (with 445 persons), Maramures (with 357 people) and Ilfov (by 34 people).

Unemployment rate registered in August 2009 was 6.6% compared with the total working population (3.8% in August 2008). The unemployment rate for women was 0.6 percentage points lower than that recorded for men (6.3% vs 6.9%). This trend of the unemployment rate in recent years can be seen in the chart below. If in January 2006, unemployment reached 6.1% value in the coming months, until August 2008, although it has fluctuated, showed a downward trend due to growth, business development of this third-party period (mainly on account of increased consumption and ease of access to credit). Since August 2008 there is a significant increase in the rate to around 6.6% in August 2009.



Source: Monthly Statistical Bulletin, 2007-2009, The National Institute of Statistics, www.insse.ro

Figure 1. Unemployment Rate (Jan.2006-Aug.2009)

Job losses affect capital-intensive sectors, sectors with long cycle of production and providing durable products (eg automotive industry). Those hardest hit by this crisis are the also first who fed it in order to offer as many financing solutions to their customers: commercial banks, investment banks, investment funds and strategic investors. When they withdrew financial support and become more attentive to the conditions of the credit the economy started to show the first signs of fatigue and adjustment. The policy of encouraging consumption through quick and easy access to consumer credit and the mortgage has led to increased activity in some sectors such as construction machinery, real estate, construction and building materials. There was economic growth based on consumption financed by debt.

But when the economy showed signs of change, rising interest rates, consumer behaviour has changed, realizing that their incomes can not support the same type of consumer. Thus, there is a liquidity crisis that has widened further the problem at those without financial resources attracted from the market are incapable of conducting commercial operations.

Current global recession puts its imprint on *the population working abroad* in the sense that the number of leave and earnings sent them into the country recorded a decline. According to a study by the Migration Policy Institute a few people leaves to work abroad and most of those who are already working abroad remain in place. Immigrant workers are at greatest risk of losing their job than local workers, because they often work in industries most exposed to the consequences of recession, in construction and in hotels. As such, they send less money home to help their families than before the crisis. Most of the money sent by workers abroad to their families bound for current expenses such as maintenance, food, clothing, and does not contribute to investment, which would support the development and healthy economic growth.

Regarding the number of *Romanians that leave to work abroad*, officials do not have complete data. In fact, no Ministry of Interior or Ministry of Labor, Social Solidarity and Family, or the National Statistics Institute have developed appropriate methodology for tracking the process and can provide general information in this area. As a result, the Romanian media are conveyed very different data on the scale of the movement of Romanians in search of jobs abroad, especially in EU countries.

Between 8% and 10% of Romanians aged 15-64 years are leaving to work abroad, thus about 2.7 million people. In this regard, the sociologist Dumitru Sandu pointed out that Romania should follow in the migration, namely: policies that are focused on working abroad, the immigration and migration policies and development and should be thought the issue of migration on regional development. Professor Dumitru Sandu believes that „Romania is missing the connection between migration policy and development policy. There, in Romania, deficit in three directions, namely normative deficit, vision and data.”

In terms of revenue received by the Romanians working abroad, this phenomenon is positive, but the long term negative effects can occur in the late development on local area.

Also, despite the declining earnings faced by most foreign workers, in most cases there is a widespread tendency to return to their home country. This shows that for some of these conditions at home would be even worse and would be more difficult and more expensive abroad to return later, after the crisis. This is especially true for illegal immigrants.

This analysis of the labor drain problem in Romania must not lose sight of some characteristics of those who leave to work abroad.

It is known that many *gifted young people leaving the country*, built an enviable career in the West and that very few return home. In this respect Professor Florian Colceag postulates: „There is an unbalanced state of needs and local resources, which makes us give all we have abroad, because the product that we can do it well it is not eaten in the country. And for that reason we have so many functional imbalances in the economy, not another area in which to do very well some calculations on material and human resources and needs in developing long and short term programs ... Peter Tutea was right, for God is not geniuses, working really not with genius, but with people and for the efforts made and to be made to start from the premise that respects the divine nature of man and not man–cargo, man consumption. *The creative Man, the capable man able to develop their potential to be promoted.*”

A special analysis is required also in *family workers in rural households*. It is necessary to take into account that much of the temporary leave from work abroad are the family workers in rural households, whose income and/or pensions are much lower than average wages on the Romanian economy, often less than even minimum wages.

Thirdly, it requires some clarification and the fact that many of those going to work out are *pensioners*. At first glance, the situation is very normal. Every pensioner is entitled to have temporary work, if health allows and it is motivated to do so. But it is known that about one million pensioners (so, 20% of them) have achieved this status and corresponding rights to request to be fulfilled before the legal retirement age and, therefore, not be made the number of years of work required by legislation. The question is, how many of the nearly one million pensioners „young” are gone abroad to work. To the extent that the country is offering opportunities to work and earn income to provide them a decent living, moving abroad in search of jobs appears as the only alternative for some retirees, the unemployed and even for many of those who have a job in the country.

In conclusion, we can say that the migration emphasizes decline the active population of Romania. In addition, changes in external migration is unpredictable today because it is directly dependent on economic and social development of Romania, the immigration policies of developed countries, the development of worldwide recession.

Therefore, the management of population and employment issues in our country will have to take into account firstly the indestructible unity of labor market mechanisms and responsible involvement of the public powers, the rule of law.

It is very important to take into account the EU enlargement process on the labor market in Romania, such as: increased labor migration into the European Union, increasing the requirements for a qualified workforce, greater use of information technologies, the need to create a more flexible workforce to participate in continuous professional training etc. All

this requires pay special attention to the education system and develop employment policies aimed at full employment and efficient workforce, in line with the existing trends in EU.

These employment policies must take into account and other macroeconomic policies adopted so as to pursue active measures aimed at creating new jobs, especially in areas that could be developed in our country, such as agriculture, infrastructure development, environmental protection. Active measures should be within the trends of our country: aging population, evolution in the dynamic participation in the work of various socio-professional categories, migration of young specialists, temporary leave to work abroad.

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EFFECTS OF FINANCIAL CRISIS ON THE MACROECONOMIC INDICATORS AND POSSIBLE SOLUTIONS TO REDRESS FOR ROMANIAN ECONOMY

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***Abstract.** Romania, as a country which adhered to the European Union just from two years ago, being including in a economical world cycle, has been more than ever exposed to the effects of this financial crisis. This issue tries to focus on the effects of the financial crisis on the main macroeconomic indicators in Romania such as: the rate of economic growth, the annual inflation rate, the budget deficit as percent from the GDP. We also try to propose some appropriate monetary, fiscally and budgetary policies in order to redress the Romanian economy and in the same time trying to maintain the conditions imposed by the International Monetary Fond for Romania.*

Keywords: financial crisis; macroeconomic indicators; Romanian economy; global performance.

JEL Codes: B22, E44, F15.

REL Codes: 8A, 8B, 8J, 8K.

1. Introduction

We are now witnessing the first crisis of the 21th century, the so called sub-prime crisis that is the biggest post-war financial crisis. This one brought with it situations characterized by a pronounced instability that are accompanied by volatility and uncertainty in growth.

In our opinion financial crisis is only one form of manifestation of the economic crisis and reflects a mistrust in the financial system, a decrease of the level in the main macroeconomics indicators: Gross Domestic Product, inflation rate, economic growth ratio, the public deficit.

2. Data basis and methodology

The data used for pertinent analyses about the Romanian economy under the financial crisis will be obtained from: the Reports of the National Bank of Romania, the Statistical Year-Book of Romania and from other data published by the National Institute of Statistics, the current legislation, reports from different international organizations.

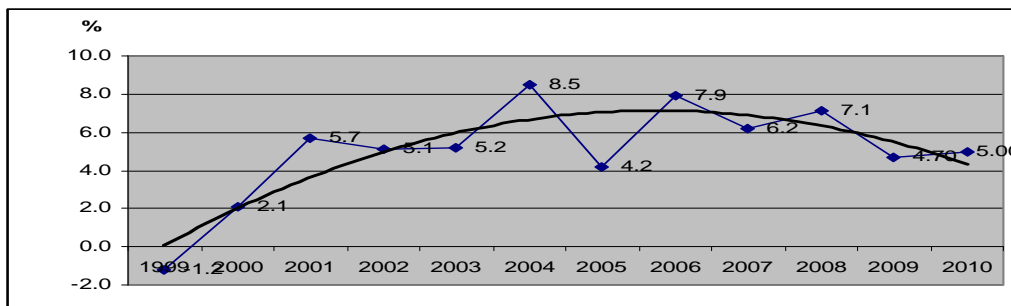
The methods used for a successful achievement of our goal will be: comparisons in time and space; methods of analysis of macroeconomic indicators; extrapolation and trends in order to point out tendencies.

3. Romanian economy under the financial crisis, reflected in macroeconomics indicators

The first months of 2008 marked the decline of the Romanian economy against the backdrop of financial crisis started in the US that was felt in Romania in a pronounced way since the end of 2007. Due to unfavorable conditions and to the entry into recession of the major economies in the European Union, Romania felt a sharp decrease in economic activity. The main engines of economic growth in recent years, namely consumption, construction and industrial production, are strongly affected by the credit crisis against the backdrop of worsening credit conditions and difficult access to credit.

The evolution of the activity of Romanian economy from January 2007 until October 2009 can be reflected with some very relevant macroeconomic indicators for the status of an economy, such as: *the rate of economic growth; the public deficit; the exchange rate of national currency; the inflation rate.*

a) *The Romanian rate of economic growth is presented as below:*

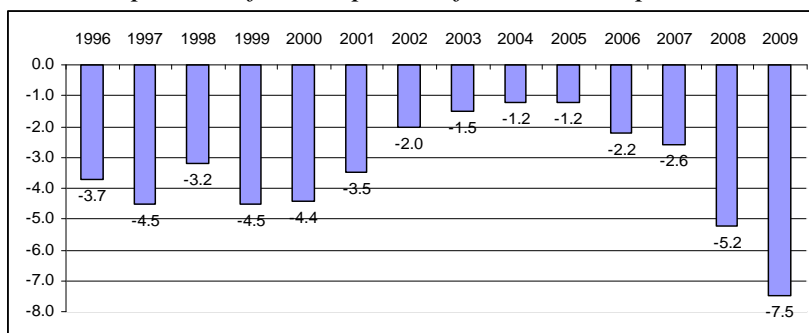


Source: Eurostat.

Figure 1. The evolution economic growth rate in Romania

If we look at the trend of economic growth it is notable that the highest values are reached in 2004, 2006 and 2008. Values for 2009 and 2010 are estimated. The situation is getting worse so rapidly that it could be that these estimates aren't too relevant, but it is observed the decreasing trend that probably will most likely be somewhere below 4% for the next years.

b) *The Romanian public deficit, as percent from GDP, is presented as below:*



Source: Eurostat.

Figure 2. The evolution of Romanian public deficit as percent from GDP

During 2007, Romania's budget deficit was within the framework forecasted by the EU. Starting with 2008, the situation changed when, due to an irrational budget policy, there was reached a huge deficit of 5.2% of GDP making Romania the country with the highest deficit from the group of analyzed countries. Bulgaria has the most favorable position, as far as this indicator is concerned, recording an important excedent.

The forecasts of the European Commission from the beginning of 2009 are not very optimistic regarding the budget deficit, which is predicted to reach an extremely critical level of 7.5% of the GDP, taking into account that the maximum level accepted by the EU for its member countries is 3% of the GDP.

Within the current negotiation with IMF for the second half of the loan until the end of 2009, the IMF states that the institution maintains its targets of budgetary deficit for 2009 and 2010 of 7.3%, respectively 5.9% of the GDP.

c) The evolution of exchange rate EUR/EURO is presented as below:



Source: www.ecb.int

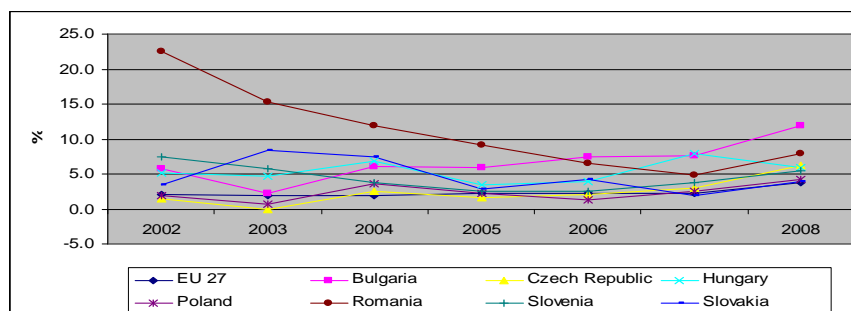
Figure 3. The evolution of exchange rate RON/EURO

The important rise in consumption was sustained by the increase in foreign currency loans, both in the case of companies and in the case of individuals, triggering a growth of the current account deficit. On the background of the degradation of financing access, the significant increase of expenses with crediting and also the decrease of direct foreign investment, Romania had problems with financing the current account deficit, reason why, in March 2009, Romania requested a 20 billion Euro loan from IMF. There is foreseen a current account deficit of 8.9% of the GDP for 2009 (BMI Romania Currency Forecasts, March 2009). For its balance, we will witness the depreciations of the national currency, a fact that will trigger an abrupt decrease of the imports and of the trade balance.

As we can see in the graphic forementioned, for the period immediately after the adherence it may be observed a very favorable trend of exchange rate, assisting to a systematic appreciation of the national currency during the first 8 months of 2007. Since August 2007 the general trend of the evolution of the exchange rate of national currency against the Euro is one of systematic depreciation until January 2008, reflecting a depreciation of the national currency, reaching 3.8 RON/EURO in this period. Then it follows a new cycle of relative stability in the evolution of exchange rate during the period between January 2008 and September 2008.

The exchange rate RON/EURO has started to deteriorate since September 2008, exceeding the threshold of 4 RON/EURO with the entry in 2009. According to BMI Romania Currency Forecasts for end of 2009 is forecast a rate of 4.5 RON / EURO, and for the end of 2010 a slight decrease to 4.4 RON/EURO. This forecast is based on the economic growth forecasted for 2009 of only 3.2%

d) The evolution of inflation rate in Romania comparing with the countries of Central and Eastern Europe, is presented as below:



Source: Eurostat.

Graphic 4. The evolution of the inflation rate in countries of Central and Eastern Europe

In close connection with the evolution of the exchange rate RON/EURO is the inflation rate. In Romania, the inflation rate reached, in 2007, its lowest level for the past 5 years, 5%. From 2008 the inflation rate started to rise, reaching at the end of 2008 the level of 8%, but the trend is still according with the developments made in the area of our country.

4. Conclusions

The economic-financial crisis is far from being over, on the contrary, it may worsen if the state will nor give up the flat rate tax and the increase of the VAT or the increase of the unique tax quota, taxes that lead to high inflation and fiscal offence and impoverish the population. The worsening of the crisis will be sustained by the fact that there is a lack of investments and debts are very high.

The economic issues of the country are related to the high private debt, the public debt estimated to increase with 50 billion lei under the circumstances in which investments are quite few and the industry is blocked. The number of unemployed individuals block the budget of social insurances. Each unemployed Romanian represents a 5000 Euro expense for the State.

Romania will receive the third and fourth payment of its loan from IMF, but it will have to reduce its budgetary expenses in order to reach the target of budgetary deficit. For this purpose, there is considered an increase of budgetary revenues, so that, in the present circumstances, there is not excluded the fact that the negotiations for obtaining the second payment from the IMF loan would also imply a series of surprises, among which the increase of taxes. The increase of the VAT with 2-3% is discussed to be applied starting from January 1st 2010 and the unique tax quota to increase from 16% to 18%.

We believe that the increase of the VAT with 3% would not lead to the expected increase of budgetary income, since we are at a point in which the consumption decreased and, even the economic theory says that when the taxation quota goes over a certain level, receipts decrease.

As far as the increase of the taxation quota from 16% to 18% is concerned, this would represent an inadequate measure of fiscal policy during the current crisis circumstances. Maintaining the unique quota or even decreasing its value should represent the objective of fiscal policy. We believe that maintaining the unique tax quota would result in a balanced and predictable competitive business milieu. In this sense we will present the example of certain states from Central and South-Eastern Europe that implemented a very competitive taxation level, such as Slovakia, 19%, Hungary, 16%, Cyprus, 10%, Bulgaria, 10%, Albania, 10%, or Moldavia 0%.

It is very important if the end of the crisis will be triggered by productivity, technology boom, orientation towards industries with significant growth potential or it will be based on unprecedented monetary and budgetary policies and measures. Let's hope that the new government will be able to apply successfully the best economic policies for getting out of the crisis, policies constructed on the creation of economic value and not destructive fiscal policies that would restrain even more the economic growth.

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THE INTERNATIONAL MONETARY FUND – THE WORLD’S CENTRAL BANK

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***Abstract.** The global economic crisis has brought again to the world’s attention the role of one of the main world financial institutions: the International Monetary Fund. Seriously affected by this crisis from the economic point of view, some developing countries have borrowed money from the International Monetary Fund. In its turn, the institution is experiencing new challenges due to economic downturn, and as a result it took a series of actions focused on the adaptation to the new situation.*

This paper aims to outline the main elements characterizing the International Monetary Fund’s activity, including the new ones interferred in its policy. The paper also includes the actions taken on the occasion of the G20 organization summits, that contributed to the rise of the International Monetary Fund’s role at present.

Keywords: International Monetary Fund; G20; credit line; ownership.

JEL Code: F 33.

REL Code: 10 C.

Introduction

The 2008-2009 period was earmarked by the global economic and financial crisis. Started in the United States Of America in the summer of 2007, it gradually spread all over the world. This failure of the run concerning our completely globalized world has taken us by surprise. Nobody expected the crisis outburst or its magnitude. It resulted in roaring bankruptcies, bank nationalizations, mergers or massive reorganizations of American, European and Asian firms’ activity. This situation has revealed that the global financial system is built on fragile poles.

Having the USA as country of origin the crisis spread quickly all over the world, however, experiencing different magnitudes and intensities from one country to another. According to the World Bank’s report entitled „Global Development Finance – 2009”, for most developing countries this situation is the most difficult to handle because of the serious impacts on economies concerned. Of all emerging economies, those in Europe and Central Asia, have been affected most by the world crisis. In the European Parliament’s resolution since October 2009 concerning the effects of the world financial and economic crisis over the developing countries it is outlined that, though these countries did not cause the downturn, they are seriously affected, experiencing a quickening reduction of economic growth pace and employment. Other negative effects accounted within the same group of countries are: a drastic reduction of private capital net flows and foreign direct investments, reduction of access to credits and trade financing, reduction of fund transfers made by emigrants, marked fluctuations over exchange rates, unbalances of trade balance and balance of payments, decrease of prices for primary commodities, as well as the drop of income from tourism. The same document also relates to the social implications of the current downturn worldwide, predicting a rise of the number of unemployed by 23 million people this year and a marked

rise of people living in pauperism. It is also noticed that all financing sources of developing countries have been affected and they will not be able to maintain the achievements accomplished and economic gains hardly achieved, as a considerable foreign aid is not provided.

1. Common action plans aiming prevention of world crisis

Apart the own economic recovery plans, the current crisis drove the world states to take action together, according to the principle „global solutions to global problems”. This trend to manage the crisis unitedly and conjunctly was the basis of carrying out many meetings of some regional or inter-regional organizations such as: European Union, G8, G20.

As for the common action against crisis a decisive heft has been provided by the meetings of the G20 organization leaders. The member states of this group, established in 1999, contribute with 85% to the world GDP formation and is nearly two thirds of world population.

Until last year the meetings of members took place at the level of ministries of finance or directors of national banks. The Washington summit held in November 2008 was the first summit held at the level of heads of states within this organization. Other two summits took place in London (in April) and Pittsburgh (in September) this year.

The current world crisis was the main topic mentioned on the agenda of the summits concerned. Even if there were also different opinions concerning the methods of fighting against crisis, the world states agreed on reforming the world financial system. In this regard, a major role has been given to the International Monetary Fund (IMF). Under these circumstances, the IMF is required to play a key role as for prevention of crisis effects. Also, the IMF should provide a higher importance to financial dimension in its macroeconomic studies in order to predict and counteract the future recessions.

Though it held on the background of some significant protests, the G20 summit held in London had a special impact over the world financial architecture, here being adopted the following actual proposals⁽¹⁾:

- Providing the International Monetary Fund a major role as regards prevention of the crisis effects, by means of loans given to the applicant developing countries and rising their resources, doubling to US\$ 500 billion respectively, or even their trebling to US\$ 750 billion;
- Diversification of foreign currency reserves of the world states;
- Allotment of over US\$ 1000 billion (the highest tax incentive in the history) in order to re-launch the world economy, most of it is to be provided by the International Monetary Fund;
- Removal of „tax shelters” in order to prevent „money laundry” and fiscal evasion;
- Elaboration of a foreign trade assistance program representing US\$ 250 billion, abortion of protective practices, liquidation of any barrier respectively from the circulation of goods and capitals.

At the G20 summit held in Pittsburgh, in September 2009, the leaders decided to take action in order to increase the impact of major emerging economies in the world. Also, the group of the biggest 20 economies in the world will take over the G8 role and will become the main international coordination authority regarding economic policies in the world, that will reflect the rise of global impact of major emerging countries. One of the main actions agreed within these summits has been the conveyance of voting rights from industrialized countries (within the International Monetary Fund’s management) to strong emerging economies. The proposal has been intensely sustained by the USA. Thus, the United States proposed the conveyance of 5 percentage points of the voting right from the International Monetary Fund’s management from the developed countries to the emerging ones. With the same occasion, the G20 leaders agreed that the IMF’s Director should be selected on the criteria of qualification and not nationality, a significant decision, as long as the Managing Director of the Fund has been always European, and the World Bank, American⁽²⁾.

2. Members, management and attributions of International Monetary Fund

The International Monetary Fund started its work in the middle of the year 1946, having 39 Member States and headquarters in Washington. The number of the members in this organization raised continuously, reaching 186 at present.

The International Monetary Fund has as main objectives: promotion of international monetary cooperation and financial stability, stimulation of economic growth, securing a high employment and providing financial assistance to countries experiencing unbalances as regards balances of payments.

The main decisional link of the International Monetary Fund is the Council of Governors. It has full power within the IMF and consists of a governor from each Member State, that is as a rule, the central bank's governor or the minister of finance. Within the annual meetings, the Council of Governors investigates the activities carried out by the institution and decides in more important matters, such as: acceptance of new members, revision of the Statute and contributions of the member states to the IMF's budget.⁽³⁾

As the Council of Governors gathers only once a year, between its meetings, the management is provided by the Executive Council (also named Board of Directors) that sets and applies the Fund's provisions related to providing financial aid, macroeconomic monitoring, consultations with Member States etc. Five administrators represent countries with the highest contribution to the organization budget: USA, United Kingdom, Germany, France, Japan. Also, the following countries obtained the right to have their own administrations: Saudi Arabia, Russia and China. The remaining administrators are elected by the other member states on regional criteria, by rotation. The Board of Directors is chaired by a Managing Director representing the hard core personality of the International Monetary Fund. At present, the Managing Director of the International Monetary Fund is Mr. Dominique Strauss-Kahn.

The Fund structure also contains the International Monetary and the Financial Committee, that through a quarterly statement reveal the major political orientations of the International Monetary Fund and the Development Committee, that judges over the issues of poor countries.

The attributions of this organization are the following⁽⁴⁾:

- Monitoring of economic and monetary policies of member countries, as well as globally;
- Providing technical assistance to the member states ;
- Short-term loaning of member states experiencing unbalances concerning balances of payments.

The monitoring function of economic and financial policies of member states by the IMF's experts is stipulated in the Statute of this organization. The monitoring frame was updated in June 2007, the previous modification took place in the 70s. To secure the efficiency of this function within the current globalization, the IMF adopted the Evaluation Program of the Financial Sector aiming each member state. Also, the IMF continuously updates the evaluations concerning economic trends regionally and globally. The main regional monitoring tools are the two annual reports: „World Economic Outlook” and „Global Financial Stability Report”. Moreover, the regional reports – „Regional Economic Outlook Reports” – focused on four major regions (Europe, Asia, America and Africa”) are published annually. In September 2006 the IMF's regional office for Romania and Bulgaria was established, following the IMF's office in Romania. The main objective of the office consists in improving the Fund's capability to carry out its monitoring function⁽⁵⁾.

The requirement of monitoring the financial sector of member countries has been called on the occasion of the two G20 summits held this year, and represented one of the problems generating controversies between Europeans and Americans. Thus, the EU's leaders exerted pressures on the United States in order to get strict regulations to restrict bank

bonuses. In their turn, American officials want to raise the exigency as regards the own funds of banks, causing fears in Europe.

3. Supplementation of the IMF's resources during the world economic and financial crisis

The Fund's resources are secured from the contribution of member states, by paying some contributions whose magnitude depends on the economic development of the states. Each country pays 25% of its contribution in one of the hard-currencies accepted internationally (American dollar, Euro, Japanese yen, Sterling pound), or in Special Drawing Rights (SDR), and the remainder, 75%, in local currency. As long as at the beginning, the members paid a part from their ownership in gold, the Fund has a substantial metallic stock, that has an important role in assuring its solvency.

The revision of ownerships takes place once every five years. The total ownerships has accounted on-going rises in over 60 years the Fund has been working, as a result of the on-going growth of the number of member states and the increase of these ownerships. Following the reevaluation in 2006, they were raised by 1.8%. At the end of October 2009 the total ownership amounted to SDR 217.4 billion (approximately US\$ 346 billion)⁽⁶⁾.

Apart the resources provided by the ownerships of member states, the IMF can use loans in order to finance. Justification of the appeal to loans is justified by the fact that most member states have low development levels and weak currencies. These liquidities cannot be used to credit the applicant states. Hence the IMF should use loans. As usual, it uses these loan agreements when the Fund urgently needs liquidity, when serious financial crisis occur. It is the case now.

The IMF provided loans up to the summer of 2009 amounted to nearly 55 US\$ billion. Most of them have been directed to the European developing countries. Examples of the states that required loans from the IMF during the current crisis are⁽⁷⁾: Hungary (US\$ 12.5 billion), Ukraine (US\$16.4 billion), Belarus (US\$ 2.46), Serbia (US\$3 billion), Pakistan (US\$ 7.6 billion), Iceland (US\$1.6 billion), Romania (US\$ 12.5 billion), Latvia (US\$ 7.5 billion).

From early spring of this year the the IMF's Managing Director stated the institution urgently needs capital if the number of countries requiring help will rise. The same requirement was mentioned on the occasion of the G20 summit held in London. In the same period it was about the selling of a part of its gold reserves, or about the issue of bonds, for the first time in its 65-year history. Practically, as opposed to the World Bank, that is financed through issues of bonds, the IMF is dependent on the loans obtained from the member states. Although it is not the first time when an issue of bonds is taken into consideration, the previous attempts have been blocked.

Considering the situation concerned, up to now, the IMF has taken loans from the developed states and gold sales. A short time ago (October, 2009), Spain lent the Fund Eur 4 billion, the action being included within the international endeavour dedicated to trebling the resources of this institution. This amount is included in the Eur 75 billion promised by the European Union in March. Spain is the fourth member country of the European Union that lends the Fund, other countries being United Kingdom (\$ 15 billion), France (Eur 11 billion), Germany (Eur 15 billion). Of the first states that lent loans to the Fund this year were Japan and the USA. The major states with emerging economies, Brazil, China, Russia and India committed themselves to earmark US\$ 80 billion to supplement the IMF's reserves. The four states, participating in a summit of the ministries of finance of the G20 member states carried out in London in September 2009, also required a doubling of the member state fees in order to strengthen the Fund's finance capability.

Recently, the International Monetary Fund announced it sold 200 gold tonnes to India, for US\$ 6.7 billion, the transaction being included in a wider program and through it the institution wants to market over 403 tonnes of gold to consolidate its reserves. The Board of Directors decided in September that the Fund can sell an eighth of its gold reserves, 3217

tonnes. Gold selling to the Indian central bank was carried out in daily tranches between 19 and 30 October and aimed to consolidate the Fund's resources so as the financial institution provides assistance to poor countries.

4. Aspects concerning the International Monetary Fund's credit activity today

Providing credits to the member states is one of the main functions of the IMF. The main destination of finances the organization provides to the member states is the coverage of their payment balance deficits and financial support of the reform policies targeting adjustment of foreign deficits. For many of the member states, finances received from IMF are the only ways of financial aid because their economic situation does not allow them to penetrate the foreign financial markets.

Of the credits provided by the Fund, the stand-by agreements represent the oldest credit facility and most often used by member states. Providing the credit tranches is joined by commitments from governments concerning economic stabilization policies and recovery of balance of payments. Tranches are provided gradually, in 12-18 months, according to fulfillment of the agreement requirements, and payback is made within 3-5 years.

Management capability of loaned resources, adaptation to requirements comprised in agreements as well as social effects of austerity measures adopted, vary from one country to another. However, in most cases, budget cost cutting, increase in taxes, removal or reduction of subsidies and increasing unemployment have resulted in people's riots and even government resignation (as it happened in Latvia this year, for instance). Thereby the IMF has attracted lots of critics, and demonstrations against its policy took place on the occasion of the meetings organized annually together with the World Bank. The most recent demonstration of that type took place in Istanbul, in November 2009.

Considering all this, in the current period, it has been arisen the problem of relaxing the credit requirements required by the IMF. The institution officials admitted that at present, loans should become more flexible and be better adapted to realities of each country. Also, in March, the Fund introduced a more accessible credit line, that interested Mexico. The new credit line will provide the well managed savings access to the institution funds, that can be immediately accessed or kept as a guarantee in case when international financial requirements worsened. After Mexico secured its access to the funds of US\$ 47 billion, the peso appreciated by over 2% compared to the US\$. Brazil, Indonesia, Poland, South Africa and South Korea are considered potential candidates for the IMF's new credit line. According to the IMF's requirements, countries that can receive funds from flexible credit lines should meet a series of requirements, such as: a favorable history of national loans, solid public finances, a healthy banking system. Based on these criteria a few European states could be eligible, this program being dedicated to cautious countries with a strong economy. Doubling of margins as regards loans where the member state will have access (normally set according to their contribution to the organization budget) is another measure comprised in the reformation policy of the organization.

After the current world crisis started, Hungary was the first European country that requested a loan from IMF (October 2008). The required amount totalled Eur 12.5 billion, however, the entire financial aid package was nearly Eur 20 billion. In order to meet the requirements, this country had to adjust the public costs, to give up to the 13th wage for civil servants in 2008, to provide wage adjustments according to inflation and to rise the VAT up to 25%. As a result of these measures, Hungary has presently become one of the strongest economies in the region. Moreover, export activity has been re-launched as a result of rising demand of partners in Western Europe, and investors regained the confidence in this country. In September 2009 the IMF approved the application of the Hungarian government to extend the deadline for Hungary to attract the tranches remained from the stand-by agreement by 6 months, until October 2010.

Serbia has required a two-year loan from the IMF representing Eur 3 billion to sustain its own financial system. According to the agreement, wages and pensions are to be frozen in 2010, year when a pension reform is predicted. In this summer, this country received the first tranche amounting to Eur 788 million, the continuation of agreement failing in September. After new commitments assigned by the government, mainly related to the reform of the pension system and setting a budget deficit of Eur 1.3 billion next year, the agreement was renewed. As a result of cutting the public costs, the government was forced to adopt unpopular measures, such as layoffs in the public sector.

After some years of economic growth, last year Romania was considerably affected by the global economic decline. The average growth of GDP in 2003-2008 was 6.5% per year, foreign direct investments and capital inflows (partly through the branches of foreign banks in Romania) contributing with a significant rise of consumption and investments. The healthy rise of exports to the EU's countries has reflected an increasingly marked process. The rise of domestic demand was even higher, generating increasingly high current account deficits, that culminated with the level of 13.8% of GDP in 2007. The fast rise of costs, especially those with wages and pensions, resulted in increasing domestic demand. The extension of the credit that was the basis of the economic growth has driven a higher exposure of Romania to the world financial difficulties and exchange rate volatility. Due to the global collapse of credit, our country started confronting with difficulties in attracting foreign capital. The difficulties also affected the exchange rate and resulted in an over 15% depreciation of the Leu in relation to the Euro, since 2008 up to now.

Evolution of the main macroeconomic indicators according to surveys carried out by IMF can be noticed in the table below:

General macroeconomic indicators in Romania

	2006	2007	2008	2009	2010	2011
Growth rate of GDP (%)	7.9	6.2	7.1	-4.1	0.0	5.0
Inflation rate (%)	6.6	4.8	7.8	5.9	3.9	3.5
Current account deficit (% of GDP)	-10.4	-13.8	-12.4	-7.5	-6.5	-6.2
Trade balance deficit (% of GDP)	-12.0	-14.0	-13.5	-7.5	-6.6	-6.8
Foreign reserves before taxes (Eur billion)	22.7	28.7	29.4	29.4	32.4	34.9

Source: www.fmi.ro

In April 2009 the IMF's Executive Council approved in Romania's favour, a stand-by agreement amounting to Eur 12.95 billion, that is part of a financial aid package of Eur 20 billion. The loan agreement comprises three main requirements: the target of the budget deficit is 7.3% in 2009 and 5.9% of GDP in 2010, adoption of three basic laws (law of sole salarization in the budgeting system, law of fiscal responsibility, law of pensions in the public system), each finance tranche depends on framing in the budgetary targets set for each quarter.

Until now, our country received two tranches amounting to Eur 6.57 billion, the supply of the third tranche, representing Eur 1.5 billion, being cancelled. The unstable political situation, the lack of a budget approved for 2010, non-adoption of the pension law and the fiscal responsibility law are the main reasons alleged by the Fund's team and focused on the third tranche. According to the specialists' opinions, this tranche will be disbursed in January 2010.

Last autumn the IMF approved a loan for Iceland totalling US\$ 2.2 billion, in order to allow this country to go through the world crisis. Iceland was seriously hit by the economic downturn at the end of last year, when the main country's banks became insolvent, and the local currency and economy collapsed. The IMF's officials estimate this country's GDP will compress by 9.6% in 2009, and unemployment rate will rise by 5.7% next year.

Latvia received a financial aid of Eur 7.5 billion in December 2008. Following the agreement, Latvia applied the rise of VAT from 18% to 21%, by cutting of public sector wages with 15% and increase in taxes. The IMF imposed Latvia the compliance with a budget deficit of 5% from GDP. Recently, this country's authorities announced they will request to be allowed to increase the deficit up to 7%, if not, the default risk will occur.

Other countries that required help from the International Monetary Fund, since the current economic downturn has started were⁽⁸⁾: Armenia (US\$ 540 million), Salvador (US\$800 million), Georgia (US\$750 million), Kenya (US\$100 million), Malawi (US\$77.1 million).

Affected by the world economic downturn, the Latin America has recently found an alternative to the IMF's loans. It is about the establishment of the Bank of the South in September 2009. Thus, the presidents of seven states – Venezuela, Brazil, Bolivia, Ecuador, Argentina, Uruguay and Paraguay set their seal on 26 September (in the first day of the Latin America –Africa Summit) the establishment document of the Bank of the South. According to officials in Venezuela, the total establishment capital of the new institution is US\$ 20 billion (Eur 14 billion). The bank will have its headquarters in Caracas and two branches, in Argentina and Bolivia. Moreover, the InterAmerican Development Bank participates in providing financial support to the countries in the region.

A new element occurred in the IMF's Annual Meeting held in Istanbul in November 2009. Thus, the Fund's officials required a massive capital supplementation in order to issue new reserve currencies instead of US\$, as Special Drawing Rights (SDR), to assist poor countries. Major economies have already complied with the request, France and United Kingdom announced they decided to provide help totalling US\$ 4 billion for poor countries. At the same time, the Fund announced it received the US\$ 500 billion promised by the G20 nations to support poor countries. The institution will focus its attention to these countries in the coming period.

Conclusions

The world economic crisis brought again to the international public opinion attention the importance of the International Monetary Fund. Its role in the world economy was always important, but in the past years (after the year 2000), while a great part of the world flourished, the IMF increasingly converted from a financier to a fiscal adviser, reducing the credits provided.

The propagation of financial crisis in Europe has driven some developing countries to take loans from the IMF. Under these circumstances, the reform of this institution work has become very necessary. Therefore, since 2008, the Fund's officials have committed themselves, that the institution would take into consideration more the internal conditions specific to each applicant economy and it would be more flexible as regards conditions „attached to loans”. Steps have been made towards this goal but not enough, as long as the Fund is still accused by „dictatorial practices”, and protests to it have joined the meetings organized by this institution. However, less people criticize the poor management of money received from the IMF, the World Bank, the EU and other institutions or the poor policy implemented in the period prior to requiring loans and especially, the poor stimulation of internal production and exports (Romania's case).

Starting from 2008, the IMF brought a series of improvements to its work, such as: the credit approval system should become more efficient, introduction of a flexible credit line, increase of amount that can be borrowed, providing a more important place to major emerging economies in its management.

Also important is the will showed at present to act together and jointly manage the problems the world economy is facing with. This crisis will surely redefine the world economy map, as regards the economic power ratios. Certainly the world economy is currently on the point of surfacing the crisis, the recent performances of emerging countries in

Asia (China, India, South Korea) and developed countries (the USA, Germany, France, Japan) contributing to this success. However, the IMF's experts draw the attention that the pace of the world economy recovery will be modest in 2010, financial and tax incentives being required from the governments in order to sustain this evolution.

Notes

⁽¹⁾ Collection of „Adevărul” publication, April 2009.

⁽²⁾ „The Economist” publication, 28 September 2009.

⁽³⁾ Puiu O., Gust M., Mihăilescu M. – International bodies and economic policies, Ed. Independența Economică, Pitești, 2006, pp. 150-151.

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⁽⁵⁾ www.fmi.ro

⁽⁶⁾ www.fmi.ro

⁽⁷⁾ „Evenimentul zilei” publication, 11 March 2009.

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PERSPECTIVES ON THE FINANCIAL INTERMEDIATION IN ROMANIA WITHIN CHANGING MARKET CONDITIONS

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***Abstract.** Within a short period of time, the Romanian financial institutions, corporate sector as well as household sector, moved from a period when the financial institutions enjoyed a rapid expansion, to a period of financial distress. Corporate sector use to have easy access to loans and risk management was not one of the priorities at that time. Times have changed and thus the structure of loans, deposits and overdue loans has changed. The paper analyses the changes and tries to give a short and medium time perspective on the market evolution.*

Keywords: financial institutions; loan, deposit; crisis.

JEL Codes: G00, G01.

REL Code: 11A.

Overview

Financial institutions (intermediaries) perform the vital role of bringing together the agents in the markets with surplus of funds and that want to lend, with those with a shortage of funds who want to borrow. Through the process of financial intermediation, certain assets or liabilities are transformed into different assets or liabilities (Siklos, 2001). When market condition change, the behavior of the participants change, thus leading to structural changes.

The past one year and half gave the possibility for researchers to study and observe what next generations will study from now on. The word „crisis” was on everybody’s agenda some were hit harder some took real advantage of it. But globally speaking there has been a huge financial loss. Already there are a lot of studies and books on the market, trying to figure out what went wrong or trying to give solutions. Just as all the other countries, Romania was also hit by this financial turmoil. If in other countries, the financial institutions were hit harder, followed by the corporate sector, in Romania the pressure that is on the economy reaches now to the financial institutions. So far they are holding good, but for the past year, we can observe a change in the structure of the assets and liabilities due to the modification of the behavior from the corporate and household sector concerning the loans and savings.

The paper makes an analysis of the corporate and household sector’s modifications regarding the loans, overdue loans and deposits, both in lei and foreign currency. Based on monthly data, using the moving average, we try to forecast the trend and determine a behavior for the corporate and household sector.

Methodology, data and analysis

The data used in this analysis is a monthly data, provided by the National Bank of Romania. The period for which the analysis was done is between January 2008 and September 2009. Within this period we covered a good part of the data before the crisis (the peak considered to be October 2008) as well as after the peak of the crisis.

The data used in the analysis is: monthly data of Loans in lei (current loans, overdue loans), Loans in foreign exchange (current loans, overdue loans), Demand deposits in lei and Demand deposits in foreign exchange, as well as the data divided in Corporate sector and

Household sector. Based on this we tried to analyze the financial behavior of the corporate and household during these periods, to give a general view of the present situation, point the changes that have appeared and make a forecast of the present trend.

The monthly data was analyzed using the simple moving average as well as the cumulative moving average. Moving averages can be used to measure momentum and define areas of possible support and resistance. Like this define the trend and make a possible forecast.

A simple moving average is the unweighted mean of the previous n data points.

$$MA = \frac{d_x + d_{x-1} + \dots + d_{x-n}}{n}$$

A cumulative moving average is usually an unweighted average of the sequence of i values x_1, \dots, x_i up to the current time:

$$CMA_i = \frac{x_1 + \dots + x_i}{i}$$

One method to calculate this would be to store all data and calculate the sum and divide by the number of data points every time a new data point arrived. We can also update cumulative average as a new x_{i+1} value becomes available using the formula:

$$CMA_{i+1} = \frac{x_{i+1} + iCMA_i}{i+1}$$

The derivation of the cumulative average formula is:

$$X_1 + \dots + X_i = iCMA_i$$

And for $i+1$

$$X_{i+1} = (x_1 + \dots + X_{i+1}) - (X_1 + \dots + X_i) = (i+1)CMA_{i+1} - iCMA_i$$

Solving the equation, the result is:

$$CMA_{i+1} = \frac{(x_{i+1} + iCMA_i)}{i+1} = CMA_i + \frac{X_{i+1} - CMA_i}{i+1}$$

Methodological notes:

Data provided by National Bank of Romania

Analysis made by authors

Data is in Ron

Loans and deposits in foreign exchange are shown in lei, at the exchange rate announced

by the NBR on the last working day of the month

Overdue loans do not include off-balance-sheet items.

Loans in lei

Loans in lei reached the peak in October 2008 with an average of 2.41% increase monthly. From November 2008 on, we could observe a stagnation or slow decline. Looking at the loans in lei from the corporate sector and household's point a view we can notice a difference in reaction. Although the level for both sectors is almost the same, the corporate sector decrease is stronger than the household decrease.

But what we should worry about is the overdue loans. During the past 21 months we observed a continue increase in overdue loans with a dramatic increase in the past 12 months, with even double digits monthly increases for some months reaching an average of 7.90% monthly increase. If the loans stayed almost at the same level, the overdue loans kept on rising reaching a 145.36% increase in September 2009 compare with the same month of last year. The trend looks like is decreasing, with May having a 166.59% increase compare with May 2008. But this does not necessary tells us that the overdue loans will not increase from now on, it just signals that the increase pace is slower comparing to last year figures.

Based on the data that we analyzed as previously mentioned in „Methodology, data and analysis” we see in the case of loans in lei a possible reversal of trend as the moving average is on the verge of crossing the loans in lei curve. This might signal a point of turn and could see an increase in the loans in lei that banks offer to corporate and household’s sectors. As for the overdue loans, the analysis tells us that the trend will continue to rise and the total overdue loans for corporate and household sectors will grow for the months to come.

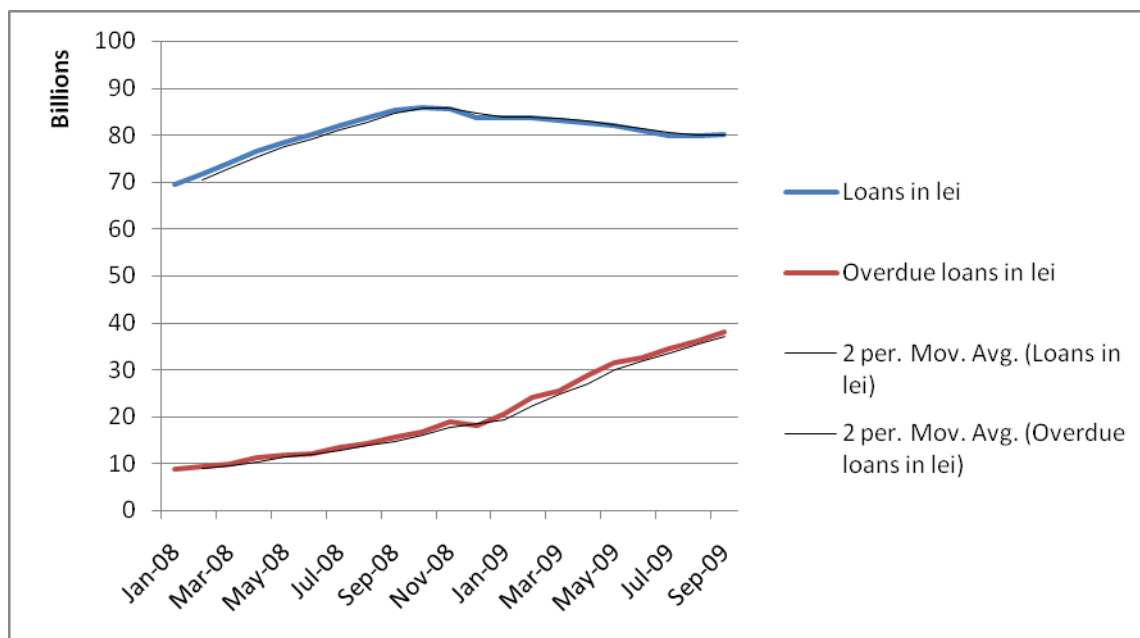


Figure 1. Loans and overdue loans in lei

Loans in foreign exchange

Looking at the foreign exchange loans, although a decrease occurred, the behavior during the months that we analyzed is a bit different compared to the loans in lei. The first thing that we can notice is that the first month of decrease is July while the loans in lei were still increasing at that time. Then October is the next month of decrease. We can say that the behavior of borrowers for loans in foreign exchange was different to the ones in lei. When loans in foreign currency were decreasing, the lei were increasing and the other way around.

These loans were the first to react to the sign of the crises, with several months prior to the ones in lei, but, on the other hand, these loans recovered their monthly increase much faster. If the February 2009 levels of loan in lei had the values of the ones in August, when it comes to foreign currency, February values are almost 25% higher than the values of July. It is interesting also to notice that we would have expected to have the corporate sector react different from the household, but to some extent there is a similarity both to decrease and increase with almost the same level.

If the loans for the analyzed period (June 2008 to February 2009) had a total increase of 30%, a positive increase despite the crisis, the overdue loans had an increase of 280% from the value of June, with a dramatic skyrocket increase of almost 50% in January.

The numbers point to a sudden stop of the cash-flows in the economy that were the source of income for the annuity, therefore a sudden stop of economy. Why such a difference between the overdue loans in lei and foreign currency? One reason that made the foreign currency had such an increase could be the depreciation of the local currency that added more pressure to the overdue loans. To this we can add the rising interest rates as well as new restrictive conditions for corporate sector to engage new loans that could have helped the lack of new cash flows.

If we have a look for both loans in lei and foreign currency for the analyzed period, we can notice a different behavior of the corporate sector. The first negative reaction of the market came for the loans in foreign currency in June, almost at the same time with the negative news that was pointing to a major crisis in the USA. At that time, loans in lei were still enjoying an increase in values. By the time the loans in foreign currency started to recover, came the shock for the loans in lei, with decreases. An opposite reaction and behavior of the corporate sector towards the loans in lei and foreign currency. For the period mentioned in our analysis, the loans in foreign exchange are 20% to 45% higher than the local currency loans, so the corporate sector and not only, preferred to use the foreign currency as a main mean for loans. Once the worldwide signs showed an imminent financial crisis, the Romanian market also reacted, the loans in foreign currency being the first one. We can presume that at that point a switch between foreign currency and local currency was made by the potential users of the loans, followed later in the year by a switch back, at the moment when the Romanian banks were facing problems with resources in lei and the interest rates and lending conditions were worsening.

The overdue loans on a month to year basis observation had an average of 392.32% increase between January-September 2009 with a peak in July with 478.20%. Based on the analysis that we made, the moving average for the loans in foreign currency point to a possible increase for the months to come as in the case of the overdue loans results show that the rising trend will continue but with slower pace.

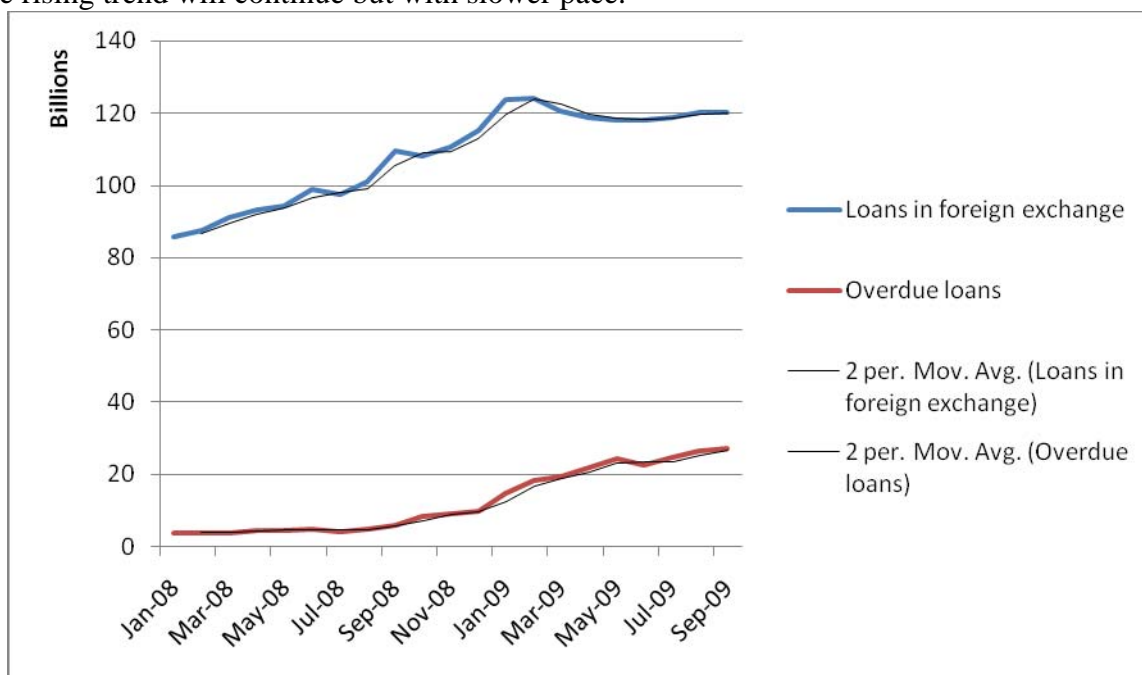


Figure 2. Loans and overdue loans in foreign exchange

Deposits in lei

Deposits in lei and deposits redeemable at notice in lei, as the study shows, had a very interesting movement during the analyzed period. Until the end of the year 2008 had, to some extent, recorded increase and moved in a parallel way. With the beginning of the year 2009, while the deposits in lei redeemable at notice show a steady increase, the demand deposits in lei have a steep decrease.

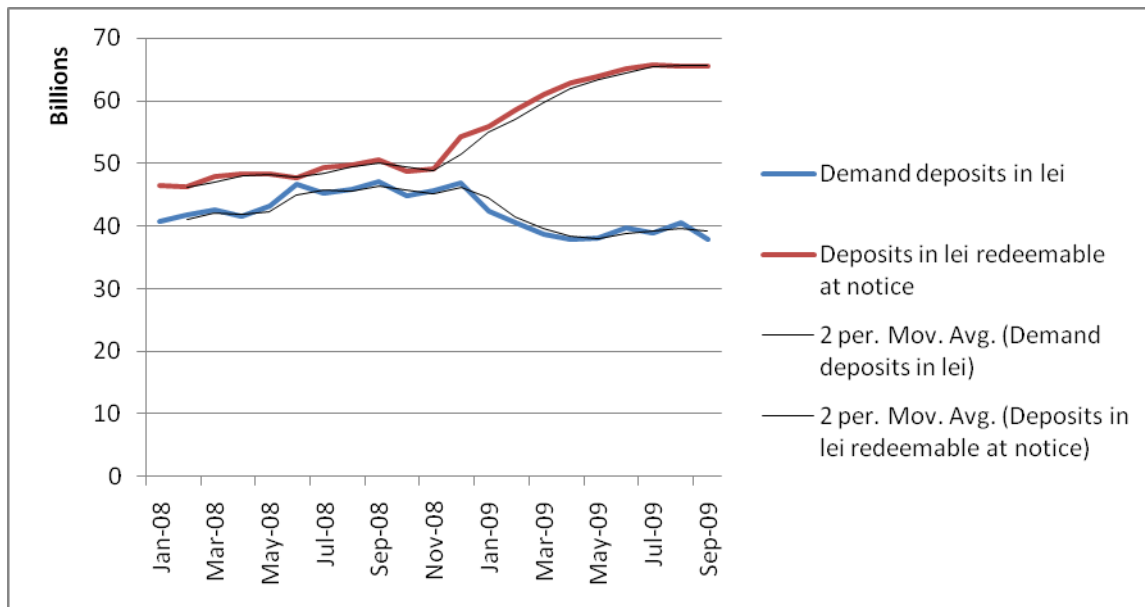


Figure 3. Demand deposits in lei and deposits in lei redeemable at notice

Why this sudden change? Falling loans corroborated with falling demand deposits for lei point the difficult situation especially of the corporate sector, which had to go for the savings in order to meet the everyday expenditures, pointing to the lack of new cash-flows and less income from the corporate sector and households. On the other side, the high interest rates offered by banks for the long term deposits along with the change in the aversion of risk from the investors made the deposits in lei redeemable at notice to increase.

The analysis made on the data using the moving average suggests that the demand deposits in lei should record new lows as the deposits in lei redeemable at notice record an inflexion point and have the tendency to decrease.

As mentioned already, time deposits and deposits redeemable at notice in lei had a rather different behavior. Again the first decrease came in October (actually July was the first, but was isolated and we can put it on the seasonality activity, summer and holiday period) but later only the corporate sector recorded further decreases while the household sector recorded an increase enjoying the high interest rates at deposits from the market. That shows that corporate sector was hit much harder and had to use also the time deposits and deposits redeemable at notice in lei to cover the everyday expenditures.

Deposits in foreign exchange

Just as in the case of deposits in lei, also foreign exchange deposits recorded a similar (parallel) movement until November 2008, when each started to move opposite to the other one. Starting with November the deposits redeemable at notice increased in the next four months with an average of almost 10% per month, while demand deposits had a monthly decrease in average of -4%.

We believe that starting with November, as the effects of the credit crunch were deepening, along with the depreciation of the local currency (lei), savings were mainly done in foreign currency in spite of the high interest rates for the local currency. With the lack of external financing, tighter rules for accessing a loan the corporate sector and household used more and more the savings to meet the short term liabilities.

The analysis suggests that in the months to follow we should continue to see an increase in both types of deposits, foreign exchange still being preferred for savings.

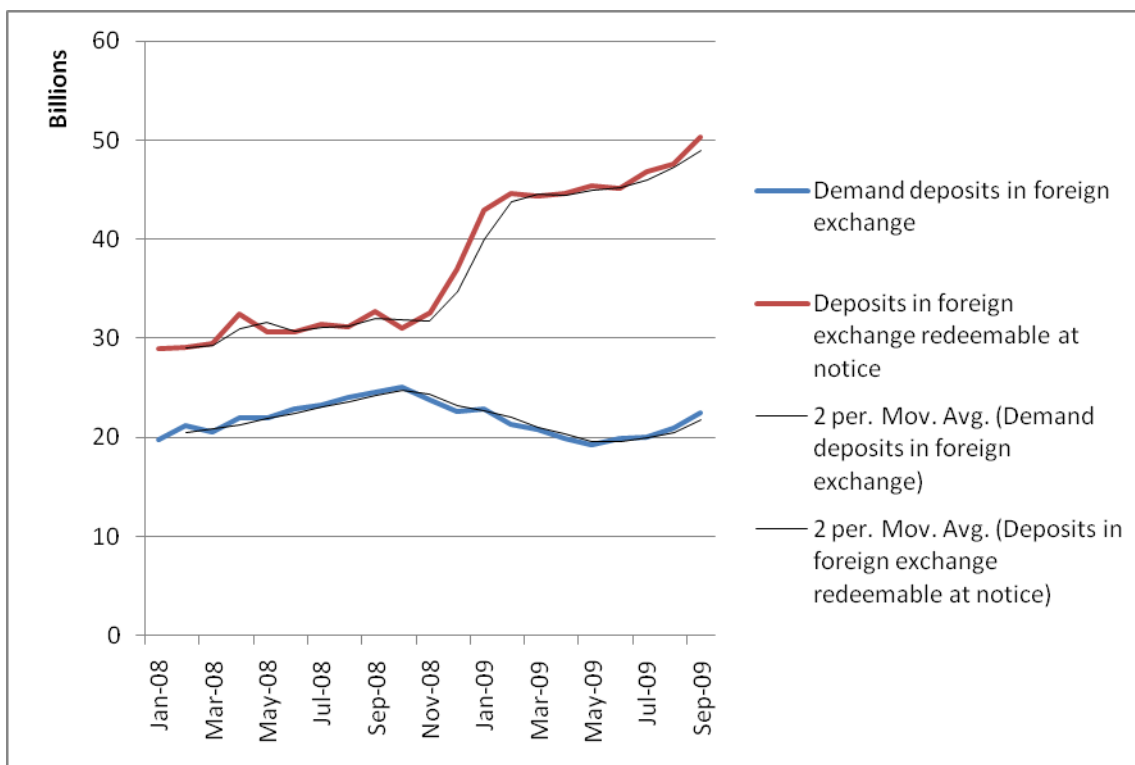


Figure 4. Demand deposits in foreign exchange and deposits in foreign exchange redeemable at notice

Brief conclusion

Although we have negative reactions regarding the loans before September 2008, we can notice that most of the constant decreases came after September, with the corporate sector having most of the difficulties. Since then, even though the decrease of loans has slow down, the overdue loans kept on reaching new higher levels.

The analysis presented in this paper suggests that both loans in lei and foreign currency should start to have increase values for the next period to come. But, unfortunately, the same analysis tells us that overdue loans will keep on rising.

Regarding the demand deposits in lei as well as redeemable at notice, the analysis points to a future decrease while those in foreign currency an increase. This suggests that foreign exchange is preferred as a mean of savings and not lei because of the depreciation of the local currency. This might add extra pressure on the exchange rate.

Based on the data analyzed we could say that regarding the loans, a bottom was reached, numbers pointing to an increase. Whether this will be the same for the whole economy remains to be seen.

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EXTENDING ECONOMIC FREEDOM: THE RIGHT PATH FOR DIMINISHING CORRUPTION AND ECONOMIC STABILITY⁽¹⁾

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***Abstract.** Nowadays, understanding and identifying economic freedom means the existence of an institutional frame, rules which guide human behaviour in a predictable manner. Approaching economic freedom from an institutional point of view is consistent with the political processes and their consequences as it is also with the economic stability. This study emphasizes the correlation between extending economic freedom and the diminution of corruption and economic stability. In order to demonstrate this, we have compared the index of economic freedom and the corruption perception index for various countries using data from specific reports.*

Keywords: economic freedom; institutions; corruption; economic stability; rent-seeking.

Jel Codes: B52 O43 H30.

REL Codes: 1H 13D 13I.

Nowadays, understanding and identifying economic freedom means the existence of an institutional frame, rules which guide human behaviour in a predictable manner. Two of these rules are fundamental for the market economy's institutional arrangement: property rights and the rule of law. As main consequence of the institutional frame which heartens development of market relations, economic freedom redefines herself as an essential ingredient for economic progress. As reality fully shows, economic progress is decisively influenced by secured property rights and the existence of legislation which encourages initiatives based on economic freedom.

Economic literature recently emphasizes the significance of extended economic freedom as a consequence of institutional frame which encourages the development of free market relations and reduced size government. Gwartney, Lawson and Holcombe (2004), Acemoglu, Johnson and Robinson (2004), Coyne and Boetke (2006) continuing the original approach initiated by North (1990) underline in their studies the importance of various institutional arrangements as an explanatory frame for the diversity of economic performances between countries all over the world. Hence, economists see economic development related to the institutional change as an incentive for more economic freedom.

Approaching economic freedom from an institutional point of view means understanding it related to the political processes and their consequences as with economic stability⁽¹⁾. Public School's concepts are useful in order to complete this approach. An institutional arrangement in favour of extended economic freedom and private property rights is capable of setting the fundamentals of prosperity. There are five important arguments concerning this relation: first, allows migration of resources toward the best alternative use; second, encourages and gratifies successful actions and punish the inefficient ones; third, offers predictability to the entrepreneurial decisions; fourth, contributes to the extension of international trade and capital's migration; fifth, entrepreneurial incentives are oriented toward productive activities and not destructive ones as rent-seeking.

Although, every implication of those mentioned above is worthy of separate analysis, our study insists on the last argument. The main goal of the approach initiated in the following

pages is to emphasize that extended economic freedom is positively correlated with low corruption and high economic stability. In order to do this we have compared, for various countries, the degree of economic freedom and corruption perception index as those are reported by specialized organizations. For measuring the degree of economic freedom we used data from Economic Freedom of the World Report 2008 by Fraser and Cato Institute. The data concerning corruption were provided by the Corruption Perception Index (CPI) and Bribe Payers Index (BPI) which were published by Transparency International in 2006.

Despite the existence of an economic freedom index, measuring economic freedom is not a matter of perfection. Theoretical investigation leads us toward a unique conclusion: a higher degree of economic freedom is preferable to a smaller one. Accepting this truth, the economists imagined various „conventional” means in order to create indicators for measuring the freedom in a national economy. These can be correlated with other various indicators of economic performance or perceived efficiency of state’s bureaucratic system.

Economic Freedom Index measured by Fraser and Cato considers five important areas in order to define economic freedom:

- size of government;
- legal system and property rights;
- sound money;
- freedom to trade internationally;
- regulation of credit, labour and business.

Countries are then sorted from highest to lowest according to the ratings they received and grouped in four categories. For every category is then calculated the average of some indicators based on their levels for every country⁽²⁾.

Fraud created by corruption to the public budgets is a fact whose effects on economy cannot and must not be negligible. One cannot deny the correlation between the level of economic freedom and the amplitude of corruption, despite the difficulties of their quantification. Analyzing this needs previous conceptual and theoretical settings that might prove useful for our initiative.

Corruption Perception Index (*CPI*) is a composite instrument which emphasizes the dimension of corruption using surveys conducted by important organizations. The index measures corruption starting with the frequency and/or dimension of bribery in the public sector and the political one. Corruption evaluation is taken by experts, resident or non-resident. Corruption perception is emphasized using values from 0 (high level of corruption) to 10 (low level of corruption).

CPI emphasizes the public’s perception on corruption both in the public and private sector. According to the Global Corruption Barometer (*GCB*) for 2009, half of the people interviewed perceived private sector as being corrupt. We argue that corruption effects are most detrimental when related to the budgetary resources, affecting consumers and tax payers as well. In the private sector corruption and bribe appear rather as a type of trade when manifested between the owner of a firm and another owner or employee. This doesn’t imply the inexistence of negative consequences. Corruption means growing expenditures with illegal payments for the private sector as well as high risk level business because of exposure. Also, there is a risk for growing level of regulation despite the fact that the goal followed by using corruptive methods is avoiding the obstacles of excessive regulation. Attracted by the possibility of supplemental gains from corruption, state’s bureaucrats can be stimulated to extend even further the bureaucratic process. Consequently, on a firm level, corruption determines growing costs. On a market level, distortions created by corruption means protecting firms which can still survive, although inefficient, thanks to the subsidies and tax cuts they receive.

Because of the various types, effects and controversies concerning the corruption phenomenon, some specifications about the proper conditions which favour it may prove

useful to our approach. Hence, we can have a better understanding of the significance and implications of corruption on the economic performances.

Corruption can arise only when we refer to using other people's money. In this particular case, resources are not used by their owners. That's why they cannot decide the way resources are allocated and are unable to sanction the inappropriate use. In the free private relations this cannot happen. Even if the owner is not also the manager of his own business, he can still sanction the inappropriate attitude of the „corrupt” manager which acts against his own interests. Moreover, he can avoid the risk of hiring a “corrupt” manager as long as market relations manifest themselves in the labour market for managers. Problems arise when ownership and control are forcibly separated by regulations. Government interference with the firm can determine growing opportunistic behaviour of employees. They can be stimulated to do things that can be perceived as being the result of „corruption”. On a free market such opportunistic behaviour can be avoided and prevented from happening. Therefore, one can consider that when the degree of interventionism is growing, incentives are created for private firms to do illegal transactions.

This is the reason we argue that corruption can exist only in the public sector. The amplitude of corruption can be explained by the fact that, excepting regulation, there are no other instruments in order to restrain the opportunistic behaviour. This is consistent with the use of public position for obtaining private benefits, tax payers not being able to sanction this behaviour.

In order to emphasize correlation between economic freedom index and corruption perception index is of main importance to identify the real sources of corruption. According to *GCB*, „the general public is critical about the role of private sector in their country's policy making processes”. This is the starting point in accusing firms for escalating corruption. As a matter of fact firms are stimulated in several ways to initiate illegal activities. Two of them are relevant for this study because of their decisive influence:

1) incentives created are a consequence of the government decisions which increase regulation, roughen taxes and extend bureaucracy. Therefore, firms are determined to bribe state's officials. For the firms, corruption appears as a mean of avoiding bureaucratic barriers and keeping in touch with the consumers and markets. This evasive attitude allows firms and consumers as well to pursue their own interests.

2) the capacity of governments to regulate and impose the rules of the game is responsible for creating these incentives. Using public budgets resources along with appropriate regulations represent another important source for rent-seeking. The possibility for certain interest groups to obtain a major part of these resources creates incentives for the appearance of the most important and detrimental form of corruption. One can call it destructive because destroys every economical connection between firms and their customers, transforming the former into political clients of the government's officials.

A complementary tool for the degree of corruption is the Bribe Payers Index (*BPI*). According to a report by Transparency International (*Global Corruption Barometer 2005*), 22% of companies (business partners or people) admit to having given bribes, indicating high corruption, even if the bribe is in a small amount.

According to the *Global Corruption Barometer*, the amounts paid as bribes in Africa are the largest as percentage of the population annual income.

In countries such as Cameroon, Ghana and Nigeria amounts paid as bribes are between one fifth and one third of income per capita. In India, Kenya, Moldova, Togo and Ukraine, families pay between 10%-20% of their income per capita as bribes. The same data shows that in Romania families paid an average amount of 56 USD in the form of bribes.

These data suggest a negative correlation between the level of unofficial payments and the level of economic development in these countries.

Bribe size compared with the GDP per capita

Table 1

Average amount paid in bribes per family, as a percentage of GDP per capita (2003)	more than 20%	Cameron, Ghana, Nigeria
	between 10% – 20%	India, Kenya, Moldova, Togo, Ukraine
	less than 10%	Bolivia, Dominican Republic, Guatemala, Lithuania, Paraguay, Russia, Romania, Serbia

Source: *Barometrul global al Corupției 2005*, www.transparency.org.ro

There is a widely shared belief that governments should fight corruption. Because of the majority perception that governments are inefficient in fighting corruption, we can expect increasing government intervention in the economy and society. Additional legislation extended bureaucracy and, therefore, the increase of the volume of resources allocated from the public budget for the fight against corruption can be sources of expansion of this phenomenon. Therefore, limiting corruption is not the result of increasing regulation. It occurs on the background of deregulation, reducing excess regulations and reduce taxation. In this vision, reducing corruption is consistent with economic freedom.

According to Chafuen and Guzman (2000), lack of economic freedom explains 71% of corruption. The most important of measures generating corruption are:

- licenses; permits, etc.;
- trade restrictions;
- public ownership of natural resources and utilities;
- the offering of loans at interest rates below market.

The index of economic freedom and the corruption level

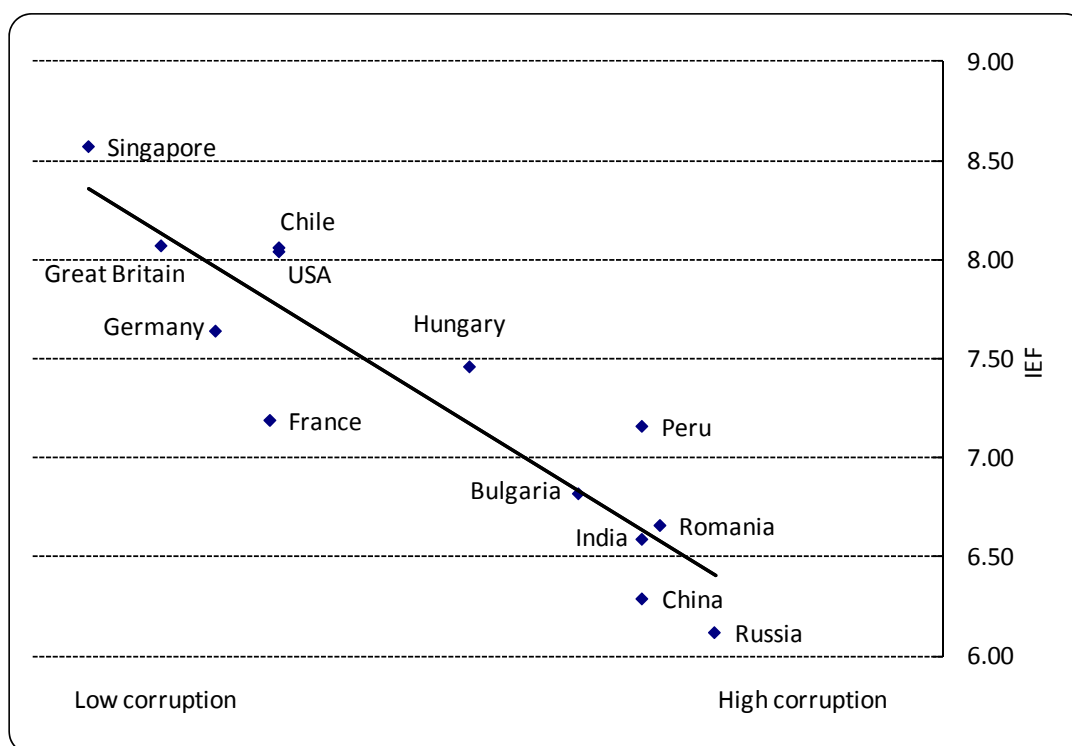
Table 2

Country	Index	Years		
		1995	2000	2006
Bulgaria	Corruption level	–	3.5	4
	<i>IEF</i>	4.61	5.06	6.82
Czech Rep.	Corruption level	7.94	7.4	7.3
	<i>IEF</i>	7.47	7.28	8.06
China	Corruption level	2.16	3.1	3.3
	<i>IEF</i>	5.20	5.73	6.29
France	Corruption level	7	6.7	7.4
	<i>IEF</i>	6.78	7.04	7.19
Germany	Corruption level	8.14	7.6	8
	<i>IEF</i>	7.48	7.49	7.64
India	Corruption level	2.78	2.8	3.3
	<i>IEF</i>	5.60	6.31	6.59
Great Britain	Corruption level	8.57	8.7	8.6
	<i>IEF</i>	8.07	8.35	8.07
Peru	Corruption level	–	4.4	3.3
	<i>IEF</i>	6.30	7.06	7.16
Romania	Corruption level	–	2.9	3.1
	<i>IEF</i>	3.81	4.95	6.66

Country	Index	Years		
		1995	2000	2006
Russia	Corruption level	-	2.1	2.5
	<i>IEF</i>	4.01	4.93	6.12
Singapore	Corruption level	9.26	9.1	9.4
	<i>IEF</i>	8.78	8.51	8.57
USA	Corruption level	7.79	7.8	7.3
	<i>IEF</i>	8.30	8.55	8.04
Hungary	Corruption level	4.12	5.2	5.2
	<i>IEF</i>	6.34	6.74	7.46

Source: www.transparency.org, www.fraserinstitute.org

The correlation between *IEF* and the corruption level is evident. As observed in Table 2, as *IEF* increases, the level of corruption decreases. Thus, out of the analyzed countries, the highest perception of corruption is in Russia (closely followed by Romania); its degree of economic freedom being one of the lowest in the years considered. At the other end, Singapore has a high level of economic freedom and a low degree of corruption.



Source: own calculations based on the data from Transparency International, www.transparency.org and Fraser Institute, www.fraserinstitute.org

Figure 1. The correlation between *IEF* and the corruption level (2007)

To better highlight the inverse relation between *IEF* and the corruption level, in Figure 1 the values indicating the corruption level were written in descending order. We chose the 2007 values to illustrate this relationship.

For demonstrating the econometric relationship between corruption and economic freedom we have chosen: Bulgaria, Czech Republic, Poland, Romania and Hungary The first

reason is that the Romanian economy structure is comparable to the structure of these countries. The second reason is that, over forty years, all of the analyzed countries had a centralized economy. And as we previously said, this type of economy assumes the total involvement of the state, and hence its functionaries, in economic life.

To confirm the hypothesis that increasing economic freedom will lead to a lower corruption we tested an econometric relationship between *CPI* and *IEF*. The relationship between the two is obtained by a regression of the form:

$$CPI_{i,t} = b \times IEF_{i,t} + \varepsilon_{i,t}$$

where $IEF_{i,t}$ is the economic freedom index for country i in year t , and epsilon is a white noise random variable identically and independently distributed.

The econometric model considered to be appropriate for studying the relationship of dependence discussed above is a dynamic panel model. Panel data regressions is a more recent and more complex econometric technique compared to simple time series regression, because the panel has two dimensions, time and space (i is the index of the country and t is a time index).

The $b = 0.63$ coefficient associated with economic freedom index suggests a direct relationship between the variables included in the analysis. F-test on null hypothesis shows that the model is valid. Also, the relationship between the two variables is strong, positive and statistically significant, as the probability associated to the t test shows.

Regression results

Table 3

Variable	Coefficient	Std. Error	t-Statistic	Prob.
<i>IEF</i>	0.625351	0.012998	48.111	0
R-squared	0.499759	Mean dependent var		4.0175
Adjusted R-squared	0.499759	S.D. dependent var		0.753075
S.E. of regression	0.532633	Akaike info criterion		1.602713
Sum squared resid	11.06421	Schwarz criterion		1.644935
Log likelihood	-31.05426	Durbin-Watson stat		0.265772

Source: Own calculations performed by the program *EViews 5*.

The results of our analysis supports the hypothesis that the higher the level of freedom, the lower is the likelihood of encountering corrupt practices. It should be noted that our analysis was based on the approach that economic freedom is closely related to the degree of government intervention in the economy. Less regulations and less control over resources means fewer opportunities to benefit from political privilege and rent-seeking behavior type.

Notes

⁽¹⁾ This paper is based on the activity report of the research project „Economic Freedom and Property. Implications for institutional reforms in Romania and the European Union”.

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FROM ECONOMIC FREEDOM TO PROSPERITY. AN ILLUSTRATION ACROSS EUROPE ⁽¹⁾

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***Abstract.** Many empirical studies show an organic connection between economic freedom and prosperity. Thus, the quality of economic and political institutions existing in a country must be assessed considering their capacity to promote private property and economic freedom. This paper analyses the evolution of economic freedom in some countries, members of European Union. The main conclusion is that the framework for development „more market and less government” is the best way to promote prosperity within our society. Thus, we can deduce the necessity of bringing forward some suggestion and debates about institutional reformes in the European area.*

Keywords: economic development; economic freedom; institutions; institutional reform; market economy.

JEL Codes: O17, O38, O43, O52.

REL Codes: 6B, 13C, 19C, 19E, 20C.

1. Introduction

In the context of modernity influencing the world today, the necessity of going back to fundamental social values such as private property, freedom and the rule of law may seem trivial. Still, directing scientific research towards analyzing the social and economical implications of freedom is very much required. First of all, because historical evidence suggests a general tendency towards restricting individual liberty in favor of the state, which is an erosion of the social contract between the government and society. Secondly, because the very existence of democracy, political pluralism or the pluralism of property types constitute a necessary premise, although not sufficient at all in order to preserve a high degree of economic freedom. Also taken into account is the fact that going back to these values stems from the conviction that the prosperity of modern society is inextricable linked to an institutional arrangement compatible with the market economy and economic freedom.

From Adam Smith who explicitly underlined the importance of the system of natural freedom for social cooperation and the welfare of individuals, the theme of freedom has attracted too few economists' attention. The only exceptions are the consistent works of Ludwig von Mises, Friedrich Hayek and other representatives of the Austrian School. Starting with 1996, once the volume „World Economic Freedom” was published, the reference to this concept is noted much more often in the economic literature.

Freedom – seen in its entire dimensions, political, social or economic – is definitely the most valuable good that society members can ever have. It is important to emphasize that the concept of freedom must be associated to human interactions *only*. It does not refer to the interaction between the individual and the natural environment for example. Whatever action he may choose, the individual could not set himself free from the limits and constraints of nature (Mises, 1949, p. 279). Still, this does not mean he is not free, it just means he is not able to

escape the context of scarcity as a universal law of nature. Applying the concept of freedom only to social interactions is also emphasized by John Stuart Mill: „the only situation defining freedom best is the one in which people seek to attain personal welfare by their own means, as long as they don't affect others' welfare or preventing them from attaining it” (Mill, 1994).

Therefore, freedom is only a condition of the individual in society, and extending this reasoning show that the limits of individual freedom are strictly defined by the social conditions of his birth and existence. It is obvious that the degree of freedom accompanying the actions of individuals in a market economy is much higher than the ones in a centralised economy where the intervention of the state is absolute. The state, as a social apparatus endowed with coercion and constraint means, has overall a hegemonic power over society. Yet, if the government could extend its power *ad libitum*, then, in an extreme scenario, it could replace market economy with a centralized economy. In order to prevent this, the power of the state and its interference in economic and social life must be constantly limited by some fundamental social institutions, such as constitutions, laws (Mises, 1949, p. 281). As a consequence, all of those who are writing, speaking or doing in oppose to the state intervention, are actually the defenders of freedom.

The concept of freedom entails the social circumstances that the individuals benefit from in a market economy in which the power of an indispensable institution – the state – is limited as to not endanger the functionality of market forces in the context of the division of labor and voluntary trade. No government and no law can possibly guarantee and preserve freedom better than by supporting and defending the fundamental institutions of the market economy: private property, contractual freedom, competition. The essential argument stems from the fact that freedom is nothing else but the extension of legitimate property rights. Since by his own action an individual does nothing to trespass the property rights of others, nobody has the right to interfere with his actions or his property (Marinescu, 2004, p. 110).

Although the government by nature involves coercion, which is opposed to freedom, it is also the defender of freedom, if its actions and its powers are limited to preserving economic liberty. This is why we believe that the concept of economic liberty is better encompassed and defined depending on the type of government intervention into the society. As a consequence, we will separate the state's formal institutions and actions that are compatible with the economic freedom from those who endanger or restrict it. Here are some examples of such actions promoting and then restricting the degree of economical freedom.

The economic literature illustrates the connection between the arrangement of the legislative and monetary system on the one hand, and the amplitude of voluntary trade on the market, on the other hand. The governments can contribute to extending economic freedom by consolidating a judicial system or by strengthening institutions such as private property and contractual freedom, and preventing the use of coercion, violence or fraud in order to grab the properties of others. Also, in favor of promoting economic freedom are monetary policies oriented against monetary injection and inflation, meant to avoid the confiscation and redistribution of wealth in society as a consequence of the increase in money supply and changing of relative pricing.

In the same time, in order to encourage economic freedom, the government should refrain itself from actions that are conflicting with individual choices, with voluntary trades or with the freedom to enter or to compete on different markets (labour market, goods, capital and services). The level of economic freedom decreases when taxes, government expenditures and bureaucratic regulations substitute personal choices, voluntary trades and the allocation of resources in the economy according to the „invisible hand” principle. Of course, there are many other state's restrictions that limit economic freedom.

2. Some empirical findings across EU

The scientific fundamentals of freedom are the resistance core in building the economic freedom index (EFI). James Gwartney, one of its authors, considers that EFI is a useful

instrument for assessing the quality of institutional arrangements in a country⁽²⁾. By using this instrument we can check the ranking of a country between the two extremes: *minimalist state* vs *totalitarian state*. The empirical evidence confirm the hypothesis that, as the actions of the government are directed towards minimising the role of the state in the economy then the EFI level increases, while an increase of state expenditures and an extension of reglementations over the economic activity lead to lowering the index. For example, according to the Annual Report of 2008, Hong Kong is in the lead (with a general EFI index of 8.94 out of 10), followed by Singapore (8.57), New Zealand and Switzerland (8.28 and 8.20). Compared to 2005, USA is down 3 levels, from rank 5 to rank 8 (EFI dropping as well from 8.20 to 8.04). Also, it is worth mentioning the ascension in rank of some countries that had implemented many pro-market structural reforms, such as Chile (ranking numbers 6) or Georgia (ranking 39, much higher than other western countries such as France and Belgium). In the lower part of the ranking, there are many of the African and Latin American countries, as well as many those from the ex-soviet block.

Next, we will turn our attention towards the empirical analysis of the quality of different institutional frameworks in EU countries, concerning economic freedom. For this purpose, the pool of countries was selected using the criteria of adhering to the EU. Among the old members we will find France and England. From the wave of the first of May 2004 we find the Czech Republic and Poland, post-communist economies that had to deal at the beginning of the transition with structural issues similar to ours. The last countries to be analyzed are those which were admitted in 2007: Romania and Bulgaria.

The study is trying to illustrate first of all the variations of the freedom level existent in the European area. We also wish to test empirically the compatibility of the European model with the economic freedom index. The interpretation of data and the conclusions will allow designing some strategies – applicable both for Romania and for the rest of the EU countries – meant to increase the level of economic freedom on the European continent as a fundamental premise for increasing the living standard and prosperity. In order to understand the differences and the similarities of the countries that had been studied we used the Economic Freedom Index developed by the Fraser Institute. The comparative analysis will be show the overall delay in economic freedom existing between countries, although we assess that a structural detailed analysis would be more relevant for specific economic policies. In order to measure the degree of economic freedom and using the EFI there are five topics of analysis: (1) the size of the public sector: expenses, taxes, public companies; (2) the juridical system and securing property rights; (3) monetary stability; (4) free trade; (5) rules and legislation for financial credits, labor and business environment.

According to James Gwartney, there are four essential components of the economic freedom: personal choices instead of collective choices; voluntary trade guided by the market instead of the distribution of resources by the government, the ability to enter a market and compete; the protection of individuals and their properties (Gwartney, 2005, p. 5). The following table shows the evolution in economic freedom during 1990-2006 for the countries chosen for case study, on a scale from 1 to 10. An increase in the EFI corresponds to a higher degree of economic freedom.

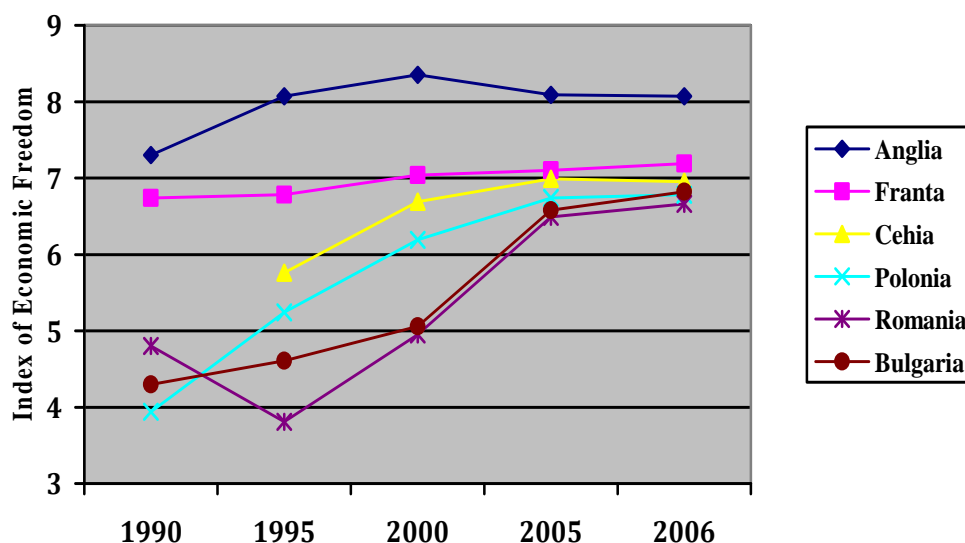
Economic Freedom – aggregate level

Table 1

	1990	1995	2000	2005	2006
Anglia	7.30	8.07	8.35	8.09	8.07
Franța	6.74	6.78	7.04	7.10	7.19
Cehia	-	5.76	6.69	6.99	6.95
Polonia	3.94	5.24	6.19	6.74	6.78
România	4.80	3.81	4.95	6.49	6.66
Bulgaria	4.30	4.61	5.06	6.58	6.82

Source: Gwartney (2008).

Using the graphic representation of the data will allow us to draw the main conclusions about the overall evolution of the economic freedom.



Source: authors.

Figure 1. Economic Freedom – aggregate level

In the beginning of 1990, a period of time characterised by the chain reaction crumbling of the communist system in Central and Eastern Europe, there is an obvious difference in the degree of economic freedom. If countries of Western Europe such as France or England⁽³⁾, benefited from the freedom and prosperity associated with the capitalist model, the ex-communist block had a very low level of economic freedom, comparable to some African countries today, like Niger, Angola and Congo, countries found at the bottom of the international ranking of EFI in 2008. The main factor generating the socialist system was not at all from the outside, but rather from the inside, stemming from the planned macroeconomic organisation system. Issues involving the impossibility of economic calculation, unreliable knowledge and the lack of economic incentives have eventually led the system to a collapse from within. Thus, in the beginning of the last decade the legacy of the ex-communist countries consisted in a production system unsuitable to the market conditions and people's needs and by an overall poor standard of living, all these being a direct consequence of the industrialisation plans and central absolute coordination in great contrast with the economic reality.

The necessity of replacing the old institutional arrangement based on planning and coercion, with a different one, compatible with the rules and mechanisms of the market economy led to two directions of institutional transformation: the shock therapy and gradual therapy. If in the case of countries like the Czech Republic and Poland, the social tendency was favorable to radical changes, political figures swiftly introduced major reforms for liberalising and restructuring the economy, in Romania and Bulgaria this process turned out to be very slow, inconsistent and most importantly fluctuating. The policy of slow gradual reforms applied just when it's really needed has turned these efforts, at least in Romania, into a „go and stop” process. The opponents of rapid privatization – who were unfortunately more than just a few – have always stated that privatization shouldn't be seen as a „mean” in itself, or as an issue of „ideology”, communicating the flawed idea that after all it is not well established what kind of propriety type ensures the best circumstances for economic growth. (see Balcerowicz, 1998, p. 65).

The social end economic outcome of these different approaches of the transition period is also reflected in the dynamic of the economic freedom. We can see the fact that Poland had a sudden growth even in the first years of 1990 in its freedom level from 3.40 in 1990 to 6.19

in 2000. The same applies for the Czech Republic, which in 2000 reached a level of economic liberalization similar to that of France (6.69 and 7.04). Unlike these countries, the EFI evolution in Romania and Bulgaria, the last new-comers in EU is completely different, both ranking in 2000 around 5.00. Considering the context of starting the negotiations with the EU and the institutional transformations imposed by the Commission according to *aquis-communitaire*, the years 2000-2005 have brought a spectacular increase of freedom in both countries that mould perfectly to a sustained economic growth.

It's interesting to note the fact that since 2005, most of the ex-communist countries slow down in their growth of the economic freedom, establishing a convergent process where the upper limit is the freedom level of continental economies, especially the French and the German ones. While the Treaty of Lisbon has just been ratified, with an European model of economy based increasingly on centralized decisions, excessive bureaucracy and major distributive policies, the old social pattern of *welfare-state* starts to re-emerge.

A more exhaustive analysis of the EU members helped formulating important conclusions, confirming the European institutional model which states that the social European model (the continental one) is rather compatible with a low degree of economic freedom. Under the present structure of the European institutions whose limits are rather obvious, it is less likely that the new members will ever surpass the old members in the EFI ranking. Although it would be long-expected to have a freedom degree like England or Ireland, in reality the Economic Freedom Index has a rather polarised distribution towards the value 7-7.5 corresponding to many of the continental European countries⁽⁴⁾.

The empirical analysis of the economic freedom in these six countries can lead to some important conclusions. On one hand, Romania has an institutional framework less suitable for individual freedom and ensuring economic prosperity compared to the old members of the EU and even to some new ones, including partially Bulgaria. The overview can show that the process of European integration has been a set of institutional constraints for all the ex-communist countries enlisted as new members, which resulted in an important growth (although not sufficient) of the economic freedom and consequently of economic development.

On the other hand, we consider this growth relatively insufficient, because if we are to take into account the deficiencies of the European model based on the principles of the German *welfare-state* (shown especially in areas 1 and 5), the option of integration and continuing this path inside the EU will limit somehow the initiatives of the members to promote economic freedom. The bureaucracy's attempts of uniformization and centralisation of national governmental programs are actually questioning the positive outcomes that Romania had gained in the road towards the European Union. This is why it is necessary at least in theory to consider the perspective of a contrafactual approach.

We can sum up by saying that aligning Romania to the European institutional framework turns out to have, at least in the short-run, enough advantages to justify the integration process. Yet this process has to be viewed with skepticism, because the EU itself is not the *Promised Land*, and the integration of our country in this political framework is actually more like a compromise solution. We had to choose between the disadvantages of not adhering and the ones involved in the process that were deemed less damaging. A retrospective analysis over the impact of the 2008 financial crisis and over the policies promoted by Bruxelles in order to reboost the economy shows unfortunately the same welfare state ideology. We can only hope that in the broader context of globalization and accelerating the migration of capitals, goods and labor, the European officials would give in to internal and external pressures to reform the institutional paternalist and centralized framework and replace it with a free market system based on private property and voluntary trade.

3. Conclusions

Considering the above reasoning, it is obvious that economic freedom is an essential factor affecting the level of economic development. This article suggested that economic development should be seen more like a major process of extending individual freedom, which is also the point of view of the Nobe Prize laureate in economy, A. Sen (2004, p. 19). This approach is in contrast with the other more limited ways of seeing development, such as identifying development with GDP growth, incomes, or social modernization. Therefore, our approach takes into account the institutional setting and the particular structure of incentives that facilitate the extension of individual freedom, as a premise to ensure economic prosperity and social order.

It is also true the fact that the relationship between freedom and prosperity is not quite unilateral and a higher degree of economic development can apply a certain pressure to society and provide incentives to increase economic freedom. Still, although the causal relationship *from freedom to prosperity* has been scientifically proven as *a priori* and universal, the second one *from prosperity to freedom* can only be demonstrated *a posteriori*. Moreover, the latter cannot be universally true, since history offers us countless examples of developed countries where economic freedom is strongly affected by an extended state intervention. Maybe the most relevant example in sustaining this idea is the USA, one of the most developed countries in the world, which actually deals with a dramatic decrease in the level of economic freedom, according to the Fraser Institute.

Notes

⁽¹⁾ This article presents some basic theoretical and empirical results developed within the IDEI research project called „*Liberty and Freedom. Implications for Institutional Reforms in Romania and EU*”, CNCSIS contract no. 363/2007

⁽²⁾ There are also some other economists that emphasized in their writings the relevance of institutions and political stability over economic prosperity. The law, the enforcement of the property rights, the contract, price stability, free trade, competition and low fiscality are among the most important factors included in the structure of EFI

⁽³⁾ It is worth to say that even in between old EU members there are significant differences regarding the level of economic freedom. For example, the anglo-saxonian model, traditionally built on market values, competition and private property, is in a greater extent compatible with economic freedom than the French one, specific by its nature to welfare state and a high redistribution of wealth

⁽⁴⁾ The above figure shows a constantly decrease of level of economic freedom in Great Britain from 8.35 to 8.07 during 2000-2006

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THE ROLE OF THE MONETARY POLICY IN ASSET PRICES VOLATILITY CORRECTION: THE ROMANIAN CASE

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***Abstract.** The speculative bubbles of asset prices, and especially their burst out, have a negative impact on the financial stability. As a consequence, a close observation of these prices is necessary. If the opportunity of the intervention is intensely analyzed, the debates related to the instruments of the intervention, differentiated depending on the nature of the assets, are almost inexistent. In this study, we intend to analyze the role of monetary policy in asset prices volatility correction, in the context of the development of the financial and real estate markets in Romania. We show that the interest rate instrument has a reduced importance in financial asset prices volatility correction.*

Keywords: financial stability; asset prices; central banks; interest rate; Romanian financial system.

JEL Codes: G12, E58, C51.
REL Codes: 8J, 10C, 11B.

1. Introduction

Most of the economists agree with the fact that the crash of asset prices represents a source of financial instability which can often generate a financial crisis. Some aspects have to be pointed out in relation with the evolution of asset prices: the boom itself is not the cause of the instability, but the possible crash that can follow it; usually the speculative bubbles lead to violent crashes, the booms being rather associated with the asset prices trend on medium and long term⁽¹⁾.

In this study we analyze the impact of the evolution of the asset prices on the financial stability, without leaving aside their impact on the prices stability. Prices stability represents a condition for achieving financial stability, which is defined as the capacity of the financial system to accomplish its functions, counteracting the turbulences that frequently appear in its mechanisms, and also as its capacity to protect itself against the shocks that can destabilize it and to return to equilibrium (Cerna et al., 2008, p.11-12).

The volatility of asset prices represents one of the four important sources of financial instability together with: the increase of the interest rate, the lack of the investors' confidence and the problems in the banking sector (Mishkin, 1997, p. 64-65). Weber (2005, p 1) sustain the idea that the asset bubbles can affect the financial stability and reduce the overall welfare. However, the stability of the market does not mean „steady asset prices” (Schinasi, 2003, p. 4). In general, the stability means the absence of those volatilities that can negatively impact on the real economy.

Being aware of the need to reduce the volatility of asset prices, in this article we will insist on the analysis of some issues that, in our opinion, are very important for the fulfilment of the two objectives of the central banks, namely prices stability and financial stability: the moment of the intervention and the tools that can be used to correct the asset prices bubbles. We also analyze the aspects that characterize the way the National Bank of Romania (NBR), future member of the Eurosystem, approach the subject of asset prices. Afterwards we show that the interest rate instrument had only a residual influence upon the financial assets prices in Romania's case. Finally we point out the conclusions.

2. Related literature

The connection between the asset prices bubbles and the monetary policy stands for „one of the most challenging issues facing a modern central bank at the beginning of the 21st century” (Trichet, 2005, p. 1). Nevertheless, the specialists have different opinions on the role of central banks in the interventions on the asset prices’ evolution.

Some authors sustain the fact that the central bank does not have to take into account the evolution of asset prices in making their decisions, as for example Illing (2001, p.5-10), Bernanke and Gertler (2001, p. 254-255). These economists state that, from the historical point of view, the intervention of central banks influences the economic agents’ psychology affecting thus the market’s equilibrium. At the same time, it is considered that the interventions of the central banks on asset booms by means of the interest rate do not eliminate the financial fragility; on the contrary, they amplify it. Mishkin (2001, p. 15-16) does not believe that the monetary authorities can improve their performances trying to intervene upon the bubbles. One issue that can occur in case of intervention is the loss of the credibility of the central banks, considers the author.

Other specialists among which Patat (2000, pp. 57-58), Borio et al. (2001, p. 6-7), Goodhart and Hofmann (2002, p. 10-12) or Davis (2003, p. 6), sustain that the asset prices influence the banks solvability and an analysis of asset prices enables a better knowledge of interactions between the real and financial spheres. Consequently, Goodhart and Hofmann (2002, p. 5-9) showed, by means of a theoretical model, that the future demand and the inflation in G7 are influenced both by the exchange rate and by the asset prices. In their opinion, the exclusion of the asset prices from the variables taken into account in the monetary policy decisions leads to a sub-optimal response in terms of inflation and production gap volatility.

There are also specialists that proceeded to a classification of the approaches related to the opportunity of the intervention of the central banks on the asset prices evolution. For example, Detken and Smets (2004, p. 8-9) made a distinction between a reactive and a preventive approach of central banks. In the first case, the monetary authority waits to see whether the collapse can occur and only then intervenes. In case of preventive policy, the intervention takes place on the moment of the boom’s construction and of the sustained credit increase.

Trichet (2005, p. 5-7) makes a complex classification and differentiates four approaches related to the intervention of the central banks on asset prices, arguing that only the moderate ones worth being taken into consideration:

- *The orthodox approach.* This approach does not assign a special role to asset prices. In the strongest version of this approach, the prices stability is sufficient to ensure the financial stability, but this version is rejected or infirmed by the empirical calculations. In a more moderate version of this approach, the prices stability contributes, on long term, to ensure the financial stability and numerous central bankers agree with this opinion.

- *Targeting asset prices.* The extreme version of this approach is to include the asset prices into the Consumer Price Index. This idea, launched by Goodhart and Hofmann (2002), is not too appropriate because the asset prices are volatile and refer to the future consumption. In this case, the pressure on the central banks will be very important, that is why the solution is considered to be an extreme one.

- *Pricking asset prices bubbles.* The roots of this position can be traced back to the so-called „liquidationist” view and this approach has some prominent advocates within the Board of Governors of the Federal Reserve System. They sustain a strong policy reaction to market dynamics which will force the liquidation of the most risky positions without inflicting further damage on sound investment strategies and the economy more broadly.

- *Leaning against the wind.* The leaning against the wind principle describes a tendency to cautiously raise interest rates even beyond the level necessary to maintain price

stability over the short to medium term when a potentially detrimental asset price boom is identified. The reasons are that credit constraints depend on the value of collateral and that, in case of a financial crisis, the whole financial intermediation process is affected⁽²⁾. Leaning against the wind is advisable only when the probability that the bubble will anyhow burst in the near future is small and when the future growth of asset prices is sufficiently interest rate sensitive.

We consider that the central bank has to take into account the asset prices evolution when elaborating the monetary policy strategies. At the same time, we think that the central bank has to intervene on an unfavourable evolution of prices when the stability of the system is endangered, even if the interest rate is not the most appropriate intervention instrument⁽³⁾. Thus, for the intervention efficiency, the authorities must delimitate between financial assets and real assets, and they also have to identify the instruments with better performances in different economic and financial conditions.

3. Conditions for the central banks interventions and available instruments

We will first describe the conditions required on the markets in order for the central banks intervention to be advisable, and then we will briefly analyze the possible means by which this intervention can be realized, making the distinction between financial asset and real estate asset.

In a small open economy, the probability that the central bank can stand against the general asset prices trend is insignificant. In other words, a central bank, in particular in a small economy, does not have the capacity to withstand a general asset prices evolution influenced by the international trends.

It is also significant to consider the importance of financial markets within the financial system. In a bank-based system, the effects of the asset prices welfare should not have a significant impact on the monetary policy transmission mechanisms (Illing, 2001, p. 15-16). Cecchetti (2006, p. 25-26) reached the conclusion that the market-based financial systems are more exposed to risks caused by the asset prices booms. The results of his researches suggest that housing booms worsen growth prospects, creating outsized risks of very bad outcomes. By contrast, equity booms have very little impact on the expected mean and variance of macroeconomic performance, but worsen the worst outcomes.

On the other hand, in case of a high leverage economy where financial intermediaries are exposed to risks, a crash can determine a “bank run” affecting the process of intermediation and a quick and expensive liquidation of real assets without the intervention of the central bank.

Beside the bank-based or market-based conditions, it is also important to make the distinction between the financial assets price volatility and those of housing assets price volatility, when analyzing the opportunity of central banks intervention, a distinction which is not often underlined in the economic literature. Even if most of the studies focus on financial asset prices because the stock-exchange crashes frequently caused financial crises, the speculations on the real estate market are also important. A sudden decrease of prices endangers the banking system by the reduction of the guarantees' value. Secondly, the welfare effect would disappear and the consumption and the investments will reduce considerably. The hypotheses of the perfect market are not valid for the real estate assets, and the acquisition of properties is often accompanied by leverage.

After we have established that the central banks' intervention instruments have to take into account the nature of the assets, we proceed to the analysis of these tools. The interest rate actually represents an important instrument available for the monetary authorities. Even if certain specialists consider that this tool can be used to correct the imbalances of asset prices, the risks corresponding to its usage are significant⁽⁴⁾. At the same time, the efficiency of this instrument has to be assessed. Unfortunately, an important part of the economic literature on this subject focuses only on the interest rate as intervention instrument.

Another possible intervention instrument for the asset prices imbalances is the regulation and surveillance policy. When the economic booms are accompanied by unbalanced increases on the credit market causing the rise of the asset prices, the risk that their level is no longer justified by the economic fundamentals appears. This imbalance has to be corrected before a financial crisis occurs. Adequate regulation and surveillance policies can contribute to the preservation of the financial stability (Caruana, 2005, p. 18).

Regulatory policies and supervisory practices should respond to possible asset price bubbles and help prevent feedback loops between asset price bubbles and credit provision, thereby minimising the damaging effects of bubbles on the economy (Mishkin, 2008, p. 68-69).

The speculative bubbles are based on the investors herd behaviour and on the lack of market transparency. The increase of the transparency, by means of public information, represents another useful instrument. The central bank can provide such information benefiting from the necessary credibility and independence. The question that arises is whether the central bank is better informed than the market and whether it can detect a bubble. It is sure that a 10-20 percent increase of the asset prices during a month is not caused by a blooming economic situation.

The monetary policy can be sustained by the fiscal policy both in case of booms of financial asset prices as well as in case of those of real estate assets prices. The structural policies also represent an advisable solution in case of booms of real estate asset prices.

4. The role of NBR in the correction of asset prices imbalances

Although at present the analysis of the evolution of asset prices is not an important element for the NBR monetary policy decisions, it can be counted among the new challenges for the financial system stability. This issue grows more important in the context of a European framework and of a continuous development of the Romanian financial and real estate market, after the economy will recover.

At European Union level, the single monetary policy is not sustained by a common fiscal and structural policy. The use of the interest rate as intervention tool can diversely affect the member states' financial system. Detailed studies made by the ECB to increase the market's information level require significant efforts. Moreover, the markets are still considerably influenced by the decisions of the national authorities.

The ECB's monetary policy strategy takes into account the asset prices evolution as one of the economic and financial indicators selected for assessing the risks on short and medium term that threaten the prices stability (the second pillar supporting the ECB's monetary policy decisions). The evaluation of these indicators is carried out in a context of prices stability and the ECB intervenes only if the stability is menaced (Trichet, 2003, p. 18-19).

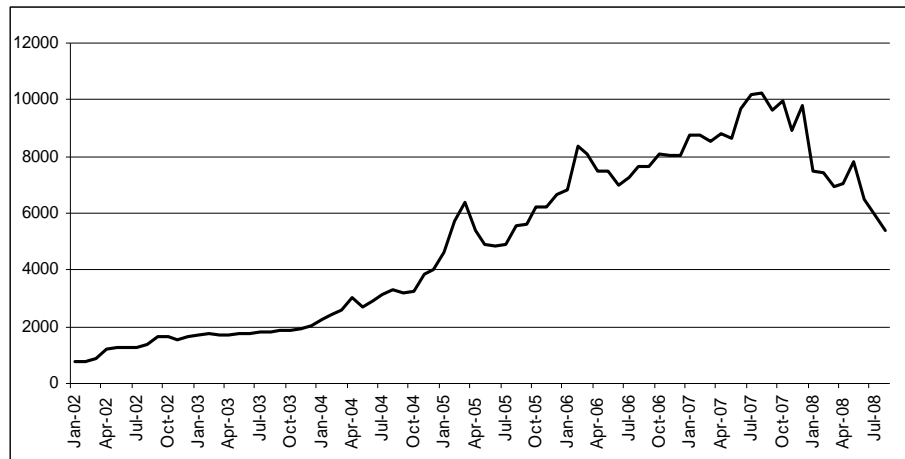
On short term, a close cooperation between the national authorities and the ECB would represent a solution for taking a common decision related to the opportunity of an intervention on the market, to the moment of this intervention, as well as to the consequence and importance of this action. The interventions still fall in the responsibility of the national authorities.

Before underlining the importance of asset prices analysis and of the adoption of preventive solutions for the Romanian financial system, we have to mention that the real estate and the financial markets, even if they are not mature, registered a considerable increasing development before the economic crisis.

In Romania, the evolution of the real estate asset prices and the bubble burst resulted in a real problem. The housing value increased substantially during the last years, amplifying the wealth effect or the leverage capacity by using the non-financial assets as guarantees. The sharply prices increase on this market was artificial. The reduced liquidity of the real estate

market and the considerable share of non-financial assets out of the total net fortune have significantly diminished the inhabitants' capacity to cope with the systemic choc.

In relation with stocks prices, the NBR analyzes the evolution of the financial market in its monthly bulletins and stability reports, but these analyses only monitor the level of market development, and not the unjustified increase of the stocks prices. These analyses did not contribute to a price correction before 2007, but in the aftermath of the financial crisis, the Romanian capital market knew a severe downturn (Figure 1).



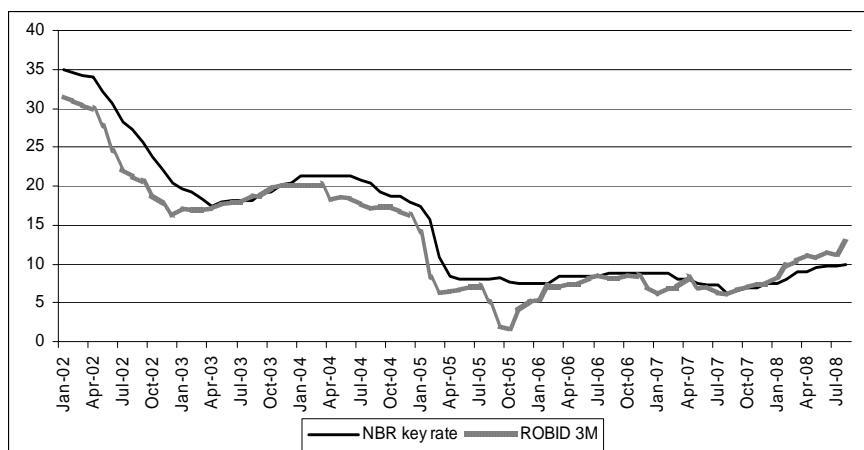
Source: Bucharest Stock Exchange.

Figure 1. BET index dynamic

5. Interest rate as possible intervention instrument: econometric tests

The connection between the stock market index and the interest rate has been already tested in the economic literature. Andersson and Lauvsnes (2007) performed a study related to the Norwegian financial system and they demonstrated that the interest rate is one of the determinants of the stock market index. Similar to this analysis, we want to investigate if the key interest rate of the NBR influences the stock prices on the Romanian capital market.

In order to highlight the importance of the interest rate in the correction of financial asset prices volatility in the Romanian case, we performed econometric tests using monthly data⁽⁵⁾. Because the NBR's key rate can remain unchanged for a longer period, we decided to use as a proxy the Romanian Interbank Bid Rate (ROBID) at three months, in order to test the influence upon the BET index⁽⁶⁾. The correlation between the interbank interest rate and NBR's key rate is very strong (Figure 2).



Source: NBR Monthly Bulletins.

Figure 2. NBR's key rate and ROBID 3M

Different control variables were introduced in the econometric equation to validate the findings, but the results were not stable. That is why we have chosen to test the asset price evolution in relation with the real interbank interest rate and the macroeconomic conditions. Because the BET index and the real interest rate were stable only in first difference, we have used their variation in the final equation:

$$\Delta \log_bet_t = c + \alpha \times \Delta rir_robid3 + \beta \times ip_{t-1} + \varepsilon_t \quad (1)$$

where: Δ , c , rir_robid3 , ip and ε represent the variation, the intercept term, the interbank real interest rate at 3 months, the industrial production as a proxy for the economic growth rate and the errors of the model; $\Delta \log_bet$ is the logarithmic return of the BET index.

The equation was tested for the period January 2003-August 2008. The econometric tests results are presented in the Table 1.

Econometric results

Table 1

<i>Dependent variable: $\Delta \log_bet_t$</i>		
<i>Explanatory variables</i>	<i>Coefficient</i>	<i>t-Statistic</i>
c	0.0140	0.6468
Δrir_robid3_t	-0.0180**	-2.1991
ip_{t-1}	0.0010	0.2250
R ²	0.0748	
DW	1.9690	
Observations:	67	
<i>Note: *, ** and ***, mean statistic relationship significant at 10%, 5% respectively 1%.</i>		

We can observe that the explanatory power of the model is reduced ($R^2 = 0.07$), but the errors of the model are independent (Durbin-Watson statistic is close to 2).

This equation, even if it is simple, shows that the BET index trend is negatively influenced by the real interbank interest rate evolution. However, the coefficient of the real economy conditions represented here by the first order lag of the industrial production is not significant. The model appears fragile in this case.

Consequently, we can not state that the interest rate represents a successful instrument in the correction of financial assets prices volatility in Romania. Moreover, it is not the only instrument which can be used for this purpose. Our recommendation is that the authorities should get more involved in increasing the capital market transparency.

6. Conclusions

The asset prices trend investigation represents an element that has to complete the analysis carried out by the central banks. Nevertheless, this concern of the monetary authorities for the evolution of the financial asset prices should not determine them to automatically intervene on markets in order to stabilize the asset prices volatility. A preventive intervention policy is more efficient. The reaction of the central bank must not be mechanical, but it has to exist. This implies the need to carry out complex studies and analysis, especially to determine the construction of bubbles.

The choice of the intervention tools has to be done by taking into account two elements: the delimitation of the market booms and of speculative bubbles, respectively the delimitation between the financial asset market and real estate market, even if the evolution of these two markets is closely related.

Although the interest rate policy remains the most important intervention instrument, the results do not always fit the expectations. The authorities have to count on a mixture of

elements to correct the imbalances. The regulation and surveillance policy, together with the reduction of the asymmetry of the information, represent important factors for the prevention of the constitution of speculative bubbles. Consequently, the role of the NBR in the correction of asset prices imbalances has to become more active and consistent in the future.

Notes

- ⁽¹⁾ Gerhard Illing defines the bubble as follows: „due to the overinvestments in the risky sector, the asset price in this sector – the rent of the scarce resources – is driven up above its fundamental value” (Illing, 2001, p. 6). Thus, the bubble is considered a distortion of the relative price of a real or financial asset.
- ⁽²⁾ This phenomenon recently occurred in the case of subprime crisis in USA, in September 2007.
- ⁽³⁾ See for example the contradictory results of Rigobon and Sack (2003, p. 660-662) and Bohl et al. (2007, p. 729-731).
- ⁽⁴⁾ These risks are influenced by the macroeconomic fundamentals level in the corresponding period.
- ⁽⁵⁾ We took into consideration the stock prices in order to reveal the financial assets prices. The stock market has an important weight into the Romanian capital market.
- ⁽⁶⁾ The causality relationship between the interest rate and the stock market index can also be considered in the other direction, within the reaction function of the central bank.

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MACROECONOMIC IMBALANCES AND THE RESPONSE OF ECONOMIC POLICIES TO THE EFFECTS OF THE INTERNATIONAL ECONOMIC CRISIS IN THE NEW MEMBER STATES

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***Abstract.** The macroeconomic developments of the New Member States, in the context of the international financial and economic crisis during the years 2008 and 2009, were characterized by heterogeneity and were accompanied by distinct monetary and fiscal policy measures. The different impact of the international crisis on these economies can be attributed to a series of diverse factors such as the cyclical position of the economy at the onset of the crisis, the structure of the commercial flows, the external financial dependency or the different contribution of the economic sectors to the formation of gross value added.*

Keywords: economic crisis; macroeconomic policy mix; univariate filters; business cycle; monetary policy regime.

JEL Codes: E3, E5, F4.

REL Codes: 8H, 8M, 10A.

1. Introduction

The macroeconomic developments in European Union (EU) countries in the context of the international crisis that became manifest mainly during 2008 is characterized by heterogeneity and consequently by different responses of the monetary, fiscal and revenues policies mix. In the European Union economies, especially in case of those countries which aren't yet members of the euro area, the general perception is that the return of the aggregate demand and supply to the levels which existed before the onset of the crisis will be a gradual one and the effects of the uncertainties will be felt with a heightened persistence in all sectors of the economy.

The macroeconomic imbalances of the last decade and the international financial and economic crisis are tightly linked (Obstfeld, Rogoff, 2009, pp. 11-39). The worldwide small real interest rates, the distortions persisting on the credit market, financial innovations and the loose exchange rate and monetary policy of some emerging markets such as China, have contributed to the onset of the financial crisis in the USA and to its propagation on a global scale. The main determinants of the financial crisis in the USA and its evolution to a global economic crisis are the loose monetary policy of several central banks which have fuelled real estate bubbles, excess savings, inappropriate quantification and hedging of counterparty risks, as well as unsuitable measures taken immediately after the onset of the financial crisis (Taylor, 2008, pp. 1-18). With regards to the solutions of the crisis, the implementation of a substantial financial stimulus packages will help through the recession without causing significant aggregate demand pressures (Krugman, 2009, pp. 20-120).

Regarding the new EU member states, the effects of the economic crisis as well as the measures taken by each government are significantly different in exchange rate targeting countries as opposed to inflation targeting countries. The difference resides in the fact that exchange rate targeting countries have had few options in case of monetary policy measures

considering their commitment in insuring the stability of the exchange rate. An example is given by the economic development of the Baltic States⁽¹⁾ during 2008 and 2009 as they have undergone a serious economic adjustment accompanied by the deterioration of the labour market, by additional constraints on the financial markets and a decrease in the sentiment towards the stability of the domestic currency. In this context, the main challenge of the monetary policy was to maintain the confidence in the fixed exchange rate system. The inflation targeting countries which have a flexible exchange rate regime have been affected by low transmission of the interest rate decreases on the financial markets. This development was mainly triggered by heightened risk aversion and low liquidity on the financial markets. From the inflation targeting New Member States' category we have included in our analysis the following: Czech Republic (CZ), Hungary (HU), Romania (RO) and Poland (PO) and from the exchange rate targeting ones: Estonia (EE), Latvia (LV), Lithuania (LT) and Bulgaria (BG). We have also added in our analysis three developed economies which are not members of the euro area: Denmark (DK), Sweden (SE) and the United Kingdom (UK).

2. The impact of the financial crisis on the economies of the new Member States

The impact of the international economic crisis was experienced with different strength in the New Member States and the three developed economies which are not members of the euro area. While some economies like Poland and to a certain extent the Czech Republic have passed this recession without experiencing a major contraction of the economic activity, other countries such as the Baltic States have suffered decreases of the real GDP of more than 10% in the period of 2008 Q2 – 2009 Q2.

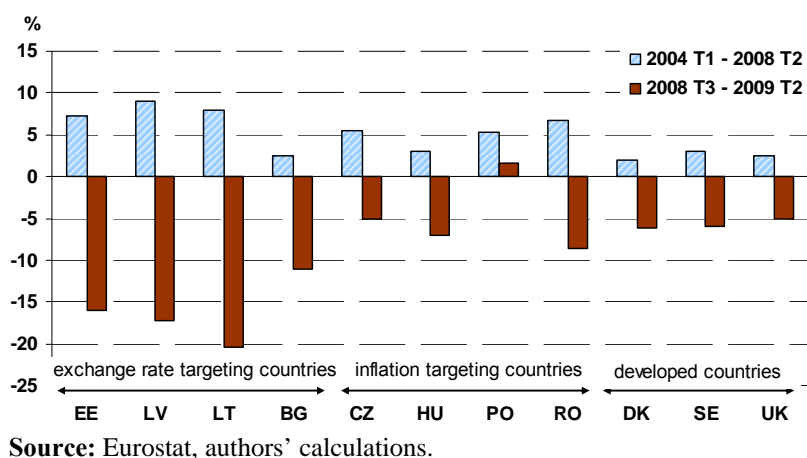
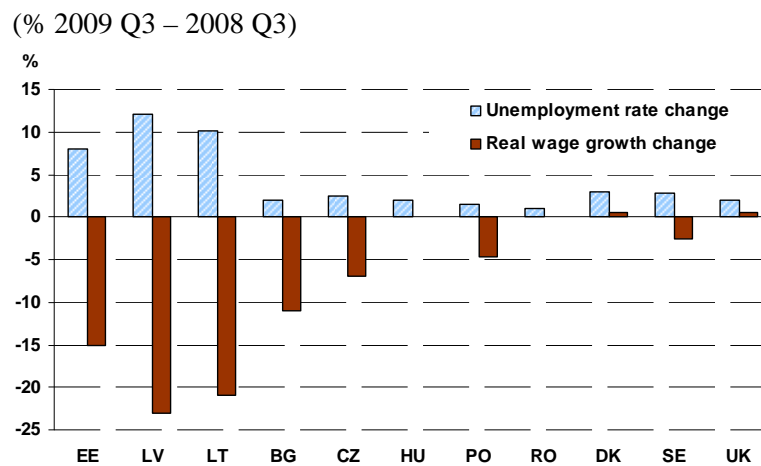


Figure 1. The economic growth before and after the international economic crisis (average year on year growth, quarterly data)

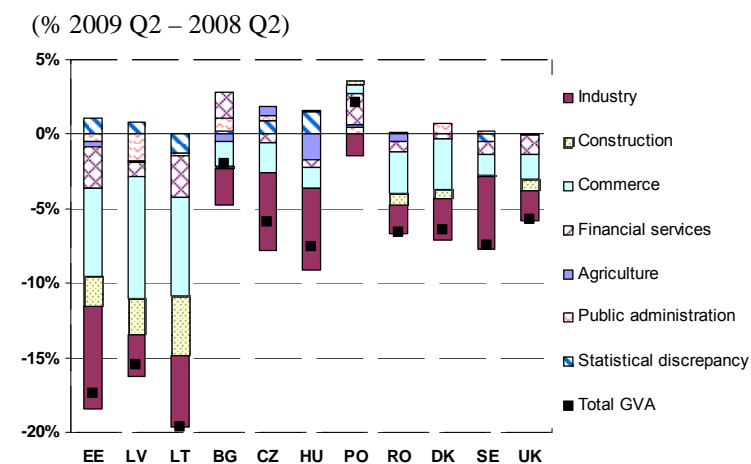
As we can notice in Figure 1, the countries which have grown at a high rate in the years before the crisis have also been those which have experienced the most severe decline in the economic activity. The different impact of the crisis can be highlighted through the reaction of the labour market in the analyzed economies. Regarding the changes in the unemployment rate and the real wages growth rate, the most affected countries are the Baltic States, followed by the central and south eastern European countries and then by the developed countries which are not members of the euro area (see Figure 2). This development of the labour market is tightly linked to the economic developments but also reflects the flexibility of these markets and the efficiency of the policies implemented by the governments. In countries such as Hungary, Romania and the United Kingdom the adjustment of the labour market wasn't achieved by the adjustment of wages which can suggest a delayed response of these economies to the effects of the crisis mainly in case of the public sector.



Source: Eurostat, authors' calculations.

Figure 2. The change in the unemployment rate and the wage growth rate

Regarding the different sectors of the economy, it is obvious from Figure 3 that the industry has contracted the most in all economies but its contribution to the total gross value added (GVA) is different in each economy, depending both on the relative dimension of this sector and on the degree of reliance of each economy on exports.



Source: Eurostat, authors' calculations.

Figure 3. The change in real GDP and its decomposition on the relevant economic sectors

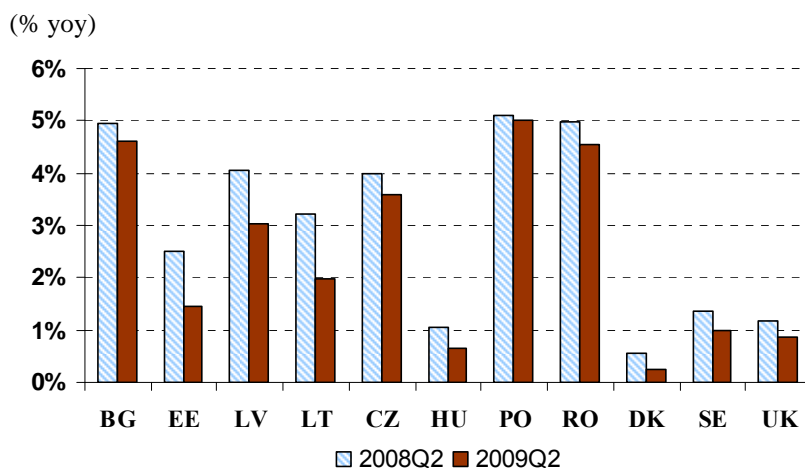
3. Possible causes of the heterogeneous macroeconomic developments during the crisis

A first explanation for the different responses of the European economies to the international economic crisis can reside in the different cyclical position of these economies in the period before the crisis and in the unlike effects of the financial crisis on the aggregate supply and the potential output. As it is visible in Figure 1, the decline of the economic activity was more pronounced in the economies which have grown mainly based on excess demand. This was in most cases accompanied by inflationary pressures and important appreciation of the domestic currencies which has led to major external imbalances expressed through important current account deficits. The causes which have led to this aggregate demand imbalance are the excessive growth of real wages and loans which have fuelled the growth of unit labour costs and asset bubbles especially on the real estate market. On the supply side, the effects of the international crisis have manifested in case of all

production factors and in all sectors of the economy but the dimension of these effects is difficult to determine presently.

In order to quantify the magnitude of the disequilibrium between aggregate demand and supply at a certain point in time, the main method is represented by the decomposition of the GDP in potential level and output gap. We can hence determine how much of the GDP change is due to the modification of the production capacity in the economy (capital stock, labour force) and to the modification in the demand excess/deficit.

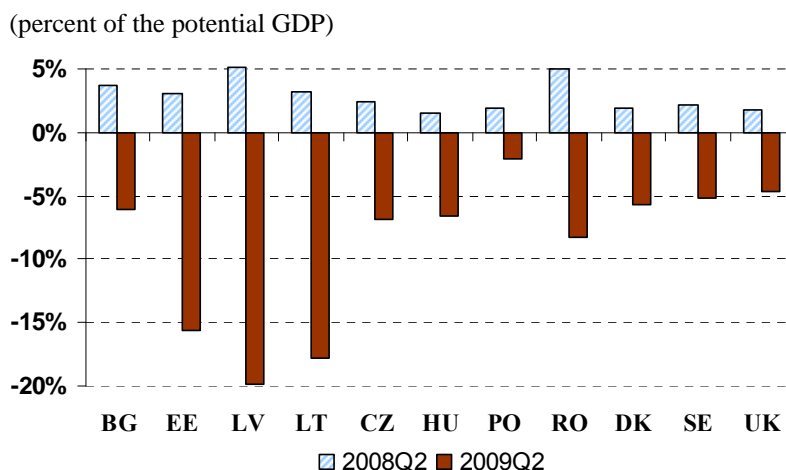
For all the 11 analyzed countries, this decomposition was performed using univariate filtering methods: Hodrick Prescott filter, band-pass filter and the univariate Kalman filter. The data regarding the seasonally adjusted GDP⁽²⁾ are taken from the Eurostat database for the period of 1998Q1 – 2009Q2⁽³⁾. The potential GDP and the output gap is obtained as a weighted average of the series resulted using the three different filtering methods, while the weights are inversely proportional with the volatility of the potential GDP. Figures 4 and 5 present the annual growth rate of the potential GDP and the output gap in 2008Q2 and 2009Q2.



Source: Eurostat, authors' calculations.

Figure 4. The annual growth of the potential GDP in 2008Q2 and 2009Q2

The potential GDP growth has decreased in all countries and the biggest reduction is the one in Lithuania. However, the negative evolution of the real GDP growth rate was mainly due to the transformation of the excess demand of the 2nd quarter of 2008 in a demand deficit in the next four quarters.



Source: Eurostat, authors' calculations.

Figure 5. The output gap in 2008Q2 and 2009Q2

The countries which at the onset of the crisis had the largest aggregate demand disequilibria are also the ones which suffered the biggest corrections – this is the case of the Baltic States, Bulgaria and Romania. However, it is clear that Romania's economy had the largest excess demand, but the correction that followed the onset of the international crisis was only the fourth largest. The difference between Romania and the Baltic States resides in the exchange rate regime – in Romania the depreciation of the domestic currency has partially absorbed the shock generated by the reduction in external demand, and hence the decrease in the economic activity was smaller.

Another possible explanation for the different macroeconomic reactions to the effects of the crisis is the degree of economic openness of the economies. Taking into account the high degree of commercial openness of almost all EU member states, the commercial channel represents a major cause for the spread of the effects of the economic crisis in all EU economies. The structure of imports and exports in the EU member states is another source of divergence in the macroeconomic evolution. Recent analysis has shown that the countries with a significant weight of intermediary and capital goods in their commercial flows have been aggressively affected by the worldwide decline in economic activity following the important reduction of investments at producers' level. On the other hand, the countries with a high weight of consumption goods in the commercial flows have suffered less from the effects of the crisis as the reduction in the consumption of this type of goods has been moderate.

Tightly linked to the degree of openness is the interconnection of the European financial markets. In the countries with a high degree of financial intermediation the effects of the crisis have been more severe. On the back of the increase in risk aversion, the amplification of the financial disintermediation process and the reduction of the economic agents' revenues, the financing requirements of the economies with high degree of intermediation have increased substantially. Following the reduction of the external financing sources, on the back of the increase in the risk premium associated with emerging markets, a substantial correction of the current account and private sector economic activity took place. In case of the Baltic States, Bulgaria and Romania, the most important reductions of the financing resources came from the other investments' (especially financing lines extended by foreign banks to their subsidiaries) and foreign direct investments' side; in case of Hungary, Denmark or Sweden the significant reduction corresponded to portfolio investments.

4. The response of the fiscal and monetary policy to the effects of the international crisis

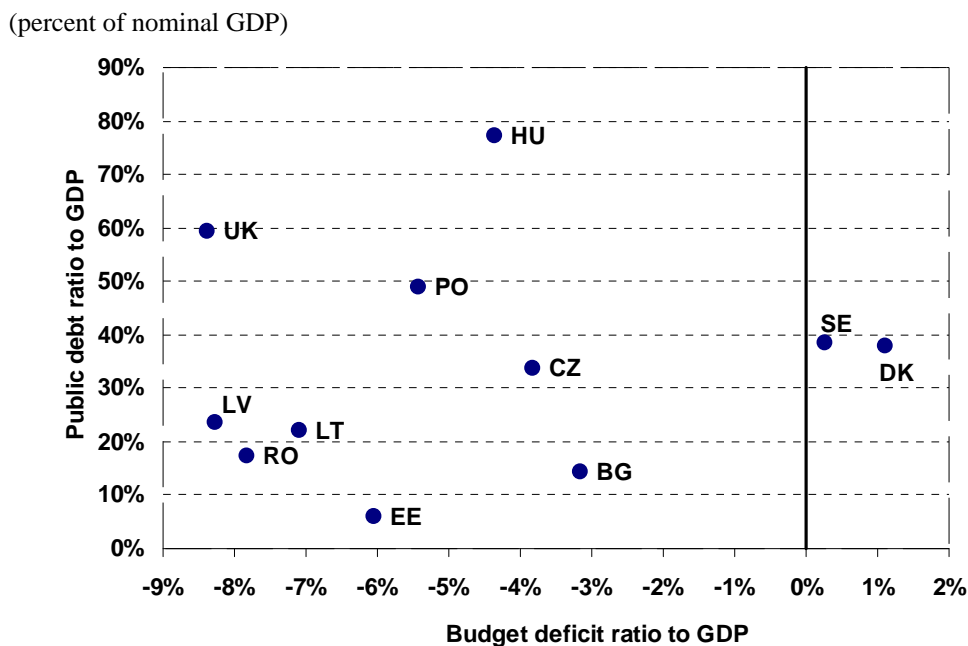
Except for Denmark and Sweden, all the countries analyzed had an unfavourable fiscal position before the onset of the crisis. In Romania for example, during the year 2007, fiscal policy was expansionary on the back of a favourable economic cycle which subsequently led to an increase in the budget deficit at around 5.4% at the end of 2008. The main challenge for the fiscal policy since the onset of the crisis was to keep the budget deficit at sustainable levels while also implementing measures to stimulate aggregate demand and supply. Countries such as Latvia, Romania and Hungary which have closed financing agreements with the international financial institutions⁽⁴⁾ will have to implement a series of strict measures convened with these institutions in order to reduce their budgetary deficits. Among these measures we can mention on the public expenditure side: the reduction of the public sector, the reduction of the costs related to pensions and capital expenditures and on the revenues side mainly the expansion of the taxation base. The aim of these measures is the reduction on a three years' horizon of the budget deficit to GDP ratio below 3%. In countries like Lithuania and Estonia the measures regard the reduction of public expenditures such as capital ones and social transfers but also the increase of the taxation rate. In the Czech Republic and Poland

fiscal policy measures weren't specific to a recession as automatic stabilizers have adjusted these economies. An example in Poland's case is the reduction in labour taxation in 2007, a measure which has worked during the crisis as a financial stimulus for both employers and employees.

The uncertainty regarding the evaluation of the fiscal policy measures resides in the difficulty of estimating the degree in which aggregate supply has been affected by the economic crisis and the decrease in the potential GDP growth rate as these two issues relate to the structural position of the budget balance. Figure 6 presents the fiscal position of the economies relative to the degree of public indebtedness. The least favourable combination is the one in which a high budget deficit is accompanied by a high level of public debt situated close to the Maastricht criteria value of 60%. In such a situation are countries like Poland, Hungary and the United Kingdom which are on a different level of economic development suggesting that crisis effects on public finance don't depend very much on the level of development.

In case of Romania, the excessive budget deficit recorded in the second half of this year was accompanied by a moderate public debt expressed as a ratio of GDP. This makes possible the increase in the public financing needs without jeopardizing the Maastricht criteria regarding public debt.

Regarding the response of the monetary policy to the current macroeconomic problems of EU countries, their effectiveness was determinant to the different evolution of these countries. In those economies in which there is an exchange rate targeting regime, monetary policy decisions were confined by the necessity to ensure a stable value of the domestic currency with respect to the euro. This limitation has affected the real economy as it wasn't sustained by monetary policy measures. Also, in most of these countries, in the period before the onset of the crisis the level of the real interest rates was extremely low and that fueled a sizeable excess demand and an unsustainable economic growth.

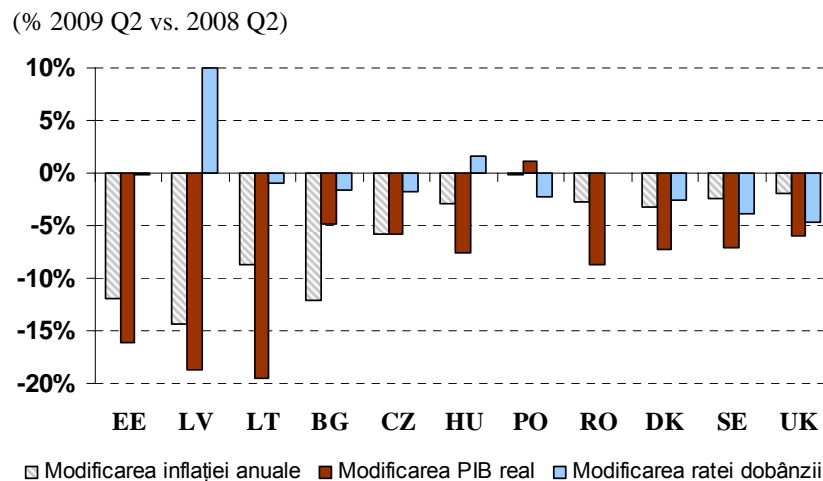


Source: Eurostat, authors' calculations.

Figure 6. Budget deficit and public debt

One can notice in Figure 7 that in the countries with a pegged or fixed exchange rate, the reduction of the interest rates was smaller compared to other economies while the real

GDP decrease was larger but accompanied by a more sizeable reduction of the annual inflation rate. In countries such as Hungary and Romania which have an inflation targeting regime, the interest rate reductions have also been limited by the liquidity problems on the interbank market as well as by a high level of the inflation rate that existed in these economies at the onset of the crisis. Also, the unfavourable perception regarding the risk of the investments on emerging markets determined an increase in the risk premium and the maintenance of interbank interest rates higher than the monetary policy rate.



Source: Eurostat, authors' calculations.

Figure 7. The development of the main monetary indicators

5. Conclusions

The macroeconomic developments of the EU new Member States in the context of the international financial crisis in the years 2008 and 2009 were characterized by heterogeneity and were accompanied by distinct economic policy measures. The different impact of the economic crisis on these economies can be explained by the different position of these economies in the business cycle at the onset of the crisis but also by factors such as the different structure of the commercial flows, the distinct external financing dependency or by the different contribution of the economic sectors to the formation of gross value added. Also, the monetary and fiscal measures implemented before and after the onset of the crisis are important. In particular, in the countries with a fixed exchange rate, monetary and fiscal policy measures have been limited by the additional constraint of maintaining the confidence in the domestic currency. Also, in the Baltic States, Bulgaria and Romania, the expansionary fiscal policy before the onset of the crisis has affected the functioning of the automatic stabilizers which in recessions should stimulate aggregate demand by reducing the impact of taxation on the disposable income of economic agents.

Notes

⁽¹⁾ Estonia, Latvia and Lithuania.

⁽²⁾ Because for Bulgaria the seasonally adjusted data for the real GDP was not available, the raw data were deseasonalised using the ARIMA-X12 procedure.

⁽³⁾ For Romania, the seasonally adjusted real GDP was available only for the period of 2000Q1-2009Q2.

⁽⁴⁾ The International Monetary Fund, the European Union and the World Bank.

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UNEMPLOYMENT TREND IN RESPONSE TO THE IMPACT OF THE ECONOMIC CRISIS

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***Abstract.** Unemployment has been rising sharply in the European Union since March 2008 as a result of the economic crisis. This paper consists of an illustration of the Romanian and European Union unemployment during this period, having as a background the contemporary economic crisis.*

Keywords: unemployment; unemployment rate; economic crisis; underground economy; globalization.

JEL Codes: E23, E24, J64.

REL Codes: 8G, 8E, 12B.

The economic crisis has hit the European labour markets, resulting in falling employment levels and rising unemployment in almost all Member States of the European Union.

Considered by some economists (R. Salais, N. Bavarez, B. Reinaud) as an invention of the modern world, unemployment, appeared in a second half of the XIXth Century, represents today one of the most important concerns for government and social forces in each country. Since then, the unemployment became a mass phenomenon, with profound implications for economic and social. The employment and, his negative side, the unemployment is one of the major economic problems, especially in this period when world economies and the global economy face a new economic crisis.

The economic crisis demonstrates the importance of ushering in a new era of sustainable global economic activity grounded in responsibility. The current crisis has once again confirmed the fundamental recognition that our growth and prosperity are interconnected, and that no region of the globe can wall itself off in a globalized world economy.

Unemployment trend during economic crisis

After three years of steadily declining unemployment, the economic crisis has hit the labour markets throughout Europe. In both the euro area (16 countries: Belgium, Germany, Ireland, Greece, Spain, France, Italy, Cyprus, Luxembourg, Malta, the Netherlands, Austria, Portugal, Slovenia, Slovakia and Finland) and the European Union (27 countries: euro area and Bulgaria, the Czech Republic, Denmark, Estonia, Latvia, Lithuania, Hungary, Poland, Romania, Sweden, the United Kingdom), the number of unemployed has increased each month since its low in March 2008. Since then the number of persons unemployed in the euro area went up by 3.7 million to a total of 15.0 million in May 2009. The same period European Union unemployment rose by 5.4 million persons to reach 21.5 million.

The monthly increase in the euro area has gone up from around 100,000 in mid-2008 to a recent peak of half a million in January 2009. However, in the last months the pace of the increase has slowed down. In the European Union the maximum increase was also recorded in January 2009 at around 800,000 in a single month before going down in recent months.

The unemployment rate, relating the persons unemployed to the total labour force, shot up from 7.2 % in March 2008 to 9.5 % in May 2009 in the euro area. In the same period, the

rate in the European Union surged from 6.7 % to 8.9 %. The unemployment rate in May 2009 is the highest since May 1999 for the euro area, while for the European Union it is the highest since June 2005.

An outline of the unemployment development during economic crisis (rate %)

Table 1

Country / Area	Turning point	Situation at turning point**	Current situation (sept 2009)	Total increase since turning point till Sept 2009
<i>Euro area (16 countries)</i>	<i>Mar-08</i>	<i>7.2</i>	<i>9.3</i>	<i>2.1</i>
<i>European Union (27 countries)</i>	<i>Mar-08</i>	<i>6.7</i>	<i>8.9</i>	<i>2.2</i>
Italy*	May-2007	5.9	7.4	1.5
Spain	May-2007	7.9	18.3	10.4
Ireland	Aug-07	4.5	13	8.5
Luxembourg	Sep-07	4	6.3	2.3
Latvia	Nov-07	5.4	19.1	13.7
Lithuania*	Nov-07	4	13.6	9.6
France	Feb-08	7.5	9.8	2.3
Estonia*	Apr-08	3.7	13.5	9.8
Finland	Apr-08	6.2	7.3	1.1
United Kingdom*	Apr-08	5.1	7.9	2.8
Cyprus	Aug-08	3.5	5.4	1.9
Czech Republic	Sep-08	4.3	6.9	2.6
Malta	Sep-08	5.8	7.1	1.3
Poland	Sep-08	6.8	7.9	1.1
Slovakia	Sep-08	9	11.7	2.7
Slovenia	Sep-08	4.2	5.7	1.5
Hungary	Oct-08	7.8	9.5	1.7
Austria	Jun-2008	3.6	4.5	0.9
Denmark	Jun-2008	3.1	6.2	3.1
Sweden	Jun-2008	5.6	8.3	2.7
Greece*	May-08	7.5	8.9	1.4
Belgium	May-2008	6.6	8.2	1.6
Portugal	May-2008	7.6	9.2	1.6
<i>Romania*</i>	May-2008	3.7	6.9	3.2
Bulgaria	Nov-08	5.1	7.2	2.1
Germany	Nov-08	7.1	7.3	0.2
Netherlands	Nov-08	2.7	3.5	0.8

* Current Situation = June 2009.

** Eurostat define *turning point* as the month with the lowest unemployment rate in recent years. It does not necessarily mean that the unemployment rate has increased each month since then, but lower rates were not reached.

Source: Eurostat Statistics (*une_rt_m*).

While, for the European Union as a whole, the increase in unemployment clearly started in March 2008, the different underlying developments in individual countries show that there is no uniform pattern. Member States' labour markets vary considerably in terms of structure and regulation. And the general crisis affects countries differently. All Member States of the European Union are currently experiencing rising levels of unemployment, but the onset of the increase varies considerably from country to country as shown in the table below (Table 1).

As the Table 1 shows, it is not only the starting month of rising unemployment that varies between countries. The intensity by which the situation aggravates, measured as *Total increase since turning point till current period Sept 2009*, is also different across Europe. In most Member States, *Total increase* in the rate has been 1-3 percentage points since the starting of the crisis. But the increases are much more severe in the Baltic States – Estonia, Latvia, Lithuania – and Spain.

Unemployment and economic growth

Without methodological misunderstandings, the unemployment rate increase in all the Member States. Unemployment is a social „evil” as well as production is a social „good”. Analyzing economy as a whole, the worse consequence is the lost production. Because the involuntary unemployed would like to work but they did not find a job, a part of potential production is lost forever. And this effect is more clearly in recession. Thus, the production decrease, the corporate income decrease, the state revenues from taxes decrease and finally the population is again affected through reduction of the governmental transfers. Having in mind that the needs are potentially unlimited comparing to the recourses which are rare, this lost production represents economic goods or services that could be produced but that was lost forever.

Richard Layard, Stephen Nickell and Richard Jackman („Unemployment Crisis”) stated: „Unemployment is important. Generally it reduces the production and total income. It increases inequality because the unemployed lose more than those employed. The unemployment grinds human capital. And, finally, it implies psychic costs. Ever through unemployment leisure time increase, its value is canceled by the pain of rejection”.

Michel Didier put on the first place in causes of unemployment *the weak economic growth*. He considered that the growth reduction lead one of two unemployed. Unemployment and economic growth have opposite trends having real „damper”, meaning that a decrease by 30-40% in production merge with an employment decrease by 5%, which is still much. The same economist argued that for rising employment we have to save the growth, but the spontaneous growth resulting of human activities. This is the sustainable economic growth, because the artificially growth with public expenditures can not take long. The state role is to create the action frame, to make possible the initiative of private entrepreneurs and not to substitute them.

The economy shrank between the second quarters of 2008 and 2009 in all Member States except Poland. The EU as a whole, as well as the euro area, recorded a fall of almost 5 percent in real GDP. Inevitably this has also impacted on the labour market, where reduced demand for labour has resulted in job losses.

Growth (%) of real GDP and unemployment (%) between 2008Q2 and 2009Q2

Table 2

Country/Area	- %	GDP	Unemployment
		2008Q2 - 2009Q2	2008Q2 - 2009Q2
EA16		-4.8	1.9
EU27		-4.9	1.9
Belgium		-3.7	1.2
Bulgaria*		-4.9	0.5
Czech Republic		-5.5	2.1
Denmark		-7.0	2.9
Germany (including ex-GDR from 1991)		-5.9	0
Estonia		-15.8	9.5
Ireland		-7.3	6.7
Greece		-0.3	1.7

Country/Area	- %	GDP	Unemployment
		2008Q2 - 2009Q2	2008Q2 - 2009Q2
Spain		-4.2	7.5
France		-2.8	1.8
Italy		-6.0	0.6
Cyprus		-0.7	1.6
Latvia		-17.4	10.4
Lithuania		-21.1	9.1
Luxembourg (Grand-Duché)		-5.3	1.3
Hungary		-7.3	2
Malta		-3.0	1.2
Netherlands		-5.2	0.5
Austria		-4.5	1.3
Poland		1.1	0.8
Portugal		-3.7	1.7
Romania**		-8.3	2.3
Slovenia		-9.0	1.5
Slovakia		-5.4	1.3
Finland		-8.9	2.3
Sweden		-6.1	2.4
United Kingdom		-5.5	2.4

Source: Eurostat, National Accounts (*namq_gdp_k*, *namq_aux_pem*).

In accordance with the decline in GDP, most Member States recorded a quick rise in the number of persons unemployed. Germany was the only country where unemployment levels increased insignificant in this period. However, the contraction of production has not been matched by a corresponding increase in unemployment. In the 27 Member States of the European Union, unemployment levels increased on average by „only” 2.7% (2% in the euro area). Spain is the only state that experienced a worse trend in their unemployment than in their GDP figures between 2008Q2 and 2009Q2 (Table 2).

It is common for GDP growth and employment/unemployment to evolve differently, both in terms of size and timing (employment levels react to economic developments with a certain time-lag). There are various reasons for this, some of which are more relevant in times of economic crisis like the one that is currently being experienced. At such times, employers can make use of arrangements such as putting employees on part-time working or reducing the number of hours worked in other ways so as to avoid having to fire (more) people, and thereby protecting their human capital. In some countries this has been facilitated by governments taking on (some of) the costs involved in the use of temporary short-time schemes.

Youth unemployment

Youth unemployment has been increasing in the euro area and European Union since the first quarter of 2008, in line with total unemployment. But the increase has been at a much higher pace for young people. Youth unemployment increased by 3.9 percentage points between the first quarter of 2008 and the first quarter of 2009 in the euro area to reach 18.4 %. In the EU27 the increase was 3.7 percentage points, leading to a rate of 18.3 % in the first quarter of 2009. In the same period, the total rate increased by 1.6 percentage points in the euro area and 1.5 percentage points in the EU27. In the first quarter of 2009, 4.9 millions persons aged 15-24 were unemployed, of which 3.1 million were living in the euro area. This is an increase of around 900 000 in the EU27 and 600 000 in the euro area since the first quarter of 2008. The youth unemployment rate ranges from 6.0 % in the Netherlands to 33.6 % in Spain in the first quarter of 2009.

Youth unemployment rates are significantly higher than the total unemployment rate in each country. However, it should be remembered that a large share of persons between 15 and 24 are outside the labour market. Unemployment rates are expressed as a percentage of the labour force (employed plus unemployed), not of the population.

The youth unemployment rate in Romania was lowest in past period before crisis in June 2008, 17.4%. The next period the trend was ascending, reaching the level of 21.3% the first quarter of 2009.

Generally, the young people are without qualification and work experience that is why they are vulnerable on the labour market, for finding a job. Finally, they accept low paid jobs and with a qualification requirement under their current qualification acquired in school.

Young people are first expose to unemployment, considering the procedure “last in, first out”. Many times, the efficiency and the qualification are not important for redundancies. They seem to be more and rapidly adaptable to other job with new requirements and qualifications than older persons. This situation increase the risk of being unemployed, at least for a short period of time.

The young people have a high mobility, they are opened to experience new opportunities more than older people. They accept easily a job change if the salary is higher and require the qualification in school, even the job is uncertain. They resign even they don't have a new job, but they want more time for looking for jobs that match their requirements.

The youth unemployment rate is usually higher than the total rate and the reasons are not only the impossibility of finding a job:

- The refusal in accepting the constraints, rigor and discipline implied by a job, because the difference between the potential salary and the unemployment allowance is not incentive for the „sacrifice”.
- The possibility to work in underground economy and, the same time, to obtain the unemployment allowance

If young people are unemployed for a long period of time, they will lose their trust in their own forces, they will lose the qualification and abilities gain in school or qualification courses. This situation can sometimes irreversible damage the physical and psychical qualities required by a job considering that they didn't strengthen the knowledge and skills acquired in schools. The damage of knowledge and skills increase with the period of unemployment and is a phenomenon that characterizes people categories but his gravity increase with the age.

Unemployment by level of education

The analysis of the impact of the crisis on employment also shows that employees have been affected differently depending on their level of education. The downturn on the labour market impacts differently on different subgroups of the population. Looking at the educational level attained by workers, it seems that people most affected are those who did not complete upper secondary education. Many of these were working in sectors such as construction and the automotive industry which have been severely affected by the crisis.

A fall in employment was observed among persons with low and medium levels of education, while employment continued to rise among persons with a high level of education.

Between the second quarters of 2008 and 2009, unemployment among those with a low level of education (up to lower secondary education) rise by 3.4% in the European Union and by 3.5% in the euro area. Among those with a medium level of education (upper secondary and post-secondary non-tertiary education), unemployment increases by 1.8% in the European Union and by 1.5% in the euro area. By contrast, unemployment of those with a high level of education (tertiary education) decreases by only 1.0% and 1.1%, respectively.

For comparison, between the second quarters of 2007 and 2008, the change of unemployment among those with a low level of education was 0.4% in the European Union

and 0.7% in the euro area, while among those with a medium level of education it was a decrease by -0.5% in the European Union and -0.2% in the euro area. The same situation registered among those with high level of education -0.1% in the European Union and -0.3% in the euro area.

European Employment Strategy stated that education and training are critical factors to develop the European Union's long-term potential for competitiveness as well as for social cohesion.

Education and training policies should increase efficiency by raising the average skill level in the population to ensure a better match between skills and labour market needs and therefore raise both employability and productivity. They should also reduce inequality by improving the employment perspectives of those most in need, including the disadvantaged and the immigrants.

Change in the unemployment rate by level of education* (%)

Table 3

	2007Q2-2008Q2			2008Q2-2009Q2		
	low	medium	high	low	medium	high
European Union (27 countries)	0.4	-0.5	-0.1	3.4	1.8	1.0
Euro area	0.7	-0.2	-0.3	3.5	1.5	1.1
Belgium	-1.7	-1.1	-0.9	2.4	0.8	0.6
Bulgaria	-2.3	-0.8	-0.5	-0.3	0.7	0.8
Czech Republic	-1.7	-1.2	0.2	5.3	2.3	0.5
Denmark	-0.6	-0.2	-0.8	3.8	2.6	2.1
Germany	-1.2	-0.8	-0.3	0.5	0.0	0.1
Estonia	-3.3	-1.2	-0.3	23.1	11.0	3.2
Ireland	1.1	0.8	0.3	9.1	8.1	4.0
Greece	-0.4	-1.3	-0.8	2.0	1.8	0.9
Spain	3.9	2.1	0.7	10.5	7.0	3.7
France	-1.0	-0.3	-1.0	2.3	2.3	0.9
Italy	1.8	0.8	0.3	0.3	1.1	0.1
Cyprus	-0.5	-0.4	0.4	2.7	2.3	1.3
Latvia	-1.3	1.0	0.6	21.3	11.0	3.4
Lithuania	2.9	0.3	0.3	17.7	11.2	2.8
Luxembourg	0.5	3.4	-1.2	3.3	-2.3	1.4
Hungary	1.8	0.7	-0.1	3.8	2.0	1.1
Malta	-0.2	:	:	0.7	0.7	:
Netherlands	-0.6	-0.3	-0.3	0.4	0.4	0.6
Austria	-1.8	-0.6	-1.0	2.8	1.0	0.7
Poland	-3.3	-2.9	-0.2	1.9	1.1	0.0
Portugal	-0.6	-0.4	-0.7	2.2	2.1	0.1
Romania	-0.2	-1.2	-0.4	0.3	0.9	0.3
Slovenia	-0.3	-0.6	-0.1	1.7	2.0	0.1
Slovakia	-1.0	-1.2	-0.3	-3.4	2.6	-0.3
Finland	0.4	-0.8	-0.4	3.9	2.9	0.6
Sweden	0.9	-0.6	-0.5	2.7	2.8	1.3
United Kingdom	0.1	0.1	0.1	3.7	2.9	1.4

*Low level of education refers to pre-primary, primary and lower secondary education (ISCED level 0-2), medium level to upper secondary and post-secondary non-tertiary education (ISCED level 3-4) and high level to tertiary education (ISCED level 5-6): no available data.

Source: EU Labour Force Survey, *educ_renr1rg1*.

The nature of the problem that we face today can be put in the following way. The people in the global economy have the same skills as before the crisis, and the machines and

real resources are the same as before the crisis. The problem is that there is an organizational failure, a coordination failure, and a macroeconomic failure. We are failing to put to work these human and physical resources to produce output. What this highlights is the importance of economic policy and organization. It is not our resources that have disappeared. It is the way we organize those resources to create jobs and to create value. The challenge, in going forward, is to try to create the aggregate demand that will put those resources back to work.

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THE FINANCIAL SUPERVISION MODELS IN THE EUROPEAN COUNTRIES

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Abstract: *In the current crisis context, more than ever, financial supervision plays a significant role. This paper presents the three main supervision models that are followed by the European countries: institutional model (banking, insurance and securities), functional model (supervision by objectives) and centralized model (single supervision authority). Each model is analyzed, through its advantages and disadvantages. One of the main questions is about the appropriate model for financial supervision, a problem for which this paper is looking for an answer.*

Keywords: financial supervision; institutional model; functional model; centralized model; european states.

JEL Codes: G2, K2;

REL Codes: 11A, 11B, 11C.

1. Introduction

The current crisis, started in 2007-2008, requires a reconsideration of the features of the supervisory architecture. This crisis stressed the incapacity of the market to ensure the optimal combination between stability and efficiency and requires the urgent need to re-think the supervisory systems of financial markets and institutions. The search of an adequate format for the regulation and supervision of financial activity has stirred considerable interest in Europe in the last years. More countries are considering reforms, while others, which went through a round of reforms, are looking at the architecture once again.

The emerging literature on the financial supervision architecture has tried to shed some light on the impact of the supervisory structure on the performance of the banking and financial industry. Nowadays, one of the main questions is about the appropriate model for financial supervision. The purpose of this paper is to find an appropriate answer to this question.

2. The analyze of financial supervision models

Maintaining and enhancing supervisory capacity and the effectiveness of supervision should be the primary objective of any proposed regulatory reform.

Today there are different types of national financial supervision in the European countries. We have identified three main models that are followed by the European states (Cervellati, Fioriti, 2006, pp. 2-3):

- The institutional supervision: follows the traditional segmentation of the financial system in three main sectors: banking, securities and insurance;
- The functional supervision (or supervision by objectives): each supervisory function is under the jurisdiction of a given authority, independently of the supervised subject; therefore there is no strict separation between sectors, instead each authority has cross-sector regulatory and supervisory powers in pursuing its function;
- The centralized supervision (or single supervisor): there is only one supervisory authority over all financial markets and sectors.

In practice, however, it is difficult to find a pure application of these models, while the actual supervisory systems are the result of the different legal frameworks of the member states and of the way in which their financial systems developed.

2.1. The institutional supervision model

The institutional supervision or vertical model has developed as a response to the great crises of 1930s. One could call this scheme the “three pillars”, because this approach follows the segmentation of the financial markets in three basic sectors: banking, insurance and securities markets. Generally, there are three different authorities, each of those having all supervisory and regulatory powers in the area that is under its jurisdiction.

Historically, the supervisory structure in many jurisdictions was based on an institutional approach. This model is still found in several major European states (France, Italy, Spain, Portugal, Greece), and in other parts of the world as well.

In Europe, Greece is one of the most representative example of pure application of the institutional model, with three authorities that have responsibilities over the banking sector, the securities market and the insurance segment. The central bank of Greece exercises banking supervision, while the Capital markets Commission is in charge of supervising brokers, investment service providers, investment funds, exchanges and post trade service providers. The Directorate on Insurance and Actuarial matters is part of the Ministry of Development and is in charge of supervising, insurance undertakings and actuaries.

Romania has also an institutional supervision approach.

The main *advantages* of the institutional approach are: it allows dividing lines between the different financial sectors to be clearly drawn; it facilitates the practical implementation of supervisory powers; it implies strong supervisory specialization and expertise.

One of the *disadvantages* is that this model is not able to ensure a stabilizing system of controls in a context characterized by a fast growth of financial conglomerates, progressive integration of financial markets, blurred borders of the financial sectors. This approach is increasingly discussed and even criticized as a consequence of market evolutions: larger financial services groups include most of the time several lines of business: banking, insurance, securities services including asset management, specialized investment banking, leasing, venture capital, and so on. The consequence of this approach is inconsistency: different regulations apply to financially identical or comparable activities, depending on the classification of the firms that engage in the activity. Some activities have been developed outside the three pillar structure: usually and after some time they have been integrated in one of the three lines of supervision. More and more firms are active in several segments, the most obvious being the bank – insurance groups.

2.2. The functional supervision model

According to the functional approach, supervision should be structured along the functions or along the lines of the objectives pursued by the different regulatory apparatuses. There should be a different supervisor for each of the goals pursued, or at least for the most important ones. A single firm will therefore be supervised by several supervisors, each applying its own rules. It therefore becomes adamant to clearly identify the objectives of the different applicable regulations and the border lines that separate them.

This way of dealing with supervisory issues has often been referred to as the “twin peaks” approach. This concept involves two supervisory institutions: one institution being in charge of prudential supervision, another supervising the conduct of business rules, including securities and investment funds supervision, but also stock exchanges and securities settlement (Wymeersch 2006, pp. 15-16).

The Netherlands have introduced a similar approach, the central bank being in charge of the prudential supervision of banks, insurance companies and pension funds, while the market authority takes care of conduct of business rules, including investment firms.

Formerly, the supervision system on insurance and banking sectors was industry based: the *Nederlandsche Bank* mainly supervised credit institutions, while the *Pensioen & Verzekeringkamer* (Insurance Supervisory Authority) supervised pension funds and insurance companies. On 30th October 2004, the Central Bank and the Pension and Insurance Supervisory Authority of the Netherlands merged into a single supervisory authority. The supervision on securities market, instead, has been attributed to the *Netherlands Authority for the Financial Markets* since 1 March 2002. Therefore, if in the past supervision had been focused on different segments of the financial sector, nowadays it is along functional lines: the Central Bank and the Insurance Supervisory Authority are responsible for ensuring prudential supervision, while the Authority for Financial Markets performs conduct of business supervision (Cervellati, Fioriti, 2006, p.12).

An *advantage* of this approach would be that it allows to more adequately identify and supervise the numerous firms that offer only a limited range of financial services, or are too tiny to raise prudential issues, and therefore may not need to be subject to the full range of traditional supervision. Here, one could mention firms that merely act as intermediaries (execution only agents, brokers), or that offer securities to the public by exception.

One of the *disadvantages* is that the regulatory cost and burden would become too high, because of the high number of the supervisory institutions. Border conflicts between supervisors would become unmanageable and overregulation is likely to result. Depending on the number of functions identified, there will be a multiplicity of supervisors, each competent for a small segment of the overall business, lacking the overall view. Multiple supervisors will be probably less efficient.

2.3. The centralized supervision model

The centralized model provides only one supervisory authority with responsibilities over all financial markets and sectors.

During last years, the great changes that have characterized financial systems, like the fast growth of conglomerates, have pushed several national governments to review the architecture of financial sector supervision.

The dividing line between banking and insurance business is becoming increasingly blurred within the context of bank-insurance groups, while both are directly involved in the securities business, especially at the asset management side and increasingly through different securitization techniques. Although the regulations prevent banking and insurance activity to be developed within a single company, economic integration between the different financial services activities has been widespread.

This single supervisor model dominated the early stage of financial systems when the central bank was, in several countries, the only supervisory institution, given the importance of banks in developed countries. Nowadays, the single supervisor usually differs from the central bank, and is responsible for supervising and regulating all the segments of the financial sector (banking, securities markets, insurance) having regard to all the regulatory objectives: micro and macro stability, transparency and competition. In Europe, the model of the integrated supervisor model was first developed in Scandinavian countries (Norway, Denmark and Sweden) in the mid-1980s. Most of the EU States have also adopted the centralized model: United Kingdom, Germany, Austria, Ireland, Belgium, Finland, Luxembourg.

On 1 January 1988, Denmark established its single supervisor, the *Finanstilsynet* (*Danish Financial Supervisory Authority*), as part of the reorganization of the Ministry of the Industry. The authority resulted from the integration between the banking and insurance regulatory authorities. Currently, the Danish Financial Supervisory Authority has tasks and responsibilities about the supervision of financial undertakings and of the securities market, the draft of financial laws, the issue of executive orders and the circulation of information.

As a consequence of the banking crisis of early 1990s, instead, Sweden set up its Integrated Supervisory Authority, the *Finansinspektionen*, in 1991. The Authority is now

responsible for supervising activities in the securities market, as well as in the credit and insurance sectors; it promotes the stability and the efficiency of the financial system and ensures the protection of consumers. Apart from supervisory functions, the Swedish FSA performs also a regulatory activity, by issuing norms that market participants have to respect (Cervellati, Fioriti, 2006, pp. 4-7).

The integrated supervisory model attempts to solve many of the problems that have been mentioned in the other models. The *advantages* are multiple. An integrated model will allow the supervisor to obtain a better and integrated view on the multi-services financial groups and analyze the risks in each of the entities, in the wider context of the group as a whole. So, the quality and effectiveness of the supervisory activity should be improved. Integration of supervision also results in a continuous exchange of ideas and experiences within the same organization and assures a better understanding of the common issues. The costs are being reduced, because of existence of a single supervisory authority.

A *disadvantage* of the centralized financial supervision is that in time it becomes too big, too hard to manage and too powerful.

3. Conclusions

In the actual crisis context, more than ever, financial supervision plays a significant role. From a theoretical point of view, there is no best model to choose among the ones that we have described. Each model has advantages and disadvantages, and their weight vary according to the specific country in which they are applied.

The supervision model in European countries

Table 1

Country	Supervision model		
	Institutional	Functional/Others models	Centralized
Austria			X
Belgium			X
Bulgaria		X	
Cyprus		X	
Czech Republic			X
Denmark			X
Estonia			X
Finland		X	
France	X		
Germany			X
Greece	X		
Hungary			X
Iceland			X
Ireland			X
Italy	X		
Latvia			X
Liechtenstein			X
Lithuania	X		
Luxembourg		X	
Malta			X
Netherlands		X	
Norway			X
Poland			X
Portugal	X		
Romania	X		
Slovak Republic			X

Country	Supervision model		
	Institutional	Functional/Others models	Centralized
Slovenia	X		
Spain	X		
Sweden			X
Switzerland			X
United Kingdom			X

Source: Wymeersch 2006, pp. 41-56.

Financial supervision regimes vary from country to country. Historically, in many countries the supervisory structure was based on an institutional approach. But new techniques, new methods and new patterns of supervision are being explored. In Europe, there is a fast changing in regulation and supervision, both at the national and at the European level. Markets are into a continuous development. As a consequence, more and more European states have chosen for a centralized supervision model, being seen as the best model in supervisory architecture for them.

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EXTERNAL DEBT SUSTAINABILITY: TRUE OR FALSE?

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***Abstract.** The liquidity crisis of the last decade have determined the Government experts, the experts from the central banks and those from the IMF to draft new methods for assessing the liquidity and solvability risks and to analyze the sustainability of the external debt. In all the states affected by financial crisis the main macroeconomic indicators were at levels considered normal and nobody would have foreseen that in the neat future the respective countries will encounter serious liquidity crisis generated by important accumulations of external debt, especially on short term and private external debt. Under these circumstances, the external debt sustainability analysis approach has changed and to simulate possible future crisis we are using stress testing.*

Keywords: external debt; liquidity; sustainability; gross domestic product; external debt service.

JEL Code: F34.

REL Code: 8B.

1. Introduction

External debt sustainability is a key element in analyzing the financial stability of a country's economy. The role of external debt sustainability increases especially when we deal with a country whose economy is in transition.

Studies on the sustainability of external debt are the preserve of international financial organizations and central banks. Thus, these institutions are recognized for their research establishing a new benchmark that you should have regard to when you analyze the financial stability of an economy. The starting point was the work of the IMF "Assessing Sustainability", this working paper was approved in May 2002 by Timothy Geithner - Director of the IMF at the time, currently US Secretary of State Treasury.

In the article mentioned in the previous paragraph, the authors used sensitivity analysis to highlight the movements of macroeconomic indicators that affect debt sustainability. In addition to this process in this research we used a scenario of crisis. This crisis scenario is based on a Monte Carlo simulation in combination with a stress testing. Such analysis may take into account major changes in macroeconomic indicators that are the result of slippage of the financial system officials.

2. External debt

Foreign loans allow a country to invest and consume more than its current internal funds and, in fact, to finance capital formation not only mobilizing domestic savings but also using capital surplus of others countries. External borrowing can lead to faster economic growth, enabling the financing of a more substantial amount of investment and training to mobilize the resources available to that country, however, using them in a more reserved, more cautious, but effective manner. Also, these loans can help to finance temporary balance of payments deficits and provide solutions to authorities that have to take draconic measures to avoid compromising the country's development program. They do not contribute to growth in conditions when are used to finance unproductive or excessive exports offsetting capital. In fact, in this case, those loans could even worsen the pressures that are exercised on budgetary operations of public administration and the balance of payments. Moreover, even if the balance of payments deficit is caused by permanent factors, financing its long-term external

debt may delay the necessary adjustments and may exacerbate the fundamental problems of balance of payments. It becomes clear that an inefficient use of inflows of foreign capital eventually cause a crisis of debt.

3. The sustainability of external debt

The main problem to be addressed regarding this issue is related to measurement of liquidity risk and solvency. External debt position is essential for analysts, but not sufficient, providing the most detailed and structured data on various criteria are absolutely necessary. States should be encouraged to join these systems and to develop as many statistics on external debt ensuring the transparency and facilitating data analysis of the external debt sustainability. The compilation guideline prepared for the IMF debt tables provides models with regard to the main concepts of external debt. It aims primarily debt classification using the following criteria: external debt in foreign currency and local currency, external debt by type of interest (fixed, variable) external debt, the main creditors (official: multilateral, bilateral and private) debt service projections external.

Also, it encouraged the idea of calculating short-term external debt based on remaining debt outstanding and not using original maturity. Debt remaining outstanding capital measures of payments are due within one year. The formula for calculating the remaining outstanding debt balance is the balance of debt External short-term debt under the original maturity rates capital + external foreign debt on medium and long maturities in the next 12 months. However, payments of principal and interest arrears outstanding at maturity are considered and included in short-term debt balance. The intention is to calculate the net external debt by taking into account the external debt stock of foreign assets corresponding to the international investment position.

It is of major importance to analyze the sustainability of the external debt, especially for the developing countries. Following the liquidity crisis that occurred in recent year's the sustainability analysis department of the IMF has developed a program that includes data on key indicators of indebtedness of a large number of states for a long period (1975-2004), and thus a comparison of developments related debt of developed countries and poor. Main indicators calculated by the program are: net present value of debt (VNP)/GDP VNP/Exports of goods and services (EXP), VNP/Revenue (VN) External debt service (EDS)/EXP, EDS/VN.

It was noted that economic decline recorded in the 80's has led over time to increase the stock of debt and in particular the rate of VNP / GDP. The increase in interest rates, fluctuations in major currencies, shocks that have appeared in international trade, poor quality of macroeconomic policies, low levels of GDP growth were the main factors that contributed to these indicators sliding worldwide.

Thus, it was found that middle-income states than depend on external financing, especially the capital from private sources, often facing liquidity crises but not solvency, should resolve these types of crises trying to restructure their debt without the intervention of the Paris Club. In states with low income and dependant of external financing, which is derived primarily from official sources (bilateral and multilateral organizations), the crisis is growing slowly, but solvency risk is substantial, these crises are resolved by rescheduling or forgiveness of debt (HIPC initiative) and the Paris Club plays a key role.

Net present value of debt is different from the nominal value of debt, it represents the amount of future external debt service payments reduced by a discount b . In other words, the net present value could be the amount deposited in a bank with an interest rate β which would cover all future payments of external debt service. Is an indicator that reflects the future debt payments and includes elements of concessionality, which has no face value, but gives no information on external debt service profile.

$$VNP = DS_0 + \frac{DS_1}{(1 + \beta)} + \frac{DS_2}{(1 + \beta)^2} + \dots + \frac{DS_n}{(1 + \beta)^n}$$

- where the DS is debt service;

$$D = P_0 + P_1 + P_2 + \dots + P_n$$

- where D is the nominal value of debt;

- where P is the capital payments.

Indebtedness indicators may fluctuate from time to time, and the values considered normal are shown in the table below:

Limits of indebtedness indicators

Table 1

Indicators	Limit%	Mean%	Lower rate%
VNP/GDP	50	40	30
VNP/EXP	200	150	100
VNP/VN	300	250	200
EDS/EXP	25	20	15
EDS/VN	35	30	25

Indebtedness indicators:

- VNP/EXP – may therefore reduce the risk on the sustainability of low added value related to exports;

- VNP/GDP – may therefore overstate the risk on the sustainability problems of calculating GDP;

- VNP/VN – is the most convenient indicator with EDS/EXP and EDS/VN.

Analyses of sustainability are very useful to analysts, but experience has shown that the scenarios constructed are very vulnerable to external shocks and in particular the exchange rate depreciation. Also, there should be taken into account the new loans and, in particular, pursued their relative concessionality elements.

3.1. Indicators of sustainability

The analysis of conditions, which characterize the external debt in relation to variables of a described national economy, it results that can be calculated more indicators on which the external debt should be assessed.

An important role in external debt sustainability analysis have classical macroeconomic indicators, such as external debt/gross domestic product, external debt structure, the structure of external debt, external debt service/GDP, etc..

In this study will be presented only one of these flags to make us a picture of the macroeconomic context in which we provide the environment for running stress test type model based on Monte Carlo simulation.

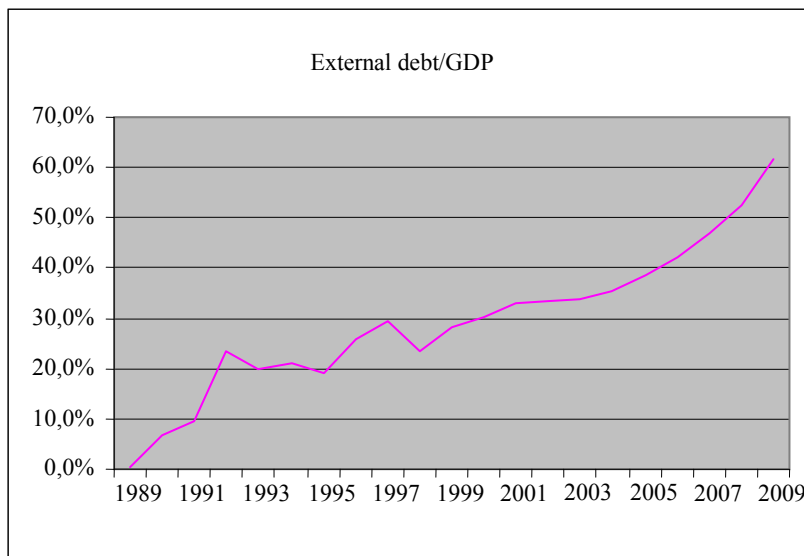


Figure 1. Share of external debt in GDP

In addition to the problem of doubling the volume of external debt in 2006 and so far, amid chaotic use of foreign loans and European funds and the financial crisis, in 2009 is expected a depreciation of GDP at least 7-8%.

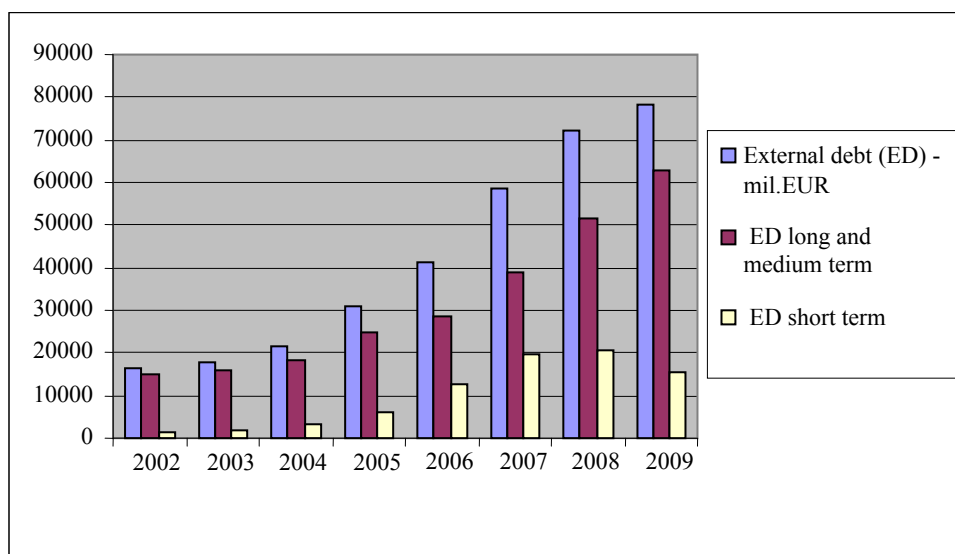


Figure 2. Structure of external debt of Romania

Figure 2 shows increased short-term external debt ratio in the structure of Romania's external debt. This is due mainly short-term loans that Romania attracted in the last three years to fund medium-term loans taken after 2004.

Also, in 2005 some of the indicators of debt values have been critical due to the capital inflows and outflows artificial increase of short-term debt service and of the external debt service. In addition to this situation since the second quarter of 2008 financial crisis hit Romania, the background situation on the external debt indicators presented in this study reached the end of 2009 as Romania's external debt ratio is above 60%.

In the next chapter, to observe the changes over the next five years the external debt indicators and, in particular, to limit the growth of external debt we used a model developed as a Monte Carlo simulation to generate an image of external debt in the near future.

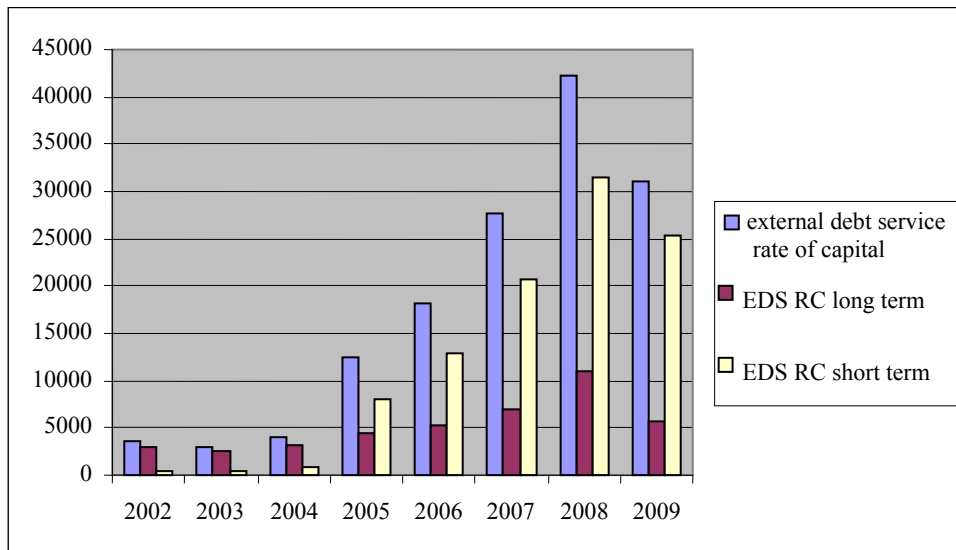


Figure 3. Structure of external debt service rate of capital

The structure of the external debt in recent years confirms that has been attracted, in particular, short and medium term loans.

3.2. Model calculation of sustainability

Equations underlying the interpretation of debt indicators are:

- debt equation is calculated in euros:

$$d_{t+1} - d_t = d_t [r - \rho \times (1 + g) - g + \varepsilon \times \alpha (1 + g + \rho + g \times \rho) - tb_{t+1}]$$

where $d = \text{VNP} / \text{GDP}$

$tb = \text{current account deficit without interest payments} / \text{GDP}$;

$r = \text{ratio of average interest rates of internal and external}$;

$\alpha = \text{share of external debt in foreign currency}$;

$\varepsilon = \text{exchange rate changes}$;

$g = \text{real GDP growth rate}$;

$\rho = \text{changes of the GDP deflator calculated in euro equivalent}$.

The equation for determining the debt limit increase is a specific equation of mixed type model lags, regarding the fact that the link between indicators is with delay and without delay.

Liquidity crises in the past decade have led governmental experts, the staff of the central banks, but also those of the IMF to develop new methods of calculating the risks of liquidity and solvency and debt sustainability analysis. In all states affected by the financial crisis the main macroeconomic indicators are located on levels considered normal, predicted that nothing in the near future in these countries will face severe liquidity crisis causing substantial accumulation of external debt, particularly short-term and private debt. In these circumstances it switched to a different approach, not based on traditional analysis of flows, but monitors the inventory of assets and liabilities, which is called Balance Sheet Approach (BSA). It was concluded that resistance of a country to shocks depends largely on the composition of stocks of assets and liabilities as BSA pursues structured trends: the government sector, financial sector and non-financial sector, the main instruments (shares/securities of the nature debt) maturity (short/long term), currency (local currency/convertible currency).

In particular, BSA analysis seeks the detection of inconsistencies in the structure of foreign exchange balances of assets and liabilities, the lack of correlation between stocks in the short and long term, the ratio of shares and debt securities and analyzes the nature of net assets. Also, it seeks the degree of risk for each sector in terms of liquidity, and sensitivity solvency shocks caused by changes of course and interest in international markets.

In multiple regression analysis of major macroeconomic indicators external debt/GDP in „t +1”, the external debt/GDP, current account deficit, net foreign direct investment, the ratio of domestic and foreign interest rates, share of total external debt in foreign currency foreign debt, exchange rate, real rate of GDP growth and GDP deflator, all the „t”, they result in more models with similar values of statistical tests.

From all the models to obtain joint autoregressive based on these indicators, we chose the following model:

$$DAT_{t+1} = \alpha + \beta \times DAT_t - \chi \times DEF_t + \delta \times DOB_t - \mu \times CS_t$$

Correlation between indicators of this model is very strong 97.7% and 95.4% of the variation is explained by external debt indicators used to elaborate the model. The model is valid as SIGN F is less than 5%, representing significant factors leading indicators report external debt/GDP.

Also, it can cause a range of time that would be based on permissible limit of external debt growth and we will show the future trend of these limits. To carry out an analysis to highlight the changes with a certain deviation of the indicators have turned to Monte Carlo simulation using two assumptions:

- Misconduct that meet the criteria for convergence;
- Deviations from the analysis of available data.

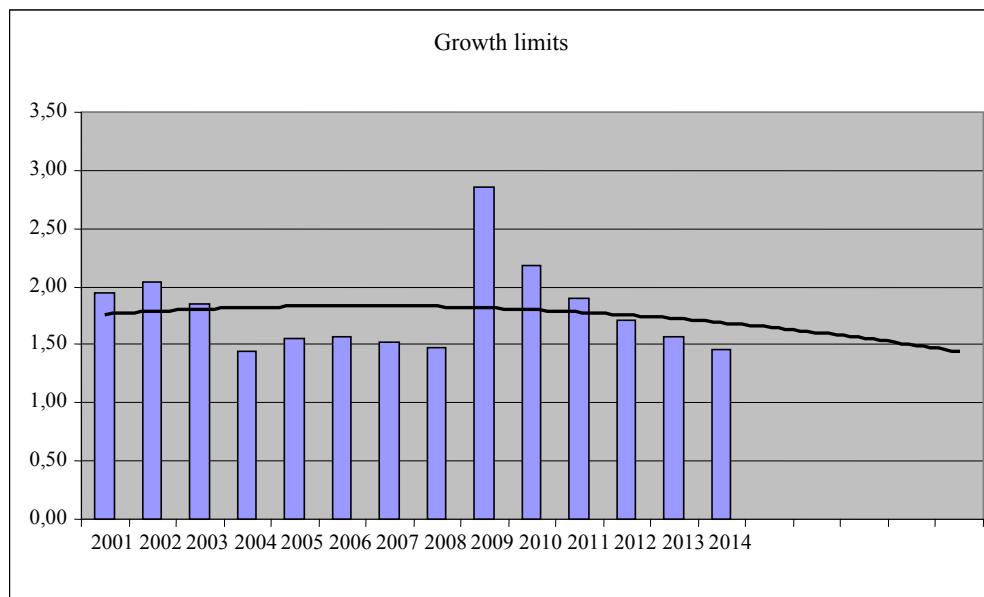


Figure 4. Overall growth limits trend using Monte Carlo simulation

Results of simulation using the deviations from the hypothesis on data analysis provide more leeway to limit the growth of external debt, the hypothesis applied determine a greater range of values. Applying the hypothesis on the deviations that meet the criteria for convergence we obtain all sorts of scenarios whose outcome depends on the indicator or indicators of change.

Simulation of possible future crises can be achieved by applying stress testing site in both its forms, respectively unifactorial test, which is a sensitivity analysis, and multifactorial test, which is a crisis scenario.

Also, the stress testing uses Monte Carlo simulation concept and the inputs changes will be made judging by the national economy conditions or in other cases by the world macroeconomic environment. As is noted that Figure 4 for debt limit increase to return to pre-crisis will take 4-5 years if the macroeconomic indicators will have a positive evolution in the future.

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INFLATION IN THE EUROPEAN UNION WITHIN THE CONTEXT OF THE FINANCIAL CRISIS

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***Abstract.** The triggering of the financial crisis on a global level, at the middle of 2007, has had a major impact on the economy of the European Union. Inflation is a macro economical imbalance that is tightly related to macro economical dynamics' indicators. This article will analyze the evolution of the inflation rate, before and after the ascent of the financial crisis in September 2008, in countries part of the Euro zone and the states members of the European Union that are outside of that zone, particularly Romania, the causes that have determined this evolution, the consequences of deflation on the economy, as well as the impact of the Central European Bank's monetary policy on the economy.*

Keywords: financial crisis; inflation rate; consumer prices harmonized index; deflation; monetary policy.

JEL Code: E3.

REL Code: 8F.

1. Introduction

In the current economy, the inflation represents a universal reality because it affects all countries in different ways and permanent because it surfaced before economics and managed to make it through more stages.

Inflation is a cumulative and self-dependent increase process of the general level of prices (Bezbakh, 1992, p. 5). The increase of prices is considered to be inflationary when the cost for procuring the production factors grows by a higher percentage than their actual productivity.

A controlled inflation of 2-3% per year is considered to be beneficial for the market economy, because an expected increase in prices can stimulate the economic agents' activity towards obtaining higher profits. The literature of the economy calls such an inflation *creeping inflation*.

Some studies show that when inflation reaches all time highs, inflationary crises have negative impacts on the economical growth (Bruno, Easterly, 1998, pp. 3-26). Another study shows that the high level of the inflation goes in detriment of growth and volatile inflation is associated with lower increases on all levels of inflation. (Judson, Orphanides, 1996, p. 13).

The current crisis, called the subprime crisis, is a financial crisis determined by the sudden drop of liquidities on global credit markets and in banking systems, caused by the failure of companies that invested in the subprime mortgages (with a high level of risk). Seen as the worst crisis after the Great Depression on 1929, the current financial crisis went into acute phase in September 2008, having a major impact on economy, on a global level, as well as in the Euro zone.

Thus, the escalation and extension of the crisis generated the reduction of the demand on a global level and in the Euro zone, which led to the deceleration of the economical growth, having a major impact on the inflationary process

2. The inflationary process in the context of the financial crisis

The intensification of the financial turbulence in September 2008 changed the trend of the harmonized index of consumer prices (HICP) in the European Union. In the first part of the year, the expansion of the economical activity stimulated the global demand and as such, determined the increase of raw materials' prices, while the deceleration of the economical

activity in the second semester caused the drop in those prices (Table 1). The decline of oil prices had a major influence on consumer prices.

The evolution of inflation in 2008

Table 1

Quarter	Euro zone (%)	Non-euro zone (%)	Romania (%)
T 1	3.4	4.2	8.0
T 2	3.6	4.9	8.6
T 3	3.8	5.5	8.2
T 4	2.3	4.3	6.9

Source: European Commission – Eurostat.

If in the first semester of 2008 the inflation rate for the euro zone had an ascending trend, from 3.2% in January to 4% in the months of June and July, in the second semester this rate dulled down, reaching 1.6% in December, following this descendant evolution until present day, reaching negative values (-0.3% in September 2009), as a result of the severe recession that crossed this region (table 2). *The acceleration of the rhythm of inflation to 4% was determined by the growth of energy prices and those of industrial and agricultural raw materials. The descendant trend of oil and commodities prices on the international markets generated the rapid drop of inflation beginning with September 2008.*

The evolution of inflation between July 2008 and september 2009

Table 2

Month/Year	Euro zone(%)	Non-euro zone (%)	Romania (%)
July 2008	4.0	4.4	9.1
August 2008	3.8	4.2	8.1
September 2008	3.6	4.2	7.3
October 2008	3.2	3.7	7.4
November 2008	2.1	2.8	6.8
December 2008	1.6	2.2	6.4
January 2009	1.1	1.7	6.8
February 2009	1.2	1.7	6.9
March 2009	0.6	1.3	6.7
April 2009	0.6	1.2	6.5
May 2009	0.0	0.7	5.9
June 2009	-0.1	0.6	5.9
July 2009	-0.7	0.2	5.0
August 2009	-0.2	0.6	4.9
September 2009	-0.3	0.3	4.9

Source: European Commission – Eurostat.

Considering the causes that determined the growth of the inflation rate in the first semester of 2008, we may state that an important inflation manifested itself in the Euro zone. Starting with August 2008, the euro zone witnessed a disinflationary process.

The annual rate of the energy component for HICP reached an all time level of 17% in July 2008, that reduced itself gradually in the 4th trimester, going on negative in December (-3.7%). In 2009 this rate continued the descending trend, reaching -14.4% in July, followed by a growth in August, by 4.2%. The high fluctuations of energy prices were determined by the evolution of oil prices.

**The quarterly evolution of prices in 2008
HICP and its components**

Table 3

Quarter	Index total	Energy	Non-processed foodstuffs	Processed foodstuffs	Non-energetic industrial commodities	Services
T1	3.4	10.7	3.5	6.4	0.8	2.6
T2	3.6	13.6	3.7	6.9	0.8	2.4
T3	3.8	15.1	3.9	6.7	0.7	2.6
T4	2.3	2.1	3.0	4.3	0.9	2.6

Source: Monthly Bulletin, European Central Bank

Oil prices have recorded a significant growth up to the month of June 2008, as can be seen in figure 1, reaching 85.9 Euro/barrel, which is a growth by almost 63% compared to the previous year. In the months following, the evolution changed and in December the price of oil was 32.1 Euro/barrel, which represents a decrease of nearly 63% compared to the maximum level reached in June 2008, as a consequence of the improvement of supply terms. (Lipsky, 2008). In 2009, oil prices went up, due to the aggravation of the economical crisis and the decline of demands.

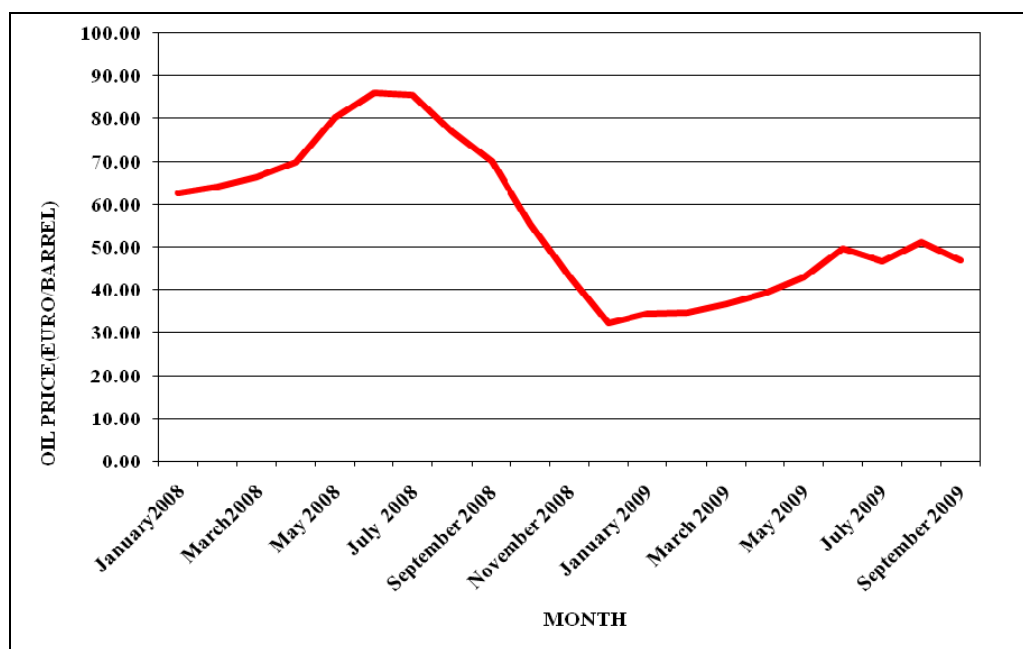


Figure 1. The evolution of oil prices

The inflation measured through the prices of processed and non-processed foodstuffs, has recorded a leap in the first 3 trimesters of 2008, ensuing a shrinkage in commodity supplies on a global level, and followed by a decrease in the 4th trimester and throughout 2009. The growth rhythm of processed foodstuffs prices reached a ceiling of 7.2% in July 2008, followed by a decrease, reaching 3.5% in December 2008, while the growth rhythm of unprocessed foodstuffs prices was slower, reaching a ceiling of 4.4% in July 2008. In the period following that, the inflation measured by the price of unprocessed foodstuffs registered a descending evolution, recording negative values in August 2009, for the 2nd consecutive month.

The annual rate of the other HICP components: non-energetic industrial commodities and services, has maintained relatively the same.

**The monthly evolution of prices between July 2008 and September 2009
HICP and its components**

Table 4

Month	Index total	Energy	Non-processed foodstuffs	Processed foodstuffs	Non-energetic industrial commodities	Services
July 2008	4.0	17.1	4.4	7.2	0.5	2.6
August 2008	3.8	14.6	3.7	6.8	0.7	2.7
September 2008	3.6	13.5	3.6	6.2	0.9	2.6
October 2008	3.2	9.6	3.4	5.1	1.0	2.6
November 2008	2.1	0.7	2.8	4.2	0.9	2.6
December 2008	1.6	-3.7	2.8	3.5	0.8	2.6
January 2009	1.1	-5.3	2.6	2.7	0.5	2.4
February 2009	1.2	-4.9	3.3	2.0	0.7	2.4
March 2009	0.6	-8.1	2.4	1.6	0.8	1.9
April 2009	0.6	-8.8	1.6	1.2	0.8	2.5
May 2009	0.0	-11.6	0.7	1.0	0.8	2.1
June 2009	-0.1	-11.7	0.0	1.1	0.6	2.0
July 2009	-0.7	-14.4	-1.1	0.8	0.5	1.9
August 2009	-0.2	-10.2	-1.2	0.6	0.6	1.8
September 2009	-0.3	-	-	-	-	-

Source: Monthly Bulletin, European Central Bank.

The process to slow down the economical activity on a global level, had led to the limiting of the economical activity in member states of the European Union that are outside of the euro zone also.

The inflation rate in these countries has grown in 2008 (except for Hungary), reaching a ceiling in July 2008, 4.4%, and the countries that adopted the strategy of aiming the inflation have significantly over passed the aims of inflation. This evolution was inversed in the 2nd semester as the rate of inflation was lower in December than at the beginning of the year (2.2%). In 2009, the inflation rate continued its descending trend, seeing a drop of approximately 93% in September 2009, compared to the peak level it reached in July 2009. The growth observed in the first semester of 2008 was mainly due to the high increase of prices, on a international level, in foodstuffs and energy. Some countries applied significant increases in the case of given prices and indirect taxes, which in return led to the increase of the inflation rate. In other countries the devaluation of the national currency contributed to the inflation increase. A main factor that ultimately generated the moderation of inflation was the significant drop of global commodity and oil prices. Secondly, the pressures made by the internal demand were moderated in parallel with the decline of the economical activity, as a result of the escalation of the financial crisis.

Although it has recorded a downward evolution starting September 2009, the inflation level in Romania was still among the highest in the European Union, surpassing the average of 1.5% of the 3 member states that registered the best results where price stability is concerned, this being the first convergence criteria foreseen by the Maastricht Treaty, regarding the adoption of the Euro as single currency.

Romania has had an evolution similar to all the member states of the EU that are outside of the Euro zone, as can be observed in Figure 2. The inflation rate in Romania recorded an increase in the first semester of 2008, reaching a ceiling of 9.1% in July, before being moderated in December at 6.4%. In the first trimester of 2009, the impact of the national economical crisis developed significantly. The strong decline of the internal demand determined a constriction of the economical activity. The decrease of the demand was due to

the diminishment of the financing resources available to corporations and the people, as well as the reduction of consumership predilection (in parallel to the proclivity to economize), in the context of the incertitude regarding the negative effects of the financial crisis on future income flow. Thus, the level of inflation in September 2009 was of 4.9%, exceeding the inflation target for this year, which was 3.5% give or take one percent.

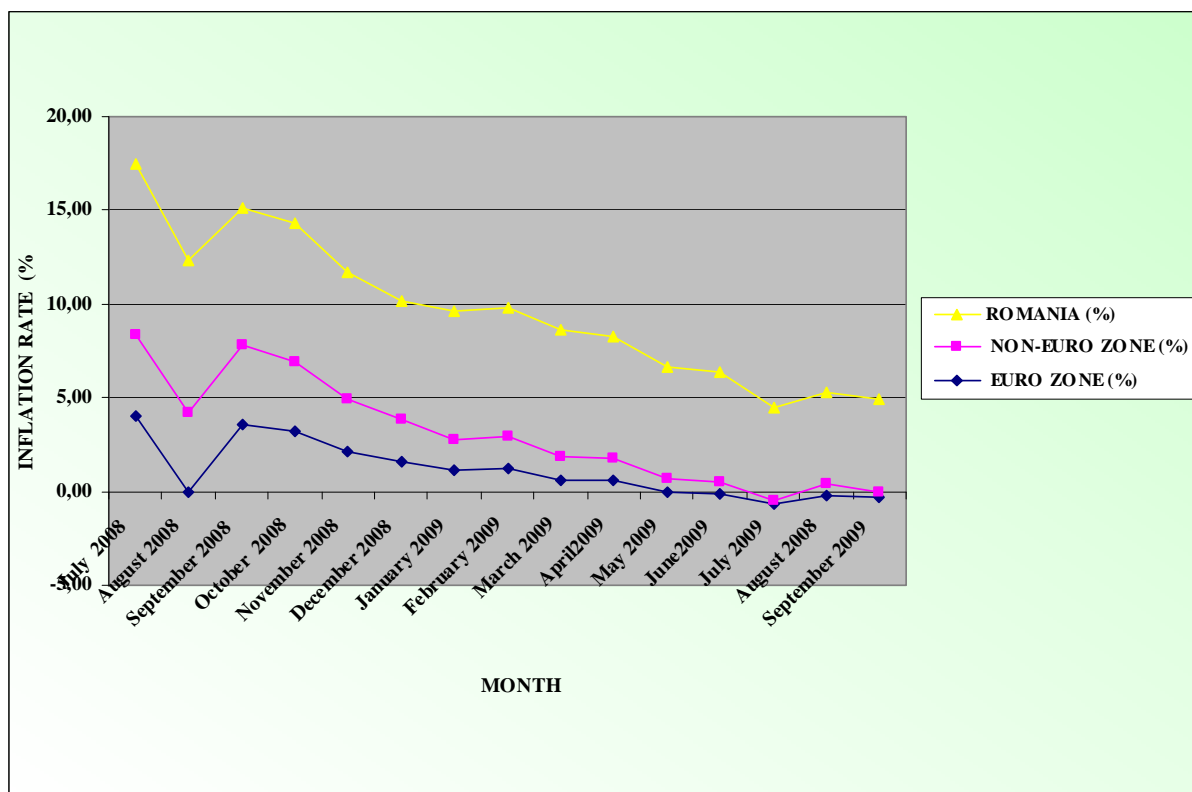


Figure 2. The evolution of inflation between July 2008 and September 2009

3. The consequences of deflation on the economy of the European Union

Starting with March 2009, many countries in the EU faced deflation, due to the drop of production in the first quarter. Deflation is defined as being the opposite of inflation, that's to say a general decrease of prices over an extended period of time. Inflation and deflation are economical phenomena that have negative impacts on the economy. This is why the main objective of the Central European Bank is to establish prices for the euro zone and, implicitly, protecting the purchasing power of the Euro. According to the definition given by the CEB governors' board, „price stability is defined as an annual increase of less than 2% of the harmonized index of consumer prices (HICP) for the Euro zone. Price stability must be maintained on a medium.” Moreover, it has been stated that the inflation rates must be maintained at an inferior level, but close to 2%. Price stability is as much a purpose in itself, as it is a means for monetary policy, because it contributes to the achievement of a sustainable economical growth and macro economical stability. This level constitutes a margin of safety against deflation.

The costs of deflation on the economy were:

- The reducing of consumption: consumers can choose to delay consumer ship when they expect prices to drop in the future;
- Increase in debts: the actual value of debts belonging to enterprises, governments and the population, grows when a drop in prices is recorded;
- The increase of the real cost of the loan: the actual interest rate increases if there is no reduction of the nominal interest rate in accordance to prices;

- the decrease of profit margins: the companies' profit is subject to pressures, except for the case when costs are within the levels of the final prices; this may lead to a higher level of unemployment as companies look to reduce their costs.

Deflation discourages production, because economical agents are not interested in producing with a low level of prices that would lead to the reduction of profit. Profit per equity is lower by 2.1% in the 2nd trimester than in the 3rd trimester of 2008, reaching 35.9%.

Deflation must be avoided as it is possible that the monetary policy cannot stimulate aggregate demand through interest rates well enough. The reduction of nominal interest rates to a below zero level might fail due to the fact that no one is willing to borrow or deposit money with a negative interest.

The increase of deflation may lead to a deflationary spiral. This happens when price drops lead to the decrease of the production level, which in turn influences salary levels, lowering them, thus reducing the aggregated demand that goes on to lead to continuous price drops.

A higher deflation rate leads to a later economical growth decrease, even if it does not cause recession. Thus, deflation is bad for the economical growth, even if it can rarely be seen in developed countries (Guerrero, Parker, 2006, p. 7).

The diminishment of the economical activity of the EU has affected the workforce market by a certain degree. The reduction of the GDP in most member states has led to a lower degree of work force occupancy, 1.9% less in the member states of the EU in the 2nd trimester of 2009, compared to the same trimester of 2008, and 1.8% less in the Euro zone. In order to avoid firing too many people, employers have opted for part-time work contracts.

In a period characterized by deflation, people increase their economies and spend less, especially based on the incertitude regarding their work place. In the second trimester of 2009, the population's economies have grown by 3.2%, in comparison to the 3rd trimester of 2008, and company investments recorded a 3% drop.

According to the executive of the International Monetary Fund, Dominique Strauss-Kahn, the surface of deflation is an obstacle in the way of outgoing the economical crisis.

4. The impact of the Central European Bank's monetary policy during the period of crisis.

Taking into consideration the evolution of the inflation rate, the CEB has promoted a monetary crisis within the context of the financial crisis. If in the first semester of 2008 the CEB's monetary policy was to dull down inflationary pressures, once the financial crisis worsened, inflationary pressures diminished and the CEB took corresponding measures. A first measure was to reduce interest rates starting October 2008, as a result of the decrease in inflationary pressures, in order to achieve its objective on a medium, which encourages sustainable development and helps increase the level of workforce occupancy. Thus CEB reduced the monetary policy interest rate to 1%, working out at 325 points of fall, since October 2008, being the most reduced rate in the history of the Euro currency, but also the lowest level by which CEB is willing to decrease the interest. The reduction of interest rates stimulates investments contributing to the economical growth.

In order to stop deflation, CEB resorted to unconventional operations on the monetary market. It injected liquidities on the market through the purchase of non-governmental bonds, valuing 60 billion Euros, in order to re-launch the giving out of loans as well as consumership and investments.

The dynamics of loans is maintained at a low level, illustrating the offsets between the economical activity trend and the loans granted to enterprises. Improving the financing terms should encourage loan demands in the following period of time (BCE, Monthly Bulletin October 2009, p. 6).

After a significant drop in the first trimester of 2009, the GDP, in the EU, has decreased by only 0.3% in the second trimester in relation to the previous trimester and it is expected to have a positive evolution in the next period.

According to the governors' Board, the measures that were adopted will be gradually reaped by the entire economy, considering the offsets that exist in the monetary transmittal process. Through all the measures that have been enforced, including the most recent refinancing operation, with a maturity of 1 year, the monetary policy remains an important factor for the rectification of the economy. As the economical conditions improve, CEB will cancel all the measures that were undertaken in order to fight the risks that surface in the process of stabilizing prices.

The risk of growth regarding price stability has diminished considerably lately, mostly due to the dramatic reduction of oil prices as well as other commodities, and the, suddenly slow, economical activity.

As a result of these measures of rectifying the economy, the rhythm of the economical downfall has slowed down in most countries, some of which recording positive growth rates. (Greece – 0.2%, France – 0.3%, Germany – 0.3%, Portugal – 0.3%).

5. Conclusions

Inflation was lowered during the financial crisis, reaching negative peaks in the euro zone, based on the reduction of economical activity. In the context of demand drops and of liquidity issues, for many companies, the general tendency of lowering the prices of their products determines them to reduce their activity in order to survive the crisis. The results of this decision can be observed by looking at the gradually smaller industrial productivity on the one hand, and at the increase of unemployment on the other.

The main causes of the decrease of inflation during the financial crisis were the economical constriction and the low level of consumption. This diminishment of consumption was due to the incertitude of consumers and the downsize trend in granting loans.

According to economists, inflation will only see a positive trend at the end of the current year. In the opinion of the governors' Board, the economy of the euro zone is in the course of being stabilized, following a path of gradual recovery. The result of the monetary analysis states that inflationary pressures are low due to the moderation of monetary expansion and loans.

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EUROPEAN ECONOMY IN ONE YEAR FROM THE START OF FINANCIAL CRISIS. CRISIS IMPACT ON ROMANIAN ECONOMY

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„A crisis can be a real blessing to any person, to any nation. For all, crises bring progress.

Creativity is born from anguish, just like the day is born from the dark night. It's in crisis that inventive is born, as well as discoveries, and big strategies. Who overcomes crisis, overcomes himself, without getting overcome. Who blames his failure to a crisis neglects his own talent, and is more respectful to problems than to solutions.

Incompetence is the true crisis.”

Albert Einstein, Nobel Prize in Physics

Abstract. *The global financial and economic crisis presents significant challenges for Romania. It has exposed the weaknesses in the functioning of the global economy and led to calls for the reform of the international financial architecture. Although the crisis was triggered by events in the US housing market it has affected all regions of the world, with direct consequences for international trade, investment and growth.*

This paper wants to present a comprehensive analysis of the global economy, followed by a review at European level and to identify the key channels of transmission of the crisis in Romania. The second part of the paper focuses on a quantitative and qualitative study that examines the evolution of Romanian economy in 2005-2009. Finally, we conclude with some perspectives and forecasts of global economic recovery, at European and national level.

Keywords: financial crisis; economic recovery; investments; GDP; MES.

JEL Code: G01.

REL Code: 8E.

1. Introduction

In mid-September this year was reached one year from the US investment bank Lehman Brothers bankruptcy announcement, which marked the beginning of the financial crisis that triggered, in turn, the economic crisis subsequently expanded globally. The failure of Lehman Brothers in September 2008 led to a collapse in confidence in the wider banking sector across the globe. Investors shunned all forms of risk. This brought the fragile global financial system to the brink of collapse. Sharp falls in trade, production and investment were recorded around the world. As economic activity has slowed, unemployment increased and inflation declined. In this context, there has been a rapid growth in the number of subprime mortgages in the US – mortgages that offered low initial interest rates to borrowers with poor credit histories. However, many borrowers were unable to afford their repayments. Mortgage defaults rose and house prices started to fall. Holders of mortgage-backed securities – loans that banks had packaged up and subsequently sold – started to question their exposure to this increased risk of default. Investors found that they were unable to quantify the value and risk

of these increasingly complex products. As a result, the market for these assets effectively closed down. Over summer 2007 a number of institutions failed. As a result of this uncertainty, banks hoarded liquid assets and the cost of lending between banks rose sharply. At the same time, central banks were constrained in their ability to react by the inflationary pressures of the concurrent surge in oil and food prices. In this context the liquidity crisis started and has been subsequently turned into a crisis of solvency of the banking system. Therefore, it became difficult to identify those who bear the final losses, banks have given bank lending, and interbank interest rates rose.

Globalization has delivered significant benefits over recent decades, but also brought challenges such as climate change, unequal growth and widespread exposure to financial crises. Firms are increasingly able to access capital from across the world. In this context, as some emerging markets were integrated into the global economy, the United States and some European countries have experienced a significant increase in labor force. As a result, large current account deficits appeared, financed by external borrowing. At the same time, as many Asian economies expanded, these economies saved more than they invested domestically and, coupled with export-led growth strategies, generated surpluses that were invested abroad. The entry of China, India and other emerging countries into the global trading system increased the global labor supply, increasing world trade and the supply of low-price goods⁽¹⁾. This change had a powerful disinflationary effect. Low inflation coupled with record financial flows helped contribute to low interest rates across the world and pushed down returns in traditional assets. Banks have sought new ways to increase profitability and to be financed, triggering a wave of financial innovation and significantly increasing the amount of credit granted. In addition, increased security measures have reduced transparency.

The current global crisis has also affected the Romanian economy after a period of accelerated growth. After 1989 the Romanian economic environment faced major imbalances caused by inflation and with the liberalization of prices (after 1990) inflation rate recorded growth increasing, especially in 1993 when consumer prices recorded an average annual rate of 256%. The downward trend in inflation occurred in 1998, amounting to 2006 to be registered for the first time since 1990, an average annual rate of inflation to single digits (6.6%). According to National Institute of Statistics, since 2000, Romania had an average GDP growth of 101.62%. In late 2007, investment made in the national economy recorded a remarkable growth, with 151.7% more than in 2000. The global economic crisis has affected our country and threatens to slow and reverse the performance achieved to date.

2. Europe after a year of crisis

The effects of the global financial crisis began to notice yet from mid-2007. Worldwide stock markets have started a downward trend, large financial institutions have collapsed and most powerful nation governments adopted packages of measures to save their own financial system. Instability contaminated sector by sector, first banking and financial markets, then the whole economy. According to Justin Yifu Lin, Senior Vice President and Chief Economist of the World Bank, there is the risk that this global recession to be the most severe since the Great Depression of 1930.

Europe entered the current global recession with a slew of underlying problems exposed by the global drop in demand and lending. First, Europe's disparate banking systems lacked unified regulation and lack of experience proved particularly problematic in Central Europe where foreign currency lending have created a „time bomb” ultimately detonated by the financial crisis. Second, property bubbles in Spain, Ireland, the United Kingdom and many of the Central European economies² burst at the start of the recession. This negatively affected lenders in Ireland and the United Kingdom, and collapsed the Spanish construction industry, which led to near-20 percent unemployment rates in Spain. In Europe, in the second quarter of 2009 economic data are showing a decline in GDP in most European countries. The two major European economies, France and Germany have increased by 0.3 percent from one quarter to

another. Statistical office Eurostat (Figure 1) estimated for the second quarter of 2009 decreased by 0.1% of GDP in the 16-country eurozone and by 0.3% for the entire EU-27 countries. While most countries in the flash estimate reported a continuation of the recession in the second quarter, Germany, Greece, France, Portugal, Slovakia and Sweden did not. According to Eurostat, in quarter II of 2009, European GDP fell by 0.3% from first quarter of 2009 and by 4.8% over the same period the previous year, indicating that the economy is still in recession.

**EU GDP GROWTH RATES
(SEASONALLY ADJUSTED DATA)**

COUNTRY	QUARTERLY PERCENTAGE CHANGE (QUARTER ON QUARTER)				CHANGE FROM 12 MONTHS EARLIER	
	2008		2009		2009	
	Q3	Q4	Q1	Q2	Q1	Q2
Eurozone	-0.4	-1.8	-2.5	-0.1	-4.9	-4.6
EU-27	-0.4	-1.8	-2.4	-0.3	-4.7	-4.8
Belgium	0.0	-1.7	-1.7	-0.4	-3.1	-3.8
Germany	-0.3	-2.4	-3.5	0.3	-6.7	-5.9
Estonia*	-2.8	-5.3	-6.1	-3.7	-15.1	-16.6
Greece	0.4	0.3	-1.2	0.3	0.3	-0.2
France	-0.2	-1.4	-0.3	0.3	-3.4	-2.6
Italy	-0.8	-2.1	-2.7	-0.5	-6.0	-6.0
Cyprus	0.1	0.2	-0.6	-0.5	0.8	-0.7
Latvia	-1.8	-4.9	-11.0	-1.6	-18.6	-18.2
Lithuania	-0.3	-1.4	-10.2	-12.3	-11.6	-22.6
Hungary	-1.0	-1.9	-2.6	-2.1	-5.6	-7.4
Netherlands*	-0.4	-1.0	-2.7	-0.9	-4.5	-5.1
Austria	-0.3	-1.0	-2.7	-0.4	-3.5	-4.4
Portugal	-0.5	-1.8	-1.8	0.3	-3.9	-3.7
Romania*	-0.1	-2.8	-4.6	-1.2	-6.2	-8.8
Slovakia*	1.8	2.1	-11.0	2.2	-5.6	-5.3
Sweden	-0.5	-5.0	-0.9	0.0	-6.3	-6.3
United Kingdom	-0.7	-1.8	-2.4	-0.8	-4.9	-5.6
United States	-0.7	-1.4	-1.6	-0.3	-3.3	-3.9

Source: Eurostat
*Non-Seasonally Adjusted

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Euro area experienced a moderate reduction in the conditions under which Germany and France, the biggest EU economies, have seen increases of 0.3% compared with the first quarter of 2009. Also, Portugal, Greece and Slovakia have been in quarter II, slight growth compared with first quarter but have dropped over the same period of 2008. On the other hand, other countries in the euro area, major trading partners of Romania, have experienced a worsening of the situation, recording the second quarter, stronger decline of GDP than the one in first quarter: Italy -6%, Austria -4.4%, and the United Kingdom -5.9%⁽³⁾.

3. The impact of financial crisis on the Romanian economy

According to Eurostat, in quarter II, Romania recorded a decline of 8.8% over the same period of 2008 and 1.2% from first quarter of this year. The decrease of 8.8% is the highest recorded for an EU country, except the Baltic states. The evolution of GDP in the period 2000-2009 shows that the effects of the crisis occurred in quarter 3 of 2008 when the Romanian economy began to decline. The effects of the crisis are felt both at macroeconomic level (lower levels of production and exports, reduced foreign investment flows, increased cost of credit and foreign financing, increasing the deficit and external), as well as across economic sectors (for example in construction/real estate, steel industry, textiles, chemicals, retail trade). The main channels through which the crisis has affected the national economy, both direct and indirect, are: external finance, trade, exchange rates and not neglected confidence. According to the RNB Governor, Mugur Isărescu, financial crisis in Romania has no direct effects, the Romanian banking system having no exposures in „toxic assets”, but the indirect effects are significant: the cost and availability of external financing, decline in the volume of FDI inflows, the negative impact on exports, increased exchange - rate volatility.

3.1. Capital markets, banking and exchange rate

For Romania, because of the structure of the financial system, capital market has not strongly affected the banking system. This is due primarily to the fact that most Romanian banks do not have significant exposures to the „toxic assets” that had led to the crisis. Also, the Romanian banking market is dominated by traditional banking products. The system is still vulnerable to contagion effects due to the high rate in the number of banks owned by foreign institutions. It should be noted that the NBR's prudent policies have cushioned the effects of the crisis on the banking system. Of these we mention: the high reserve requirements that allowed adjustment of liquidity in the banking system gradually, depending on the market; slowing credit expansion in the private sector to support local currency loans and limited risk exposures. To these were added the following factors contributed to maintaining the profitability of the banking system: small share of doubtful loans outstanding in total loan portfolio (1.1% in September 2008) and that of October 15, 2008 the guaranteed bank deposits increased from 20.000 EUR to 50.000 EUR.

Foreign exchange market was under constant pressure from the beginning of the financial crisis. Currency depreciation has increased external debt, increasing the cost of imports, with consequences on production and unemployment. The financial crisis has also led to increased risk premiums that Romania has to pay on international capital markets, leading to hinder the taking of funds. The private sector has difficulties in attracting capital from international capital markets.

3.2. Price of goods and trade

The financial crisis had a negative effect on trade. In particular, note a significant decrease in the volume of goods exported. In the period ahead, exports will continue to decline following the trend in external demand. Decreased exports lead to lower revenues from exports, and would constrain the government's ability to finance imports needed for production. In this case, imports will continue to decline as a consequence of the decline in business, investments and exports.

3.3. External funding

The global financial crisis has diminished the prospects for capital inflows. In recent years there has been a significant increase in private investment in Romania. Many investment projects are already under way. As funding decreases are two possible situations: in some cases projects will not be completed and will become non-performing, loading bank balances with bad loans and second, running projects will add to excess capacity resulting from global slowdown and the risk of deflation will grow. Possible solutions to the availability of alternative sources of funding are loans taken from international financial institutions and a better absorption of EU funds.

4. Evolution of the Romanian economy during 2005-2009

4.1. Investments dynamics

To analyze the dynamics of the investment volume in the Romanian economy for the period 2000-2009, we considered the quarterly data. To ensure the time compatibility of investments and GDP volume, we used data expressed on 2000 average prices. Data were adjusted to remove seasonal effects to reflect the real economic development. In late 2007, investments recorded a remarkable growth, with 151.7% compared to 2000. Also in Q1 2009 there was an explosion in the volume of investments, from 48,2620 million lei (average prices of 2000) in 4Q 2008, to 433,1073 million lei (average prices of 2000) in quarter 1 of 2009⁽⁴⁾.

We considered the following regression model:

$$I = \alpha_1 + \alpha_2 * PIB + \alpha_3 * R_{dob} + \alpha_4 * R_{infl} + \varepsilon_t$$
 where PIB =GDP, R_{dob} = interest rate and R_{infl} = inflation rate.

$$I = 91.78320169 + 0.00185905 * PIB + 14.40250404 * R_{dob} - 31.23352456 * R_{infl}$$

(426.9110) (0.011628) (13.20100) (19.47765)

An increase in interest rates by one unit will lead to an increase of 14.4 units in investments, while inflation rate exercise a negative effect: an increase in inflation with one unit will lead to lower investments with 31,234 units. GDP does not strongly influence the development of investments. Data analysis shows that the interest rate is statistically less significant (according to T-state). For all indices p is less than the level of particular relevance (10%), so coefficients are considered statistically significant and the regression model valid. Also, p is less than the level of particular relevance for the F-test and meaning that null hypothesis is false (that at least one of the regression coefficients is statistically significant). $R^2 \sim 0.22$, which means that regression is not well documented. $DW = 1.548542$, which means that there is positive serial correlation of errors. According to the equation obtained, there is a strong positive influence of interest rates on investments and a negative influence of inflation rate.

4.2. Evolution of the Romanian economy during 2005-2009

In the following we tried to analyze the economic behavior of Romania during 2005-2009, using the keynesist model. For this, we considered the following data: GDP, population consumption, investments, government spending, exports, imports, taxes, disposable income (calculated as GDP-taxes), interest rate and inflation rate.

The period under review is Q1 2005 - 2nd quarter of 2009, quarterly data. To ensure the compatibility of data we expressed them in average prices of year 2000 (million lei). Data were adjusted to remove seasonal effects and to show real economic development.

We have defined the following MES model:

$$PIB_t = \alpha_0 * C_t + \alpha_1 * I_t + \alpha_2 * G_t + \alpha_3 * E_t - \alpha_4 * X_t + \varepsilon_t$$

$$C_t = \beta_0 + \beta_1 * C_{t-3} + \beta_2 * VD_t + \varepsilon_t$$

$$I_t = \gamma_0 + \gamma_1 * I_{t-3} - \gamma_2 * R_{dob_t} + \varepsilon_t$$

$E_t = \delta_0 + \delta_1 * E_{t-3} + \delta_2 * PIB_t + \varepsilon_t$, where $PIB = GDP$, $C =$ consumption, $I =$ investments, $G =$ government spending, $E =$ export, $X =$ import, $VD =$ disposable income and $R_{Dob} =$ interest rate.

Next, we estimated the parameters using OLS, being obtained the following equations:

$$EQ01: \quad C_t = \beta_0 + \beta_1 * C_{t-3} + \beta_2 * VD_t + \varepsilon_t$$

$$C_t = -10431.62501 + 0.07424 * C_{t-3} + 1.38742 * VD_t$$

(3214.466) (0.08821) (0.176355)

Initially we considered the independent variable C_{t-1} , but the coefficient was not statistically significant and the t-test and the Akaike and Schwartz criteria suggest a better estimate based on C_{t-3} .

$$EQ02: \quad I_t = \gamma_0 + \gamma_1 * I_{t-3} - \gamma_2 * R_{dob_t} + \varepsilon_t$$

$$I_t = -465.769201 + 2.469588 * I_{t-3} - 5015.450547 * R_{dob_t}$$

(166.2320) (0.966971) (1797.929)

$$EQ03: \quad E_t = \delta_0 + \delta_1 * E_{t-3} + \delta_2 * PIB_t + \varepsilon_t$$

$$E_t = -10442.96536 - 0.05269 * E_{t-3} + 0.83332 * PIB_t$$

(1873.486) (0.079403) (0.079006)

According to T-state, the coefficients are statistically significant for all three estimated equations, so that the regression model is considered valid. Only in the last equation, previous period export explains less the current export development. F-test gives similar results in all three cases: zero assumption is false – at least one of the regression coefficients is statistically significant. The corelograme certifies the test results obtained with DW. According to the

quadratic errors graph, their serial correlation exists and may also exist ARCH terms in all the three equations, as confirmed by White test. According to the histogram and the JB test, the errors are normally distributed, but platikurtotic for consumption equation and leptokurtotic for investment equation, which means that extreme events can have a profound impact on the latter.

EQ04 was estimated using TSLS:

$$PIB_t = \alpha_0 * C_t + \alpha_1 * I_t + \alpha_2 * G_t + \alpha_3 * E_t - \alpha_4 * X_t + \varepsilon_t$$

$$PIB_t = 1.019179 * C_t - 8.682936 * I_t + 2.016742 * G_t + 0.603676 * E_t - 0.402667 * X_t$$

(0.333561) (2.57823) (3.529079) (0.434408) (0.106431)

According to T-state, the coefficients are statistically significant and the regression model is valid. Exports from the previous period explain less the present evolution. According to F test, null hypothesis is false. At least one of the regression coefficients is statistically significant. DW = 2.88, there is negative serial correlation of errors. R2 = 0.89 - regression is well documented. According correlation graph there is serial correlation of errors. According quadratic errors correlation graph, serial correlation is required and there may be terms ARCH (heteroskedasticity). According to the histogram and the JB test, the errors are normally distributed, but platikurtotic, confirmed by JB test. LM test confirms that there is serial correlation of errors and the White test confirms heteroskedasticities existence.

The conclusions from the data evaluation for the analyzed period (2005-2009) are:

- Disposable income strongly affects consumption. Its effects in the period under review are strongly positive and influence the consumption in a greater measure than the consumption of the previous period. The effect takes place immediately, with no lag. How disposable income had in the period under review a positive trend, due to the positive evolution of GDP, and the constantly changing tax rate positively influenced the evolution of consumption;
- Development of investment volume is strongly affected by interest rate developments and to a lesser extent by the investments made in the previous period. The latter had a positive influence. Interest rates took a downward trend during the analyzed period, which was one of the determining factors for the positive development of investments. The model shows that a one unit increase in interest rates causes a decrease in investments of a 5015.450547 unit volume;
- The positive development positively influenced GDP exports;
- With Q1 2009, investments began to decline affecting the evolution of GDP. Large volume of imports adversely affected GDP.

The problems of the two models are the existence of serial correlation of errors and the existence of heteroskedasticity. This should be corrected, or by using weighted least squares method, or by redefining the regression model considering the new combinations of explanatory variables. Also, equations are involving Arch terms.

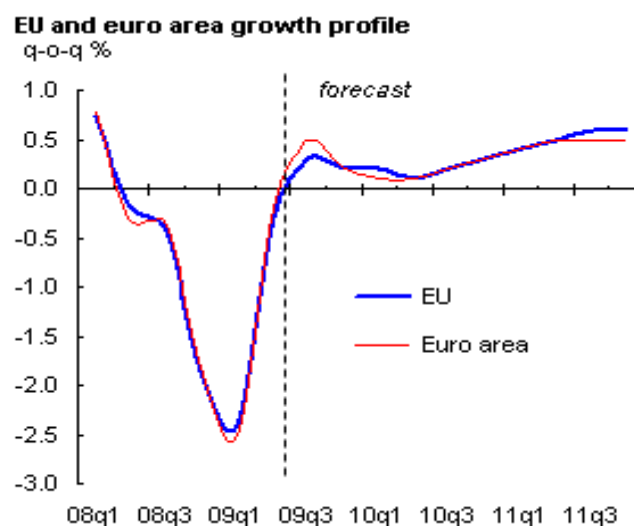
5. Prospects and forecasts on economic recovery

5.1. Overall

Preliminary figures on the situation of major economies (quarter 3 of 2009) and forecasts of economic analysis institutions tend to confirm the assessments that we can talk about reaching the point of stagnation preceding restarting economic growth. Thus, the World Bank projected an overall increase in industrial production of about 9% in the quarter III in 2009 against the same period the previous year. Industrial growth is stronger in Asia (13.8%), where China seems relatively unaffected by the effects of the crisis, India recorded a surprising rate in last quarter (10%) and Japan managed to maintain itself, despite the effects of international market. We believe, however, we can not yet speak of a global economic recovery since the signals to halt the decline are coming from some countries with a strong

economic base/industrial. A global economic recovery can be really taken into account when the phenomenon of loss of other economic areas (Latin America, Central and Eastern Europe and, not least, in Africa – still affected by the food crisis) will be completed and the advanced/major economies will change from decrease to increase. Although Asia seemed to be the main driving force of the global economic recovery, its evolution, considered in isolation, will not be able to determine immediate release of the situation and to counterbalance the influence of the complex factors that have generated the current global crisis.

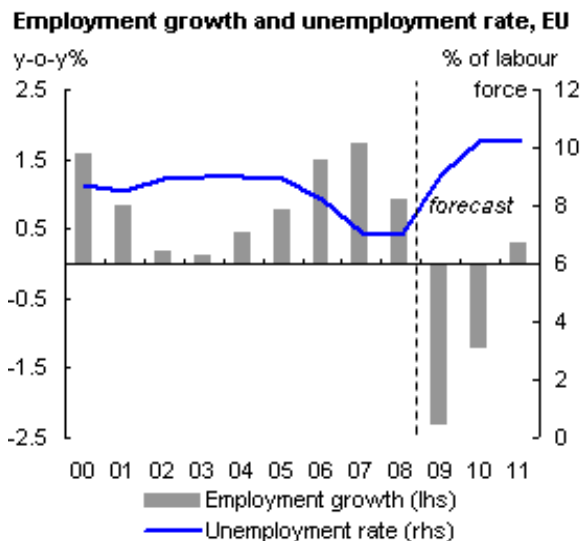
Regarding quantitative aspects, forecasts for the current year shows a decrease of the global economy between -1.4% and -1.8%. The evolution of the global economy depends primarily on the extent to which there will be a recovery in the US, a key issue being that the US administration seems determined to continue incentives as long as need be. Despite positive signals, the recession is still present but the main concern remains the financial sector to restore sustainability, while preparing the ground for the gradual withdrawal of massive support given by government authorities. Moreover, global trade (an important indicator of recession) will decrease in 2009 to 12.2%, 1.2 percentage points more than expected in April, following to recover 1% in 2010. Extended global recession risks are still present, the main factors that favored such a development are raising oil prices and the high value of the debt accumulated by U.S. and continued problems in the workplace.



5.2. At European Union level

European Commission's autumn forecast of the financial crisis that included the EU is that despite positive developments, the uncertainties remain high. COM estimated that out of the recession of the European Union (EU) will take place in the second half of this year. EU executive forecasts a gradual recovery period, so in 2010 the EU economy would grow by 0.75% and 1.5% in 2011 due to improving external environment, financial conditions and the effects of incentives. The extraordinary measures of tax incentives taken by the EU (which have brought shortages as) are the main cause of short-term recovery expected. This estimate has positive influenced the other indicators, business confidence and the consumers. On the other hand, COM believes that trend will see a mitigation of the recovery next year due to, first, the rising of unemployment and due to the financial sector difficulties⁽⁵⁾. For the euro area (considered the engine for economic recovery in Romania) it is expected that the economy will gradually return out of recession in the third quarter 2009 and the evolution will be followed by an increase of 0.7% in 2010 and 1.5 % in 2011. However, positive signals should be viewed with caution, in terms of warnings on the plight of the credit markets. On the other hand, Central

and Eastern Europe was affected more severely („ground zero” of global recession). According to assessments, is expected the ECE recovery to be slow and to take place in a period of 6-9 months after the recovery of the Western Europe. Poland it is the only country in Central and Eastern European region which gives signals to end the crisis, registering in the second quarter of 2009, an increase of 1.4% over the same period the previous year. Also according to the Prague authorities, Czech Republic recorded a quarterly increase of 0.3% compared with first quarter of 2009 but a decrease from the same period of 2008.



The European Commission estimates that the economic situation is better than the forecasts made at European level and calls for urgent implementation of economic measures of recovery remaining as European plan adopted in December 2008. But unemployment remains high next year, take this will prevent expansion of consumption and will temper growth. Return on growth will be slow and steady in the coming quarters. With regard to budget deficits projected for this year, figures have increased in all EU countries, following the various tax incentives implemented by the authorities. Higher values are expected for Eastern Europe, averaging around 5-6%, for Romania being estimated a value of more than 8%.

5.3. Romania

As regards Romania, the predictions made on the basis of equations obtained shows that there will be a recovery of GDP. Conclusions from the above analysis are:

1. Romania is in a specific situation in the EU - has one of the highest rates of economic decline (8-8.5%, the IMF forecast for 2009) and the largest projected budget deficit. Its advantage (at least yet) consists of an unemployment rate among the lowest in the EU;

2. For Romania, any substantive improvement in the economic situation out of the recession depends on the main trading and investment partners (Germany, France, Italy, Austria). Even in terms of a possible revival of Romanian exports, improving the economic situation will not materialize until two semesters after leaving the recession of western economies;

3. One of the problems on medium and long term potentially significant negative is reduced FDI flows amid increasing reluctance of investors to emerging markets. This will affect particular peak industries being therefore likely to result a decline in technological development, resulting the need for intervention from the state;

4. Existing current account deficit must be reduced by measures such as supporting productivity, boost competitiveness and labor market flexibility, which could adjust domestic absorption.

Notes

⁽¹⁾ IMF, in its reports (World Economic Outlook and Global Financial Stability Report) emphasizes the need for reversing shock appearance and global imbalances to avoid a crisis. This effort calls for reforms to ensure relatively concomitant decrease in the U.S. budget deficit, relief and flexible savings surpluses in Asian exchange rates and stimulate growth in the euro area and in some emerging economies had reduced the excess domestic demand contributing to the crush of deficit current account.

⁽²⁾ The latter buoyed by foreign-currency lending.

⁽³⁾ Overcoming the recession can be technically declared when an economy growth is positive quarterly report with the corresponding quarter of previous year. An increase in comparison with the previous quarter only mean a reduction in the rate of decline, but it may also indicate a possible getting out of recession.

⁽⁴⁾ According to NBRs data, February 12, 2009.

⁽⁵⁾ Graphic Sources: <http://ec.europa.eu/>

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CREATIVE ECONOMY AND MACROECONOMIC STABILITY DURING THE FINANCIAL CRISIS

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***Abstract.** The current crisis has struck and still strikes most sectors of the economy. The question that is being asked is which are the areas and sectors that have the potential to withstand the crisis and to develop despite this adverse economic reality. Experience shows that creative industry in particular and creative economy in general has the ability to face the crisis challenges and to follow an upward trend. The paper summarizes the stake the creative economy presents in times of crisis and proposes a set of policies possible to be followed in order to support and promote the creative economy. The paper disseminates a part of the results obtained within CERES and IDEI 1224-two research projects dedicated to creative economy.*

Keywords: creative economy; creative industries; global crisis; creative communities.

JEL Codes: Z1, A13, A14, A30, D89, O1, O4.

REL Codes: 18A, 19Z, 16 C, 16D, 16G, 20F.

1. Introduction

The global crisis that has made its presence felt since 2008 has already affected to a large extent all sectors of activity, regardless of country, region or continent. This has not avoided the creative sector or creative domains. Despite the potential of the creative economy to generate value added/wealth and to create jobs and to induce benefic pre requisite for growth and development, the creative economies must face the same threats that all economies face. The question is to what extent it affected the creative sector and what are its prospects for development in today's context.

As the global crisis affected without exception all areas and industries of the economy, the creative economy could had not avoid this major global change. The current social and economic landscape could be described broadly by: unemployment and the disappearance of a large number of jobs, the remaining being at risk; businesses which go bankrupt; owners that move etc. All these phenomena occur simultaneously worldwide and in all industries.

2. Global crisis and the creative economy

Moody's (*Economy.com*) published a report on recent economic activity in the United States of America. The report investigated 381 metropolitan regions, of which 302 were already in strong recession and 64 were at risk of recession. When the research was conducted, only 15 of those 381 regions were still experiencing economic growth.

The regions which were the least affected, according to the survey, were those regions rich in oil and other natural resources (e.g. Texas and Oklahoma), which were *saved* by declining energy prices. As well, the Washington DC region still provides and creates new jobs in law and administration, due to nationalization of financial companies and fiscal expansion (Florida, 2009). At the opposite pole are the regions less associated with massive funding, which are most affected by the crisis.

In this context, sooner or later, all world regions will be affected by the recession, to some extent and for a certain period. As the crisis deepens, some regions will be more affected than others. Moreover, it is likely that certain regions or cities will have fully recovered, reaching back their past performance, and others not to come back ever again. One thing is certain, however, that the world economy is deteriorating, and the response of different regions to these new conditions is various.

Similarly, *The Big Economic Crisis* or the *Great Depression* of 1929 began as a banking crisis caused by insolvent mortgages and complex financial instruments. Soon, however, the effects of this crisis widened and affected even the real economy, giving rise to a very high rate of unemployment (e.g. unemployment rate in New York was 25% and in some countries exceeded 30%). At that time, the oil industry, building railways and the steel industry were well developed. This is the context in which appeared *the dawn* of a new period of innovation and industrial growth. A similar opportunity may be identified today for the creative economy, since it can play a key role in the current crisis. Some famous authors such as Richard Florida highlight the ability of creative economy to revitalize; this capacity was already proven during the periods of growth and expansion.

One of the root causes of the crisis is the increasing difficulty of the West to offset internal „*exhaust*” by attracting resources from other parties. West founded the globalization of markets (especially financial markets) to attract resources from elsewhere, enabling it to maintain the same standard of living, but created „*a financial bubble*” at world scale. Everybody was interested in the fictional and non-control growth that was going: on the one hand, Western economies could maintain their growth, governments assured full employment today with the money of the tomorrow taxpayers, companies provided the required products without increasing the wages, employees were finding jobs, shareholders were getting significant value gains, the poorest had access to housing, banks gained enormous profits, United States effortlessly maintained their supremacy, the southern countries were involved in the growth with the help of US imports and the world financial system stored much of the world added value.

For ten centuries, Europe and then America and Japan were able to mobilize to their advantage four getting the most important elements considered key for development: population, technology, economy and raw materials. Thus, Western towns get all the resources and technology. Is the case of cities such as Bruges, Venice, Antwerp, Amsterdam, London, Boston and New York. Later, California was able to mobilize many talents, capital and raw materials. In 2006, foreigners who have come here made up one quarter of the total number of patents and more than half of *start-up* sites created in Silicon Valley in the period 1995-2005 were set up by the newcomers in the US.

The situation began to change, however, since those coming from other parts of the world, which until then had brought their talents and resources in the West, began to migrate to other regions, including to regions of origin.

To prevent this phenomenon, the West would have to find its demographic forces, intellectual or pull resources in a profitable manner from elsewhere. Emphasis must be placed both on the creative economy in a broadly sense but also in areas such as nanotechnology, biotechnology, information technologies and cognitive sciences and neuroscience, future areas that may develop only in interdependence, since there can be no genetic without information technologies; there is no nanotechnologies without biotechnology, there is no traceability without nanotechnologies, biotechnology and information technology; biotechnology cannot exist without robotics and nanotechnologies, and neuroscience cannot exist without the other. This accumulation will produce an exponential progress, while other technologies can occur simply by combination of existing technologies.

These techniques will revolutionize the practice of many industrial and service sectors, particularly regarding health, education, media, banking and consulting. These technologies bring, however, ethical problems, because of the uncertainty about their impact on human

nature and democracy. For example, carbon nanotubes could have a devastating impact on human cells, genetically modified organisms may have an irreversible effect on the structure of DNA, and tracking tools could become instruments of political control that could undermine democracy

Many big cities are the venue of a diverse and innovative economy, built around a wide range of creative fields: advertising, architecture, art and antiques market, crafts, design, fashion design, film, interactive leisure *software*, music, television and radio, stage arts, publications and *software* production. High technology companies are the most illustrative example of innovative and creative diversity of these cities, whose growth is largely due to creative economy. For example, it has been measured the concentration of certain types of jobs in New York to highlight their impact on the U.S. economy. Richard Florida's studies and measurements have shown that this city is a veritable *Mecca* for fashion designers, musicians, filmmakers and artists rather than to specialists in finance, for example.

According to Richard Florida, the first who saw in the various economic and social structures, the true engine of growth was urbanist Jane Jacobs. Jacobs considered that *congestion* and *gather hood* in one place of several professions and types of people are a key source of innovation, the capacity of making really new things, which in the long term, can preserve the capacity and power cities. *When a place gets boring, even the wealthiest will leave it.* Accordingly, the current crisis may serve as an opportunity for creative economy to play its *revitalizing* part in the cities and in the creative regions potential of which is higher than usual potential sites. In such places, the creative economy can stimulate growth by attracting investment and talent. Currently, we are already witnessing the decline of old consumer combinations car-house, which was the basis for post-war growth. Instead, new consumer trends and lifestyles appear.

In November of 2008, unemployment in the production domain of the United States reached 9.4%. By contrast, unemployment among creative people with liberal professions was much smaller, about 3%. Thus, the number of jobs in the *tangible* sector (production, construction, mining and transport) decreased by approximately 1.8 million during December 2007-November 2008, and the number of jobs in the *intangible* sector (Scientists, engineers, managers, specialists in various fields, etc..) increased by over 500,000.

In Richard Florida's view, this is the era of emerging mega-regions, which focuses on housing market affordability and creative talent from several specific areas.

The same author believes that the current crisis is affecting different the three social *classes*: *working* class involved mostly in manufacturing, *service* class and *creative* class. Those who are part of the first two categories are often tied to a job or region because of skills, while the creative class members can deal with current changes and prosper due to their flexibility. Credit crisis is part of a succession of crises: advertising bubble, bubble Internet / dotcom, and now the credit crisis. All these bubbles generated fictitious wealth. This is why people should become aware that true wealth is found in arts and culture. The solution Florida proposed is not the return to the original situation, but consists in building a creative new and sustainable ecology, to improve the present situation in a new and creative way. In this process, the creative class can play an important role of catalyst.

Richard Florida argues his theory using the example *Ontario megaregion* provides. Despite the general economic decline, Ontario province had a positive development because of the transition from work based routine to creativity. *Rutiniere* activities, which are mainly based on physical ability or on the opportunity to follow a specific mechanical process, can be carried out much cheaper in emerging economies, but will not stand in developed economies. Ontario has not yet reached the development potential of creative economy. Although the province has a well qualified workforce, business and industry worldwide, excellent universities, cities and large parts and a culture that emphasizes openness, diversity and social cohesion, it experiences the difficulties in building capacity to compete in this creative era. *Ontario* benefits from many creative people involved in creative fields, but are not rewarded

to the extent that are rewarded those in the most developed states of USA. The author proposes the following recommendations for Ontario in the context of the Creative Age (<http://martinprosperity.org/research-and-publications/publication/ontario-in-the-creative-age-project>): Encourage the creative potential of its people, enhancing creativity in all activities, including as many people in creative activities, strengthen the creative abilities through the education system, promote *Ontario* as a creative region, transforming diversity in the foundation of economic prosperity, attracting talent in *Ontario*, strengthening managerial skills, establish new social *safety nets* ; development primarily small individuals during childhood, investing in skills to newly arrived immigrants, the general strengthening of the mega-region, investment in connectivity.

These recommendations can be followed by other countries, regions or economies. In other words, creativity, skills, diversity, talent, entrepreneurship, tolerance, education throughout life, early education and openness are the answers that can make a difference in this period of uncertainty and instability, together with the potential of creative economy and creative class. People do not need to look for bubbles of speculation or other income generating worthless, but to increase creative potential.

While the once thriving and prosperous regions are now in decline, welfare and economic revitalization depends on the creative economy. Creative economy and creative class are protected from the effects of the deep crisis, unlike the well-being created in the traditional industrial system or between bubbles.

3. Policies that support and promote creative economy

Following the lead of other countries, but also drawing on the local success stories, Romania can hope to develop its creative sector provided the implementation of policies dedicated to this goal.

Policies can be designed to be implemented on several levels:

- Policies aimed at the propensity of a given area, meaning special policies created for each of the creative domains;
- Policies aimed at the creative sector as a whole, by encouraging production of creative character and/or cultural;
- Policies aimed at aspects of education and training, business, infrastructure, intellectual property rights, taxation, competition, technology, international relations;
- Local policies promoted by local communities or governments.

Before you think these policies in a frame so narrow and specialized, it should be encouraged to increase individual diversity, the practices of creative domains and markets. Individuals, practices and markets must be seen in close interdependence in the wider context of places and *creative communities*.

Thus, *individual diversity* can be encouraged and promoted through:

1. generating more opportunities for discovery and experimentation of personal creativity;
2. consumer's education as to become more demanding in terms of diversity, quality product's quality and creative services;
3. stimulating the demand for training in creative fields;
4. stimulating creative people to meet and work as within networks;
5. creating conditions for improving auxiliary commercial skills, technical, etc.. useful for the created activity;
6. raising the profile visibility of the persons working in these areas;
7. public support for initiatives with regards to creative domains and their inclusion in broader programs that will contribute to a *long term sustainable development*.

Among the measures that can enhance the *diversity of practices* regarding the creative domain we can find:

1. the use of all market opportunities to establish social and business network
2. creation of local or regional markets in order to gain access to communities and networks of practitioners and the development of markets for innovative practices;
3. classification of emerging creative businesses according to the circuit of existing business practices and in the markets that are already functioning.

To increase the *diversity of markets*, we may propose measures such as:

1. providing help and financial support to remove barriers to entry;
2. creation of new markets and opportunities;
3. promoting the creative sector in various areas and regions.

In regard to *Small and medium enterprises* SMEs, the government should be actively involved, having in mind the British model, in implementing policies to ensure access to the economic operators distribution network, particularly for small and medium businesses which are involved in creative fields and markets with a low degree of concentration.

Protection of intellectual property rights must take into account both the needs of major market players and those of small and medium enterprises and individual entrepreneurs, meaning creative people.

On one hand, should encourage research development and innovation in universities and large companies in the field, as they benefit from the advantage of being able to finance the work and therefore need *insurance* and an incentive, so that the efforts would be justified and investments made to generate revenue on the long run. However, intellectual property rights may meet these requirements of a compensatory nature. On the other hand, intellectual property rights must provide shelter for creations, innovations and inventions of the individual or individuals working in smaller firms. The reason is that, given their limited financial strength, lack of adequate protection can result in the abandonment of the final creative work. It also would be extremely helpful setting up an advisory service on intellectual property rights in creative fields (virtual and real).

It should also be set up a *framework of standards* that will make reference to terminology, management and marketing of goods and services which make up the subject of intellectual property rights. This framework of standards must be proposed by authorized agencies in creative fields in a joint project with a goal to bring together all sectors concerned.

On a government policy level, there can be thought of *tax incentives* for investment in creative fields, such as: exemption from income tax (re) invested in the creative or cultural activities and/or any type of enterprise, exemption from income tax for creative businesses and/or cultural start-ups for a certain period of time, exemption from income tax for certain key activities such as *software* production; *subsidies* offered to businesses that produce creative goods and services and/or cultural original goods and services, of high quality and which enhance cultural diversity and prestige of the country (after the French model of computer games); grants for small businesses in markets with strong barriers to entry, grants to start up etc..

From the perspective of *financing* the creative areas, following the Nordic model, it can be proposed the following measures: the establishment of a coordinated and coherent plan of investment (public and private financing); the launching of an investment fund for creative professionals; establishment of investment clubs in creative fields, to attract sponsor-interested companies and build a portfolio of creative and innovative companies in the investment scheme.

In addition, it is necessary to regulate aspects of *asymmetric competition*, especially in those areas and markets where there are a few strong companies (market focused). One example is media, with a fairly high degree of concentration in which small firms take the head start with an obvious disability.

Creating the *networks of firms* can help SMEs and individual entrepreneurs to develop their businesses. The networks established at the local or global environment is the place where information, knowledge and best practices are shared. Also, networks are the best way of the creative businesses to connect to other areas and industries which can work with or they can find markets for their products and/or services. This work is, in fact, development initiatives and expansion of the market.

Creative clusters should be built where they don't exist and where it exists, must be strengthened, by targeting the policies to sector specificities, supporting small businesses, processing industrial landscape and focus on convergence. The exchange of knowledge must take place in creative regions through partnerships of *Creative sites* which focuses on culture and creativeness, to be supported by coherent and up to date strategies.

Technologies must be seen in all creative fields and/or cultural, whether it is the ultimate goal of the activity (production of *software* or computer games, film, video, music) or just a support carrying on the production/current creation activity. Thus, technological and creative industries must work in tandem to meet the goal of spreading innovation and technology exploitation in the creative industry. Specific digital creative technologies (archives, databases, collections of radio and TV) represent valuable resources in the creative sector.

Regarding technological industries, they must find new ways to improve access to *information and communications technologies*. Extremely useful would be to create an information portal for the creative fields, including legislation, guidelines, useful information (grants, tax breaks, possible funding sources of business, contracts).

To stimulate creativity (individual and group) is needed to implement *a program which honours creative entrepreneurship*, whose base is made of creative businesses, through an online portal specially dedicated to this purpose.

Education, the formal-informal axis, plays a central role in the creative area's development, through education and training policies and beyond. In addition to the strictly formal context, the education system should encourage learning throughout life and lifelong learning. Unlike other types of investment, investment in education is a long-term investment. First, it is appropriate to introduce creativity in curricula at undergraduate level and at university. Individual talents and inclinations to be grown from an early age, so the school curriculum should include elements related to creative and cultural fields. Inclusion of these elements in school programs must be done with cooperation between established educational institutions, through an effective academic network, and industry. It should also be harmonized creative skills in relation to the new professions and types of creative activities. All educational programs specifically designed to cultivate talent among young people must complete through a degree, after the British model. Along with creative skills, entrepreneurship should be cultivated through measures such as: the creation of bachelor programs, master, MBA for creative professionals, presenting challenges and intellectual property rights regime, training for business skills (economics, finance, marketing, management, accounting, computer science, law, etc.).

Creative exchange programmes between educational institutions, programs of study based on professional work in companies (internships), the creation of academic *hubs* dedicated to the creative areas (where we can include schools, colleges, universities, companies, non-profit) and exchange of knowledge in the industry-education networks, all these are forms that can involve all the stakeholders: employers, public agencies, educational system, creative people, etc.

From an institutional viewpoint, the establishment of a council for education and skills training in the creative economy would respond to today's creative Romanian industry needs. Its role would not only summarize the organization of courses, but actively contribute to policy development and creative agendas in this area and would mediate the relationship between industry and education system.

Among the education necessary contributions for the industry we can include: special training for the creative sector, training, mentoring, expertise, specific training programs, information services, advice and guidance for those wishing to work in creative fields, etc...

These objectives cannot be made without industry support. Entrepreneurship also should launch campaigns with economical and formative role, targeting schools, universities and creative businesses start-ups to promote plans for career and business opportunities in the creative sector in order to provide necessary advice from experienced practitioners and to establish centres of excellence in creative fields with the most prolific creators in the field.

The role of *research* is to create a link between innovation and creativity, being the form of which innovative and technological initiatives are taking place. The university is the most conducive environment for expression and proliferation of initiatives to transfer knowledge and can become an important factor in implementing policies directly aimed at creative professionals, in cooperation with local and / or central administrations. Research in universities is facilitated by the expression of openness to new and unusual ideas, expressed by students and researchers. Using the new model of Great Britain again, for Romania as well it would prove useful to lay the foundations for a *knowledge transfer partnership*, to deal with the transfer of knowledge between universities and business or university and various non-profit institutions by collaborating in various research, development and innovation projects.

Locally, creative areas can be driven by organizing cultural programs and international events such as exhibitions promoting local cultural diversity and to increase visibility of local artists and hosting events with international and local participation.

At the national level are appropriate *campaigns which support and promote* local markets through loyalty to national brands and encouraging specific initiatives.

Conclusions

Actions aimed at Romanian creative economy must take place in a wider context, an *international* one, in the South-Eastern Europe space or even in the European Union. Nordic countries are the most eloquent example of that cooperation among nations can only lead to the creative field development.

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Section III
Insurance

HEALTH INSURANCE - CHALLENGE FOR SOCIAL POLICY

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***Abstract.** This article expresses opinions related to a number of ideas commonly found in various studies on the evolution of health expenditure and its effects on economic and social environment. Reform in this area, particularly focused on issues facing health system funding, must be based on a set of criteria that take into account the impact of globalization and the specific situation of each country.*

Keywords: health system; health expenditure; health insurance; health financing system.

JEL Codes: G22, I1, I10, I11, I18.

REL Codes: 13 A, 20F.

1. European social policy

In building the European project, the social dimension has remained mostly under national competence, which feeds the skepticism of citizens from Western Europe and also increases expectations for European citizens, especially, for those who have recently gained this status as is the case of Romanians.

The European Community intervention is limited, as sphere, by the extent in which Member States adopt such provisions, based on the capacity allocation. The complementary action of the subsidiary and proportionality principles contributes greatly to the fragile manner of shaping the European social model.

Based on the principle of subsidiary, the European Community intervenes only when Member States do not obtain satisfactory results in the national framework, compared to the objectives they have established.

As a result of the action of the proportionality principle, this intervention is strictly limited to what is necessary to achieve those objectives.

The strategy defined in Lisbon in 2000 correlates the competitiveness of the European economy to a triangle composed of economic growth, employment and social cohesion, which opened a field of indirect influence on social policies of Member States. State policies in health are influenced more and more by the activity of some EU institutions. Thus, the formation of the single market in services, along with the jurisprudence of the Court of Justice has allowed wider expression of citizens' rights as patients in order to exercise the freedom to choose their benefits outside their state of residence. Also, the European directives on insurance have exerted a strong influence on complementary social protection. In one important area of health policy – the medicine policy, community competence is quite widespread in legislative matters and procedures permit the marketing of medicine.

2. Health reforms

Health systems in the contemporary world are under the sign of diversity – as organization, functioning and funding – but, at the same time, are looking to optimize the relationship between the effectiveness of services provided by the system, the fairness and freedom of their stakeholders, based on the growing concern regarding the funding system. The main concern is the timing of the growth rate for the public expenses, targeted to this

sector and alternative solutions identification, by which to support the functioning of the system.

Developed countries have addressed the issue of health expenditure sustainability to fund the phased system. The period 1970-1990 was dominated by macroeconomic solutions that increased funds allocated for the system and led to its consolidation and conservation. Under the pressure to limit the possibilities of support for this increase, due to the negative impact on the competitiveness of goods in a powerful internationalized and competitive economic environment, the decisions switched to microeconomic orientations which limits and controls the growth of public expenditure directed towards health.

For this purpose a series of procedures have been promoted to encourage changes in the behavior of health actors.

In terms of cost financing source, a reversal of funding through private or mutual insurance can be noticed, process most evident in countries like the Netherlands, Poland, Czech Republic, but less significant for France, Denmark, USA.

OECD countries have acted to limit public expenditure by applying the co-payment system, in parallel with the operation of structural changes in health system.

Increasing health cost, supported primarily from public sources causes concern, because it can lead to loss of growth potential in terms of taxes and optimal growth theory.

Increased intake of private financing for covering health costs pose problems in terms of equity which can lead to exclusion and discrimination. If the private financing input is derived from business operators, in different types of insurance, then the risk of losing the growth potential is manifested again. The direct implication of the patient in financing the health system is discussed in contradictory terms: on the basis of the efficiency principle the patient should contribute to the cost of health services; on the contrary, as a consequence of the right of access to these services, the patient exemption from any monetary contribution is required. The direct monetary contribution of the patient is seen as a tool by which he is constrained to not abuse the system facilities and have a responsible attitude, implicit to his own health.

Free services offered by health insurance are the result of a solidarity system. The possibilities of this system to offer ever richer services that combine medical and sometimes even supplying an increasing demand for healthcare goods is becoming more limited. This fact generated the idea of setting a set of procedures to act as a filter for financing requests from patient and health system professionals.

Moving towards solutions that combine access to free health care for some services with direct payment system for others can be justified by the perverse effects of a system based solely on free services. Studies undertaken under the World Bank highlighted the risk that these services could benefit less to people with low incomes, because the population has difficulties to express its demand and to be recognized by the health system.

3. The contradictory character of the health cost development

The timing of health expenditure growth for developed countries is justified by the ability to generate perverse effects on both economy and population health. The negative influence of such a phenomenon is manifested as long as growth is not accompanied by an increase in the efficiency of these expenditures.

By reducing the growth potential of an economy, taking into account the allocated resources, it is possible to reach in the end to the deteriorating health condition of the population shown by the negative impact on revenue – it can escalate phenomena as unemployment and exclusion that are in a negative relationship with health status. Increasing the allocated resources share for health expenses covering must be analyzed also by taking into account the fact that it can lead to a reduction in resources, at least in relative terms, for other sectors.

Public health specialists and social scientists, mainly under the impact of McKeown's work (1972), have generally agreed that the health condition, expressed by increasing life expectancy, depends, first of all, on social and environmental factors (the life and work conditions, hygiene, nutrition, environment), the contribution of the health system being valued at approximately 15-20%. In this context, an increase in concerns towards prevention of disease risk may help to improve the health condition and thus to diminishing the growth of health system expenditure.

A feature of the health field, shown in numerous specialized studies, is that of sustained pace of innovation, which trains and justifies the increased expenditure in this area. At the same time, it emphasizes that, after 1980, no major innovations appeared to exert a major impact on human health, as was the case of penicillin in the past.

The discontinuity of innovation processes, the need for a lengthy period of result testing and the prospects of applying genetic and associated therapies are the determinants of health resources growth.

The health sector becomes more capital intensive, which requires additional investment funds, targeted especially towards equipment procurement and laboratory investigation, generating a training effect on branches producing such goods. Also the health sector relationship with the pharmaceutical industry is powerful; countries like South Korea, Spain, Hungary, Mexico, Italy, Poland and the Czech Republic allocated in 2004 over 20% of health expenditure for pharmaceuticals.

Increasing health costs is a reality that generated two types of reactions. Most people who have studied this issue directly advanced, or sometimes implied, the idea of an attenuation of this increase, under the pressure of not sustaining these trends in large time horizons, generally around late 2030 or 2050. Meanwhile, for the same temporal parts, the demographic structure, not only in economically developed countries, but in most emerging countries will be likely to require increased health costs. This phenomenon is not the first concern, in itself, but particularly in terms of problems posed by the allocation of resources to other areas. It is not just about becoming a classic arbitrage between healthcare costs and those devoted to education. Taking into consideration the time horizons referred to above, the competition for resources between the two domains of social action will diminish, because of population aging under the impact of increased life expectancy and birth rate reduction, phenomena taken into account for shaping the evolution of health expenditure. The choice, in terms of opportunity cost will be manifested as a priority over other economic and social sectors. In economic terms, the solution lies in the ability of human society to achieve labor productivity growth that allows the generation of wealth to levels that do not pose problems for resource allocation to other fields. The current investment in innovation-research, parallel to accelerating the applicability of the results may support the labor productivity level growth.

If the demographic structure of the years 2030, respectively 2050, will look as the results of current forecasts, then major changes in demand will be recorded, which will radically change the coordinates for current resource allocation examination between sectors.

Another guidance starting from the same demographic trends and resource allocation for health highlights the inexorable nature of health cost growth, but considers that this phenomenon is positive. The explication: Health is a good whose demand is growing faster than the revenue. For the supporters of the idea, the reasoning is based on the fact that in old age, people's preference is clearly for an additional year of life, compared to another machine or any other commodity. This has a great impact on progress, specific technology, health services, leading to the widening trend of increasing health spending, but will also generate a training effect to other fields.

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MOTOR CLAIMS INCREASE IN ROMANIA – CAUSES AND PREDICTIBLE CONSEQUENCES

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***Abstract.** The scope of this article is to analyze the factors that can influence the motor claims on the Romanian market and the methods through this can be analyzed and managed. The lack of statistical data that will validate the proposed model allow us to stress out the structural approach of the claims phenomenon and not to actually test the model. Besides the external causes (accidents, deaths etc., considered objective factors) that are responsible for motor claims, we included also the internal causes (operational risks at the level of insurance companies). The initial presumption was that is it is much easier to manage operational internal risks than to change the entire motorists' discipline.*

Keywords: bonus-malus; claims; motor insurance.

JEL Codes: D81, G22.

REL Codes: 11C.

1. Insurance market

The Romanian insurance market has undergone a rearrangement, a result of mergers and acquisitions in the past four years. The beginning of the consolidation process, we might say, is the year 2009, when officials of several companies have announced for the first time as a strategic goal the profit margin instead of the market share.

This decision comes amid explosive growth of the fleet of new and second-hand cars in Romania according to official statistics published by the National Institute of Statistics. Deaths due to accidents follow the same evolution, according to European Commission's statistics concerning road safety. Thus, Romania ranks first with a 25% increase as the number of fatality accidents, recorded in the year 2008 compared to 2001. Compared to 2007, the increase is of 9%. The next European country in this top is Bulgaria, with 5% growth recorded for the period 2001-2008. In addition, all other European countries recorded declines of this indicator by up to 50% such as the case of Luxembourg or 48% as in the case of France. Official statistics in Romania beginning with the 90s indicates that during this time horizon serious accidents and fatalities have decreased yet. The lack of light accident records, which are the focus of traditional insured damages may lead to the idea that they are the ones that basically generates a large share of damage.

On this background, the insurance market in Romania for first three quarters of 2009, compared to 2008, the motor claims rate was of 95%. An increased value of gross written premiums by approximately 15% was recorded, while the amount of compensation paid increased by nearly 33% (over 1.11 billion lei). As the insurance premium increased (the average premium was 333 lei), the paid average compensation reached the level of approximately 4356 lei (with 23% more than in the first three quarters of 2008). The increase in the average paid compensation is attributed to the cost of parts and labor expenses.

In terms of events that generate motor claims, a first classification would imply the existence of external causes (of which the most obvious is the evolution of the number of accidents):

- Quality of infrastructure (the impossibility of measuring the quality of roads in Romania leads to an empirical approach; thus the common causes that generate damages are: trees on the national roads, lack of proper signals to the road sections without proper vision, lack of appropriated parking spaces, etc.). Basically, this indicator although difficult to quantify, is perceived empirically as having a substantial impact on the number of accidents, and indirectly on motor claims.

- Increase in motor fleet (inevitably, the increase of motor fleet, combined with a low quality infrastructure and the inability of the police authority to ensure compliance with basic traffic rules causes an increase in the number of accidents- the number of contraventional fees is insignificant and ineffective in relation to the number of violations of traffic rules.)

- The fraudulent method of obtaining driving license (a number of cases were reported in the national press that there are officially several hundred drivers who obtained driving license without benefit of specialized training and without passing the exam).

- Fraud (subject to further detailed analysis).

- Amicable agreement (introduced with July 1, 2009) that allow the drivers (in specific circumstances) to establish the liability for an incident (the guilty party).

Although it is difficult to quantify what is the cause that generates most of the claims registered by car fleet, the perception of the insurance representatives is that the motor claims will rise steeply because of fraud (especially following the introduction of amicable agreement).

2. Fraud in motor insurance

Fraud as defined in literature by Derrig, Johnston and Sprinkel should have the following features taken based on the principles of law in the sense that the act/activity must be:

- a) A clear act of will;
- b) Directed (a) against the law;
- c) One way to achieve an unfair financial gain;
- d) The result of a distorted presentation of the material damage

According to this description, practically any situation, even the ones officially unreported, that do not reflect the entire reality, may be considered fraud.

Classification of types of auto fraud, according to Derrig, includes as follows: 1. Planned accident („directed”); 2. The applicant is not involved in the accident 3. Double claims for a single damage; 4. Issued invoices for nonexistent repairs; 5. Injuries not related to the accident; 6. Fictional damage; 7. False statements from a financial standpoint, 8. False statements.

Official statistics and the speciality literature ranges between 10% level of fraud (United States) and 25% (in Great Britain). On the Romanian market there is no official statistics, for the moment, although the percentage could be a significant one.

The main causes generating fraudulent acts are considered: the disproportion between the purchase price – in case of second hand cars – and the price at which they are insured based on specialized catalogs; mandatory inclusion of a deductible on the insurance policy; lack of a correct information of the insured concerning the insurance conditions and especially the exclusions; lack of transparent communication of the insurer/broker to the insured during the claim settlement process; the level of bonus for the insurance sales force (its lack or the calculation and payment of this bonus prones to fraud) and lastly, the current economic circumstances (eg the total damage of vehicles outfinanced through lease or loans).

3. Amiable agreement

Starting with July 1, 2009, the framework of auto insurance in Romania included a new element – amiable agreement. This system applies in case of light traffic accidents, with no victims, enabling to reduce the complexity of the approval procedure for the insurance compensation.

According to the new system, the drivers involved in a road incident, with no victims, no longer are required to declare the incident to police; the single procedure to fulfill is to complete the amiable agreement statement, considering they agree on the responsibility in the incident, and then to submit it to the insurer of the guilty party.

According to the legislative framework in Romania, the amiable agreement may be declared if all the following four conditions are met:

1. there was an accident with property damage only, no injuries,
2. there were involved maximum two vehicles, which have MTPL (Motor Third Party Liability) valid at the time of the accident,
3. the accident takes place in Romania (on public roads),
4. no offense was committed, according to Traffic Code.

Existing statistical data for the months from time of introducing the system, concerning the cases of recorded claims by insurance companies are not sufficiently conclusive to determine the degree of correlation between the amiable agreement and the motor claims in Romania - expressed as a ratio of paid claims in relation to volume of premiums collected. However, over 28,500 cases of motor claims were approved on the basis of amiable agreement, in the first three months from the introduction of this procedure. Monthly, however, according to traffic police records, the number of records drawn fell by an average of about 20,000/month.

Another issue affecting the management of motor claims at the level of insurance industry is the lack of a common database for insurers and police. If initially they were completely centralized by the police, now the accidents subject to amiable agreement are no longer known by the police.

Currently, the claims paid by the insurance industry are maintaining, or even growing, compared to the same period of last year, due to factors related more to organizational aspects of the system.

Another consequence of amiable agreement is the increase in the duration of opening a claims file - especially because of time spent in data verification in the amiable agreement form and due to establishing the guilty part. Insurers have tried to offset this risk by increasing the number of employees in claims departments to reduce the duration of solving the cases, but unfortunately, the measure is proved to be ineffective at this stage of implementation. Other problems leading to slow settlement procedure and payment of damages, and implicitly to the increasing discontent of the insureds, refers to the incorrect completing of the amiable agreement form or to the non-acceptance of mutual responsibility in case of accidents with common fault.

On the other hand, a number of internal factors specific to insurance industry may lead to the increase in paid claims. Thus, the reduced training of those responsible for establishing damages in the absence of a report by police is worth mentioning – the reduced experience in the interpretation and assessment of damage generated by road incidents may lead to delays in solving cases or to increases of number of files superficially solved. Another internal factor of claims settlement system is the modest benefits system of the claims adjusters, they may, at any time, accept compromises and become accomplices in the attempted fraud of the insured.

4. Setting discipline in road traffic– MTPL Bonus Malus system

Intending to create a system of awarding the disciplined drivers and to penalize those involved in road incidents, especially after the introduction of the amiable agreement – drivers

are more relaxed in their reporting of accidents to insurers –, the insurance industry has developed the Bonus Malus in Romania for MTPL insurance policy.

A form of Bonus Malus for CASCO motor insurance was implemented by more insurers since four years ago, in order to increase the loyalty degree of customers with low risk. The distinct application and under different forms (in terms of discounts given) had the desired success of insurance companies; taking into consideration the maintaining of the claims level, the growth of paid average claim, a new system was developed – the MTPL Bonus Malus system – the uniform implementation of a bonus system is considered auspicious for the entire market.

At implementation moment, all the insureds will be classified B0 – any new car, first registered, will receive this classification. Later, based on the damage history of the car, its „status” can improve or worsen, regardless of the driver. The novelty of this system lies in maintaining the „rating” of the car. In this way, it is intended to eliminate the possibility of losing the damage history of the car by alienation/cancellation of a vehicle or by changing the insurance company. A controversial aspect is that the system transfers the vehicle liability policy. For professional drivers or car fleet registered to legal persons directly responsible for accidents, the drivers can change the car and not be followed by any penalty.

The decision of implementing this system to reduce the level of paid claims and not to reduce the number of fatality accidents may lead to new forms of fraud.

The bonus-malus system includes 14 bonus classes and eight malus classes. A driver who had no accidents in a period of one year may receive a bonus of 10%, and can reach a 50% reduction in insurance premium over seven years. On the other hand, for risky drivers, the MTPL tariff will increase with a malus coefficient of 45% for road events and an increase of up to 200% for those producing more accidents. The application of malus coefficient is yet established annually, so more incidents per year will not be considered until the renewal of the policy and not during the insurance period started.

According to specialists in the insurance industry, the bonus-malus system will benefit 90% of the MTPL insureds. The system is introduced as a measure of accountability of drivers, the cautious ones will not pay the same insurance premium as drivers who cause accidents, even inadvertently. And here is a matter that all MTPL policies will increase starting with January 1, 2010, and the bonuses granted will only reach the most likely value of the policy paid previously.

4. Claims settlement

Considering the high level of motor claims, the implementation of efficient management systems for the factors that may influence its change may be one of the real solutions of the insurance industry to control the future claims.

Such an approach for the purpose of identifying factors generating claims, for the benefit of the insurance company, would be the application of methodologies for the identification and analysis of operational risks: the RCSA model and the causal analysis of taxonomy model.

4.1. RCSA model

One methodology used successfully so far, according to specialty literature, was RCSA (Risk & Control Self Assessment). It is a process through which the operational risks and their control methods are analysed and assessed from an internal point of view (most often using an external facilitator). The usual approach starts with the consideration of operational risk in terms of current activities in the area of business analysed. Thus, it ensures the transparent dissemination of information within the organization as well as the personnel involvement in that process. The general steps in this process are:

- a) Environmental documentation and how the control is carried out,
- b) Identification and assessment of risk,

- c) Identification of specific types of risks' controls,
- d) Evaluation and scoring of control mode,
- e) Planification of actions,
- f) Monitoring and reporting of results
- g) Testing and validation of control modes.

The benefit of this approach comes from two directions. On the one hand, by covering business areas it allows for better internal visibility of this internal competency in the same time with understanding of business objectives to be achieved. Moreover, this bottom-up approach allows for better internal communication. On the other hand, it stimulates the organization's members to become proactive in identifying and managing risks. The major drawback of this methodology usually comes from how responsive staff involved. Studies in this area have identified four factors that may vitiate the results of this self assesment.

Individual experience – the overall trend is that people overestimate the frequency of cases already tried and to underestimate the likelihood of less popular events (reactions like: „Since I work here I have not heard about it and I do not think we can expect it. Here! No way.”)

Anchoring – if a survey indicates an event or the quantification of the impact, the trend is oscillating around that value, even if it was chosen arbitrarily. (eg „What do you think is the maximum amount that the company might lose because of a fire at headquarters? Vs. In our field the largest loss recorded from a fire at headquarters was about 500 million Euro. What do you think could be relevant amount for our company?”)

„The law of small numbers” – determining the probabilities for an event is made by each individual interviewed, usually on the basis of previous experience to which they relate, and not necessarily based on probabilistic expectations that take into account extreme horizons, such as black Swan horizon.

Semantics - the response to a questionnaire used can be induced by how the question was made.

A counterbalance of the lack of efficacy for this process lies in the drawing up of questionnaires used and especially the inclusion in the analysis module of the third dimension in risk assessment matrix (the two already being frequency and severity/impact), namely the worst possible scenario. Thus the resulting new matrix can be used for estimated losses and for the unexpected losses by offering the possibility of integrating the results of such analysis in a mathematical, quantitative model.

4.2. Causal taxonomy analysis model

Individual tendency to address the use of complex models is overcome in the long term by one of Murphy's laws about technology: „it's easy to do something complex, but it is hard to make something easy”. Therefore, the reference model (belonging to Risk Business) may be surprised, initially, in a single step and has the particularity to include in the existing general industry frame a series of causal factors that come to deepen the understanding on existing relationships and generating in turn the risks, the four components defined by the Operational Risk Consortium: people, processes, systems and external environment.

Stage One: The Behavioral Perspective: In fact, risk management is a discipline that studies the behavior of a dynamic point of view of risk. Organizationally, this can be done procedurally by approaching the channels/key business processes, where the causal factors of risk are formed and begin to interact, namely: planning, customers, human resources, product characteristics, performance, systems support, external factors, the response to risk, etc.

Aggregation of cases identified: Collection is made in general by most of the financial and insurance industry by recording information on losses. This information can then be aggregated, but when we speak of causal factors, this aggregation can not be formulated. An important distinction should be made here between cause/underlying factors of risks and events. Causes refers to generating factors and circumstances favoring the emergence of

undesirable events, and events are tangible and measurable results that have adverse effects and may include both gains and losses.

Defining only the causes (causing elements) that can be objectively measured: measurable aspect is important because no one makes the process of searching for the responsible person but rather to identify opportunities and control the assigned responsibilities. This stage of measurement is based, according to experts from the Risk Business, on the development and use of KRI - Key risk indicators.

Establishing links between causing elements, the general frame, including the control processes: a major benefit of this approach comes from the fact that it allows at this stage, as can be seen in Figure no. 1, the successful integration of the factors generating unwanted events at the level of enterprise-wide risk monitoring system. This systematization will lead to identifying key points of risk (= business processes* risks associated), which allows the evaluator, using the causal taxonomy, to determine much easier the control and mitigation methods.

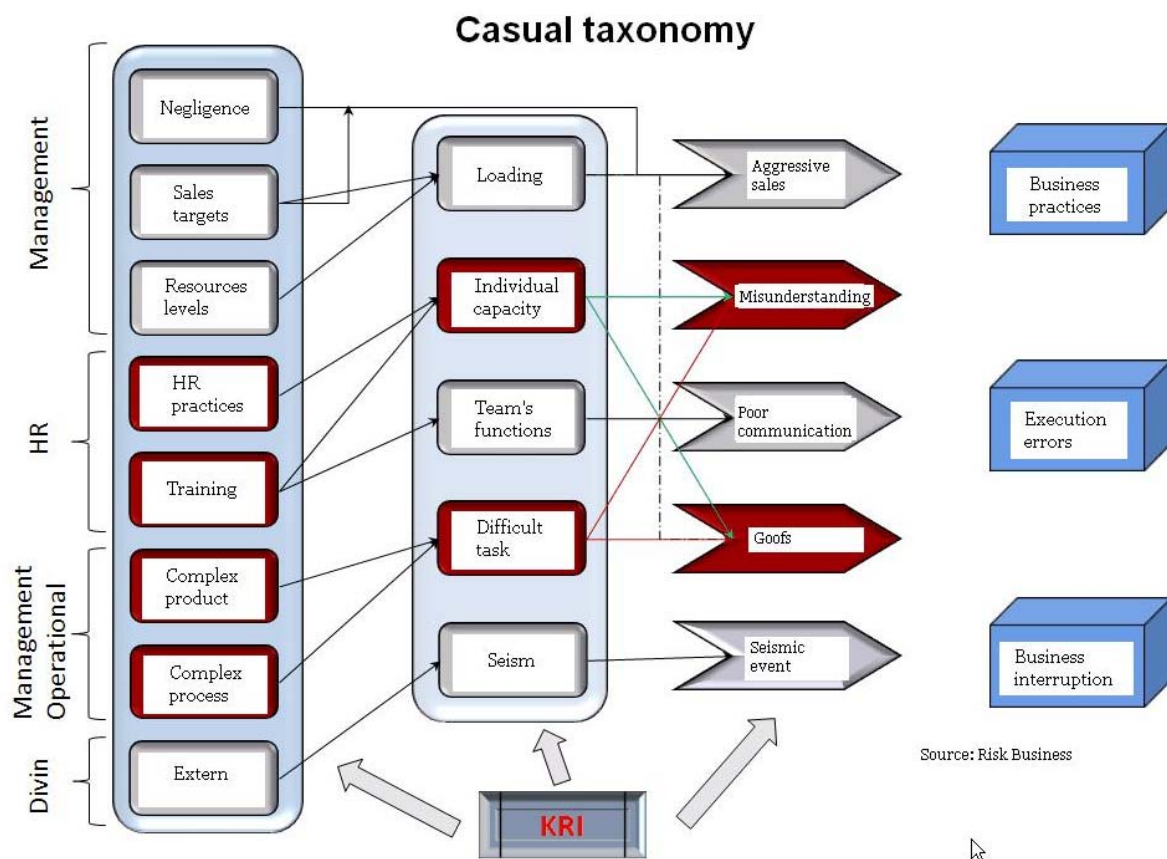


Figure 1. Casual taxonomy

Establishing a causal taxonomy to identify threats and not forecasts: this principle allows precise location of key risk points, defining their monitoring, cataloging control functions and determining the level of threat for each case .

Second stage: It implies that based on the existing and valid data obtained as a result of activities performed prior, their mathematical modeling can be initiated using simulations, analysis and specific techniques to generate a horizon predictability on confidence intervals decided by the regulator or domestic commitments.

5. Conclusions

In the absence of penalties by the police, following the amiable agreement application, one feasible solution to control the number of motor claims and to attempt to reduce fraud remains the MTPL bonus-malus system – it is the one that will impose monetary penalties when the insured will try to evade the fundamental principles of insurance.

Applying the bonus to motor third party liability insurance policy will have beneficial effects as it aims to increase the accountability of drivers, and implicitly to set a more „disciplined” traffic and a smaller number of accidents.

All these steps seen from a contemporary perspective is likely to cause, individually and/or organizationally a status of inconvenience caused by the lack of certainty on the short, medium or long term. However, paraphrasing Voltaire, and looking from a historical perspective this time, „Uncertainty is an unpleasant condition for human beings, but certainty is already an absurd one”.

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PENSION SYSTEM IN ROMANIA – CURRENT ISSUES

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***Abstract.** The popular saying „who doesn't have elderly, should buy” had lost its relevance in the face of many current problems of pension systems. Aging population, declining birth rates and fertility are the current demographic trends worldwide, threatening the sustainability of social protection systems. The study explores the public pension system in Romania, operating principles, sustainability, the evolution of the average pension, retirement ages compared with other European Union countries.*

Keywords: public pension system; sustainability; demographic tendency; trends; pillar II pension.

JEL Codes: J11, H55.

REL Codes: 20F, 11C, 12F.

The pension system in Romania is the largest category of public spending. Annual expenditure on pensions in Romania is over 10 billion euros, more than 9% of GDP and over 26% of all expenditures strengthened⁽¹⁾.

The public pension system is in a difficult situation for some time, due to system sustainability, lowering the retirement income security. This situation is even more difficult in terms of economic crisis, hardly providing the funds necessary for the payment of pensions.

At EU level, the right to establish the principles, methods, mechanisms and types of pension represent a sovereign right of each Member State. Thus, the diversity of pension systems, the conditions and criteria for retirement, the way of calculating pensions, the number of taxpayers, led to the existence of the three pillars of pension systems: public pensions, occupational pensions and private pensions.

Compared with other European, countries where the situation of pensioners depends not only on the public system, but has an important and private pension system, in Romania compulsory private system was introduced late.

And if you think about the future, it „does not sound too good”, the aging of the population and the number of ever more pensioners put pressure on the public budget, the employees, who contribute to the public pension system.

1. Principles of public pension system

The right to social security is guaranteed by the state and is exercised by the public pension system. The public pension system operates based on these principles⁽²⁾:

- The principle of uniqueness, according to which the state organizes and guarantees the public pension system based on the same rules of law.

- Principle of equality, which ensure that all gets the same treatment.

- The principle of social solidarity, under which participants assume any obligation to each other in order to ensure social risks and benefits, in order to limit or eliminate the risks.

- Principle of compulsory, according to which individuals and companies are obliged by law to participate in the public system, social security benefits are conditioned upon the fulfillment of obligations.

- The principle under which pensions are based on contributions of individuals and legal entities.

- The distribution principle, contributions are used for payment of the pension system obligations.

- Principle of autonomy, based on independent management system.

On these principles, the draft law in September 2009, the public pension system unit, added two new principles:

- the principle according to which pension rights does not prescribe,

- the principle according to which pension rights may not be transferred totally or partially.

Based on those principles, the state organizes and manages the public pension system, old-age pension, early retirement pensions, survivors' pensions, disability pensions, financed from social insurance budget.

Currently active population is financing income pensioners, the payment of state social security contributions. This type of pension system is present also in Bulgaria, Estonia, Latvia, Lithuania, Hungary, Poland, Slovakia, and Sweden.

The public pension system, called „pay as you go” was designed in nineteenth century in Europe, imposed by German Chancellor Bismarck, a period when the birth rate was significantly higher than today, and life expectancy was significantly smaller.

According to Milton Friedman, Nobel laureate for economics: „The state social insurance is becoming less and less attractive as the number of beneficiaries increases and the number contributors decreases, trend that gets worse, increasingly more in the future. This should be privatized. In this variant, contributions, as their level, should not be mandatory. Each person will decide for itself the reasonable amount which should set aside each month to saving for retirement, according to the needs, values and conditions of life.”

2. Sustainability of public pension system

If in 1990 there were 8.2 million employees and 2.5 million of state social insurance pensioners, (a ratio of 3.3 employees to support each pensioner), in 2009 (July) there were 4.52 million employees and 4.72 million of state social insurance pensioners (a ratio of 0.96 employees per pensioner). But according to Eurostat estimates, in 2050, Romania will report an alarming amount, 0.4 employees per pensioner.

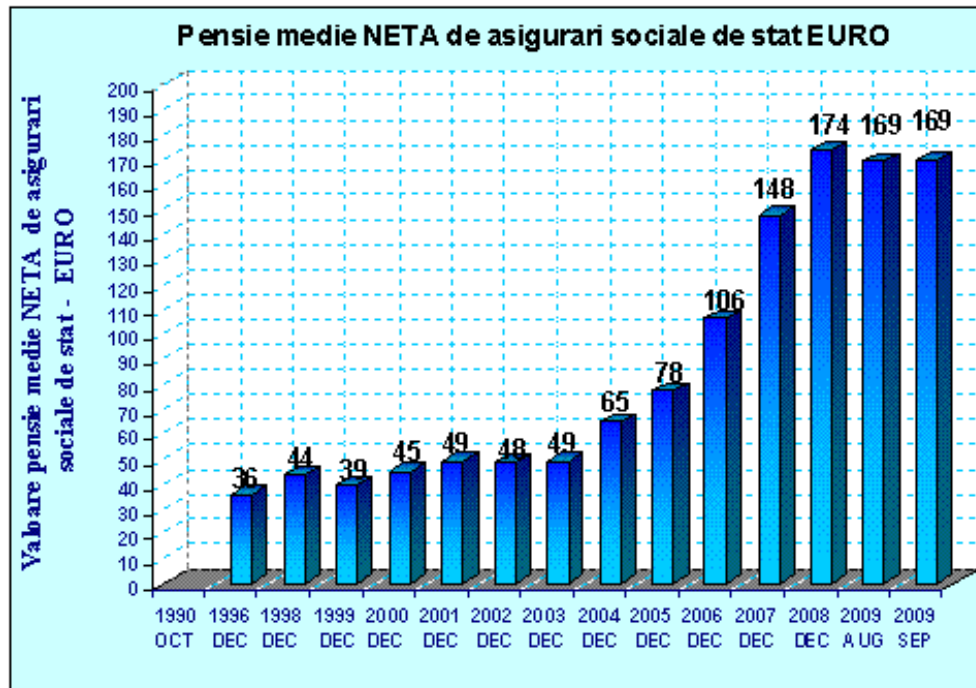
Economic dependency ratio of people aged over 64 years, meaning the proportion of those over 64 inactive labor market relative to the employed population between 15 and 64 years, will increase from 30% in 2008 not less than 99% in 2060.

Demographic trends are not encouraging at all. European Bank for Reconstruction and Development (EBRD) estimated in 2008 that Romania's population will drop to 13.3 million inhabitants by 2050.

According to the National Institute of Statistics, Romania's population has declined in the period 1990-2008 with 1.8 million inhabitants, from 23,2 to 21,4 million people and 2050, population will continue to decline until about 16-17 million, with 6-7 million less than in 1990. The birth rate fell from 13.7 ‰ in 1990 to 10 ‰ in 2008, the fertility rate from 2.3 children/woman in 1989 to 1.3 children/woman in 2008, and the average age of mothers at first birth increased from 22.3 years in 1990 to nearly 26 years in 2008, while life expectancy in Romania increased from 70 years in 1990 to 74 years in 2008 and continues to grow⁽³⁾.

Another aspect to be considered is the average pension amount, its level compared to the minimum wage, and the level of pensions in other EU Member States.

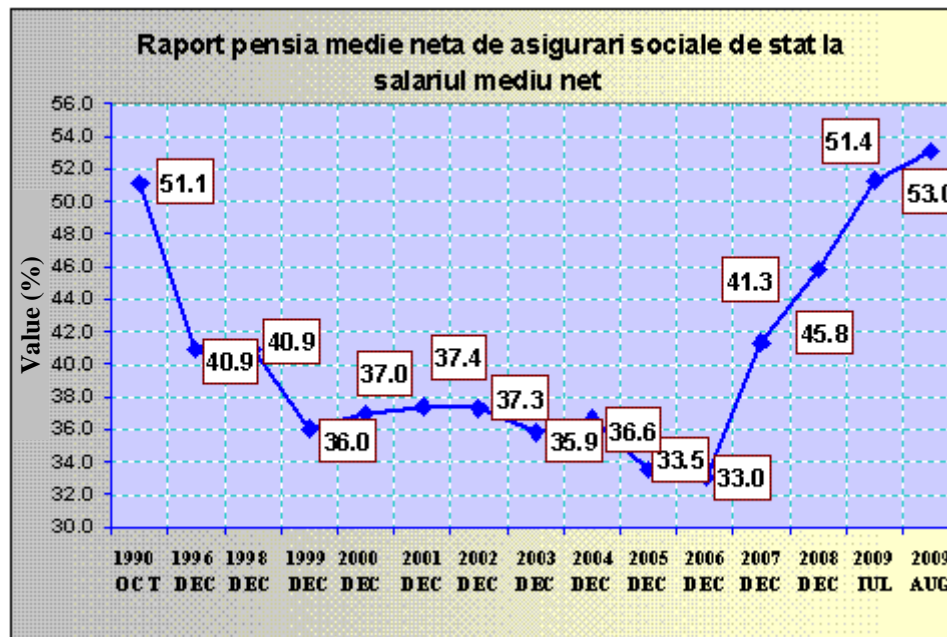
Currently, in Romania the value of average pension is 714 lei per month, one of the lowest levels of the European Union. In 2008, in Romania the average pension was 161 euros, 473 euros gross average wage and the ratio of pension to average gross salary was 34%, compared to Hungary, where the average pension was 265 euros, the average salary was 792 euros and pension-wage report was close to that of ours, namely 33.5% .



Source: Eurostat.

Figure 1. Net average public pension in euros, in Romania, from 1996 to 2009

Evolution of average net pension, expressed in euros, for the period 1990-2009, has an ascending trend, from 36 euros to a maximum of 174 euros in 2008. Although in 2006, for example, net average pension was 106 euros, the ratio between pensions and average net salary was only 33%, while in 2009, net average pension was 169 euros and represented 53 % of net average wage, while the average pension in the 90's was fewer than 40 euros and represented 40% of average wage.



Source: Eurostat

Figure 2. The ratio between net average public pensions and the net average salary in Romania, from 1990, to August 2009

Problems exist, must look for solutions. Other countries too, are facing demographic challenges, with high rates of economic dependency of people over 65 years, for example Poland, where the working is expected to be surpassed by the number of pensioners by 2060. From this point of view the situation from us resembles that of Poland, only Poland has initiated since 1999 public pension reform, and in 2002 created a reserve fund to support the system, fed fund 0.4% of social security contributions.

A necessary measure is to increase the actual average retirement age, depending on its gender equality, improving and increasing the collection of social security contributions from the insured.

Under the draft law on the unitary system of public pensions, the retirement age is 65 years in a phased approach, for both men and women, in October 2009 the retirement age for women is 58 years and 8 months and will reach 65 in 2030 and for men is 63 years and 8 months and will reach 65 in January 2015.

In the case of Bulgaria, the Government announced that will maintain their intention to reduce social contributions by 2 percentage points since January 2010, reducing the public pension budget revenues by around 150 million euros. In this context, Bas Bakker, head of IMF mission in Bulgaria, emphasizes accelerated reform of the public pension system and the main measure supports increasing the retirement age for women. Currently the retirement age for women is 60 years, and will increase to 63 years, so in terms of an average pension of 130 euros, will allow the economy estimated at 31 million euros in the first year.

Hungary voted in May 2009, to increase the retirement age from 62 to 65 years, gradually, with each 6 months a year, starting in 2012, and since July, right in the main financial benefit attached to the state pension, the so-called "13th pension is eliminated".

UK aims to increase retirement age from 65 to 68 years, until 2046, in terms of increased life expectancy. In the U.S., the percentage of employees over 65 increased from 12.5 percent in 2000 to 15.5 percent in 2007, according to Organization for Economic Cooperation and Development (OECD).

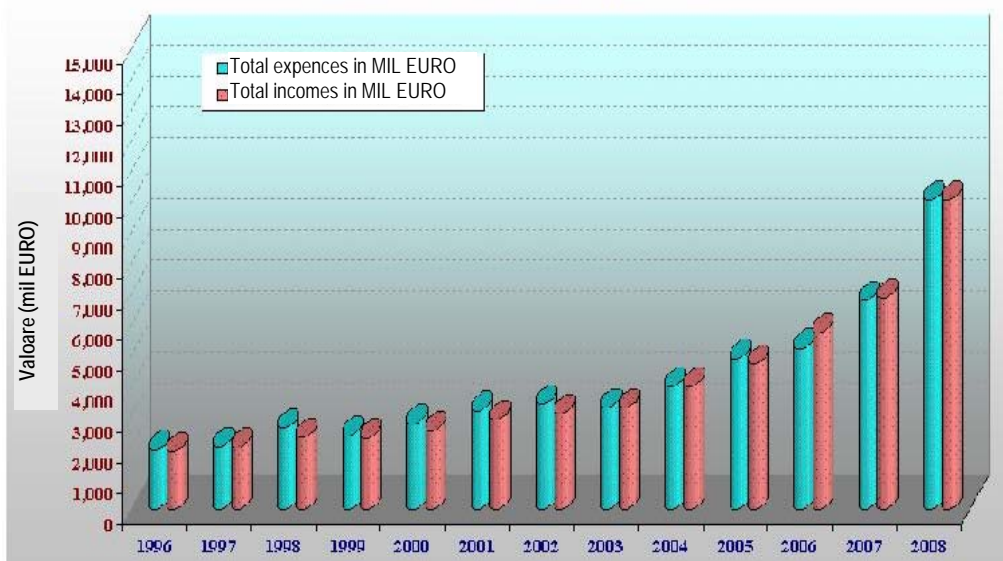
But are people willing to work a longer period in order to obtain higher pensions? What would be the deadline that can go with increasing the retirement age versus life expectancy?

According to a survey of Financial Times/Harris Poll, in Britain, 61% of respondents agree to increase the retirement age if this will lead to increase pensions, while 13% are opposed.

In US 66.6% of respondents are in favor of the increase in the retirement age. 59% of respondents are worried about security in retirement income now compared to past years, which caused the investment component of pensions, as a result of the crisis in stock investments.

3. Private pension system. Cost or investment?

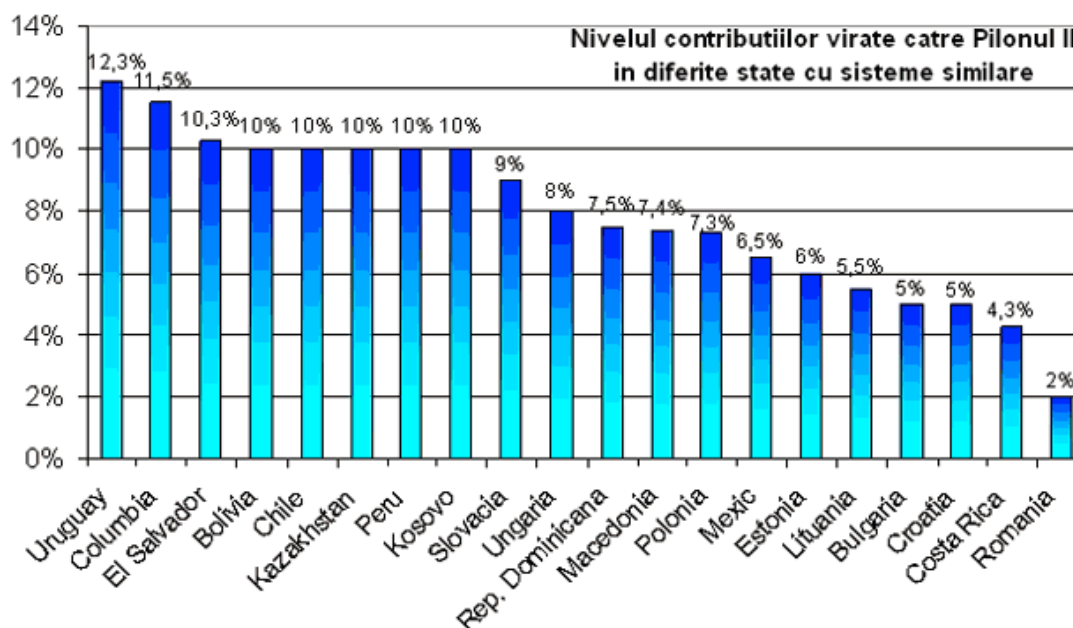
Contribution to private pension system is a cost if we think that is a contribution paid by employees and which will become pension payments, only in the future. But at the same time is an investment in future generations of pensioners who can not rely on social security state, whose budget deficits are increasingly larger from some small surpluses in the early 90s, and reaching from a deficit of 14% for first seven months of this year, representing 2.84 billion lei.



Source: Eurostat

Figure 3. The revenues and expenditures of the social state budget from 1996 to 2008, in Romania

In the context of similar pension systems, Romania is on the last place in terms of the contributions to pillar II pension.



Source: www.pensiileprivate.ro

Figure 4. The contributions for pillar II pensions in different countries with similar pension systems

In 2009 contributions to the mandatory private pension system was locked at 2%, but the scheduler for Pillar II was to provide a share of 2.5% in 2009 and 3% as in 2010, 0.5% each year until reaching 6 % in 2016. These pension funds are required for the elderly by up to 35 and voluntary for people between 36 and 45 years.

The economy of the state budget made following the freeze of the percentage is estimated by officials of the Association for Privately Administered Pensions in Romania to 5% of the estimated deficit in the pension budget, for the entire year, money that could be invested by the mandatory private pension funds with 14 to 15% results.

Faster return to the old schedule of contributions to pillar II is a condition for the delivery of the loan granted to Romania by the International Monetary Fund installments, as provided by the official documents.

4. Conclusions

Aging population leads to a decrease of active population compared with the number of pensioners. The challenge is to ensure revenue needed to cover income retirees without putting too much pressure on people and on social equity between generations.

Pension system, to be sustainable, should undertake a continuing process of adaptation to demographic changes and economic context of the period. This has led to the present retirement age to rise, as a consequence of the average life expectancy. The public pensions system are supplemented by private pensions, voluntary pension contributions and the trend is to allow each person to decide what amount is willing to save monthly, as a retirement income.

So, the future belongs to reforming the pension system, based on Pillar II and III, with voluntary contributions expansion, improved collection of contributions, linking pensions to the level of their contributions, moving from wage indexing to inflation rate for state pensions, and limiting the potential for discretionary pension increases.

Notes:

Notes

⁽¹⁾ According to the study conducted by the Presidential Commission for Social and Demographic Risk Analysis – Risks and social inequality in Romania, September 2009.

⁽²⁾ Law no. 19 of 2000 on public pension.

⁽³⁾ In 2075 US life expectancy is estimated at 83 years.

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CURRENT ISSUES OF PUBLIC-PRIVATE DUALISM OF PENSIONS. THE PERSPECTIVE OF ROMANIA

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***Abstract.** No matter how distant is the retirement or how everyone believes that will face this important stage of life, it can not miss among the important economic issues this aspect. Since Romania is part of nearly three years of a large European family, it is interesting to assess how the private pension systems in countries of the European Union evolves, its impact on social life of individuals, but also the macroeconomic issue that they have taken during the longer or shorter period of national existence.*

Keywords: pillar of pension; unemployment; the standard retirement age; empty accounts; concentration.

JEL Codes: G22, G23.

REL Codes: 11B, 11C, 11D.

1. Introduction

Whatever the period to which we refer, retirement is a key moment in the life of every individual. As will be seen throughout the article, there are many similarities between the pension systems of the states under review, but there is no uniqueness reform. The purpose of this analysis is to capture the main issues facing the pension systems, the reference relating to public-private partnership, as was he was thought in several countries in the world. The viability of this system has been tested in several countries in the region, the most important developments in terms of profitability and market penetration were recorded in Hungary and Poland (Șerbănescu, 2008, pp. 24-26).

As to the public system, the biggest problems are those related to increasing unemployment and reducing wages (as direct effects of the global financial crisis) and reduce social security contributions, generated by the elements mentioned above. From this perspective may challenge the following question: Does makers took into account that the new salary scale which will be implemented for the budget employes will significantly reduce the volume of social contributions paid into the state budget? Since it is clear that along with these contributions' decrease there is pressure both on the public budget, and on the business plans of privately or optional managed pension fund managers.

As to the managers this issue is one that takes better account of their internal management, since they need to predict the effects of a financial crisis which is already manifest in several European Union countries or overseas. But in terms of the public pension system, the difficulties are at first sight more difficult to overcome⁽¹⁾. We say this because as this year seemed, makers may set a different turn here for the multipilon system and here we mean the share had broken the pillar II of social security contribution, which was projected at 2.5%, but

managed to be kept only as a result of constraints imposed by the International Monetary Fund (previously, due to problems maintaining the old public system wanted share of 2%).

2. Vision system multipilon

Faced with declining interest in the state pension (there are no such indicators, but the continued growth of interest in Pillar II, before the promulgation of the law, is a proof), the legislature has stepped up development of reforms in this area (Șerbănescu, 2007c, pp. 18-19). Thus was conceived a new pension scheme based on a relatively simple structure to understand:

- a state pension;
- a mandatory private pension;
- an optional private pension.

In addition there must be concerns in adapting this system to country-specific as demographic differences are consistent and the living standard is obviously a factor in market development in Romania pension pillar. The approach should be made pragmatic and in relation to defining identified elements (Holtzmann, 1999, p. 25), or with the risk of jeopardizing the gradual transition pressure burden for Pillar I, the other two components of the system multipilon.

If on the pension paid from the public system there are not many good things to say, private pillars took off, with positive returns, but also generated heated discussions related to guaranteed minimum return, the procedure for transfer from one fund to another investment limits in certain assets, which can only give a stable framework for further development (Șerbănescu, 2007b, pp. 25). But the efforts of the public system should not be overlooked in maintaining a relatively decent level of pensions, for example by introducing minimum pension or the other trends of special pension savings by capping.

Pillar II is privately administered, but mandatory, meaning that policyholders had to opt for a company over four months, since September 17, 2007, where they had less than 35 years. It is not an actual payment of the insured, only requiring them to indicate the chosen company and the employer is obliged to remit 2% of the 9.5% social security incurred by employers to that entity. This percentage will not remain constant, it will increase by 6%, with a progression of 0.5% each year.

In addition to the first two pillars developed in parallel Pillar III, open to those wishing to contribute additional, the favorable element for tax purposes as net contributions for both employee and employer for up to 400 euros.

Even if, as will be stated, it is being tried a rebalancing (counterbalance) of this system by increasing the age limits for retirement, the problem remains. The pace of aging is rapidly 2050Eurostat approximating population of age over 65 years to over 30%, an item that can only worry if we consider the concomitant reduction in the working population. Moreover we believe that there should be raised and the inclination to work "black", which causes additional continuous decrease contributions paid by employers and employees (Serbanescu, 2007c, p. 23).

3. The reality of the current system of privately managed pension

3.1. The structure of this study

As can be observed also in real life, retirement is a special problem in social life of any individual. Insufficient funds available, the relative fairness of the system of calculation, lack of collateral, the fluctuation of the standard retirement age are some of the factors with major influence on the public pension system (Șerbănescu, 2008, p. 23).

The present survey is intended to be an analysis of the relationship between private pension pillar promises and the various determinants of this complex system, on the one hand, and a parallel between social and economic trends and public-private dualism, on the other

hand. The fact that things are for now on a good path, and in addition it happens by itself, fact visible by checking the comparative yields existing in the world market⁽²⁾, we should not deviate from the very careful monitoring of these processes, because otherwise we risk the collapse of the pension system, whether public or private talk.

The study is designed in two phases. The first analyzes the relationship between life expectancy, the retirement age by reference and unemployment, while in the second part to calculate correlation coefficients based on existing relationships in the market. To estimate the intensity correlation between two variables, we call the coefficient of linear correlation (Pearson). If we have n observations for two related variables X, Y : X_1, \dots, X_n and Y_1, \dots, Y_n , then we can calculate the Pearson coefficient using matrix elements

$$\text{covariance } \Sigma_{XY} = \begin{pmatrix} s_X^2 & s_{XY} \\ s_{XY} & s_Y^2 \end{pmatrix}; \rho = \frac{s_{XY}}{s_X s_Y}.$$

3.2. The necessity to amend the pension system

The problem is vast, if we want to consider all aspects that affect this area of private pensions. This system has emerged due to the need to find a solution to the demographic of the population, especially in the old continent. Global trends in terms of solving this problem is to increase the retirement age, along with a positive change in life expectancy for both men and women. Romania also fall on this trend, however, a better correlation can be made between these two indicators: life expectancy and retirement age. The table below presents a comparative situation of these two indicators for European countries that have implemented private pension pillars.

Table 1

Comparison of life expectancy and the standard retirement age in several European countries

State	Average life expectancy	Average life expectancy in men	Average life expectancy in women	Standard retirement age for men	Standard retirement age for women
Polland	75.63	71.65	79.85	65	60
Romania	72.45	68.95	76.16	65	60
Slovakia	75.4	71.47	79.53	62	62
Bulgaria	73.09	69.48	76.91	63	60
Hungary	73.44	69.27	77.87	62	62
Estonia	72.82	67.45	78.53	63	60*
Latvia	72.15	66.98	77.59	62	62
Lithuania	74.9	69.98	80.1	62,5	62

Source: Processing of authors on the basis of existing data in the European Union statistics site www.wikipedia.org

* Increased to 63 years.

As it can be seen, Romania has almost the highest retirement ages in all these countries, given that we are facing almost the lowest life expectancy. The only Member State that is „close” to the implemented or under implementation in Romania values is Poland, but it is worth noting that the young population is bigger (discussing the weights).

Other states have taken steps to increase them. Latvia for example decided that this age should be increased, but since 2012 or even 2016, so that the current effects of the crisis to maintain „unemployed” many of those who lost their jobs. The problem is that at that times there can be difficulties in the global economy, and then it will not be able to invoke any reason.

Bulgaria intends to equalize retirement ages, considering this to be normal considering women live longer than men. It is maybe the only state that discussed this item, although there may be brought into question and other elements of psychological differences between the two sexes.

The most important European markets pillars II and III are found in Central and Eastern Europe. Poland is the largest, in terms of participants and assets, and followed by countries such as Hungary, Czech Republic, Romania, Bulgaria, Slovakia.

Poland is the first country to be considered as representing the strongest market in the region. Contributions are significant because of several factors converging in this direction, such as:

- The population is large, since this is more than 38 million people;
- Share of contributions is important, as in the year 2007 of 7.3% of wage fund, with an annual maximum calculated level of 30 average salaries in the economy;
- Unemployment is less than 10%, so that the number of contributors is maintained at high rates;
- Obligation applies to all those who are born after January 1, 1969 (for comparison, in Romania limit was set at 35 two years ago, while Poland established the age limit of 30 years from the date of implementation of Pillar II (1999)).

It is interesting to note that retirement ages are similar to those recorded in Romania, especially if we share and the remaining contributions to the state, only 12.22%. Level may seem modest, but not overlooked the difference in income per capita between the two countries, this indicator having a value of 820 euros for Poland, and 370 euros for Romania. And for other countries, the average salary is higher than in Romania: Hungary (589 euros), Czech Republic (899 euros).

In addition there are important differences in the mean life expectancy in such countries. Poland has a life expectancy at birth of 75 years and 4 months, and 81 years and 8 months to 65 years.

The population aged over 65 is also significant in total employment, being around 21.1%, still below the OECD average, by 23.8%. For Czech Republic, this percentage is even closer to the OECD average, being 22.1%. For Hungary it can be said that this indicator is worrying in terms of social implications, because the share is 25.3%. In addition to the latter Member State is interesting that retirement ages will be the end of 2009 of 62 years irrespective of sex and will stagnate in these values. And if the same trend Slovakia remains relatively low age (62 years for both sexes), if we consider that even in this life expectancy is higher than Romania, being involved as the previous model, for 74 years and 4 months, and 80 years and 2 months. The share of population in active age population is lower than in Hungary, however, remains the landmark event in Poland this share is 13.4%.

However the development of all these indicators should be considered in conjunction with the unemployment rate. Countries that rely most on the pension system of the invention of the World Bank (multi-pillar system), which so far can be considered a success, will have to face serious problems in the future due to rising unemployment in the national economies, because of the reducing inactive labor is similar to multiplying accounts, of the non-powered, reducing those to be created (recent graduates have poor employment opportunities), etc.

3.3. Pillar II. A viable alternative

On the Romanian market of Pillar II is a clear trend of concentration if we held that a restriction of competition existing in the market, from 18 how many there were in February 2008 to 10 entities, if we consider all prior decisions absorption. This development is but one abnormal. Reducing the number of privately managed pension funds operating in the markets is part of a consolidation policy which aims to enhance market profile (Zalewski, 2005, p. 2)

concentration, however, must take account of regulations for competition (Șerbănescu, 2009: pp 54).

If you are interested in an analysis for a longer time period, from the data presented in the table above, we can make a comparative statement for the period May 2008-August 2009. Thus most prolific ING funds were an increase of 22.86%, 19.6% and AIG with AZT with 18.42%, while the more modest yields were obtained also for this time of the PRIMA PENSIE (5.06%), OTP (8.43%) and BRD (9.11%). The two funds that have been removed from the analysis because it had been acquired by Eureko (BANCPOST) and BCR FPAP (Omniforte) would also be located through the bottom of the league, first with a yield of 3.24%, and the second with 7.2% (yield was calculated for the period in which they worked, ie until May and June). However after both OTP and PRIMA PENSIE will be abosbite of entities, the BRD will be the least prolific administrator.

Turning to profitability analysis in parallel, respective the transfers to private pension funds, for the six aforementioned surprises that there are major differences in the consumer's behavior regarding mandatory pension. This is visible if we calculate the correlation coefficient (Table 2) for different situations (the 14 funds that existed on May 1, 2008, the 12 still operating, the 10 that will remain after the absorbtion of OTP and PRIMA PENSIE, respectively the six located at the poles of the top according to the achieved profitability indicator):

Table 2

**Correlation coefficients in the privately managed pension funds
in Romania**

Selection criteria	Correlation coefficient value
➤ 14 funds	0,3155
➤ 12 funds (fără BANCPOST and OMNIFORTE)	0,3461
➤ 10 funds (except OTP and PRIMA PENSIE)	0,4036
➤ 6 funds (AIG, ING, AYT, PRIMA PENSIE, OTP, BRD)	0,3247

Source: Interpretation authors based their calculations.

All the correlation coefficients are in a range of relatively low values (0.3155, 0.4036), they all express a weak direct proportional relation. This is explained by the fact that development funds evolution may be considered difficult to prediction, if we consider the opposites developments. For example there are funds that had remarkable developments, such as ING and subsequently drew, during transfers, many initial participants of other funds, but can be identified also failures difficult to predict initially if we are strict with the evolution of profitability, and here I can bring into question when AZT, which although reported second yield the market, has lost the most participants.

Conclusions

Even it is too early to say that the current structure is optimal multipilon system in terms of social protection, the review of the situation is beneficial, since the old system is creaky of financial terms and the solutions at hand, namely increased retirement age, raising base for CAS, reducing the share of contributions to pillar II is broken or reconsideration share upwards CAS is not only viable solution to some time very close in time.

As it has been observed and over the article, in terms of retirement age by increasing its risk of everlicitation at a level devoid of reality. Nothing will increase the age as long as the problem lies in the non-budget amounts due or to grant large pension, with no more than a training contribution by the amount of pension.

Notes

⁽¹⁾The public system is created and operates on the principle of "Pay-as-you-go", which is based on an algorithm that is supported by a subunit ratio between pensioners and active individuals. On the basis of contributions made through their working lives is born right to pension and other social rights, but they will be supported by contributions from future employees.

⁽²⁾The Romanian profile showed positive returns for pillar II in conditions in which the OECD has been no country that can report these developments gladdening.

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REINSURANCE OF CATASTROPHIC RISKS

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***Abstract.** Without reinsurance, the profile world market would fail to meet the multiple risks, of high intensity and high production rate. Expanding the business developed by different companies and the first signs of leaving the global financial crisis are factors which should draw attention to the increased risks faced by insurance companies. But the greatest danger comes from the catastrophic risks that will not disappear in any of the previous assumptions as to which requires the development of viable reinsurance programs.*

Keywords: catastrophic risk; catastrophe reserves; mandatory housing insurance; pool insurance; reinsurance sessions.

JEL Code: G22.

REL Code: 11C.

Defined as a logical extension of the business of insurance, the reinsurance process helps from a financial point of view, the increased economic stability of insurance companies (Văcărel, 2006: p. 236). Reinsurance is the main instrument of an insurance company to transfer their risk exposures, homogenization of the taken risks and the achievement of the financial stability in order to protect their business and therefore customers and partners.

Insurance treaties extend the definition of „reinsurance is a means of equalization, through the division of responsibilities among several insurers, spread out over large geographical areas possible, of maintaining a reasonable balance between earned premiums and compensation due to each insurer in part” .

In terms of insurance companies (Grossi, 2005, p. 42), accidental disasters are events that cause severe losses, damage to property or injury to a large population of exposures. The exposure refers to the size units of the dimension of an insurance portfolio (eg. no. of policies, no. of goods provided by type of settlements, the value of the amounts insured, etc.).

The classification used in the international insurance practice distinguish between natural disasters and technical disasters. Thus, natural disasters are those events that cause great material damage, affect the lives and physical integrity of a large number of people and causing major problems on the national economy of time intervals. Technical disasters are associated to risks related to human activities, development of science and technology (Tănăsescu et al. 2009, p. 82).

Many may wonder whether this risk dispersion procedure can be applied in the private pension market, as an alternative to the lack of a guaranteed minimum return for pillar II, the privately administered or if we can discuss the transfer and reinsurance acceptances. The answer to the first question is easily perceived as even if it is not reinsurance, we may assert the existence of pools through exchanges that are in the pension funds, mutual funds, financial companies. Based on these assumptions, we can continue the analysis indicating that the pool does not mean nothing but cease and acceptance at the same time. However we emphasize that one can not question the definition of these processes as financial reinsurance, as defined by specific insurance laws.

1. Active and passive reinsurance of catastrophic risk in Romania

The active reinsurance is when an insurer agrees, under the terms of the contract of reinsurance, to take over its part of responsibility which has assumed a different insurance company.

In contrast, the passive reinsurance is meant when an insurance company assigns under the insurance contract, to another institution or to an insurance-reinsurance society a part of its assumed liability.

In a mature market economy, an insurance-reinsurance should accept, in the same time the two forms of reinsurance, in order to achieve a balance between rights and obligations relating to the disposition, or the reception of the reinsurance. Moreover, it is useful to achieve good dispersion of the catastrophic risks by combining internal with external reinsurance. The ways of obtaining the mutual information system, the organization of professional organisms for the re-insurers for catastrophic risks contribute to a better conduct of business of reinsurance.

In Romania, the insurers authorized to insure catastrophic risks are required to reinsure to achieve the best possible dispersion of risk (Văcărel, 2006, p. 239). In practice, these risks are taken by first class international re-insurers.

A feature of the Romanian market for reinsurance is that the insurance companies primarily occur in a position of re-insurers (passive reinsurance) and only in small measure that of re-insurers (reinsurance assets). This phenomenon can be explained by the immaturity of the insurance and reinsurance market in Romania, characterized in that point of view by:

1. Lack of specialized reinsurance companies.
2. Poor development of the Romanian insurance market as a basis for the reinsurance market.
3. Poor coverage of catastrophic risks by insurance companies in Romania.
4. The absence of a reinsurance pool consisted of domestic insurers approved by ISC.
5. Poor legislative cover of reinsurance for catastrophic risks.

To analyze the reinsurance indicators characterizing the Romanian market, ISC prepares an annual Report, from which we can distinguish the following data.

Table 1

Main indicators of the business of reinsurance for the insurance class in the years 2005/2007 in the insurance market in Romania

	Indicators	General insurances				
		2005 (1)	2006 (2)	2007 (3)	Variation (2/1)	Variation (3/2)
1	Gross premiums subscribed	919	1357.6	1586,3	47.7%	16.8%
2	Admission to the reinsurance	8.7	23.2	7,6	166.7%	-67.2%
3	Commissions received for admission to the reinsurance	0.5	8	0,7	1500%	-91.25%
4	Premiums ceded to reinsurance	252.3	435	466	72.4	7.1
5	Commissions received for reinsurance cessions	54.5	98,9	77,8	81.5	/21.3
6	Premiums ceded to reinsurance / gross premiums	27.5	32	29,4	4.5 pp	-2.6 pp

Source: processing by the authors based on the data of ISC reports.

However it mustn't be overlooked that a strong reinsurance market is based mandatory on an insurance market at a national level severe enough to stimulate new product development. The insurance market in Romania is on a positive trend, although the growth

rate is not exactly the one desired. The results are satisfactory, and the current trends are part of the kind estimated by the experts of the European Union. Thus the trend towards a greater concentration of insurance companies, although it can be interpreted in competition terms as hazardous, increases the confidence in the „new” competitors, which will attract an increased number of customers. This concentration may lead, in terms of competition, to concerted pricing practices (as was the case of liability insurance of motor vehicles in 2000), the main losers of such practices being the consumers. But in the lack of evidence or of infringements of the competition law, all these mergers and acquisitions should not be viewed only as a sign of increased financial potency of insurers.

2. International reactions at the process of catastrophic risks reinsurance

2.1. World Bank

International Financial Corporation (IFC), World Bank's investment division, will allocate 20 million US dollars to hold 20% of the stakes in a new company for reinsurance for catastrophic risks, which will be established together with the company PartnerRe Ltd.

According to the IFC, the total corporate funds' value of the newly created company for reinsurance for catastrophic risks will be around 100 million US dollars, amount that will be subscribed by two shareholders, IFC and PartnerRe Ltd, in annual installments. The reinsurance company that will be established by IFC and PartnerRe Ltd will have the name of the Global Index Reinsurance Facility (GIRIF) and will have as main activities incurring risks of weather and other catastrophic risks in developing countries and technical assistance and financial area governments, businesses private, farmers and institutions in financial intermediation.

GIRIF will reinsure the risks of disaster that threatens the economic progress of developing countries and especially of poor rural communities. Establishing GIRIF project will have a strong impact on economic development in developing countries by providing them a financial instrument able to mitigate the economic effects of natural disasters, covering, in part, the losses caused by these communities in these countries.

2.2. Austria

Country with developed economy, Austria was hit in the last decade of three disastrous floods and storms. Unlike Romania, insurance and reinsurance Austrian economy is well developed, but was strongly affected by the high volume of paid claims. Austria was hit by natural disasters over the past nine 10 years, including large-scale flooding in 2002, 2005 and 2009. Only the 2002 floods caused damage of 400 million euros, and if this phenomenon would repeat the compensation would amount to 600 million euros. Also, the Wolfgang last winter storm brought damages of 360 million euros on the property segment.

Increased frequency and intensity of catastrophic risks in Austria causes an increase in the price of reinsurance contracts on the segment of natural disasters/property.

There is a huge gap between premiums collected for the risk of natural disasters and paid claims. Obviously, this is not sustainable, so are being required necessary action accordingly in the market in Austria. Thus, insurance-reinsurance societies and reinsurance specialist companies will continue the increase process of the reinsurers premiums in 2010.

Meanwhile, in Central and Eastern Europe, where market prices for natural disasters were relatively small, the representatives of SWISS Re advocate for increasing the insurance and reinsurance premiums contracts. Capacity is not a solution for Austria and C.E.E. markets, where the insurance and reinsurance industry may create a sufficient capacity for managing the natural disasters.

3. Compulsory insurance of housing

In this broader context is required an implementation of much tougher rules to protect not only insurers but also their customers, because once the risk has been placed in the insurers' level, the insolvency and lack of liquidity of these can easily lead to problems including the level of economical agents' management. On this line have also appeared new rules on insurance prudence (Novac, 2008, p. 178), the Solvency II principles desiring to strengthen the financial force of insurance companies active in the market.

On the same trend occurred the Insurance Supervisory Commission's concerns translated into various laws and rules, which either bring a new breath to the management of insurers, or call into question the eternal problem of compulsory insurance of housing, which should eliminate some of problems posed risks of earthquake, flood and landslide in the Romania level (Șerbănescu, 2008, p. 63). From this perspective it seems that we will have a compulsory insurance since 2010, because the rules are based.

From this point of view of the compulsory insurance of housing, perhaps the most interesting question remains, depending on the situation, that of co-insurance or over-insurance as many of us already have voluntary insurances, which protects the insured's property, or to certain risks, such is earthquake, or for all risks. In this situation calls into question what should be done, because customers can not be informed about changes in terms of sums insured and other elements of the contract immediately.

If we make an optional housing insurance for the actual market value, the risks underwritten by the insurer is among other earthquakes, landslides and flooding, to avoid the situation of the over-insurance (which actually means throwing money out the window), should be given different amounts insured. This could be considered difficult, especially in the situation in which we discuss the transfer policy over to the banks, the insured amount and the amount of credit being identical.

Since there is no question for the elimination of compulsory insurance for those having optional insurance, the asset must be under-insured automatically with 10,000, 20,000 euros respectively. Many insurance companies entering into voluntary policies already have entries for the existence of a mandatory policy, but what happens if two products are different insurers.

When increasing the market value of housing is relatively simple as it may require the insurance company to increase the amount of insurance to the difference between desired value and the amount of the insurance sum required consistent with the housing mandatory insurance. The problem is really obvious if the market value of that property reduces (current situation in the Romanian real estate market), because in this situation should be sought reducing the insurance, whereas in the case of total damage will not receive compensation until the value of the house even if the total sums insured exceed this level. In addition the housing market fluctuations in value do nothing but cause disturbance and to the claims of policyholders. Regardless of how you will resolve these differences is obvious that it must speed up approval of the insurance practice.

Conclusions

Catastrophic risk insurance and reinsurance them is a priority for countries in the world which faced different natural disasters. Note that, gradually, the business of reinsurance is increasingly considered in the light of financial profitability.

On compulsory insurance of houses on all these issues will find answers through the ISC rules, but we must not forget that there remain others to be discussed. However, regardless of how easy or difficult it will explain things, adopting this law is a step towards civilization insurance, not to call into question the happiness that before he could not provide housing of causes related to building resilience.

Critical is how they will be implemented for the reinsurance contracts of insurance pool of natural disasters, because rates are low and should include administrative costs of which are not known very many details at this time.

Reinsurance remains the main means of dispersing risk, but should not be considered as the unique, because as example, the mandatory insurance involves including in the insurance a very large number of insured property, even if rates are lower than facultative insurance.

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LEISURE TIME MANAGEMENT THROUGH PHYSICAL EDUCATION AND SPORT

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***Abstract.** Physical education - activities which exploit systematic practice all forms of physical exercise to increase mainly the biological potential of social rights in accordance with requirements.*

Keywords: physical education; specific; time off.

Physical education is a deliberately constructed and conducted business primarily to improve the physical and motor ability, the human being depending on the particularities of age and gender, social requirements, specifics of professions, etc.

Physical education is a particularly complex task, if we refer primarily to content, structure, organization and holding it. When we want to analyze the activity of physical education as a social phenomenon, we must have the multitude of components which it involves:

- exercise;
- the specific material;
- specific equipment and materials;
- technical and organizational aspects;
- a scientific discipline based;
- specialist staff.

Exercise appeared and were continuously improved in line with the social order. The emergence and evolution of physical exercise have a clear social conditioning. They are not determined by instincts, biological factors, etc.. Contrary to some theories, the emergence and development exercise was determined by the material side of social life but also other factors Science, level of culture, religion, etc..

Scientific validity of the process of practicing physical exercise was done over time, with the same stagnation, regression. The foundation took over critical, so he exploited some ideas, norms, rules, belonging to ancient, Renaissance, bourgeois humanism, etc.. Background deepened with the advent of "Theory" and "methodology" as a scientific discipline and other disciplines have approached our area from different angles and points of view.

Over time in outdoor sports facilities or from within, and sports appliances and especially sports materials is particularly telling.

Significant difference between the outstanding sporting performances achieved today and those of prior periods is explained by their higher quality level.

In the context of building physical education as a social activity, specialized frameworks were formed much later. In Romania the process of specialized training for field practice of physical exercise, has taken a clear status since 1922 when he established the National Academy of Physical Education and Sport. At present the preparation of personnel specialized in physical education and sport has grown and diversified. There was particular in education and physical education and sport. Improvement professionals increased gradually paying attention tests completed, grade II and grade I.

The essence is that the physical education, physical exercise aimed at practicing always, irrespective of organizational and socio-economic and political formation in which the physical development and improvement of driving ability of subjects. In other words, the purposes of practicing physical exercise were quite different from a socio-economic and political formation to another, but the essence has always remained the same.

Physical education is a predominantly biological nature and the important facets of social, cultural and educational plans. The practice of physical exercise as physical education activity has been and is determined and the needs of nature recreation, relaxation and emulation.

Physical education in its different forms of organization and because of its emotional, has a particular contribution to the development of creativity, the spirit of affirmation and the excess or strive, etc..The practice exercise, developed aesthetic sense, a sense of love for Driving gesture executed with him, a sense of gesture to move.

The functions of physical education

Functions are constant destinations of something and they derive from ideal, in that it is subject. The function is achieved ideal physical education, is "close" to it. All physical education are important functions and proving their effectiveness are met in the "system" is influencing and supplementing each other. The functions of physical education are of two kinds, specific and associates. Specific functions aimed at the two coordinates of its object of study Theory and Methods: the physical and capacity motive. Associated functions round effects of physical exercise on human practice.

- *The function of the physical training* is part of the specific category and serves as a priority especially in physical education of the young generation. The role of harmonious physical development, higher level of somatic index and the functional to the life and work of people of all ages is too well known and not denied or disputed by anyone.

- *Function to improve driving ability* is part also of the specific physical education class. With this function are concerned the two components of driving ability: the quality of driving, driving skills and abilities. The role of power for a high throughput capacity at all levels of life and the whole of the human personality, not be argued.

- *Hygienic function* is part of the kind associated concerns the fundamental requirement of maintaining an optimal state of health of people. The physical education is a priority act preventively on the plan. It can, through exercise, is action and to correct deficiencies in the health plan.

- *Functions associated recreation* is another function for physical education. It should be understood at least the following two ways:

- Ensure, through physical education activity fund qualities, skills and driving skills required, people of different ages can spend a useful and pleasant, or recreational, their spare time (daily, or vacations and holidays).

- Ensuring conditions and development interests to follow, all the free time, directly or through the media, the racing drivers of good quality or of motor activity carried uncompetitive.

- *emulation function* is part of all of the kind related to physical education. This function must be endorsed by the competitive spirit that characterizes development in general, human beings, the constant desire to "overcome" and "strive", but only up to the proper regulations and attitude of fair play. In this regard, it must promote frequent physical education, to race through games of movement or sports games, relay, passes applied, contests, etc.. By the way subjects are developed and creativity, desire to win, victory, to be holding the first places, etc., Particularly important especially for students.

- *educational function* is also a function related to physical education, but is considered to be more complex in terms of influences on the development of human personality in its integrity.

Influence of physical education is evident in terms of development side "natural" personality. At the same time, however, are influences that may have special physical education, well conceived and carried on the development side of human personality: intellectual, moral, aesthetic and technical training.

On the intellect can come off at least two obvious directions:

- armed with knowledge of basic subjects in the field of physiology and hygiene, physical effort, the biomechanical performance of the acts and actions of drivers, driving business psychology, methodology, etc. All this knowledge and requirements provided under the principle of accessibility, provide basic background scientific knowledge to the practice of physical exercise for its awareness.

- the moral may be achieved also an effective action by all physical education activities. Emphasis must be placed on training of skills and habits of proper behavior in contests and competitions in the spirit of respect for opponents and contest partners, the acceptance decision of the arbitrators, the labor discipline.

- on the aesthetic, the technical and tactical exercises, sometimes located in the master, effectively contribute to the education of taste for beauty. The practice of physical exercise background music, both in physical education lessons and in other forms of organization, increases the apparent influence of physical education on aesthetic qualities and traits (rhythm, harmony, grace, etc.).

- on the technical and professional contribution of physical education is also evident. First, is expressive contribution to the growth indices of driving qualities required to perform effectively the duties deriving from social-economic characteristics of occupations.

Also, the same contribution is visible in the sense ensuring superscript morpho-functional development and capacity, with good basic driving skills and tool-applied effectively involved in the conduct of most professions.

Physical education takes place in two ways:

- a) the bilateral process;
- b) independent activity.

As a bilateral process, physical education is conducted in time, permanent, continuous. The driver process has responsibility or specific responsibilities on a lawsuit. He must be competent to capacitive methodology knowledge and to make an accurate processing of the entrants in this process, the subjects. Subjects, established groups should be tuned, be careful and seek the physical and intellectual, to learn what is sent by the head process. This appropriation must be matched, conscious and active participation of subjects.

As independent business, an individual or group, physical education is conducted sometimes leisure subjects and physical absence of the driver process, the teacher in most cases. The employment of physical education should, however, be prepared in the educational process bilaterally.

Physical education has the general objectives formulated precisely, his specific subsystem: physical education of young generation (pre-school student), military physical education, physical education training, physical education of adults, physical education and self-education elderly physical independent physical education. Logical link between these subsystems are determined by individual human ontogenesis.

Some other characteristics of physical education should be mentioned, especially for a comparative analysis with other fundamental driving activities:

- a) Physical education is accessible to all humans, regardless of age, sex, occupation, religion, political affiliation, etc..

- b) Physical education is a highly formative in the sense that subjects prepare for life. It addresses mainly the human body (harmony, strength, etc..) Driving human qualities practitioner, for an effective performance at work, skills and basic driving skills and commercial application. The formative nature predominantly in physical education does not exclude the presence of competitive element, which is done based on race, respecting some precise rules.

c) Physical education has a very large number of exercise. In its various forms of physical education organization "operating" with exercises of various branches and sport samples, exercises for motor skills, exercise to influence body development executor.

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THE ANALYZE OF THE ACTIVITY OF INSURANCE COMPANIES IN ROMANIA DURING THE PERIOD 2002-2008

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***Abstract.** The article refers to an analyze concerning the efficiency of the activity of Romanian insurance companies. In the analyze of the insurance companies it is taken into consideration their size, determined by the structure of the social capital, the number of employees and the number of locations. The indicators presented refer to the entire insurance market, generating therefore a full image of the analyzed phenomenon.*

Key-words: insurance activity; efficiency; indicators; dynamic; capital structure.

JEL Codes: G22 Insurance; Insurance Companies.

REL Codes: 11C Banks and Insurance Institutions.

1. Introduction

The insurance activity is analyzed according to the efficiency of the indicators specific to the insurance companies and the market shares of the insurance companies. In the analyses concerning the efficiency of an insurance company the same principles of evaluating the performances of a society are applied. The economic efficiency of the insurances describes the report between the optimal results obtained from the insurance premium and the expenses determined by the loss caused by the goods damage or insured sums. The concept of efficiency in the insurance activity is based on the report between the obtained effect and the effort deposited in the insurance activity.

2. The analyze indicators concerning the activity of insurance companies

The efficiency of the activity developed by the insurance companies can be determined according to some market indicators, which express the position of the insurance company in report to the competition but also the general situation existing on the market. The insurance-reinsurance activity requires the offers, the intermediary activity, the negotiation, the issue of insurance and reinsurance contracts, the cash of premiums, the claim activity, the regress and recovery activity and also the investment and increase of funds (personal or obtained from the developed activity).

The insurance-reinsurance activity is administrated by Insurance Supervisory Commission, institution which authorized the commercial companies that want to develop the insurance-reinsurance activity.

The Insurance Supervisory Commission together with the Ministry of Public Finances has elaborated the accounting Settlements specific to the insurance field, in accordance to the European Directives and International Standards of accounting.

2.1. The evolution of the number of insurance companies and their locations

In order to obtain a realistic analyze we'll take into consideration the total number of insurance companies that develop their activity in Romania, respective the number of active insurance-reinsurance companies authorized by the Insurance Supervisory Commission. The number of locations represents the total number of branches, subsidiaries, agencies and locations with insurance-reinsurance activity that were active during the reference year.

The evolution of insurance-reinsurance companies and life insurance companies during the period 2002-2008

Table 1

Year	2002	2003	2004	2005	2006	2007	2008
Insurance companies TOTAL	45	46	42	42	40	42	42
Non-life insurance companies (general)	24	24	20	20	21	21	21
Companies with life insurance activity	3	4	3	8	8	9	9
Companies with mixed activity	18	18	19	14	11	12	12
The locations number of insurance-reinsurance companies	820	1.066	1.214	1.385	1.264	1.693	-

Source: Report ISC during the period 2002-2008.

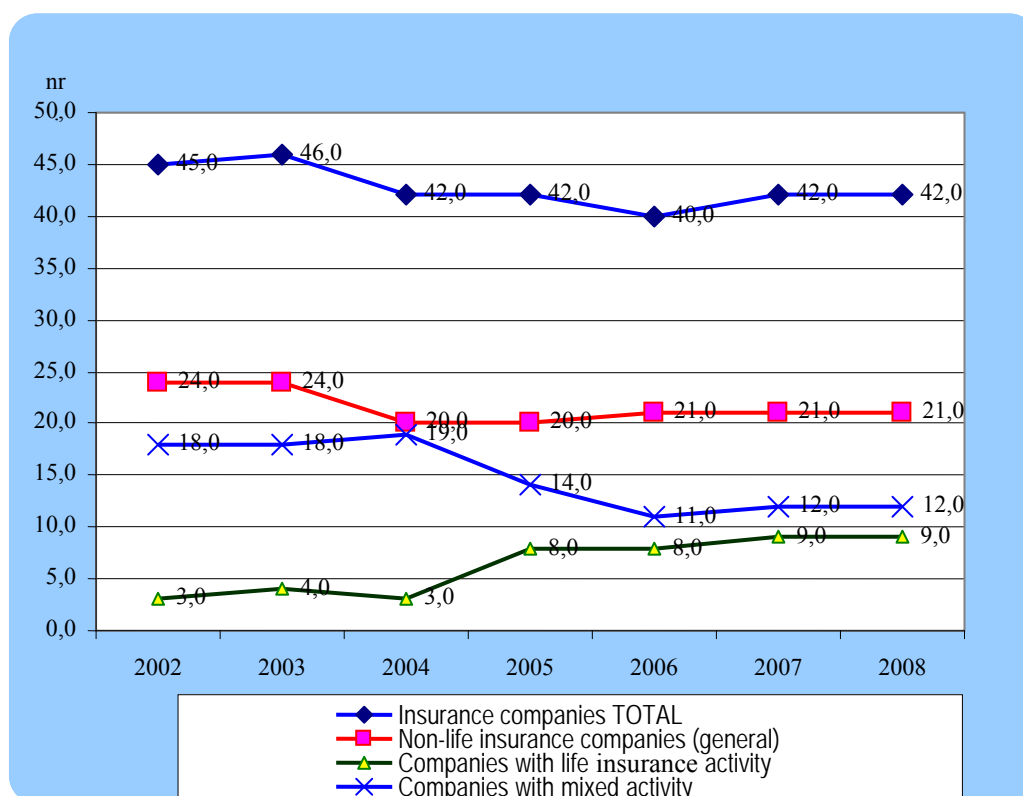


Figure 1. The dynamic of companies which developed their life insurance activity during the period 2002-2008

In 2008, there were 42 insurance-reinsurance companies in Romania, from which 9 had as main activity life insurances, 21 non-life insurances (general) and the rest of 12 had a mixed activity. Although the level of companies decreased, the number of locations increased with 106% from 820 locations in the first year analyzed to 1,693 in 2007. In the table presented we can observe the fluctuations of the number of life insurance companies, extremely obvious starting to 2005 when Romania was announced that it will join the European Union.

The activity of an insurance company depends on the number of locations, meaning the territorial distribution of its branches. The result of a high number of branches will automatically be shown in the volume of brut premiums cashed from insurances. Romania is divided in eight regions, from which the most important percentage according to the total territory is owned by the centre area, with 14.41%. From the following tables and graphics we remark that the volume of brut premiums subscribed in the region of Bucharest-Ilfov is considerable higher than other regions. This fact shows a large density of insurances in Bucharest, this region having also the highest medium incomes from the country. Therefore, in 2002, the volume of the brut premiums subscribed in Bucharest was of 11,038 billion lei, reaching in 2007 to 37,738 billion lei.

The regional distribution for locations' development during the period 2002-2007

Table 2

Regions	2002	2003	2004	2005	2006	2007	The dynamic in 2007 compared to 2002 (%)	The percentage of locations on regions in 2007
North-East	105	141	154	197	175	218	207.6	12.88
South-East	104	131	148	161	148	200	192.3	11.81
South	105	138	155	179	146	243	231.4	14.35
South-West	79	98	113	130	115	156	197.5	9.21
West	85	110	133	151	136	178	209.4	10.51
North-West	131	166	188	196	185	236	180.2	13.94
Centre	114	151	176	200	188	244	214.0	14.41
Bucharest	97	131	147	171	171	218	224.7	12.88
TOTAL	820	1066	1214	1385	1264	1693	206.5	100.00

Source: Data obtained from the National Institute of Statistic during the period 2002-2007.

We can also remark a constant increase from year to year concerning the number of insurance companies' locations, even if the number of the companies reduced. This phenomenon is explained by the necessity of covering more and more areas of the country in order to increase the insurance premiums.

2.2. The evolution of the employees' number in the insurance sector

In Romania during the period 2002-2007 the medium level of employees of insurance-reinsurance companies varied between 11,278 persons and 16,107 persons. Although the number of insurance companies in 2007 decreased compared to 2002, the level of the employed personnel increased with approximately 40%, respective 4,571 persons.

The level of the employees inside the insurance-reinsurance companies during the period 2002-2007

Table 3

Indicators	2002	2003	2004	2005	2006	2007
Number of employees in insurance field (persons)	30,151	26,000	38,700	45,472	50,524	52,025
From which partners (persons)	18,615	14,722	26,349	32,353	35,376	35,918
The average of employees (persons)	11536	11278	12351	13119	15148	16107
The dynamic rhythm compared to 2002 (%)	-	-2.2	7.1	13.7	31.3	39.6
The absolute change compared to 2002 (persons)	-	-258	815	1583	3612	4571

Source: Report ISC during the period 2002-2008.

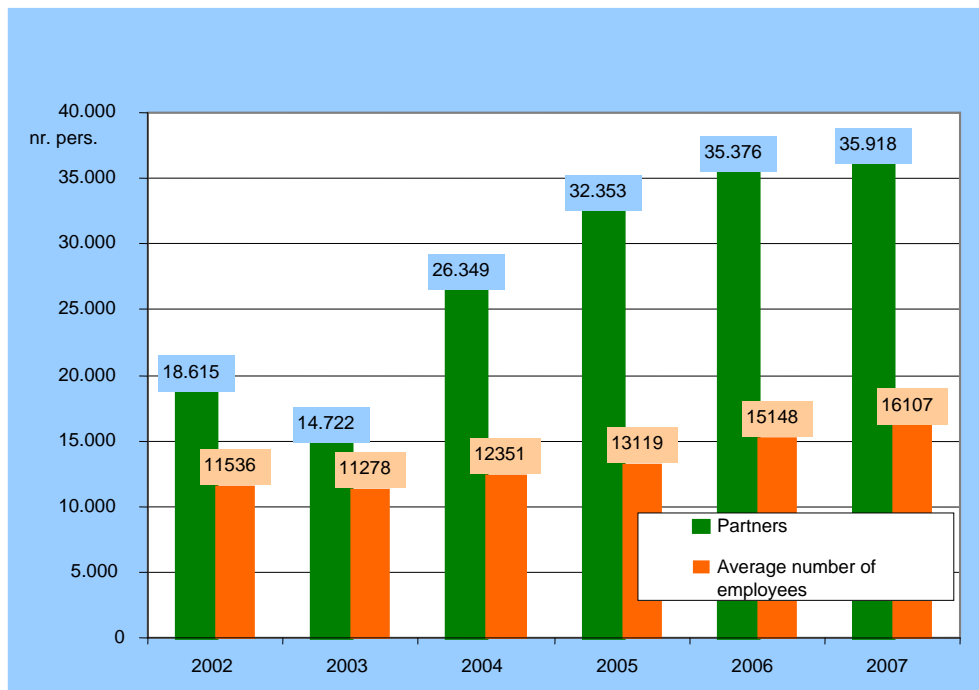


Figure 2. The evolution of employees and partners inside the insurance-reinsurance companies during the period 2002-2007

We also remark the high number of partners due to the flexibility of this activity. The flexibility permits a combination of this activity with another one stable, representing an additional income for the partner. This fact demonstrates that in general the dynamic of the effort of this activity is increasing.

2.3. The structure of the social capital

The social capital represents the nominal value of shares or social parts, respective the value of the contribution in nature and cash, the incorporated resources and the profit distributed in order to increase the capital or other operations that lead to their change.

More than a half of the social capital of insurance-reinsurance companies represent foreign capital, respective the one owned by the foreign commercial companies or individuals. In 2002 from the 47 active societies, 28 had foreign contribution to the social capital. At 31.12.2007, the total value of the social capital subscribed by the 42 authorized companies to develop the insurance company was of 1,977 billion lei, in increase compared to 2006, with 31, 92%. The contribution of the foreign investors has increased from 50 million lei in 2006, to 1,148, million lei in 2007, in increase with 43, 66%, as a result of founding three new companies and capital majorities made by the existing companies. Reported at total subscribed capital, the value of the capital owned by the foreign investors represents 58, 10%. In order to develop the efficiency of the activity, in 2007 a number of 24 insurers increased the social capital, the value of the increase totals 554 million lei. If in 2002 the foreign contribution to the social capital of insurance-reinsurance companies, respective the capital owned by the foreign commercial companies and individuals was of 53%, in 2003 this percentage decreased to 37% because of the increase of the Romanian contribution to the capital. In 2007, from the 42 active companies, the ones with life insurance activity were formed from more than 85% foreign social capital.

The total social capital and the foreign contribution to the social capital during the period 2002-2007

Table 4

Indicators		2002 Billon lei	2003 Billon lei	2004 Billon lei	2005 Thous and lei	2006 Thous and lei	2007 Thous and lei
Social capital, from which:		3966	6039	6886	835	1287	1858
- in the life insurance companies		1402	1813	2098	241	310	420
<i>The percentage of the social capital of life insurance companies (%)</i>		<i>35.35</i>	<i>30.02</i>	<i>30.47</i>	<i>28.86</i>	<i>24.09</i>	<i>22.60</i>
The foreign contribution to the social capital, from which:		2099	2232	3205	479	777	1286
- in the life insurance companies		1316	1582	1995	235	271	359
<i>The percentage of the foreign capital</i>	<i>In total social capital of insurance-reinsurance companies (%)</i>	<i>52.92</i>	<i>36.96</i>	<i>46.54</i>	<i>57.37</i>	<i>60.37</i>	<i>69.21</i>
	<i>In total social capital of life insurance companies (%)</i>	<i>93.87</i>	<i>87.26</i>	<i>95.09</i>	<i>97.51</i>	<i>87.42</i>	<i>85.48</i>

Source: Calculations according to the reports of ISC and INS data.

If in 2003 the foreign contribution to the social capital of insurance-reinsurance companies, respective the capital owned by the foreign commercial companies and individuals was of 37%, in 2004 this percentage increased to 47%. In 2004, from the 43 active societies, 23 had a foreign contribution to the social capital.

The foreign contribution to the social capital of insurance-reinsurance companies, respective the capital owned by the foreign commercial companies and individuals, was in 2005 of 57%, compared to 2004, when it was 47%.

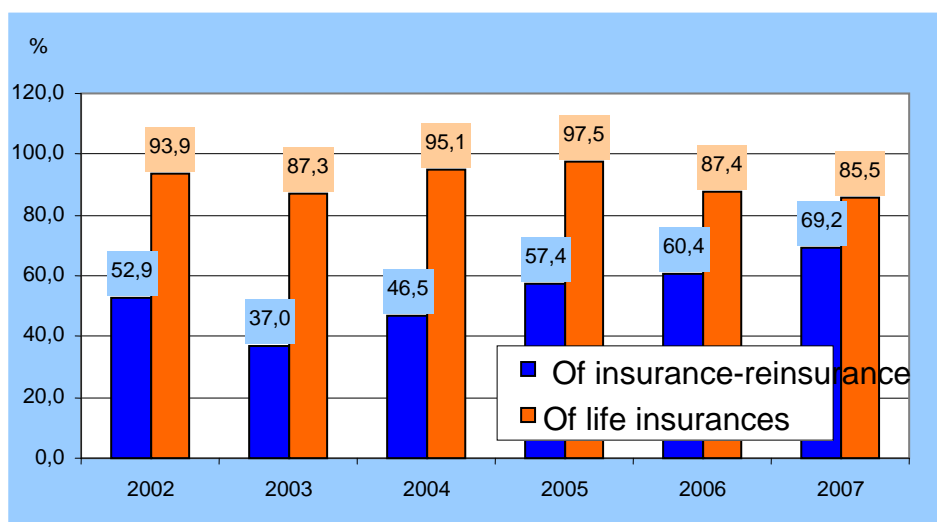


Figure 3. The percentage of the total foreign capital per categories of companies during the period 2002-2007

In 2005, from the 41 active companies, 23 had a foreign contribution to the social capital. The foreign contribution to the social capital of insurance-reinsurance companies, respective the capital owned by the foreign commercial companies and individuals was in 2006 of 60% compared to 2005 when it was 57%.

In 2006, from the 39 active companies, 28 had a foreign contribution to the social capital. The foreign contribution to the social capital of insurance-reinsurance companies,

respective the capital owned by the foreign commercial companies and individuals was in 2007 of 69% compared to 2006 when it was 60%.

In 2007, from the 42 active companies, 31 had a foreign contribution to the social capital.

The analyze of the efficiency should be made on a longer period of time but not less than 5-10 years (compared to other economic activities whose efficiency can be determined annually). In this sense the conclusions resulted have a stronger ground.

From the analyze of these indicators we can suppose the development level of the insurance market in each country of the world.

In order to obtain a better relevance the analyze of the market must be made in report to the other state members of the European Union. We mention that the size of the insurance market depends on other indicators such as:

- ✓ The number of contracts made during the reference period;
- ✓ The number of active policies;
- ✓ The annual value of the insurance premiums;
- ✓ The total insured sums during the reference period;
- ✓ The total value of commitments assumed by the insurance companies in a certain period.

The indicators used to evaluate the efficiency of the insurance companies' activity are established according to several elements: the certain objectives aimed the appreciated level of the efficiency (micro or macro), the legal settlements, the insurance category and the insurance class.

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PROTECTION AGAINST CATASTROPHIC RISKS IN SOME COUNTRIES IN EUROPE

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***Abstract.** The impact of increasingly large catastrophes on the economics of world states prompted a call for thorough evaluation of possible strategies to reduce their harmful effects. Also, more high frequency of the catastrophic phenomena determined at global level, but also at the level of individual countries greater emphasis concerns to insurance, to cope with major losses occurring in such situations. The article analyzes the evolution of global catastrophes and a comparison of the protective measures against catastrophes introduced by some countries in Europe.*

Keywords: natural catastrophes; man-made catastrophes; protection; insurance; reinsurance.

JEL Code: G22.

REL Code: 11C.

Introduction

Protection against disasters is not a novelty. In most world states, particularly in more developed countries, state authorities, large insurance/reinsurance corporations, as well as individual natural persons are more and more preoccupied with preparations against major earthquakes, powerful hurricanes, vast floods or other various accidents with serious consequences and losses of human lives.

The ever increasing frequency and intensity of natural hazards during the past two decades have determined the competent authorities of each country to pay special attention to the identification of insurance solutions, so as to handle the major losses that occur in such situations. As for the insurance decision, it is not an easy one to take, considering the major social implications it has and, most times, the orientation of the ongoing political class.

Two categories of catastrophes may be traced in international practices of insurances/reinsurances, namely: natural catastrophes and man-made catastrophes. In compliance with global reinsurer Swiss Re, natural catastrophes are caused by forces of nature, whereas man-made catastrophes are closely linked to human activities (Sigma no. 2, 2009). Natural catastrophes include the following events: floods, storms, earthquakes (earthquakes and underwater earthquakes), draught and fire caused by high temperatures, cold, frost, hail, tsunamis, as well as other natural catastrophes (avalanches, landslides), whereas man-made catastrophes include events such as: fire and explosions, aviation and space incidents, sea, lake and river incidents, railroad and road accidents, mining and quarry accidents, building, bridge and artwork crashes, various other incidents, terrorism included.

In compliance with the Romanian laws regulating insurances, namely art. 2 of Law no. 32/2000 on insurance companies and their monitoring and the order of Insurance Supervisory Commission no. 4/2002 for the implementation of the norm on the coverage of natural hazards, the catastrophes category includes all types of risks assimilated to an event or a series of events which may engender substantial damages in a brief time interval. Natural catastrophes are events caused by the occurrence of the following natural hazards: earthquakes with a magnitude exceeding 6 degrees on the Richter scale, floods and storms.

1. The evolution of catastrophes

2008 was one of the most unfavorable years from the point of view of losses entailed by natural catastrophes. More than 240,500 people have lost their lives, of which 228,400 have died due to tropical cyclones, typhoons and earthquakes in Asia. Furthermore, the cost of property-type insurances (property: fire, natural calamities and property damage) amounted to USD 52.2 billion, which made 2008 one of the costliest years in the history of catastrophes. Of the total sum, USD 44.7 billion insured losses were caused by natural catastrophes and USD 7.8 billion were caused by man-made catastrophes. The impact that natural and man-made catastrophes have had upon the global economy amounted to USD 269 billion (Sigma, 2009). Approximately half of this sum was due to the occurrence of the large earthquake in China in May 2008, which generated economic costs of USD 124 billion, corresponding to around 3% from the total GDP of this country. In this way, statistics confirm the increasing trend in terms of numbers and costs of natural and man-made catastrophes.

According to the prestigious publication Sigma of Swisse Re no. 2/2009 on natural and man-made catastrophes in 2008, there were 311 catastrophes worldwide in this year, of which 137 natural catastrophes and 174 man-made catastrophes, Asia had most deaths, whereas the USA holds the record in terms of losses insured with property-type insurances. Europe was the least affected from the point of view of the losses that occurred in 2008, as compared to 2007.

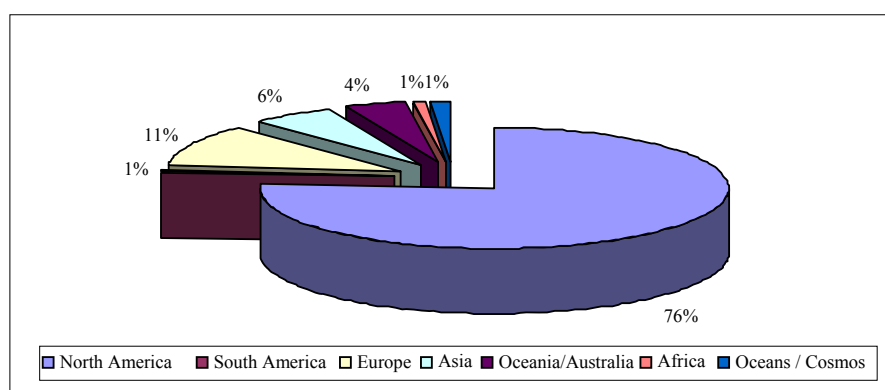
At the end of 2008, the global status of catastrophes was as follows:

Global status of catastrophes for 2008

Table 1

Region (continent/ country)	Total no. of catastrophes	Victims	Insured damages (USD million)
North America	54	1,230	39,881
South America	13	534	360
Europe	45	506	5,806
Asia	129	235,276	3,014
Oceania/Australia	7	4	2,272
Africa	29	1,543	426
Oceans / Cosmos	34	1,367	745
Global total	311	240,460	52,504

The analysis of the status of catastrophes for 2008 from the point of view of insured damages reveals that fact that from the total sum of USD 52,504 million of insured damages, most percentages – 76% – are held by North America, followed at a very large distance by Europe with 11% and Asia with 6%.



Source: elaborated by the author.

Figure 1. Global scale of catastrophes depending on the insured damages for 2008

If we analyze the evolution of natural and man-made catastrophes during 2002–2008 in terms of numbers, victims and insured damages, the essential feature of catastrophes is revealed, namely that they differ from one year to another, from one geographical region to the other, both in terms of numbers, as well as in terms of damages and affected persons. This conclusion can be demonstrated with the help of the following table:

**The evolution of natural and man-made catastrophes during 2002–2008
(number, number of victims and insured damages)**

Table 2

Type of catastrophe / characteristics	Years						
	2002	2003	2004	2005	2006	2007	2008
<i>Natural catastrophes</i>							
- number	130	142	116	149	136	142	137
- victims (number)	10,729	51,485	295,160	88,083	22,394	14,630	234,842
- insured damages (USD million)	11,423	16,170	45,737	78,330	11,838	23,269	44,692
<i>Man-made catastrophes</i>							
-number	214	238	216	248	213	193	174
-victims (number)	13,066	7,914	7,275	8,935	8,677	6,923	5,618
-insured damages (USD million)	2,130	2,320	2,889	5,066	4,043	4,295	7,812
<i>Total catastrophes</i>							
-number	344	380	332	397	349	335	311
-victims (number)	23,795	59,399	302,435	97,018	31,071	21,553	240,460
- insured damages (USD million)	13,553	18,489	48,626	83,396	15,881	27,564	52,504

Source: elaborated by the author.

Furthermore, Table 2 reveals a series of features characteristic to the evolution of catastrophes during larger time spans. Thus, during 2002-2008, man-made catastrophes have by far exceeded natural catastrophes in terms of number; nevertheless, natural catastrophes entail more victims and insured damages than man-made catastrophes, except for 2002, when the number of persons affected by man-made catastrophes (13,066) was superior to the one registered by natural catastrophes (10,729) and was caused by the terrorist attacks that occurred in India and Gambia in 2002. For example, in 2008, the number of victims entailed by major natural catastrophes amounted to almost 98% from the total (68% in 2007), whereas the number of insured damages amounted to 85% from the total (84.4% in 2007).

In conclusion, the dangers to which people and assets are exposed are multiple and varied, unequally affecting continents, regions and territories of various states.

Both the frequency and intensity of the latest disasters and the importance of the losses registered, increasing as of the middle of 1980, represent sufficient arguments to conclude that this increasing trend might be maintained during the next interval as well.

2. Protection against catastrophic risks in some countries in Europe

World practice has shown that the occurrence of disasters can not be avoided, but can be managed and their effects can be reduced through a systematic process, leading to a series of measures and actions to help minimize risk associated with these phenomena.

To protect against certain catastrophic risks, governments, public authorities and public institutions responsible for management and supervision of catastrophic risks and private insurance/reinsurance sector sought to develop and implement various means of protection and defense against the dangers of any kind.

These means of protection differ from country to country, from one geographical area to another, depending on several factors, such as: catastrophic risks faced by each country, the frequency of their occurrence and damage caused as a result of such risks, the degree of intervention and the availability of state dealing with such sensitive issues, ability of the state financial support some complex programs and not least the political class interests that are in office.

In Netherlands, for instance, flooding is the most important natural peril and the purchase of natural disaster insurance by the population or by corporate entities is not compulsory. Flood risk has never been covered by private insurance in the Netherlands. In order to compensate the losses resulting from floods, citizens have received compensation from the government on an ad hoc basis.

Taking into account that only storm risk being covered in existing policies, insurance and reinsurance companies are not highly exposed to natural disaster risks. The coverage of catastrophic risks by insurance and reinsurance companies is based on normal insurance principles and there are no special fiscal incentives regarding catastrophic risk reserving in the Netherlands.

In 1998 was passed the Calamities Compensation Act (WTS) on compensation of damages in case of catastrophes and large accidents (Financial Management of Large-Scale Catastrophes, Policy Issues in Insurance no. 12, 2008). The WTS covers non (commercially) insurable property losses due to water floods and earthquakes that are considered catastrophes under the law. Purchase of the natural disaster insurance is not mandatory.

For writing terrorism risks there is a reinsurance dedicated company named The Netherlands Reinsurance Company for Terrorism losses –NHT. In 2003 a terrorism cover clause, was added to all new and/or amendable policies providing for overall terrorism exposures to be limited to EUR 1 billion per year. Participating insurers are charged for the reinsurance premium and, once having decided to become a member of the NHT, they are deemed to cede all their terrorism exposure to the pool.

In respect of Switzerland, under Swiss federal law, the coverage of flood, inundation, windstorm, hail, avalanche, snow pressure, rock and stone fall, and landslide (but not earthquake) is mandatorily included in the scope of fire insurance for buildings and chattels. In the 26 cantons of Switzerland there are two different systems to cover such risks (Financial Management of Large-Scale Catastrophes, Policy Issues in Insurance no. 12, 2008).

In the cantons Geneva, Uri, Schwyz, Ticino, Appenzell Inner Rhodes, Valais and Obwalden, coverage is provided by private insurance companies. In 1939 a group of Swiss insurers formed the Natural Perils Pool to share natural catastrophe risks. Participants in the Natural Perils Pool extensively reinsure the coverage they provide in the international reinsurance market.

In the remaining 19 cantons, coverage is provided by the Cantonal building insurance companies. These institutions are governed by public law and enjoy a monopoly in their respective cantons. Stop-loss reinsurance coverage for natural disaster risks is available through the Inter Cantonal Reinsurance Union, which in turn reinsures in the international market.

In France exists the compensation scheme of natural disasters - Natural Disaster Compensation Scheme - CAT NAT, covering natural disasters and covering started when the natural disaster is declared by an inter-ministerial decree. Legal basis of this regime is established by Law no. 82-600 of 13 July 1982 and provides for a compulsory extension on all property damage policies purchased on the voluntary market.

Primary coverage in case of the disaster is provided by private insurance as an extension of policy for property. Private insurance companies can get fully reinsurance at Caisse Centrale de Réassurance – CCR, a state-owned company established in 1946 that offer

offer reinsurance cover with a government guarantee in the field of natural disasters. CCR does not have a monopoly in natural disaster reinsurance: primary carriers, therefore, are free to seek coverage from the reinsurer of their choice, and may even take the risk of not purchasing reinsurance. The French government effectively acts as reinsurer of last resort, offering unlimited protection through the CCR.

On the coverage for man-made disasters, the victims of terrorist attacks perpetrated on French national territory and French nationals victims abroad of such same acts may seek indemnification from the government's Guarantee Fund of Victims of Terrorist Attacks and Other Offences.

For reinsurance against terrorism risk after the events of 9/11 September 2001, a dedicated terrorism reinsurance pool, named GAREAT, was established in December 2001, covering risks since 1 January 2002. GAREAT offers reinsurance protection to direct insurers provided that they cede the terrorism risk forming part of all qualifying policies within their portfolio.

Also, as a response to the accident of 21 September 2001, involving the explosion of a chemical plant in Toulouse that caused 30 fatalities, 5,000 injuries and the devastation of thousands of buildings, a law was enacted in July 2003 to extend first party insurance coverage to damage caused by industrial catastrophes.

In terms of natural perils, Luxembourg is mostly exposed to floods, storms, and hailstorms. Nevertheless, there is no national agency in charge of risk assessment and monitoring.

Catastrophic risk insurance is marketed on a voluntary basis in this country, where there is no national scheme to compensate losses due to disasters. Insurance coverage of storm risk is almost systematically included in multi-peril property insurance policies taken out by private citizens and the current penetration rate is quite high (roughly 80-90 per cent of the population and 70-80 per cent of businesses are insured against storm). On the other hand, coverage of flood risk still remains very low (5 per cent penetration rate). Storm and flood risks located in Luxembourg are reinsured on the international market.

3. Protection against catastrophic risks in Romania

According to a report of the World Bank, the economical losses caused by the natural disasters occurred because of the climate changes are estimated for Romania at around USD 3 billion (XPRIMM, 2009).

Romania is one of the European states which are significantly exposed to natural disasters, especially in earthquakes and floods, but also other catastrophic natural risks like draught and landslides.

The earthquake represents for Romania the principal catastrophic risk, due to the fact that our country is located in an active area from this point of view, with seismic risk 3, according to Munich Re, which is one before the last risk area, according to the intensity, with a periodical cycle of 50 years.

Among the Vrancea earthquakes, we remained as the most important that from 10 November 1940, with a magnitude of 7.4, that caused around 500 victims and total damages of around USD 10 million and the earthquake from 7 March 1977, with a magnitude of 7.2 on Richter scale, which caused losses of USD 2 billion (that means around 5% from PIB) and a lot of human lives, the most affected town being Bucharest. According to a report of the World Bank from 1978, Bucharest has cumulated 70% from the losses, respective USD 1.4 billion, as well as 1,391 dead people and 7,596 victims, which represents 90% from the total on the country.

Therefore, the problem for Romania is Bucharest, which, together with Lisbon, are the only European towns characterised by Mexico City effect, which means that, because of the ground conditions, the earthquakes intensity is bigger in the respective area than in the areas more closed to the epicenter.

The mandatory houses insurance in Romania was canceled in 1995, by the appearance of the Law no. 136 on the insurance and reinsurance activity in Romania, when the insured houses were around 90% from the total number of houses. After 14 years from that cancellation, as at 1 July 2009, the percentage of the facultative insured houses is around 25% from the total, estimated to 8,3 million houses, according to the information provided by the Insurance Supervisory Commission (XPRIMM, 2009). This means a difference of 75% non-insured optionally part, which means that there is no protection by insurance, and the state cannot support at a full extent the recovery after a potential disaster, through the funds from the state budget.

As an example, in the state budget law for 2007 it was proposed a level of the reserve fund of RON 128,7 million (0.2% from the total expenses of the state budget) and a level of the intervention fund of RON 12.0 million (0.019% from the total expenses of the state budget); during 2007 the level of the two funds was extended several times, and as at the end 2007, the two funds reached around RON 2.5 billion, half representing agriculture affected in 2007 (the Law of the State Budget, 2006).

Another catastrophic risk for Romania are the floods. Annually, because of the floods, die on average 8 persons and thousands of areas are covered by water. To the floods are added landslides, which means that more than 30% from the Romanian territory is exposed to a this risk at a high level.

According to the information provided by the World Bank the assessment of the damages caused by the floods in Romania is as follows: material losses in the period 1997-2001 were around USD 528.9 million; in 1999 – about USD 132 million, in 2000 – about USD 98.3 million, and every year 500,000 persons and 1.3 million ground area are exposed to a high risk of floods.

Related to the floods in 2005, the total losses were around EUR 1.5 billion and represented 1.9% from PIB of this year, being the most expensive, considering the damages. From these, only 1% from the total losses are insured, respective around EUR 16 million (ICAR, 2007). This thus mean that in the task of the state is the biggest part of the expenses of the recovery of the damaged objectives and only 1% is to be supported by the Romanian insurance companies.

The insurance solution of the catastrophic risk for Romania is a pool of reinsurers, composed by the local authorized insurers, which are to subscribe in a first stage that risks, and continuing with retrocession, until a satisfactory risk mitigation is obtained.

The discussions as regards the introduction of a mandatory insurance system of houses were launched in Romania in 1995, and, after a long period of debate, in November 2008 was promulgated the mandatory insurance law for houses (Law no. 260/2008). Compulsory enforcement of housing has been delayed several times and on the market is advanced July 1, 2010 as the deadline for issuing such policies. In October 2009 was constituted Pool of Insurance against Natural Disaster (PAID), by the participation of 13 insurance companies from Romania, from 16 companies interested to conclude insurance policies for houses.

The mandatory insurance of houses is covering the risk of earthquake, landslides and floods, for every building which is considered as a house.

The maximum insured amount is EUR 20.000 for houses type A and EUR 10.000 for houses type B. The premium is EUR 20 for houses type A and EUR 10 for houses type B.

Even is recently approved, the law will be modified as related to an appropriate perceiving cost for the first year of activity of PAID, the absence of the franchise, but also the fiscal policy exposure of the Romanian Government to the damages which might occur after a potential catastrophe in the first year of applying the law. Meantime, it must be clarified the form of the financial support of the Government, as well as the annual change of the

mandatory insured amount, as well as the insurance premium, according to the house dimensions, recovery costs and the rate of inflation (XPRIMM, 2009).

Conclusions

The comparative analysis of the protection systems against the disasters in the five analysed European countries (the Netherlands, Switzerland, France, Luxembourg and Romania) shows that there exists a large range of political strategies and assumptions as related to the financial management of the catastrophes, with responsibilities and different grades of participation of the public and private sectors and as well as with different types of the coordinating mechanism.

Because of the:

- the exposures to the risks of disasters are different from one country to another;
- the social and political instances are also different;
- the legal and cultural conditions are different,

the identification of an institutional standard solution, which is to be applicable to all countries, cannot represent the scope of the comparative analysis in this field, the transparent allocation of the risks and the responsibilities within the public authorities, firms and individuals, which represents a component key of the schemes related to the coordinating.

Even the covering of the catastrophic risks is differing from one country to another, it is concentrated among four directions, respectively: in the Netherlands the state organizes exclusive insurance schemes for catastrophes, the role of the private companies being reduced to a minimum; in Switzerland the state does not intervene in providing the insurance services, but only presumes the insurance of the mandatory risks; the solution adopted in France being a mix between the mandatory insurance and the state intervention; this scheme was taken into consideration by the Romanian authorities, but the last and the most extended approach is the total absence of the state from the system, the covering of the catastrophic risks being facultative, depending on the risk perception and the exposure degree (Luxembourg).

The law of the mandatory insurance of the houses against the natural disasters, which will come into force as at 1 July 2010, means a starting point for a proper management of the catastrophic risks in Romania, which will be further improved, based on the realities of the Romanian society as related to the catastrophic risks.

All the actions and measures which were taken in Romania, up to now, in respect of the catastrophic risk management will come to the conclusion that only by a common effort of all the institutions with responsibilities in the management of the situations generated by the natural disasters will increase the capacity of our country to cope with the disasters, which existed and will continue to exist.

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AIG – THE STRENGTH TO BE THERE...IN THE MIDDLE OF THE CRISIS. THE STORY BEFORE AND AFTER THE BAILOUT

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***Abstract.** The vortex unleashed at the end of year 2008 shattered the trust of investors and general public in the financial and credit institutions, which registered huge losses due to the exposure on the financial markets. Comparable as proportion only to the „Great Depression”, the current economic crisis has almost destroyed the company American International Group, a symbol of stability and professionalism. A year after receiving the Fed bailout, the company seems to get on its feet, obtaining liquidities by selling certain assets, in order to give back the money it received. Nevertheless, the recovery process is far from being ended, because this could take several years from now.*

Keywords: AIG; credit derivatives; stock market; bailout.

JEL Code: G22.

REL Code: 11C.

1. Introduction

It is said that, unlike humans, companies live forever (Gardner, 1995, p. 177). This is true, at least at theoretical level. But it comes a moment in the “life” of a company when this theory is seriously questioned. One of those moments was the situation AIG faced at the end of year 2008. For its stocks crashed due to Standards&Poor’s reducing the company’s ratings, AIG was on the brink of ending its „life” through a thundering bankruptcy, weren’t for the American authorities which intervened and bailed it out of taxpayers money.

But what is this company whose possible crash generated panic on the financial markets? American International Group, Inc., simply known to the general public by its acronym AIG, is the biggest commercial and life insurance company in the world, and also one of the top providers of private pension funds⁽¹⁾. The company has assets of 1 trillion USD, subsidiaries in 130 countries in the world, 116,000 employees and 74 million customers. „Of its \$2tn financial products operation, some \$1tn protects 12 global banks”. (Morgenson, 2008, p. 1).

Moreover, AIG insures 94% of the wealth of the first Fortune 500 American companies and it is the biggest owner of aircraft in the world, supplying for several companies like Virgin Airlines⁽²⁾, Thomas Cook or BMI.

2. Materials/Method of research

When analyzing the proportion of the company’s activities, one question arises: How was it possible for the giant insurer to end up in the situation of needing governmental aid to prevent its bankruptcy?

This paper tries to answer the previous question asked by the majority of the financial analysts and investors. To reach this goal, the modality which has been chosen is the succinct presentation of the effects which the housing market crash and stock market crash have had on the AIG activities and also the description of the company’s recovery process from the moment of the Fed bailout until today.

3. The unfolding of the research

In the context of a global economy, the markets interdependence is self implied, and the correlation between these two elements is direct. Hence, the ascending trend of one market generates growths in other markets, and the decrease in the transaction values of one market is reflected by decreases on the other markets. In other words, the spread of linked increases and domino effects are expressions of this correlation.

Markets interdependence pictures also the situation registered at global level after the year 2003. The ascending trend of the US housing market generated by the reduction of the general interest rate from 6.5% to 1% has awakened the interest of important stock market players. Foreseeing the possibility of gaining large sums of money, they have created several financial instruments which implied huge risks, based upon complex mathematical models and on the „certainty” that the positive evolution of house prices would maintain. Two things were left out the equation by all of them: no increase is permanent and any price which goes up will drop at a certain moment.

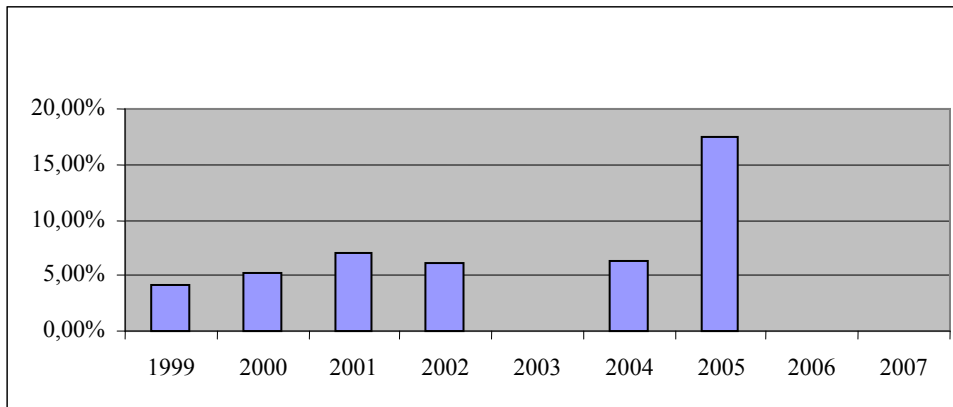
The current crisis would not have affected AIG in such a manner, if the company's exposures on the financial markets had been smaller. Following, I will present the activity of one AIG division which contributed to the gravity of the situation, causing almost the bankruptcy of the company.

3.1. AIG Financial Products (AIGFP)

Present at a global level, AIG has managed to gain also the market of the United Kingdom, becoming one of the biggest house, car, business and life insurers (through its division AIG Direct). Besides tradition division, in 1987, the company created also a financial products division in London, called American International Group Financial Products (AIGFP). This division was almost independent from the corporate parent, being led by Joseph J. Cassano. For it was not an insurance company, AIGFP didn't have to report its financial statements to the insurers regulating authorities.

If at its debut on the financial derivatives market, AIGFP would trade less complex products such as interest rate swaps, an idea given by JPMorgan Chase specialists was embraced with enthusiasm by the company management. Noticing the ascending trend of the US housing market, AIGFP was to sell insurance for collateral debt obligations (CDO), which financial institutions had in their portfolios.

Therefore, those particular products were in fact complex financial derivatives called „credit default swaps” (CDS), for which the clients paid insurance premiums for a period of 4-5 years. Due to the fact that AIG was a well rated company, it didn't had to post any collateral for the insurances the London division was selling, and this fact made business even more profitable. With only 377 employees, AIGFP became an important source of income for AIG. From the CDS transactions, the incomes from sales of AIGFP increased from 737 million USD in 1999 to 3.26 billion USD in 2005. Moreover, the profit of the company increased from 44% in the year 2002 up to 83% in the year 2005, and the share of all operating income from AIGFP had a staggering evolution from 4.2% in the year 1999 up to 17.5% in the year 2005, as it can be seen from the following figure.



Source: New York Times, 27.09.2008 (based on AIG company reports).

Figure 1. The share of all AIG operating income from AIGFP

It is easily understood that notable performances have to be rewarded. Therefore, the expenditures with the bonuses of the AIGFP reached important percentage values from the unit's incomes. During the average years, their value was 33%, and during the years with outstanding results, the bonuses were 46% of the incomes. All in all, AIGFP paid its employees 3.56 billion USD during 1999-2007, although in the last two years of that period the London division had registered serious loss.

3.2. The beginning of the AIG crash

Following the transactions on the stock market, the AIGFP division has insured products of 513 billion USD. Nevertheless, the outstanding performances of the London division have been interrupted by the crash of the US housing market. This crash has been generated by the drop in the value of real estate properties beginning with the third trimester of 2006 and it has been sustained by the increase of the general interest rate from 1% to 5.26% in February 2007.

Once more, the markets interdependence showed its importance. Following the decrease in the real estate properties values and the increase in the number of mortgage foreclosures due to the lack of credit reimbursement, the collateralized debt obligation contracts have begun losing their initial value, and the value of the credit derivatives sold by AIGFP began to drop. The goal of that phenomenon was to alarm the AIGFP management, for the company's exposure to the CDO contracts was of 78 billion USD. But with all the alarm signals, AIGFP management continued restating its trust in the financial products. In August 2007, the CEO Joseph J. Cassano said: "It is hard for us, without being flippant, to even see a scenario within any kind of realm of reason that would see us losing one dollar in any of those transactions". (Morgenson, 2008, p. 1)

The situation was much more serious than anyone would have imagined. According to the columnist Gretchen Morgenson, a Pulitzer winner, the problems became serious "in an environment of lavishing bonuses, shallow supervision and blind trust in financial risk models". (Morgenson, 2008, p. 1) Several months after restating his trust in the activities of AIGFP, more precisely in February 2008, Cassano resigned after the division had started losing money, and the auditors had begun investigating the company assets.

3.3. The domino effect

The collapse of the US housing market has generated a domino effect, which has influenced AIG at a global level. Hence, because AIGFP registered substantial loss worth of

billion USD, AIG was obliged to increase its liquidity⁽³⁾ and diminish the value of several assets of the group. Following those decisions, rating agencies reacted, by reducing on September, 15, 2008 the rating of the company to „A-“.

The effect was devastating, and the company crashed on the financial markets. The value of the stocks decreased by 74%, being suspended afterwards. Because the need for liquidity increased over the company indebt possibility, which had to cover also the AIGFP loss by constituting an additional collateral fund of 15 billion USD, the only solution was the Fed aid. Although the AIG motto is „The Strength to Be There“, it seemed that the company power was not enough, and it needed governmental help. After several discussions with the AIG management and other important market players, Federal Reserve decided to save AIG and to give a first bailout of 85 billion USD.

Although this moment was meant to mark the recover of the company, the AIG image was seriously affected due to an event which had happened less than a week after receiving the bailout and which had generated many controversies and dissatisfactions among officials and tax payers. Surrounded by euphoria, AIG top managers organized a party to celebrate the bailout at St. Regis Resort in Monarch Beach, California, where the price of a room was 1000 USD/night. The total bill was of 440,000 USD, from which 200,000 USD were spent on accommodation, 150,000 on meals, and 23,000 on spa treatments. (4) The behavior of AIG managers was perceived as outrageous, and, due to the virulent reactions of some officials and the general public, the company has decided to cancel such meetings.⁽⁵⁾

Even though the money given by the Fed were absolutely necessary, the sum wasn't enough to solve the company's liquidity problems. Thus, the bailout was increased, so until this moment the company has received a total governmental aid of 182.5 billion USD.⁽⁶⁾ After the given bailout, the US government owns 77.9% of AIG. Several contractual measures have been established for the governmental quota not to outrun 80%, because therefore AIG would have to be included in the financial statements of the Treasury.

3.4. The story after the bailout

During all this time after the bailout, the most difficult month was March 2009, when the loss of AIG reached the value of 61.7 billion USD. (7) If during the year 2008 AIG stocks were traded at a value of 46 \$, in March 2009 it reached the value of only 42 cents. All those facts influenced the value of several stock indexes: for the first time since 1997, the Dow Jones decreased under 7,000 points; S&P 500 decreased by 4.7% until 700.82 points: the FTSE decreased by 5.33% to 3625.83 points, the lowest level of this index since the beginning of the war in Iraq in March 2003.

With all the stock market fluctuations, the 182.5 billion USD given by the Fed have contributed to the AIG recovery, which has begun to show improvement signs from the middle of the year 2009. (8) Thus, in September, AIG stocks increased by 21%, reaching a value of 48.4 USD/stock, and in October the value of 45.15 USD/stock. Confident in the recovery process, AIG spokesman Mark Herr declared: “Last year was a long year, but we're in the marketplace competing, we are doing business”.⁽⁹⁾

The story of the company continues, because AIG has made some progress: it has reduced the excessive risk from the exposure at certain financial products, financial derivatives and debt from stocks; it has rationalized the structure of the company costs, it has stabilized the company liquidity and sold easy separable assets.

Thus, in its attempt of raising capital to reimburse the governmental aid, the company sold in July 2009 a component of its insurance division named 21st Century Insurance Group to the client Farmers Group for 1.9 billion USD. Moreover, in October, AIG sold Nan Shan Life, the life insurance division from Taiwan for 2.15 billion USD in favor of the holding Primus Financial (it contains also China Strategic Holdings Limited), which acquired 98% of the company after an auction of five months. Created in 1963, Nan Shan Life is the third insurance company in Taiwan with a market share of 10%, assets of 46.4 billion USD, 4000 employees, 36,000 sales agents and 4 million clients. After the acquisition, Primus has decided that the headquarters, the employees, the management and the employee payment plan would not be modified.⁽¹⁰⁾

For the future, the AIG management will not concentrate the most on asset sales, but more on the increase of the business value. To protect the company, AIG wants to create a general insurance holding, which would contain the commercial insurance group, and also the foreign general units under the number of AIU Holdings, with a management team different from the one at AIG. The holding will have a role in preparing potential asset sales, based on a public offering of shares, depending on the market conditions.

Regarding the AIG activity in Romania, the company goes through a re-branding process, which starts at the end of this year or in the beginning of 2010 and finishes with the change of the name from AIG into Chartis. Thus, the company will become a subsidiary of Chartis Europe, which owns 99.99% of AIG Romania, and the activity of AIG Romania will end. The start of the re-branding process comes after the decision taken in July 2009, according to which AIG will use the Chartis brand for its operations outside the United States, which activated under the names of AIG or AIU (American International Underwriters).⁽¹¹⁾ After the process, there will not be any changes regarding the headquarters, management, shareholders, employees of the former AIG Romania, but the product portfolio will diversify.

4. Conclusions

Sayings contain bits of popular wisdom, expressing altogether undeniable truths. “The small leak sinks the big ship” describes perfectly the situation with which AIG has confronted at the end of the year 2008, due to the London division AIGFP. The 377 employees under the management of Joseph J. Cassano have assumed huge risks by trading complex financial products called credit derivatives (credit default swaps) based on sub-prime mortgage credits from the US market. Afterwards, the loss registered by the London unit due to the American housing market crash have lead the company AIG on the brink of bankruptcy. To save the giant insurer, there were necessary: tensed negotiations, the intervention of the American government and 182.5 billion USD given by the Fed from taxpayer money as a bailout.

Starting with the second half of the year 2009, AIG began showing signs of improvement, managing even to sell some of its global assets to reimburse taxpayer money. Nevertheless, the difficult situation of AIG and the economic crisis started at the end of the year 2008 have led to the decrease in the people’s trust in financial and credit institutions. Concerning this, interesting is the study „Millennials in Financial Service”⁽¹²⁾ requested by Microsoft and realized in the United States in the period 19-23 August 2009 by the company KRC Research of Washington, on a subject pool containing teenagers born between 1981 and 2000. Here are the conclusions of the study:

- 80% think that financial institutions do not deserve the bailout money;
- 67% are skeptical regarding investments on the stock market during the current economic crisis;

- 82% are concerned by the fact that other financial institutions will go bankrupt in the nearest future;
- 82% sustain the elimination of lavishing bonuses given to the managers, at least until the US economy recovers;
- 51% will no longer invest in 401(k)s or other pension funds.

It is certain that the world governments and the players from the business environment have to make substantial efforts to rehabilitate the trust in financial and credit institutions, because, by rewording a Romanian song, it can be stated that “if there is no trust, there is nothing”.

Notes

⁽¹⁾ 2.03.2009. The Guardian, London, UK.

⁽²⁾ Property of the eccentric American billionaire Richard Branson

⁽³⁾ In May 2008, the company obtained the lowest financial results in its 89-year history. Therefore, to cover the losses, AIG obtained 20.3 billion USD by selling some stocks.

⁽⁴⁾ Afterwards, the company representatives declared that the meeting had been planned a few months before the bailout and that from the total of 100 participants, only 10 were AIG employees.

⁽⁵⁾ The behavior of the AIG management was not unique; several other bailed companies did the same. Hence, for the same festive purposes, Royal Bank of Scotland spent 150,000 GBP, Barclay's 640,000 EUR and Fortis 150,000 EUR.

⁽⁶⁾ According to the financial analyst Don Vickrey, AIG could cost the American government up to 250 billion USD (The Guardian, London, UK, edition from 3 March 2009).

⁽⁷⁾ During this period, AIG has lost 678 million USD per day or 28 million USD per hour. AIG loss beats the 2002 record, when the company Time Warner lost 54 billion USD in a single trimester, merging afterwards with AOL. In the United Kingdom, the record was set by the Royal Bank of Scotland, which lost 24 billion GBP in the year 2008.

⁽⁸⁾ Along with the first signs of recovery, the former CEO of AIG, Hank Greenberg, has proposed the modification of the bailout conditions established by the Federal Reserve, suggesting the decrease of the 77.99% quota from the equity of the company, which the Fed owns, and the increase of the reimbursement period.

⁽⁹⁾ Associated Press News, 12 October 2009.

⁽¹⁰⁾ www.aig.com

⁽¹¹⁾ Săptămâna financiară, 28 August 2009.

⁽¹²⁾ <http://www.microsoft.com/presspass/press/2009/sep09/09-30millennialpr.mspx>

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THE PENSION SYSTEM IN JAPAN: SOME COMMON ISSUES WITH THE ROMANIAN ONE

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Abstract. *The aging of the population in Japan is a serious problem, and the reform of the public pension system is a major political issue. In this paper I made a presentation of the Japanese pension system and the reforms it has to pass from a system based on Defined Benefits to a system based on Defined Contribution where companies must change their DB type pension plans from the old types (TQPP's) to new ones (e.g.; DBCPPS) by the end of March, 2012.*

The concluding and remarks present some common subjects (aging population, allocation of pension plans' assets) and differences about the shift from DB to DC plans among Japanese corporate pension plans as compared with the shift from DB to DC plans in Romania.

Keywords: DC pension plans; DB pension plans; financial markets; asset allocation; benefits.

JEL Codes: G23; J26; D31; E21;G11.

REL Codes: 11C; 11 B; 12A; 8A; 13 A.

A growing concern of the pension systems worldwide is the „ageing” of the population. More people rely economically on the benefits provided by the pension systems. In Japan the rate of dependency between the active population and the retired population is growing up.

Romania – as other countries from central and east Europe before her – started two years ago to implement a new (multi-pillar) pension system instead of the DB public one. Among other parameters, the sustainability of the pension system depends on how the aging population will be treated: who will bear the costs of the improvements in life expectancy. A consequence of an increasing life expectancy is a longer period of retirement and therefore a need to increase the costs of pension annuities.

Japan is the OECD's 'oldest' country, with just 2.6 people, of working age for every person aged over 65.

In 2007, in Romania, the rate of dependency between the active population and the retired population was 4.2 active persons for every person age over 65 (Figure 2).

Older people in Japan are much more reliant on income from work than most OECD countries. Earnings self-employment income make up 44% of the income of households in which older people live, compared with an OECD average of 20%. As aged people are increasing in society, DB pension recipients are also increasing and pension liabilities are getting larger. In addition to that, recent worldwide economic recession caused stock prices plunge and DB pension funds were deteriorated. As a result, management of DB plan is becoming a heavy burden for the social security systems and employers who provide DB schemes for their employees. Romania, like Japan, will experience a sharp aging of its population in coming years. Romanian population is expected to drop from around 21.6 million in mid 2007 to below 19.7 million by 2025 and 17.1 million by 2050. The fertility rate dropped from 2.3 children/woman in 1989 to 1.3 children/woman in 2008. The natal rate dropped from 13.7 per thousand women at fertility age in 1990 to 10.0 per thousand women at fertility age in 2008. In those years there was an increase in the life expectancy at birth of

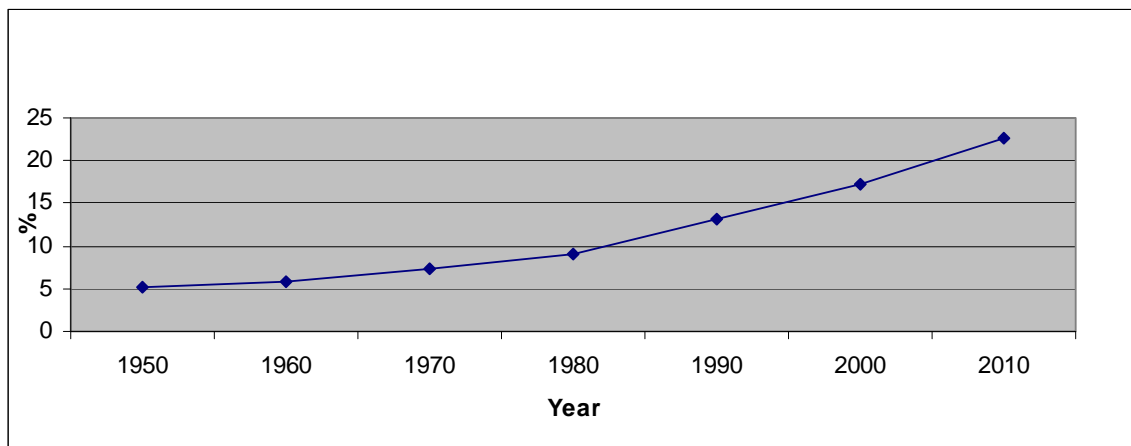
approximate 4 years. Romanian's pension system like the Japanese's is evolving from heavy reliance on public benefits provided on a PAYG basis to a system with greater emphasis on individual and company pension funds.

Romania has restructured its pension system by implementing a mandatory pillar to which contributions are transferred from the DB public system to the new DC mandatory pillar. It means that the longevity risk (for the part of the old age pension which is transferred to the mandatory private pension system) is transferred from the entire active population to the individuals.

Due to the volatility in the financial markets, in the present, there is awareness especially for the financial risk followed by a demand for some kind of guarantees. The participants at the mandatory pillar will be aware of the longevity risk when they will realize that at retirement age for the same accumulated amount they will receive different pensions related to the year of birth.

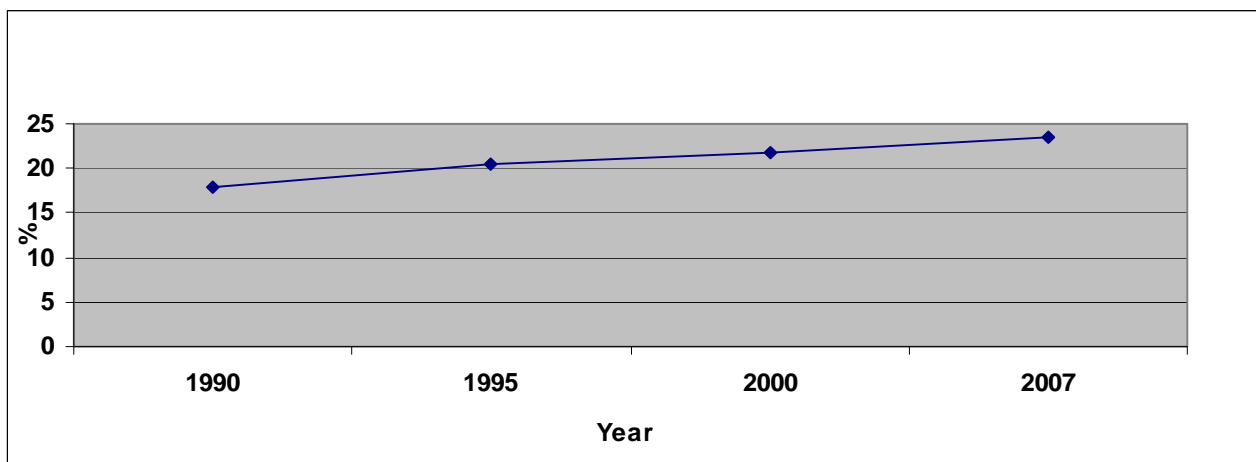
At the same time the public system – from which they split – will calculate pensions without any direct reference to year of birth. As a result, the public interest, for a decision how to share the longevity risk and hedge it, is growing up.

The Japanese pension system is in a period of transition from a DB system to a combined DB and DC system.



Source: Japan, National Institute of Population and Social Security Research, Yearly Report, 2008.

Figure 1. Elderly Japanese population rate (between active population and elderly)



Source: www.insse.ro

Figure 2. Elderly Romanian population rate (between active population and elderly)

Key facts

	Japan	OCDE
1. Pension replacement rate	33,9	59,0
* Average earner (%)	47,1	71,9
* Low earner (%)		
2. Public pension spending % of GDP	8,7	7,2
3. Life expectancy	82,4	78,9
* at birth	86,0	83,4
* at age 65		
4. Population over age 65 of working age population	4,99	4,17
Average earnings (per year) JPY million		

Sursa: OECD, Pensions at a Glance 2009: Retirement Income Systems in OECD Countries, ISBN 978-92-64-06071-5.

Characteristics and problems of existing Japanese pension system

- Late establishment of the DC systems and rapid maturation
- Complete Universal Pension coverage. Even persons without income are covered
- Two level structure: basic pension (fixed amount) and pension proportionate to wages
- Low insurance premium rates: early payment age, high payment levels, lower limit of payments and upper limit of contribution
 - Adjustment (increase) in payment levels with upper limit on contribution and lower limit on payments
 - A hybrid system with various characteristics and functions overall
 - Increase in persons with no pensions or low pension
 - Concerns and anxiety regarding the reliability of future payments.

The Japanese pension system is composed of four-tiers:

First tier is a flat rate social security pension system financed by pay-as-you-go (PAYG) with a state subsidy named National Pension Program (NP).

Second tier is salary related, social security pension system financed by partially funding (Employees' Pension Insurance: EPI). The coverage of the EPI system is employed persons in private corporations.

Third tier provides social protection by the employers based on corporate pension plans such as the EPFs, the TQPPs, the Defined Benefit Corporate Pension Plans (the DBCPPs) and the Defined Contribution Pension Plans (the DCPs). Those plans are provided by employers voluntarily, financed by funding system.

Fourth tier is private pension plans and personal savings.

1. Public pension

The public pension system in Japan comprises two parts, namely the NP programs and occupational related public pensions; the latter includes the employee pension insurance (EPI) for the private sector and the mutual aid association (MAA) for the public sector and private school employees.

National pension program (NP)

The NP program covers residents aged between 20 and 59 staying in Japan. Participation is mandatory, except for those residents aged between 60 and 64 and for the citizens (aged between 20 and 64) residing abroad. For workers in the public and private sectors, the contribution to the NP is deducted from contributions to the second part of the public pension system, i.e. EPI and MAA. Full contributions by employees, i.e. 480 months of contributions, result in a pension benefit of JPY 792,000 a year. If the number of contributing months is less than 480 (but must be more than 300), the pension benefit will be reduced

correspondingly. Meanwhile, given NP's partial funding nature, the Japanese government makes up the financing gap, which is currently around 1/3 to 1/2 of the total benefits.

Employee pension insurance (EPI) and the mutual aid association (MAA)

The employee pension insurance (EPI) covers employees in industry and commerce as well as seamen, while the mutual aid association (MAA) mainly covers the public sector employees and the private school employees. For the EPI, as of 2006 the contribution rate in total was 14.64% of payroll, which is equally split between employees and employers, i.e. 7.32% each. The government does not need contribute to the NP, but total administration costs for public pensions are fully covered by the government. Pre-determined formula is used to calculate the earning-related benefits.

2. Private pensions are occupational (voluntary) and personal (voluntary)

2.1. Occupational (voluntary) private pensions are classified as following:

- Employees Pension Fund (EPF)
- Defined benefit corporate pension plans/fund (DBCPPs)
- Corporate defined contribution funds
- Tax qualified pension funds (TQPF)
- Mutual Aid Associations (MAA).

Coverage

EPFs, TQPPs, defined benefit and defined contribution plans, cover only private sector employees, with EPFs designed only for private-sector employees who are part of the EPI public pension system. Public sector employees benefit from separate arrangements. In 2000 approximately 90% of firms with at least 90 employees offered occupational pension provision: book-reserved termination indemnity plans, EPFs, or TQPPs. Approximately 50% of these firms provided EPFs or TQPPs. Overall, the occupational pension system covers approximately 35% of the labor force.

Typical plan design

A typical plan design in Japan is a severance-pay defined benefit plan. Benefit is often taken up as a lump sum and is equal to final salary multiplied by a pre-specified coefficient, which depends on an individual's years of service and the reason for his or her termination of employment. Defined contribution plans were introduced in Japan in 2001, but have not yet proved to be particularly popular.

Under EPF schemes, employees and employers each contribute one-half of total contributions to substitution benefits, while employees usually pay less than one-half of total contributions to additional benefits and employers more than one-half.

Employees do not usually contribute to defined benefit plans or TQPPs. Employers generally pay the total contribution, with the rate varying greatly from company to company. Employers pay the total contribution to defined contribution plans, as employee contributions are prohibited.

Benefit payments can be lump sums or annuities in all five types of plans. The normal retirement age is 60.

Taxation

There is no limit to the percentage of employee contributions that can be claimed as tax-deductible. Nor is there any tax-deduction ceiling on employer contributions, as long as the amount is based on the proper actuarial funding standard.

Employee contributions to defined benefit plans and TQPPs are tax-deductible up to a limit of JPY 50,000. If an employee pays a life insurance premium, the cap of JPY 50,000 is reduced by the amount of the premium. There is no limit to the tax-deductible share of employer contributions, as long as the amount is based on the proper actuarial funding standard.

Under defined contribution plans, the maximum yearly amount deductible from the contribution of an employer sponsoring only one occupational plan is JPY 552,000 per employee. If the employer also sponsors a defined benefit plan, the maximum yearly tax deduction from the employer's contribution to the defined contribution plan is JPY 276,000 per employee.

Assets in EPFs are taxed at an annual rate of 1.173% (1% national and 0.173% local tax), if they exceed the amount needed to cover liabilities of 2.84 times the accrued substitution benefits. Assets in all plans other than EPFs are taxed at a yearly rate of 1.173% (1% national and 0.173% local tax). Pension benefits from all plans are taxed as income at a rate of between 10% and 37%. The legislative Japanese corporate pension plans were introduced in 1960s; the TQPFs in 1962 and the EPFs in 1965.

The Tax Qualified Pension Plans (TQPPs)

TQPPs was introduced by the Corporate Tax Law Reform of 1962. The purpose of the TQPPs is to provide preferential tax treatment so as to smooth lump-sum payment. One major purpose of its introduction was to give employees an option of receiving pension payment after retirement, with favorable tax treatment to their employers.

The TQPPs is a contract-type pension system. Employers who want to introduce the TQPPs have to make pension trust contracts with trust banks, pension insurance contracts with life insurance companies, or pension mutual aid contracts with Japanese Agricultural Mutual Aid Association, and get tax-qualified approval from the Secretary-General of the National Tax Administration.

The TQPPs were decided to be expired in March 2012. Therefore the existing TQPPs should be transferred to other corporate pension plans or just terminated.

The TQPPs were required tax qualified conditions laid down in order for enforcement of corporate tax law, and have weaker funding obligation. Therefore the TQPPs were easier to introduce compared to the EPFs and particularly for small and middle size corporations.

The Employees' Pension Funds (EPFs)

The EPFs were introduced by Employees' Pension Insurance Law Reform of 1965 (effective in October 1966). The main purpose of the EPFs was to offer an additional benefit to the Old-Age Employees' Pension Benefit in Employees' Pension Insurance which was operated by the Japanese Government. Further, the EPFs system is aimed to secure the pension benefit in addition to the Old-Age Pension of the Employees' Pension Scheme. The EPFs provided the benefit of a part of the old-age pension in the EPI Scheme except the payment born by the improvement of the wage and price indexation. The EPFs' pension benefit is composed of 'substitution portion' which is equal to the amount paid under the old-Age employees' pension, and 'additional portion' which is paid by corporations themselves additionally. The regulation indicated the amount of additional benefit must be at least 50% higher than that of substitutional portion. Employers are tax exempted from paying the premiums for government, namely 'exemption premium rate'.

The EPFs are required 1,000 of members or more for single employer plan, and 5,000 or more for multi-employer plan for their establishment. The EPFs also required some obligations in benefit design including level, period fairness and funding standards.

The DBCPPs scheme was introduced in 2002. As mentioned above in Japan, companies must change their DB type pension plans from the old types (TQPPs) to new ones (e.g.; DBCPPs) by the end of March, 2012. TQPPs will be expired in the end of March, 2012.

In order to supplement the fault of TQPP scheme, DBCPP scheme was provided with following three frameworks to protect employees' benefit rights: a) funding requirements, b) fiduciary responsibility, c) reporting & disclosure. As for plan design, companies must focus on annuity payment after retirement. (e.g.; 60 years old and over)

They were modeled after US Employee Retirement Income Security Act 1974 (ERISA). In fact, these frameworks have been applying to Japanese EPFs since 1997.

Enactment of DB Corporate Pension Act 2001 let all Japanese DB type pension plans except TQPPs have these frameworks.

After seven years that DBCPPs was introduced about 65% of TQPPs were discontinued. When companies decided not to continue their TQPPs, some of them deliver employees' benefit rights to newly introduced DBCPPs. There are many cases where plan designs, such as eligibility for benefit, withdrawal lump sum, level of benefit, and period of benefit payment are not changed but the actuarial assumptions are much-improved. Companies adopt lower discount rate than ever in order to match with current low interest rate and let their DBCPPs have resistance to the change of economic environment. And changes are also seen in companies' attitude toward pension plan asset management. As companies adopt lower discount rate, they can change their plan asset allocation into more conservative one. With the progress of financial technology, new investment solutions, such as alternative investment and Liability-driven Investment (LDI), have been brought to DBCPPs. But it has not be popular among small and mid-sized DBCPPs.

In the „freefall” capital market in 2008, even some of the ready-made DBCPPs that adopt low-risk investment in order to avoid possible asset management slump are required to increase their pension contribution. It goes without saying that DBCPPs that adopt high-risk investment are facing mandatory increase.

Because the scale of companies that manage ready-made DBCPPs is small, the impact caused by aggravation of the economic environment can be big. Some companies cannot afford to increase annual pension contribution. Some of them have to spread the special supplementary contribution payment period because the amount of unfunded liability is too much, and others start to consider the transition from DBCPP to DCP.

2.2. Personal (voluntary) private pensions are classified as following:

- Individual defined contribution funds;
- National pension funds.

3. Regulation

Introduction of accounting standards for retirement benefits in 2000 required to disclose the underfunded situation of corporate retirement benefit plans including pension plans in terms of accounts, which accelerated the crisis.

Though the Japanese government took several measures for the EPFs, including relaxation of deficiency level and revaluation standards, the crisis was so severe that so-called partial remedy could not improve their symptoms. This situation drove introduction of two corporate pension systems as follows: introduction of DB and DC Pension Laws.

Two corporate pension system bills passed the Diet (Japan's Parliament) in June 2001. The Defined Contribution Pension Act (the DCPA) was enacted in October 2001 and the Defined Benefit Corporation Pension Act (the DBCPA) was enacted in April 2002. The cash balance plan was also introduced as a kind of a DB plan.

The Defined Benefit Corporation Pension Act

The crisis brought cases in which pension assets were not assured enough at the time of bankruptcy. As a result, an adjustment of the system to protect the rights to receive benefits (eligibility) became necessary, and this situation drove establishment of standard measures for eligibility protection such as reserve obligations in the DBCPA.

The purpose of the DBCPA is to introduce the common framework to protect employees' benefit rights covered by DB type corporate pension plans; both the EPFs and the DBCPPs. The DBCPA provides (1) funding requirements, (2) fiduciary responsibility, and (3) reporting and disclosure signed by Certified Pension Actuaries.

The Defined Contribution Pension Act

Until a new two corporate pension laws were introduced, DB type corporate pension plans had not always been adopted by small and medium sized companies and self-employed

persons. Also, the transfer of pension assets in case of job change was not assured, which complicated measures to respond to labor shifts. In order to cope with these problems, the introduction of the contribution-based pension plan had been examined and was introduced by the DCPA.

The purpose of the DCPA is to introduce DC pension plans as a new option for retirement income more stable as well as corresponding changes of socio-economic situation such as lower fertility rate, population ageing, diversifying of life in old-age period and fluidity of employment.

The contributions of the DCPPs are specified for each employee, and the benefits of ones are determined based on the sum of the contributions and the investment profits managed by participants themselves. Features of the DCPPs are as follows;

(a) The DCPPs pension plans are easier to introduce for the SMEs compared to DB type plans,

(b) The DCPPs can easy to correspond to portability, transferring pension assets in case of job change. Because the contributions are clearly specified for each employee.

(c) For persons who cannot participate in the system such as housewives, etc., assets associated with

the participants are transferred to the National Pension Fund Federation.

4. Converting to company – group DB pension plans

In Japan, one of the most serious problems about corporate pensions is how the employers can manage their DB pension plan after TQPPs are discontinued. Japanese government established TQPP system in 1962 by giving favorable tax treatment. Ever since, many companies have adopted TQPP as a main Japanese DB type corporate pension plan. But the Defined Benefit Corporation Pension Act (DBPA) was enacted in June 2001 with the purpose of strengthen protection of employee's benefit rights. TQPPs are scheduled to be abolished at the end of March 2012. It is because that it does not have adequate funding requirement therefore it is considered unsuitable pension plan for protection of employee's benefit rights.

If employers adopting TQPP want to continue their DB type pension plan with favorable tax treatment, they must convert the TQPP to another DB pension plan, such as DBCPP or EPF. However, both DBCPP and EPF have strict regulations about funding requirement, fiduciary responsibility, reporting and disclosure.

In the economic recession one solution is that the small company converts the TQPP to a Company –Group DB Pension Plan. Company – Group DB Pension Plan means a DB type corporate pension plan which consists of many companies. It is difficult for one small company to manage its DB pension plans by itself. When is a lot of small companies together, they can manage a large strong DB pension plan.

Typical cases of Company- Group DB Pension Plan in Japan are as follows:

- a small company unifies the TQPP with the allied-companies DBCPP adopted by its parent company

- a small company incorporates the TQPP into a multi-companies DBCPP.

The year 2012 will be a very important year in the Japanese corporate pension history, because many events including pension plan reforms will concentrate in or around 2012;

(1) TQPP will be expired in March 2012. It also means that ten-year transitional period after corporate pension reforms at the beginning of 21st century will be ended and new Japanese corporate pension era will start,

(2) Baby boomers will reach 65 and start receiving pension benefits. It means the Japanese corporate pension plans will enter the pay-out phase from accumulating phase, and

(3) New post-retirement accounting standards, now under discussion, will be applied around 2012.

It is difficult to predict the Japanese corporate pension plans evolution and their financing which actuaries have keen interests in that era in actual. But we could say at least that they would be more market-oriented and internationalized. We would like to imagine that they will be more common and developed in full then if we are allowed to try actuarial guess. The year 2012 is the epoch year in terms that many events mentioned above will occur at the same time. Employers and who relate to corporate pension field should understand and prepare for the year 2012 issues.

Conclusions and remarks

1. While the circumstances in which Japanese small and mid-sized businesses companies find themselves are very severe, companies that are still managing TQPPs must conclude what type of retirement benefit plan they will adopt after abolition of their TQPPs. Then again, some of the companies that have already delivered their TQPPs to DBCPPs are getting into difficulties with financial management. In addition, the unfunded of DB type pension plans affects sponsor companies' corporate accounting as well as increase of cash flow (increase of pension contribution).

2. In Japan the number of the shift from DB to DC plans is limited. DB plans are suitable for corporations or industries whose employment system is seniority-based and lifetime employment which is Japanese traditional style management. On the other hand, DC plans are suitable for corporations or industries whose employees often switch their job, because DC plans' participants can transfer their pension account on changing job (so called 'portability'). This is the situation on the Romanian labor market. Though employment policy is changing from Japanese style management to American style one in Japan, Japanese style management is still majority, which may prevent the shift from DB to DC plans rapidly in Japan. DC plans have heavy costs of investment education needed for participants and high costs of plan administration. Japanese employers also do not want to burden employees with investment risk. In Romania the DC plan administration costs are approximately 1% per year from the accumulated reserves for mandatory pension funds (1.5% – 2.0% for the facultative pension funds).

In Japan DB pension assets for both past and future service can be transferred to DC plans. In Romania, mandatory DC plans are introduced only for new participants or future eligible service.

3. As a matter of fact, restructuring the system by implementing a mandatory pillar to which contributions are transferred from the DB public system (the longevity risk is carried by the actual and the future generations) to the new DC mandatory pillar it means that the longevity risk is transferred from the entire active population to the individuals.

In present, due to the volatility in the financial markets, there is awareness especially for the financial risk followed by a demand for some kind of guarantees. The participants at the mandatory pillar will understand the longevity risk when they will realize that at retirement age for the same accumulated amount they will receive different pensions related to the year of birth.

At the same time the public system – from which they split – will calculate pensions without any direct reference to year of birth. In the context of pensions, the Romanian population like the population in the East of Europe manifests an absolute aversion to risk much higher than the population in the West of Europe. It is emphasized by the assets allocation of the autonomous pension funds.

Table 1 presents the pension funds' assets allocation in European countries for 2007 and 2008. From the data presented can be also concluded the aversion to risk in east and central Europe countries – which started to implement a multi-pillar pension system few years ago – as comparison with OECD countries which have already developed DC pension funds.

In 2007, in US, the pension fund's investment in bills, bonds, loans, land & buildings, deposits and cash (hereby we shall call „solid investment”) were approximately 19 % and

share's investment (hereby we shall call „risky investment”) more than 50% (almost 47% directly). At the same year, in Canada less than 33% of assets were „solid investments” more than 40% in „risky investment” (almost 29% directly in shares).

The investments, in west Europe – except UK, were the allocation of assets is almost the same as on the American continent – seem to be more risk averse. In Germany almost 60% from the assets were invested in „solid investments” and investments in shares were through mutual funds. In Italy 50% of the assets are invested directly in „solid investments”.

In East Europe – due to the risk aversion of the population - more than two thirds of the assets were invested in – solid investments”: Poland – 64.5%, Hungary – 68.0%, Czech Republic – 85.0%, Romania (from 2008) – 97.8%. Japan's pensions are similar to those of several European countries in terms of high dependency on public pensions, a relatively high social security replacement ratio, numerous asset allocation restrictions and minimal disclosure.

In 2008 the global crisis and the volatility of the financial markets stimulate allocation of assets in less risky investments. Therefore, we expect that in the future the pension funds will invest on a regular basis a higher part of their assets in low risk investments like as: bonds (especially governmental bonds), real estate, loans.

4. Table 2 presents a self forecast about the possibility that the Japanese pension funds should be obliged to invest twenty to thirty percent of their assets in special governmental bonds issued for them. Those special bonds will have a yield higher by 1.5% than the bonds traded in the financial markets. For preparing Table 3 was assumed the mortality tables issued by the Japan's Institute of statistics and the forecast that the governmental bonds will produce an annual yield of 3.5% and for the entire portfolio an annual yield of 5.0%. As a conclusion those types of governmental bonds are necessary for covering the longevity risk for Japanese people.

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Asset allocation of private pension funds (% of total investment)

Table 1

Year 2008	Cash and deposits	Bills and bonds issued by public and private sector	Loans	Shares	Land and buildings	Mutual Funds	Private investment funds	Other investments*	Total
Poland	2.5	75.0	0.0	21.4	0.0	0.5	0.0	0.6	100.0
Hungary	3.0	62.0	0.0	12.2	0.3	22.2	0.0	0.3	100.0
Czech Republic	8.0	78.9	0.0	3.0	0.9	3.2		6.0	100.0
Romania	13.2	84.6	0.0	0.5	0.0	0.0	0.0	1.7	100.0
Germany***	2.9	26.0	29.3	0.1	2.4	36.1	1.0	2.2	100.0
Italy	7.5	39.9	0.0	8.1	4.8	9.1	1.2	29.4	100.0
United Kingdom**	2.9	21.9	1.2	29.6	2.8	23.3	0.0	18.3	100.0
Japan	3.0	63.0		28.0	-			6.0	100.0
Canada***	3.2	26.7	0.5	25.2	6.2	33.5	0.0	4.7	100.0
United States	1.2	22.9	1.0	37.1	1.7	17.0	0.0	19.1	100.0

* includes unallocated insurance contracts (Italy, UK)

** year 2007

*** shares are included in mutual funds

Source:

www.csspp.ro CSSPP, Comisia de Supraveghere a Sistemului de Pensii Private din România

www.oecd.org OECD, Global Pension Statistics

www.watsonwyatt.com, Watson Wyatt Worldwide, Global Pension Study, 2009

Year 2007	Cash and deposits	Bills and bonds issued by public and private sector	Loans	Shares	Land and buildings	Mutual Funds	Private investment funds	Other investments*	Total
Poland	3.4	61.0	0.0	34.6	0.0	0.5	0.0	0.5	100.0
Hungary	1.2	66.8	0.0	14.0	0.2	16.0	0.0	1.8	100.0
Czech Republic	9.6	75.2	0.0	5.9	0.7	4.5	0.0	4.1	100.0
Romania									0.0
Germany***	2.3	25.8	28.0	0.1	2.4	38.5	0.8	2.1	100.0
Italy	7.4	37.2	0.0	10.1	5.2	8.9	2.0	29.2	100.0
United Kingdom**	2.9	21.9	1.2	29.6	2.8	23.3	0.0	18.3	100.0
Canada***	3.0	23.6	0.4	28.9	5.0	36.0	0.0	3.1	100.0
United States	0.9	16.4	0.7	46.7	1.2	19.6	0.0	14.5	100.0

* includes unallocated insurance contracts (Italy, UK)

** year 2007

*** shares are included in mutual funds

Source:

www.csspp.ro CSSPP, Comisia de Supraveghere a Sistemului de Pensii Private din România

www.oecd.org OECD, Global Pension Statistics

www.watsonwyatt.com, Watson Wyatt Worldwide, Global Pension Study, 2009

Notes: Japan. For 2007 there are not reliable data. In 2003 according to Watson Wyatt Worldwide, Global Pension Study, 2009, the assets allocation was almost the same as in 2008.

The cost of an immediate annuity of 1000 Yen paid monthly at Standard Retirement Age*Table 2*

Women age at year 2008	Accrued value of net assets (without improvement in life expectancy)	Accrued value of net assets (with improvement in life expectancy)	The cost of the annuity when governmental bonds with an real annual interest rate of 5.0% are allocated in special government bonds for the pension fund's portfolio in proportion of:		
			20%	25%	30%
20	174319	188182	181720	180266	178651
25	174319	187307	180913	179473	177874
30	174319	185973	179679	178261	176687
35	174319	184840	178630	177231	175677
40	174319	183847	177710	176327	174791
45	174319	182516	176477	175116	173603
50	174319	181324	175372	174029	172538
55	174319	180113	174247	172924	171453
60	174319	178875	173096	171792	170343

Man age at year 2008	Accrued value of net assets (without improvement in life expectancy)	Accrued value of net assets (with improvement in life expectancy)	The cost of the annuity when governmental bonds with an real annual interest rate of 5.0% are allocated in special government bonds for the pension fund's portfolio in proportion of:		
			20%	25%	30%
20	134863	154840	150542	149568	148483
25	134863	153156	148953	148001	146940
30	134863	151471	147363	146431	145393
35	134863	149767	145753	144842	143828
40	134863	148044	144124	143234	142243
45	134863	146303	142476	141607	140639
50	134863	144545	140810	139962	139017
55	134863	142768	139126	138298	137376
60	134863	140975	137424	136617	135718
65	134863	139166	135706	134919	134043

JOINT NATURAL DISASTERS RISK FINANCING IN ROMANIA – AN ECONOMIC STABILITY FACTOR

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***Abstract.** Protection against the effects of natural disasters requires the existence of substantial financial funds at the government disposal. Under the conditions of the current world economic crisis, existing resources are totally inadequate. A viable solution for overcoming this difficulty is to use a mix of additional disaster risk financing sources, their proper management being an economic stability factor. In support of these affirmations, an analysis is made regarding the adequacy and availability in time of the financial resources that can be mobilized at any given moment.*

Keywords: natural disasters; risk; economic stability; source of financing; insurances.

JEL Code: E6.

REL Code: 8M.

1. Short history of natural disasters in Romania

Because of the features of relief, river network and earth structure, Romania is a country exposed to the risk of natural disasters, especially earthquakes, floods, landslides, drought and lately, extreme temperatures. These important sources of risk generate, annually, important damages to individuals, businesses and government sector, Romania being in the 34th place in top of the 50 countries of the world, with over 3.48 billion USD economic losses recorded between 1991-2005 (<http://www.unisdr.org>, 2009). Of all risk sources, earthquakes and floods caused the greatest losses. Nowadays, due to the increasing number of population and economic activity in areas with high exposure but also to the increased costs of reconstruction, the economic losses, in the event of an earthquake similar to that of 1977, can be several times higher.

Taking measures to prevent, limit and mitigate the effects of natural disasters upon communities, post-disaster recovery and reconstruction, in order to ensure a climate of normality and civic safety, need significant financial resources which the Romanian Government must have at certain point. Providing them in a very short time and with low costs implies the existence of a risk financing strategy in case of natural disasters at national level. This strategy is the key in relation to the creation, allocation and efficient use of the national public budget resources in case of disaster and it is based on specific instruments and financing sources.

This article is an analysis of the adequacy and availability of the alternative risk financing sources in case of natural disasters in Romania, proving that their combined use is, under certain conditions, a factor for economic stability.

2. Stages of post-disaster recovery process

At present, Romania, like most states of the world, has a deficit in the national public budget. Regarding the natural disasters risk financing, the budgetary implications derived from the financing needs faced by the government during the three main stages of post-disaster recovery process (Ghesquiere, Mahul, 2007, pp. 9-10). According to the authors, these stages are:

2.1 The relief stage extending over a period of up to three months after disaster occurrence and includes the relief provided to the affected population, in order to ensure basic

needs for shelters, food and medical attention. The costs of these actions are difficult to estimate in the pre-disaster period, as long as they depend on the disaster specific features (place of occurrence, intensity, time of the year – summer or winter, during the day – day or night etc.), but they are relatively small compared with those in later stages of early recovery and reconstruction. These costs can be estimated based on a *scenario analysis* developed by professionals. Although these costs are limited, they should be funded in a very short time (at a few hours) after the disaster's occurrence. In this case, the government's ability to mobilize these resources on very short term should be a key element of risk financing strategy.

2.2 *Early recovery stage* comes after the relief stage and may last to nine months after the disaster occurrence. This step is crucial for limiting secondary losses and ensure the beginning the reconstruction phase in the shortest time. This includes mainly activities related to emergency restoration of infrastructure functioning for vital public services (water and electricity supply, rebuilding the main transportation lines etc.) Also, specialized firms will be leveraged to design infrastructure works to be carried out on during the reconstruction phase. In terms of determining the costs are several techniques, including *catastrophic risk models*, that can simulate the impact of natural disasters on infrastructure and then provide estimates about the damage. Such models can be used to assess the number of people likely to lose their homes and the number of buildings to be rebuilt.

2.3 *The reconstruction stage* is the longest and the most expensive stage, reconstruction is beginning several months after disaster occurrence through rehabilitation of emergency disaster strategic infrastructure, continuing, even decades, the rehabilitation or reconstruction of housing, utilities, administrative buildings, the necessary means to ensure education and health, transport routes etc. In most cases, the government will subsidize the reconstruction of private properties and, in particular, the housing of low-income families who otherwise can not allow such costs. The *catastrophe risk modeling techniques* can be used to estimate the potential damages to infrastructure and to public and private buildings. They may provide, for each group of assets, probable maximum loss for each return period established, which may help the authorities to assess the budgetary needs caused by a potentially catastrophic event. The parallel use of risk scenarios analysis and catastrophe risk modeling can help authorities to better understand what could be the potential needs that might arise throughout the post-disaster period.

3. Disaster risk financing strategies

In specific international literature there are two approaches regarding disaster risk financing strategies: ex-ante or pre-disaster financing and ex-post or post-disaster financing. (Mahul, Gurenko, 2006, pp.7-8). Differences between these two financing strategies refer to the moment of completed financial arrangements that ensure the necessary resources and the type of used financing sources. Thus, in ex-ante approach the financial arrangements are completed before the disaster occurrence, unlike ex-post financing when such financial arrangements are completed after the disaster occurrence. According to Mahul and Gurenko unlike the ex-ante financing strategy, ex-post approach presents a number of disadvantages, as follows:

- *it is inefficient* due to the lack of advance resource allocation planning, which prevents the availability of necessary funds immediately after the disaster. However, completion of arrangements relating to financial assistance and support received from various donors requires a fairly long period of time;
- *it is ineffective* as allocation of resources after the disaster occurrence can be made ad-hoc, after political or bureaucratic criteria by which the financial funds may be diverted from projects or programs for which they were designed;
- *it is insufficient*, the amount of resources available for relief and reconstruction is below the required level, even for the existence of loans or grants received from various international financial institutions.

It should be noted that in designing of a disaster risk financing strategy is necessary to take into account a number of specific factors to each country. For Romania, these factors could be:

- financing needs, whose volume depends on the return period of the event, for example 40, 100 or 200 years;
- the concrete conditions of the economy and the national public budget at a specific moment, such as the existing debt or the impact on meeting the convergence criteria for euro adoption, in the event of contracting an additional public debt;
- the emergence of conflicts in the allocation of resources at national level, due to the postponement of financial support for the ongoing projects;
- the cost and availability of different financing sources.

4. Analysis of the sufficiency and availability of post-disaster financing sources

In realizing of this scientific approach we begin with the data contained in Table 1 below where Ghesquiere and Mahul present a timing of the financing sources that can be used in case of disaster, grouped by funding strategy adopted. The analysis will be done by studying the needed time for its establishment or access and in terms of sufficiency, in the light of specific conditions of Romania.

To begin with, totally different funding sources can be noted for the two types of financing strategies. Thus, in case of ex-ante financing there are used, in addition to risk transfer instruments (parametric and traditional insurances), reserve funds and contingent debt, while ex-post the strategy it is based on domestic and external credit and assistance received from various donors and budget contingencies.

Since funding sources vary depending on the adopted strategy, it can be seen that their availability in time is different. If ex-ante financing, except for traditional insurances, requiring the deployment of a damage evaluation process extending over a certain period of time, other resources can be mobilized immediately after the disaster, because the financial arrangements have been settled. This is a great advantage because the necessary liquidities are provided in a moment when the financing needs exceed the existing resources.

It is not the same with the time availability of financing sources in the ex-post approach where, as seen in Table 1, they become available at different moments of time after the disaster occurrence.

Availability of financial instruments over time

Table 1

	Short term (1-3 months)	Middle term (3-9 months)	Long term (over 9 months)
Ex-post financing			
Budget contingencies	■	■	
Donor assistance (relief)		■	■
Budget reallocations	■	■	■
Domestic credit		■	■
External credit		■	■
Donor assistance (reconstruction)			■
Tax increase			■
Ex-ante financing			
Reserve funds	■	■	■
Contingent debt	■	■	■
Parametric insurances	■	■	■
Traditional insurances	■	■	■

Source: Ghesquiere, Mahul (2007).

Analysis of the sufficiency and availability of post-disaster financing sources will be undertaken in the order of their description in table 1, as follows:

4.1. *Budget contingencies* represent amounts kept in reserve to guard against possible losses (Popa, et al., 2006, p. 147).

Thus, according to the Law No. 500/2002 of public finances in Romania, the State budget contains the *Government Budget Reserve Fund*, for financing urgent or unforeseen expenditures, arising during the budgetary year and the *Government Intervention Fund*, which finances urgent actions, in order to mitigate the effects of natural disasters and support the affected individuals. These funds have the advantage that they are time *effective*, since they can be mobilized in a relatively short period, based on government decisions, but also the disadvantage of *insufficiency* in the event of major disasters. This disadvantage is generated by the actual purpose of the funds' establishment, which is to cover losses caused by natural disasters of low severity and high recurrence.

4.2. *Donor assistance* from individuals or legal entities, resident or non-resident. Both during the stage of support, assistance and the reconstruction, this financing source is characterized by a certain delay, between the time of the need for funding and the actual transfer of cash to the disaster affected country, given the time required to meet all applicable legal formalities.

An example may be the European Union Solidarity Fund. This fund was established by (EC) Regulation no.2012/2002 and is intended to support Member States or the state whose accession to the European Union is being negotiated, called "beneficiary state", based on request, when on the territory of this state there is a major natural disaster that has serious repercussions on living conditions, the natural environment or the economy of one or more regions or countries. A major catastrophe is any catastrophe that causes damages whose estimate is more than 3 billion euro, at 2002 prices, or more than 0.6% of GNP.

Romania benefited of these EU's financial resources. When, in July 2008 when a large part of the territory was affected by heavy rainfalls, leading to severe floods and landslides, the Romanian authorities have requested financial assistance from the EU Solidarity Fund, within 10 weeks, as provided in Article 4 of Council (EC) Regulation no.2012/2002. Following, within the European Union's general budget for 2009, 11.78 million Euros were allocated in commitment and payment loans. This amount is calculated and represents 2.5% of the total direct damages suffered by Romania (471.42 million Euros).

Given the above mentioned, results this financing form is characterized by *inefficiency*, time wise, liquidities being provided after more than one year from the occurrence of a disaster and *insufficiency*, since the amount allocated by the European Union is only 2.5% of the total damages suffered by Romania.

4.3. *Budgetary reallocations*. These operations do not involve, in all cases, a supplement to the approved budget, but merely the structure modification by reducing budgetary allocations assigned to a particular purpose and the increase, by the same amount, of allocations to fund other goals, according to the emerging needs. For instance, under the laws applicable to public finances, during the budget year the Government's Intervention Fund can be supplemented from the Government Budget Reserve Fund according to the needs to ensure the mitigation natural disasters effects.

And in this case shows a certain delay of time required to develop a government decision approving the reallocation of amounts between the two funds.

Analyzing this funding source we can say that it is *inefficient* in terms of resources' availability in time, is *insufficient* in terms of their volume, and not least, is *ineffective*, as this may generate conflicts in the allocation of funds due to the postponement or diversion of resources from projects and programs to which they were assigned.

4.4. *Domestic/external credit*, are obligations arising from contracts on the domestic and/or international financial market by which the State or central government or local authorities, as borrowers, obtain financial funds from an individual or a lending legal entity

and they commit to repay it with interest and other costs, within a specified period (Moşteanu, et al., 2008, pp. 183-217).

Both domestic credit and external credit, whether is the issue of government bonds or loan agreements with domestic or international financial institutions, require compliance with procedures, whose duration can span over several months. For external loans, the time required is even greater, because the loan agreements are ratified by the Romanian Parliament by law.

This financing source is *inefficient*, time wise, *insufficient* in terms of the volume, but it is *effective* because the funds may not have receive other destination than the one approved by the loan agreement.

4.5. *Tax increase*. This measure is taken exceptionally in low-income states, as is the case of Romania, because it has negative implications for living standards, general investments and economic growth. In contrast, in developed countries economic losses from natural disasters are typically funded through combined financial arrangements, made between private insurance industry and a tax system, based on a high level of taxation (Mahul, Gurenko, 2006, p.9).

Tax increase is *inefficient* regarding the time availability because it requires a fairly long period of time to amend tax legislation.

4.6. *Reserve Funds* are drawn out of the country's own resources in order to cover the resource gap defined as a range of losses caused by the disaster which are founded neither by self-retention because these potential losses are beyond the financial capacity of the country, nor by the international community because they are too small to attract the attention of the international community (Mahul, Gurenko, 2006, p. 11).

These reserve funds, together with a contingent capital and risk transfer instruments, represent an important element of the ex-ante strategy funding.

Unlike budget contingency funds, up to fund losses caused by events of low intensity but high frequency, reserve funds have a clear and precise landing namely to provide the required liquidity in the event of major natural disasters, with large return periods, tens or hundreds of years, in which case, the potential losses are very high. Another important feature of the reserve funds is their systematic supply through annual contributions from the state budget in order to accumulate reserves over time, depending on the time of the considered event return period.

This funding source is *efficient* in terms of time availability, becomes, through successive accumulations over time *sufficient* in terms of its volume, and is also *effective* because the funds may not receive other purpose than that has been established.

4.7. *Contingent debt or contingent capital* is an alternative means of risk transfer through which capital funding is provided to the client after the occurrence of some risk-related loss, often on pre-loss financing terms. It is intended to provide the customer immediate and cheaper liquidity when it is needed, as is the case of natural disaster (Cummins, Mahul, 2009, p.172).

In this context, one of the most recent and favorable financing instruments is *Deferred Drawdown Option for Catastrophe Risk (CAT DDO)*, specialized product of the IBRD. It works like a credit line and is designed to provide a source immediate funding for natural disaster (<http://treasury.worldbank.org>, 2009).

This new financial instrument is *efficient* because it provides immediate liquidity, while other forms of assistance are involved, after the *declaration of emergency* by the State and *effective* because the borrower is obliged to take necessary measures to develop its program in disaster risk management, to be implemented in accordance with standards required by IBRD. On the other hand, they have the disadvantage of *insufficiency* because the maximum amount borrowed is 0.25% of GDP or the equivalent of 500 million USD, which in most cases is below the losses. This new financing facility has already been accessed by Costa

Rica, IBRD management approving them, on September 16, 2008, a loan of 65 million USD for a period of 29.5 years with a grace period of 5 years.

In Romania, by entry into force of the Law no. 260/2008 on compulsory insurance of dwellings against earthquakes, landslides or flooding, has paved the way for developing a strategy for ex-ante natural disasters risk financing, using transfer risk instruments. But the problem is solved only in part, because the legislation covers only compulsory insurance of dwellings owned by individuals or legal entities and not the entire range of possible losses caused by a disaster, namely the rehabilitation of infrastructure, administrative buildings, railway transportation, utilities, media necessary to conduct education, etc., being necessary to find new complementary sources of funding.

Although Romania is exposed to risk of natural disasters, particularly earthquakes and floods, so far there have not been taken steps to conclude arrangements with IBRD, in order to access, if needed, the necessary funding, using CAT DDO.

4.8. *Parametric insurances* are index-based insurance contracts that make payouts based on the exact location and level of intensity of an adverse natural event (wind speed, earthquake intensity, rainfall level) characterizing the insured risk. Unlike traditional insurance settlements that require an assessment of individual losses on the ground, parametric insurance relies on an assessment of losses using a predefined formula based on variables that are exogenous to both the individual policyholder and the insurer, but have a strong correlation to individual losses (Cummins, Mahul, 2009, p. 100).

They have the advantage of time *efficiency*, because it is not necessary to evaluate the level of incurred losses, the damages payment is promptly accomplished in conditions that the insured risk is in excess as in the contract. As for the sufficiency of funds it is questionable, as there might be the case that the paid compensation could be higher than the caused damages, or, in contrary, it might be lower, being determined based on a predefined formula.

Currently, in Romania, this form of insurance for protection against natural disasters is not used.

4.9. *Traditional insurances*, in what concerns disaster risk, come to complete the compulsory insurance of dwellings. Therefore, if the actual value of the dwellings is higher than the maximum insured amount, that is 20.000 euro, the policyholder can be insured optionally for the difference between the two. This type of insurance has the disadvantage of *inefficiency*, in terms of resource availability in time, because the necessary time for assessing and elaborating damage application.

5. Conclusions

The analysis shows that, currently, the impact of a major natural disaster upon the national public budget of Romania is especially severe for the following reasons:

- *lack* of a modern approach, ex-ante, on disaster risk financing, except for a shy start, which is the law for compulsory insurance of dwellings against earthquakes, landslides or floods, that is not yet operational;
- *inefficiency*, in terms of availability of time, of the funding sources that can be mobilized at any given time, which is specific to the fullest extent of ex-post financing strategies;
- *insufficient* funding sources that can be deployed in case of a disaster.

Since natural disasters are inevitable, additional sources of financing must be found in order to ensure the protection of property and people in case of disaster, their combined use ensuring equilibrium in public finances of the State. This funding mix should include:

- a sufficient *reserve fund* that can support substantial financial effort for a catastrophic event with return period of about 40 years;
- *ex-ante financing instruments*, CAT DDO and parametric insurances, that finance losses, other than those related to dwellings;
- *compulsory insurance of dwellings*.

This solution is viable and represents a factor of economic stability if the extent of the disaster risk financing is provided at an appropriate level. Accordingly, the ongoing projects and programs will not be affected due to the postponement or diversion of funds intended for them to specific activities for protection against disasters, ensuring continuity and smooth operation of economic and social activity.

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Section IV
Corporate finance

IS MANAGEMENT TURNOVER DETERMINED BY FINANCIAL STRUCTURE?

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***Abstract.** The objectives of enterprises, their internal organization and the environment in which they operate evolve permanently; thus, the risks they are exposed to permanently change, influencing performance and even putting their existence in danger. Therefore, corporate governance may sometimes refer to extreme governing actions, such as control takeovers or replacing from office underperforming managers. After presenting several current studies on this subject, the paper aims to detect a statistical connection between the financing decision and management turnover.*

Keywords: financing decision; leverage; chief executive officer; management turnover, corporate governance.

JEL Code: G32.

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1. Introduction

One way of disciplining corporate managers' behavior, in order to restore proper functioning of the corporate governance mechanism, is replacing them from office, a phenomenon that is called "management turnover". A multitude of studies in this area examined this phenomenon.

According to undertaken research (Denis et al., 1997, pp. 193-221), the probability of top executive turnover is strongly determined by ownership structure. Particularly, this probability is negatively related to the ownership stake of officers and directors, and positively related to the presence of a „blockholder”, from outside the corporation. A „blockholder” is defined as the owner of a considerable percentage of a company’s shares, who usually has the power to influence the company’s decisions, by means of his voting rights.

To synthesise, the probability of a change in top executive is very little sensitive to stock price performance, in firms with high managerial ownership. Also, an unusually intense rate of control was identified in the twelve months prior to top executive turnover, namely – chief executive officers (Denis et al., 1997, pp. 193-221).

Thus, ownership structure has an important influence on internal monitoring efforts and this influence stems from the effect that ownership structure has on corporate control threats, coming from outside the firm.

In a very recent paper, Liao, Chen, Jing and Sun (2009) have conducted an empirical study on how restrictions imposed by the Chinese state affect (Liao et al., 2009, pp. 15-28) top management turnover, for the firms listed on the Chinese capital market, during the period 2000-2005. Under information asymmetry conditions, the managers of state-owned enterprises can use state-imposed policy burdens as a motivation for low recorded performance, holding the government accountable for this defect.

This argument implies that performance volatility of state-owned enterprises decreases as policy burdens increase, and that this impact depends on the extent of information asymmetry. Moreover, the authors conclude (Liao et al., 2009, pp. 15-28) that chairman

turnover of Chinese companies is significantly determined by different corporate performance measures, both for state-controlled firms and for private firms.

2. Methodology for empirical analysis

The proposed analysis includes studying the relationship between firm's financial structure and the office replacement rate of mandated managers, called "management turnover" in literature. The econometric technique that is used is the simple regression. In general, a regression is based on the premise that variables designating studied phenomena are in a certain relation to each other, through simple or more complex mechanisms. When the explained variable of regression is a binary variable, the regression model is called *linear probability model*.

Financial structure is described by the long-term debt and the financial lever, and it is synthesized by the independent variable (X). The dependent variable (Y), which is considered for analysis, is management turnover. For quantifying it we used a **qualitative binary variable**, which can record two discrete values:

- *value 1*: for the cases where the manager is retained in office;
- *value 0*: for the cases where the manager is replaced from office.

The database is structured around the following fundamental coordinates, supported by the variables between which we analyze the dependency:

- long-term debt and financial lever – for defining X;
- binary variable – for defining Y.

Depending on the values the independent variable may take, the empirical analysis aims to perform two simple regressions:

- for percentage values, where: X= financial lever and Y= binary variable;
- for absolute values, where X= long-term debt and Y= binary variable.

Thus we considered that a company's financial structure can be expressed both in absolute values, by the amount of debt, and in percentage values, by using a financial leverage ratio. In order to quantify leverage, a multitude of leverage ratios can be used (Brezeanu, 2007, p. 331), which divide contracted debts (or a part of them) by total liabilities (or by shareholders' equity).

We selected for analysis the long-term debt because they are part of the permanent capital of the enterprise, contributing in a steady manner to the fulfillment of a company's major objective, with implications for corporate governance. Long-term debt is synonymous with financial debt, long-term and medium-term debt, or with debt contracted on a greater than one year term. By dividing long-term debt by shareholders' equity we obtain the financial lever, which is usually noted with L:

$$L = \frac{\text{Long - term debt}}{\text{Shareholders' equity}}$$

The objective of analysis is to determine the influence that leverage exerts on replacing managers from office. The generic structure of the database required for the qualitative analysis is the following:

Database structure

Table 1

Company	Year	Binary variable	Long-term debt	Financial lever
.....

In order to collect the necessary data for the independent variable, and in the absence of a unique and complete data source, we directed our attention over data and information posted on websites of institutions such as the Bucharest Stock Exchange and the National Securities Commission. Another valuable source is the website of the investment advisory firm KTD Invest S.A.

The database contains the cumulative recordings of values for the previously described explanatory variables, for companies listed at the first 3 tiers of the Bucharest Stock Exchange, over a period of 4 years, namely the interval (2005-2008). Collected data is annual and had been taken from the companies' balance sheets. The regression is performed on global data series, with values recorded for all the sampled companies.

The firms BRK, BCM and CGC were excluded from the sample. As argument, BRK is a financial intermediation company; therefore its financial leverage is influenced by a series of specific financial regulations; and for BCM and CGC, the available data is not sufficient.

For banks (TLV, BCC and BRD) and for the insurance company ASA, in the absence of accounting records consistent with the structure of the database, we assumed the liabilities item „debt regarding credit institutions” as representing long-term debt, and the liabilities item „equity subscribed” – as representing equity. In particular, for ASA we collected the total debt data, because of the absence of a detailed debt recording.

Let it be noted that for firms where there is no data available for the year 2008 (or for any other year), the recordings of 2007 (or previous year recordings) were taken into account. For the special case of TRP, where data is available only for 2007 and 2008, for completing the missing values from years 2005 and 2006 we used the average value of 2007 and 2008 recordings. Also, null values from the *long-term debt* column were replaced with recordings from the liabilities item „total debt”, when there is no value available for *long-term debt*, from any of the previous years, to replace the null value.

In order to collect the necessary data for the qualitative variable, a questionnaire was made up in which the respondent, a juridical person, was required to indicate if, on annual basis, during 2005-2008, the CEO (chief executive officer) was retained or replaced from office. The questionnaire was sent to the companies whose shares are quoted at the first three tiers of the Bucharest Stock Exchange. The 4-year time period, under analysis, was thus considered to be roughly correlated with the time period for which financial-accounting data is available.

It should be noted that we received response only from the following issuers from the Bucharest Stock Exchange: BRD, SIF1, SIF2, SNP, SOCP, ALU, APC, BRM, COS, VNC. Because collected data is insufficient for conducting a relevant regression, we decided to supplement missing values by randomly generating values 0 and 1.

3. Analysis results

The results of the regression analysis with a binary dependent variable – *linear probability model* with **the independent variable expressed in percentage values** (financial lever) are presented in the following tables:

Regression results for percentage values

Table 2

<i>Regression Statistics</i>	
Multiple R	0.048059891
R Square	0.002309753
Adjusted R Square	-0.001498225
Standard Error	0.497628341
Observations	264

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.150203943	0.150203943	0.606556304	0.436790217
Residual	262	64.88009909	0.247633966		
Total	263	65.03030303			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	
Intercept	0.559104711	0.030687515	18.2192891	1.7963E-48	
0.142301275	0.005921916	0.00760373	0.778817247	0.436790217	

On these results we have to state the following essential comments:

- Multiple R shows a very weak link between the two variables;
- R Square indicates a very small proportion in which the chief executive officer turnover decision is explained by the financial lever;
- P-value > 5%, therefore we cannot reject the null hypothesis which states that the regression parameter is equal to 0; consequently, there is no real connection between the management turnover decision and financial leverage;
- Significance F > 5%, which implies that *the regression model is not valid*; the influence of the explanatory variable on the explained variable is insignificant.

The results of the regression analysis with a binary dependent variable – *linear probability model* with the independent variable expressed in absolute values (long-term debt) can be found in the following tables:

Regression results for absolute values

Table 3

Regression Statistics	
Multiple R	0.112931453
R Square	0.012753513
Adjusted R Square	0.008985397
Standard Error	0.495881174
Observations	264

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.832263349	0.832263	3.384586	0.066939944
Residual	262	64.42531241	0.245898		
Total	263	65.25757576			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	
Intercept	0,538724282	0.031494464	17.10536	1.47E-44	
150101676	9,07298E-11	4.93171E-11	1.839724	0.06694	

On these results we have to note the following essential observations:

- Multiple R indicates a weak link between the two variables;
- according to the R Square result, roughly 1.27% of the chief executive officer turnover decision is explained by the leverage factor – long-term debt;
- P-value is greater than 5%, implying that we cannot reject the null hypothesis which states that the regression coefficient is equal to 0; consequently, there is no real connection between management turnover decision and long-term debt;

- Significance F is greater than 5%, which implies that *the regression model is not valid*; the influence of the independent variable on the dependent variable is statistically insignificant.

4. Conclusions

The study results show that the regression is not valid, in both forms in which it was tested, with the independent variable expressed both in percentage values and in absolute values. There is no real statistical connection between corporate leverage and the decision to replace managers from office.

Accordingly, financial structure has no influence on the functioning of governing and internal control mechanisms, specific to corporate governance, which work in some cases by modifying top management structure.

For further research, the sample should be expanded, especially regarding data on management turnover – a key element of corporate governing.

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PUBLIC ATTITUDES TOWARDS ADVANTAGES AND DISADVANTAGES OF RENEWABLE ENERGY EXPLOITATION

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***Abstract.** In this paper we present the perception of a representative sample of the population connected to the university environment about advantages and disadvantages of renewable energy exploitation. The survey results indicate that the target population is definitively in favor of the renewable resources, and against continuing to produce electricity using the traditional pollutant fossil fuels. Nevertheless, the survey results revealed a lack of information or education for the Romanian students and graduates in regards to how they can contribute to environment protection.*

Keywords: renewable energy; public attitude.

JEL Code: Q42

REL Code: 15G

1. Introduction

Many studies tried to „measure” the consumers’ degree of awareness about different types of energy technology. Devine-Wright (2003) found that people don’t make a correct distinction among renewable energies; this is why, many respondents believed „natural gas” to be a form of renewable energy, while „biomass” is not.

DTI, Scottish Executive et al. (2003) point to the idea that people do not understand the correct meaning of the term „renewable energy”; for example, only 4% of the general public and 3% of an „informed” sample used the term „renewable energy” in one study conducted with a representative sample. When it comes to the sources of information, the difference between rural and urban areas is present. For instance, in rural areas, local newspapers play a significant role (Braunholtz, 2003, DTI, Scottish Executive et al., 2003, MORI Social Research Institute for Regen SW, 2004), while TV is the major source of information for all the respondents.

Several studies such as: Carlson et al. (1996), Kilbourne et al. (1997), Zinkhan, Carlson (1997) express the concern about the scarcity of the resources if the present standard of living will continue to be maintained without no adjustment. The energy consumption is a major problem considering that the largest source of pollution is the power generation as is stated in Dunn (1997). Brown et al. (1994) point out that the demand for fossil fuel increases every day, but most part of the consumers are willing to reward organizations that intend to address environmental concerns (Carlson et al. 1993). Other studies (Lecky, 1993, Matulich et al., 1995) show that environmentally friendly products are what a responsible consumer looks for.

Renewable forms of energy are the solution to the current environmental problems and companies started to develop environmentally friendly products (Arnst et al., 1997). This is why, 23 electric power utilities from US started to market renewable forms of energy to consumers at a premium price (Ottman, 1997). Kozloff (1994) states that renewable technologies represent only 9% of US energy consumption in 1992 and are expected not to exceed 11% by 2010 if current market trends persist. The low share is due to the fact that energy corporations were not very successful at marketing renewable energy directly to consumers (Gleason et al. 1996, Rader, Norgaard, 1996).

Farhar (1996) indicates that 56–80% of respondents to national surveys say that they would pay a premium for environmental protection while Gleason et al. (1996) suggest that less than 5% of the residential market can be expected to actually pay a premium for renewable power.

2. Sampling details applicable for the survey and the research methodology

The goal of the questionnaire was to investigate the perception of a representative sample of the population connected to the university environment, about the renewable energy resources. By the responses offered by 375 participants, the proposed goal is considered achieved. The survey field was conducted in October 2009, during 1 week period of time.

The questionnaire applied includes 12 questions, which can be grouped in the following categories:

- Demographic questions, asking the respondents about age, gender, occupation, income, and education. The main purpose of including those questions is for being able to weight the results, and get in the end confidence that the sample used for interpreting the results ensures is representative.
- Specific questions, asking the respondents about the relevant aspects regarding the renewable energy:
 - How informed they consider to be regarding the possibilities of exploiting the renewable sources of energy, and which are their sources of information in this area;
 - How important are for them 9 different aspects related to environment protection, related to recycling, or related to paying more for helping decreasing the environment pollution;
 - Their agreement or disagreement regarding several general statements related to renewable energy policies that the local or national authorities could implement in the future;
 - Creating an hierarchy for their preference over five possible renewable sources of energy that could be exploited: wind, solar, biomass, geothermal or hydro energy;
 - One optional open question – allowing the respondents to comment more on the survey topics.

The data collection methodology was an offline type, namely the printed questionnaires were distributed to student respondents from the Academy of Economic Studies Bucharest, and collected after approximately 15 minutes of individual thinking, time considered for giving the responses. The population asked to fill in the survey answers was not targeted so that to respect some quotas from the start. On the contrary, after enough answers were collected (over 440), during the responses processing phase, were applied the appropriate weights, so that to get in the end a representative sample among the university students. In the next section are given more details about the representative sample.

In order to ensure the credibility of the results gathered from the survey field, the authors have considered two criteria for the representative character of the sample analyzed:

- The number of students vs. number of graduating students. The split between the two categories of the analyzed sample should match the valid split at national level in Romania.
- The number of males respondents vs. number of female respondents. The split between the two categories of the analyzed sample should match the valid split at national level in Romania per students, respectively per number of graduating students.

For an extended purpose of the opinion survey, such as to extend the results to the entire Romanian population, other representative criteria should have been taken into account:

- Region for the respondents;
- Rural or urban provenience of the respondent;
- Household size for the respondent;
- Education level for the respondent;
- Age and gender of the respondent;
- Etc.

This research is a pilot one with a more limited purpose: to investigate the opinion of representative population among the students and the recently graduates people. In the future, the authors intend to conduct a more complex research with more ambitious targets and much harder to collect the data, based on the learning & experience of this current research.

3. Survey results and interpretation

The first renewable energy specific question from the questionnaire was about respondents' awareness about exploiting renewable sources of energy. In average, on a scale from 1 to 7, where 1 means very little aware and 7 means very much aware, the respondents scored 3.77, which is a moderate score. By applying the adjustment coefficients for representatively, the average score becomes 3.80 – indicating again the moderate awareness among the Romanian students and graduates about the existing possibilities of exploiting the renewable sources of energy. Most of the respondents have scored this Q.7.1 question with 4 – a medium score on the chosen scale (24.23% of the respondents).

Question # 9 from the questionnaire has 9 sub-questions, and each has collected the answers from the respondents with a scale from 1 to 7 (1 = very little, 7 = very much, and 2 to 6 – intermediate preferences, similar scale as the one for the question Q.7.1).

Q.9.1 – preoccupation for environment protection;

Q.9.2 – preoccupation for the level of pollution in the place of living;

Q.9.3 – preoccupation for environment pollution when choosing the goods to buy;

Q.9.4 – preoccupation for recycling (paper, plastic, textiles...);

Q.9.5 – agreement to pay more for the electricity produced from renewable sources;

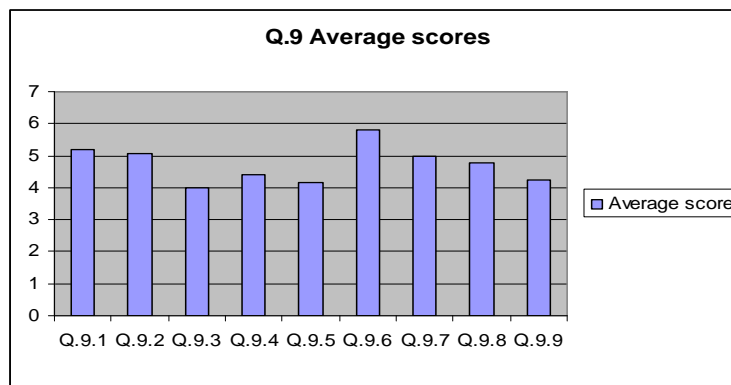
Q.9.6 – agreement to setup wind turbines in the place of living;

Q.9.7 – willingness to acquire photovoltaic or geothermal electricity captures for own household usage;

Q.9.8 – agreement to pay today more for the electricity produced from renewable sources, knowing that in the future the perspective is that the invoice value decreases;

Q.9.9 – agreement to include in the electricity invoice paid a part of the investment cost into renewable energy project development;

A graphical representation of all the 9 computed averages scores is presented below (for Q.9.1 to Q.9.9):



From the results, we can see the following top 3 preferences scored by the respondents:

a. *First preference*, and the biggest score achieved: Q.9.6 – agreement to setup wind turbines in the place of living (5.8 score in average, on a scale from 1 to 7, where 1 means very little, and 7 means very much)

b. *Second preference*, and the second big score achieved: Q.9.1 – preoccupation for environment protection (5.2 score in average, on a scale from 1 to 7, where 1 means very little, and 7 means very much)

c. *Third preference*, and the third big score achieved: Q.9.2 – preoccupation for the level of pollution in the place of living (5.07 score in average, on a scale from 1 to 7, where 1 means very little, and 7 means very much)

On the other hand the lowest preference / interest declared by the respondents is for Q.9.3 – preoccupation for environment pollution when choosing the goods to buy (4.0 score in average, on a scale from 1 to 7, where 1 means very little, and 7 means very much). This result might be caused by the lack of information or education for the Romanian students and graduates in regards to how they can contribute to environment protection with every choice they are making when buying the day to day goods.

The next question from the questionnaire, question # 10, is asking in even greater details some aspects of the renewable resources exploitation. Question #10 consists in 8 statements on the renewable energy topic (Q.10.1 to Q.10.8), and asks the respondents to score their agreement or disagreement on each statement. (1 = total disagreement, 7 = total agreement). These statements are the following:

Q.10.1 – agreement that the electricity producers should use fossil fuels – cheaper and more pollutant (coal, oil, gas), rather than renewable sources – more expensive but less pollutant;

Q.10.2 – agreement that the authorities should subsidy the activity of producing electricity from renewable sources, as well as part of the invoices paid by the final consumers;

Q.10.3 – agreement that the banks should credit in advantageous conditions the investment projects in renewable energy;

Q.10.4 – agreement that, by exploiting the renewable sources of energy, new jobs will be created, and will have a positive economical impact on the local area where the investment is made;

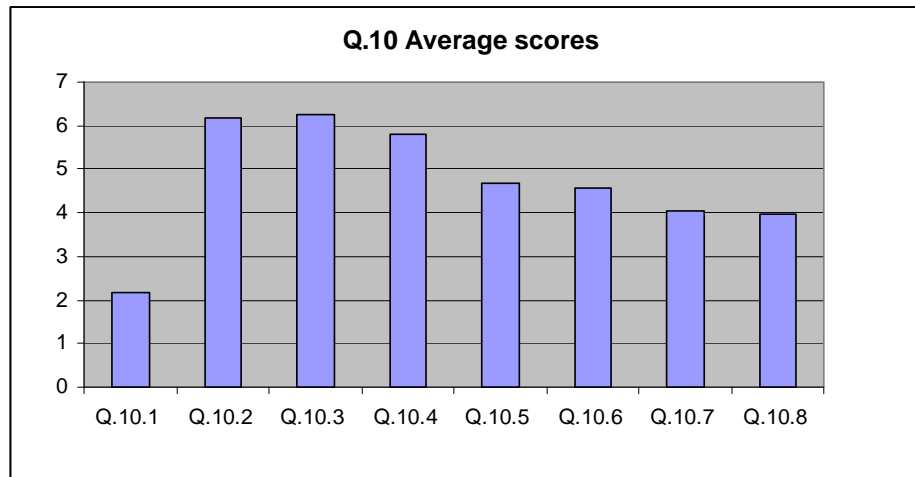
Q.10.5 – agreement that the electricity produced from renewable sources (wind, solar, biomass, hydro, geothermal) is cheaper then the electricity produced from fossil fuels (gas, coal, oil);

Q.10.6 – agreement that the wind turbines setup impact (visual aspect, audio pollution) might be a problem that should be careful analyzed before taking the decision to startup such an investment project in a local area;

Q.10.7 – agreement that the real estate prices will decrease in a local area once wind turbines or biomass/geothermal technologies would be setup;

Q.10.8 – agreement that by exploiting renewable resources of energy in a given local area, the inhabitants from the proximity would be affected (an unaesthetic visual aspect, audio pollution, natural habitats affected, etc.)

A graphical representation of all the 8 computed averages scores is presented below (for Q.10.1 to Q.10.8):



From the above results, we can see that two of the total scores are the highest and the only two ones with an average over 6, all others having the average score less than 6:

First preference, and the biggest score achieved: Q.10.3 – agreement that the banks should credit in advantageous conditions the investment projects in renewable energy (6.25 score in average, on a scale from 1 to 7, where 1 means total disagreement, and 7 means total agreement)

Second preference, and the second big score achieved: Q.10.2 – agreement that the authorities should subsidy the activity of producing electricity from renewable sources, as well as part of the invoices paid by the final consumers (6.17 score in average, on a scale from 1 to 7, where 1 means total disagreement, and 7 means total agreement)

The results indicate a clear agreement that the activity of producing electricity from renewable resources in Romania should be supported primarily by the banks sector through advantageous credits, and secondly by the authorities through subsidies. A big score indicating a rather strong agreement was obtained for Q.10.4 as well – average score of 5.8 (Q.10.4 – agreement that by exploiting the renewable sources of energy, new jobs will be created, and will have a positive economical impact on the local area where the investment is made).

Close average scores of 4.67 and, respectively, 4.56, and still indicating agreement and not disagreement of the respondents, were obtained for Q.10.5 – agreement that the electricity produced from renewable sources (wind, solar, biomass, hydro, geothermal) is cheaper than the electricity produced from fossil fuels (gas, coal, oil), and respectively for Q.10.6 – agreement that the wind turbines construction and exploitation might be a problem that should be careful analyzed before taking the decision to startup such an investment project in a local area. For Q.10.5, the result might be caused by the perception that the natural resources as being renewable/unlimited, they are associated with cheaper electricity producing technologies. Nevertheless, the public is aware in a certain degree that some of the renewable technologies for electricity are supposing huge amounts invested (i.e. the solar energy), and probably that's why the score didn't show a total agreement for Q.10.5 question.

The results for the sub-question Q.10.7 showed a neutral perception – people are neither agreeing or disagreeing (Q.10.7 – agreement that the real estate prices will decrease in a local area once wind turbines or biomass/geothermal technologies would be setup; average score obtained: 4.05, on a scale from 1 to 7). Same neutral perception was recorded for Q.10.8 as well (Q.10.8 – agreement that by exploiting renewable resources of energy in a given local area, the inhabitants from the proximity would be affected; average score obtained: 3.98, on a scale from 1 to 7).

The only sub-question for which the respondents have expressed a clear disagreement was Q.10.1 –the electricity producers should use fossil fuels – cheaper and more pollutant

(coal, oil, gas), rather than renewable sources – more expensive but less pollutant. The average score obtained of 2.18 on a scale from 1 to 7, where 1 means total disagreement, and 7 means total agreement, confirms once again that the respondents are in favor of the renewable resources, and against continuing to produce electricity using the traditional pollutant fossil fuels.

The last guided question from the survey questionnaire is question # 11, which proposed the respondents five renewable resources and asking them to make a hierarchy of them by scoring from 1 to 5, where 1 means the least important renewable resource, and 5 means the most important renewable resource from the perspective of their exploitation priority for the energy producers. It was proved from the answers that the solar energy is considered the most important renewable energy type, as it obtained the highest total score: 1385 points. The second important resource is considered to be the wind energy, with a score of 1335 points. In the middle of the hierarchy stays the hydro energy, with over 1200 points scored, while on the last two places, at quite a significance difference, are placed the geothermal and respectively the biomass energy (with total scores of 878, respective 764).

4. Conclusions

One conclusion of this study is that the young and high level educated population in Romania (students and recent graduates) is medium informed about the possibility to exploit renewable resources of energy, as opposed to continue to exploit the conventional resources of energy.

Another conclusion is that the target public would strongly agree with setting up in their local area wind turbines for supporting the renewable resources exploitation, and so accepting to be affected by the unaesthetic visual aspect or audio pollution. The results reveal not only that the target population is generically supporting the environment protection idea, but would also accept compromises affecting them directly as individuals, in order to have themselves contributors to the idea implementation.

However, the analysis of responses from the survey does not show a high degree of concern of respondents for avoiding environmental pollution when choosing what goods to buy (an average score obtained for 4 on a scale of 1 to 7 where 1 means very less and 7 means very much). This result could be caused by lack of information or education of students / young graduates in terms of how they can contribute to environmental protection with every choice they make when they buy consumer goods.

The most used source of information for young people in the survey, regarding renewable energy resources and how to exploit them, is the internet (more used than TV and press). Very few respondents indicated that they got this information at school, at specialized conferences or at the workshops. The target population would want to see happening in Romania the investment projects in renewable energy, with the involvement of the banking sector, and with a subsidies scheme implemented by the authorities.

Acknowledgements

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STUDY REGARDING THE IMPACT OF THE CORPORATE SOCIAL RESPONSIBILITY UPON FIRMS' FINANCIAL PERFORMANCE

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***Abstract.** In this paper, the authors intend to present a method of measuring corporate social performance (CSP), through a coefficient, and to study the link between this measure of CSP and the financial strength indicators of a company (size and profitability measures), at the level of a sample of Romanian companies listed on Bucharest Stock Exchange, making use of a series of statistic methods such as correlations analysis, principal components analysis, cluster analysis and discriminant analysis. Although in a manner that has limitations, this study has revealed that, at the level of the sample employed, it can be established a positive relationship between CSP and corporate financial performance (CFP), founding toward which indicate the majority of the studies in literature.*

Keywords: corporate social responsibility (CSR); corporate social performance (CSP); corporate financial performance (CFP); CSP-CFP relationship.

JEL Codes: L25, M14, Q01.

REL Codes: 15D, 11Z.

1. Introduction

Both at the scientific research and practical level, at international and, relatively recent, national level, it can be noticed the increase of the interest in corporate social responsibility (CSR) concept, context in which companies are currently more difficult to eschew from acting socially responsible (Aras, Crowther, 2009). According to Sahlin-Andersson (2006), the RSC movement has been identified as a global trend that involves states, international organizations, companies and civil society organizations and which can be observed at the level of regulation framework, that impose new requirements on corporation, of mobilizing the corporate actors for supporting the development aid of states, and of management.

The conceptualization of CSR is not an easy task. This difficulty can emerge from the fact that, as Lindgreen et al. (2009) remarked, CSR has developed under the influence of different theories, including agent theory, institutional theory, firm-based resources theory, stakeholders' theory and others. From a general perspective, Branco and Rodriguez (2006) state that the notion of CSR is related to ethic and moral aspects that regard the corporate behaviour and decision-making process, but the central point consist of identifying those activities in which a firm should engage because they are beneficial or, on the contrary, avoid them because they are harmful to society. The European Commission defines CSR as a concept by which companies integrate social and environmental concerns in their affaires and interaction with the stakeholders, on a voluntary basis (Commission of the European Communities, 2006). Traditionally, involving in social actions was considered the privilege of

the big enterprises, developing and implementing the concept of CSR at the small and medium-sized enterprises level having some particularities (Vintilă, Moscalu, 2009).

The integration of social and environmental aspects in the activity of companies doesn't imply the denial of their business interests, because the first responsibility of companies, as key economic actors, is to produce goods and services wanted by society and to sell them at a profit, on this basis being grounded all the others (legal, ethic and discretionary) responsibilities of the firm (Carroll, 1979). What has changed is the way in which are followed the economic interests of the firms, or, differently said, the way in which companies make profit (The CSR Initiative). As a result, from the companies' perspective, the problem refers to the way in which they can follow their economic interest by considering social responsibility (Branco, Rodriguez, 2006). As regards the motivation of firms to socially engage, Branco and Rodriguez (2006) indicate the existence of two cases, met sometimes in practice as a mix of them, namely: (1) *the normative case*, according to which the socially responsible behaviour of companies is driven by moral principles; and (2) *business case for CSR*, which focuses on the notion of enlightened self-interest, according to which companies follow their economic interest by taking into account social responsibility (Branco, Rodriguez, 2006). In practice, the decision of companies to undertake socially responsible behaviours is determined both by moral reasons and practical goals (Marom, 2006).

In this context, an intensively debated problem in literature is about the relationship between CSP and CFP (Peters and Mullen, 2009). In this article, the authors intend to present a method of measuring corporate financial performance, through a coefficient, and to study the link between this measure of CSP and the financial strength indicators of a company (size and profitability measures), at the level of a sample of Romanian companies listed on Bucharest Stock Exchange. In this sense, a series of statistic methods have been employed such as correlations analysis, principal components analysis, cluster analysis and discriminant analysis. Although in a manner that presents limitations, this study has revealed that, at the level of the sample analyzed, it can be established a positive relationship between corporate social performance (CSP) and corporate financial performance (CFP), founding toward which indicate the majority of the studies in literature. Before presenting the results of this study we will refer, in the next sections, at a literature review regarding the following aspects: defining and measuring CSP, measuring CFP, theoretical opinions and empirical results regarding the relationship CSP-CFP.

2. Defining and measuring corporate social performance

From the beginning it is necessary to state that not CSR represents the object of measuring, this being a theoretical concept, but CSP as an operational measure of CSR (Peters, Mullen, 2009). CSR is not a variable and therefore it cannot be measured while CSP, although difficult to measure, can be transformed into measurable variable (van Beurden, Gossling, 2008). In a very suggestive manner, Marom (2006) states that CSP constitutes a way of making CSR applicable and putting it into practice. If defining CSR raises difficulties of conceptual nature, defining CSP is even more difficult. One of the first conceptual models regarding CSP belongs to Carroll (1979), who proposes a three-dimensional model of corporate social performance based on (1) defining CSR, by identifying the categories of responsibilities that companies have (economic, legal, ethic and discretionary), (2) identifying the social problems that have to be connected to the company's responsibilities previously inventoried and (3) defining a philosophy of response of the company for tackling social problems, which can range from the lack of any reaction to a proactive attitude. Wood (1991) reformulates the model of CSP advanced by Carroll (1979), to whom he brings some critiques, and proposes a model grounded on principals (legitimacy, public responsibility and managerial discretion) and not on categories of CSR, on social responsiveness processes and on results of corporate behaviour. According to this model, measuring CSP supposes

evaluating (1) the degree to which the principals of social responsibility motivate the company's actions, (2) its capacity to respond to social issues (environmental assessment, stakeholders' management and social problems management) and (3) the existence and nature of policies and programs created for managing social relations together with the social effects of company's actions, programs and policies.

Measuring CSP represents probably the most difficult task in the goal of empirically analysing the relationship CSP-CFP. According to Abbot and Monsen (1979), the major difficulties faced in the scientific effort of measuring the corporate social involvement of companies consist of: (1) lack of detailed information regarding the social activities of companies, expressed in quantitative terms and for a big number of companies in order to allow for statistical analyses; (2) the necessity of conceiving by researchers a methodology for measuring the full impact of corporate activities upon society.

The literature dedicated to the subject presents a series of practical ways of measuring CSP. Among the most frequently mentioned methods are: (1) evaluating the degree to which companies make public information about their social involvement through content analysis of the annual reports and other corporate reports dedicated to specific subjects (Abbot, Monsen, 1979, McGuire et al., 1988, Beurden, Gössling, 2008, Turker, 2009); (2) single or multi dimensional indices, such as the pollution control index (McGuire et al., 1988, Turker, 2009); (3) scales measuring the social behaviour at individual and organizational level (Turker, 2009); and (4) reputational index for companies (van Beurden, Gössling, 2008, Turker, 2009).

Van Beurden and Gössling (2008) in their meta-analysis regarding the CSP-CFP relationship divide CSP in three components, as follows: *social concern*, the extent to which a company disclose information regarding its social involvement; *social action*, the degree to which a company involves in philanthropic actions, social programs and actions devoted to pollution control, these representing concrete processes and results of CSR; *ratings of corporate reputation*, the corporate social reputation being considered a good reflection of underlying RSC values and behaviours. Among the best known indexes there are KLD (Kinder, Lydenberg, Domini), FTSE4GOOD and DJSI (Dow Jones Sustainability Indexes). Each of these indexes assesses a company according to a proper methodology and an established set of criteria. The dimensions regarding environment, labour and community are among the most frequently used criteria for assessing the CSP of a company (Muller, Kolk (2009). In spite of the fact that there are more methods for measuring a company's social involvement, each of them presents limits and measuring remains problematic (Turker, 2009).

3. Measuring corporate financial performance

By studying literature have been identified more aspects related to the measurement of financial performance. In the majority of studies, financial performance has been understood in terms of profitability and other measures of financial performance (Shen, Chang, 2009, Peters, Mulen, 2009, Scholtens, 2009). Few studies have approached financial performance also in terms of risk (McGuire et al., 1988). Another aspect refers to the use performance indicators based on accounting or market values.

McGuire et al. (1988) have used a set of indicators that includes market-based measures (risk adjusted return and total return) and accounting-based measures of CFP (return on assets, total assets, sales growth sales, assets growth and operational income growth) alongside market-based measures (volatility coefficient beta, standard deviation of total return) and accounting-based (ratio of debt to assets, operational leverage and standard

deviation of operational income) measures of risk. Shen and Chang (2009) compare the performance of firms that undertake social causes (CSR firms) with that of those that do not involve in social actions (non-CSR firms) with regard to return on assets (ROA), earnings per share (EPS), return on equity (ROE), taxable income to net sales ratio and gross income to net sales ratio. The analysis of Peters and Mullen (2009) has as a goal exploring the degree to which CSP together with firm size and industry explained CFP variability, measured by ROA. In the meta-analysis of van Beurden and Gössling (2008) CFP is defined also by market measures (stock performance, market return, market to book value ratio, stock price and stock price appreciation) and accounting measures (profitability measures, assets utilization measures, such as ROA and assets turnover, and growth measures).

The option between market and accounting measures of financial performance is not a simple one. McGuire et al. (1988) review the strengths and weaknesses of both types of indicators as they have been identified in the literature, but in their own analysis they arrive at the conclusion that the accounting measures, especially ROA, are better predictors of CSR as compared to market measures, and the explanation for this tendency is the following: assuming that the perceptions toward social responsibility are firm-specific (unsystematic) then accounting measures of profitability should be more sensitive to these perceptions than market measures, these reflecting systematic market trends.

4. Opinions and findings regarding the relationship CSP-CFP

Research dedicated to the subject has led to the shaping of some mixed opinions regarding the existence and nature of the relationship CSP-CFP. In this sense, Preston and O'Bannon (1997) investigate the next set of hypotheses: *social impact hypothesis* (social performance influences positively financial performance), *trade-off hypothesis* (social performance is the independent variable and social actions suppose costs that indicate toward a negative relation), *available funds hypothesis* (CSP and CFP are positively correlated and the causal relation is of the form CFP-CSP), *managerial opportunism hypothesis* (the following of own interests by managers in the detriment of shareholders and other stakeholders can lead to a negative relationship between the two variables) and *positive* or *negative synergies hypothesis* between CSP and CFP. After the empirical testing, using an extensive set of data, are rejected all the three hypotheses that advanced a negative relationship and are validated the other three hypotheses that assumed a positive association. There is evidence supporting the idea that CFP either precedes or is contemporary with CSP, which implies supporting especially the available funds and positive synergies hypotheses.

There is a diversity of studies, older or more recent, that empirically analyse the above mentioned relationship and that have provided a series of results in this sense (Shen, Chang, 2009, Scholtens, 2009, Peters, Mullen, 2009, Van de Velde et al., 2005, Ruf et al., 2001; McWilliams, Siegel, 2000, Preston, O'Bannon, 1997, Waddock, Graves, 1997, Davidson III, Worrell, 1990, McGuire et al., 1988). These results have been recalled in the further studies, reason for what we will limit to present the conclusions of the synthetic study of van Beurden and Gössling (2008). They have recently realized a meta-analysis of 34 empirical studies, dating from the years 1991-2006 and which explore the relationship CSP-CFP. The research of van Beurden and Gössling (2008) has demonstrated that the majority (68%) of studies indicate the existence of a positive association between the social and the financial aspects of firm' performance, while 26% pointed toward a non-significant relation and only 6% offered support for a negative CSP-CFP relation. Moreover, the authors state that studies supporting a negative relation have grounded the theoretical framework and results on outdated research. The contradictory results advanced by these studies may be due, according to Shen and Chang (2009), to the using of different samples, periods and measures of social performance.

The previous studies have revealed the importance of considering some aspects when empirically testing the relationship CSP-CFP. The study of McGuire et al. (1988) has highlighted few important findings, namely: although the risk indicators represent weaker

predictors of CSR as compared to performance indicators, the reduction of risk, as a major benefit of CSR, can constitute a better objective than the increase of profitability; accounting-based measures of performance, especially ROA, are better indicators of CSR than the market-based ones; previous financial performance is a better indicator of as compared to further performance, so that studying the influence of previous financial performance upon CSR is a more adequate research objective than that regarding the relationship between CSR and further financial performance of the firm. Peters and Mullen (2009) have stated the importance of using longitudinal data for analyzing the CSP-CFP relationship, thus testing the cumulative not the immediate effects, because their study has showed that the effects of CSP upon CFP are positive and become stronger in time. Another important aspect refers to integrate in analysis some additional factors that can influence the CSP-CFP relationship. The variables that are considered relevant in the literature are: firm's size (Scholtens, 2009, Lindgreen et al., 2009, Peters, Mullen, 2009, van Beurden, Gössling, 2008), and industry (Peters, Mullen, 2009, van Beurden, Gössling, 2008, McGuire et al., 1988). In spite of this, the influence induced by the two variables upon CSP-CFP relationship is not fully clarified.

5. Study case

The scope of this study is to provide a framework for measuring social performance and analyze the relationship CSP-CFP for a sample of Romanian companies. In this respect, two stages are followed: measuring corporate social performance, by calculating a score; and investigating the relationship between social performance, measured through the score previously derived, and financial performance.

The methodology used for measuring CSP is the one developed by Scholtens (2008). This consists of assessing companies with respect to the fulfilment or not of a set of 29 criteria grouped into four categories. The fulfilment of one criterion is rewarded by 1 and the reverse is penalized by 0. By aggregating the individual scores for each criterion and dividing the sum by the total number of criteria assessed is derived a score that measures the social performance of a company. Starting from this methodology proposed by Scholtens (2008), the companies from the present study were evaluated with regard to the following categories of indicators of CSR: (1) ethical codes, social responsibility reports and management systems; (2) environment management; (3) quality and product safety; (4) social behaviour. For each category has been established a certain number of criteria (24 in total) for evaluating the social performance. *The firms selected* for analyzing social responsibility are listed on first category of Bucharest Stock Exchange (BSE). Due to the low availability of data has been retained a small number of firms (11 firms). The criteria used for selecting firms were: financial quality of firms and industry diversification. *The data* regarding social involvement of companies were collected, mostly, from annual reports or social responsibility reports of disclosed by firms and also from their websites. The data for size and financial performance indicators (sales, total assets, and return on assets - ROA) were drawn out from public databases that provide such information. After checking the individual fulfilment of the criteria has been realized a matrix upon which has been computed the score that reflects the social performance.

The estimation of the level of corporate social performance of a company suppose the calculation of the weighted average of the four partial coefficients (one for each of the four groups of criteria), as it follows: $C_{CSP} = a_1 \times C_1 + a_2 \times C_2 + a_3 \times C_3 + a_4 \times C_4$, where: C_{CSP} = CSP coefficient; a_1, a_2, a_3, a_4 = importance coefficients for each of the partial coefficients C_1, C_2, C_3, C_4 ; C_1 = coefficient for reporting; C_2 = coefficient for environment; C_3 = coefficient for quality; C_4 = coefficient for social conduct; and $a_1 + a_2 + a_3 + a_4 = 1$. After performing calculations are obtained the next values for the importance coefficients: $a_1=0.208, a_2=0.208, a_3=0.084$ and $a_4=0.5$ and the values for CSP coefficient are presented in table 1:

CSP coefficient

Table 1

	ALR	ATB	BTL	BRD	SNP	OLT	IMP	TNG	TNE	TER	ZNT
PSC COEFF.	0,708	0,459	0,500	0,583	0,750	0,542	0,625	0,583	0,458	0,542	0,417

Starting from the CSP coefficient derived in this way, have been undertaken a series of statistical analyses regarding the relationship between this dimension of corporate performance and financial performance using methods of data analysis (correlations analysis, principal components analysis, cluster analysis and discriminant analysis). *Correlations analysis* highlights the existence of a significant positive correlation between CSP of companies and their size and financial performance, given the fact that the value of the correlation coefficient between CSP and any of the financial indicators is higher than 0.3. Specifically, the correlation coefficient between CSP score and sales is 0.54 and between it and total assets is 0.3, which indicates the existence of a size effect. Moreover, social performance is positively and significantly correlated with return on assets of companies (0.38). Starting from the hypothesis suggested by McGuire et al (1988) has been explored the correlation between previous CFP (year 2006) and future CSP (2008).

Further, leaving from the four initial dimensions of the causative space has been undertaken a *principal components analysis* in order to evaluate the socio-economic strength of companies generated by the socially responsible behaviour and their financial strength. After analyzing the eigenvalues of the correlation matrix have been retained two principal components greater than 1 (Kaiser-Guttman criterion), because only these have an informational content richer than the original variables. These two principal components explain a proportion of about 89% of the variability from the original causative space. The first principal component is positively correlated with size indicators, sales (0.97) and total assets (0.94) and the second one is directly correlated with ROA (0.89) and CSP coefficient (0.73), so that the two aggregated factors express the size and, respectively, socio-economic strength of companies. The structure of the second principal component indicate the fact that the companies that show high positive values for this second factor undertake important social activities and present high values for return on assets, into this category being included Petrom and Alro, companies with the best social performance, followed by Transgaz, Impact and Banca Transilvania. The remaining six companies present a negative score for the second factor.

Using the Ward's method of ascending aggregation, *cluster analysis* has identified three groups of companies ((A) SNP, BRD; (B) TER, BTL, IMP, ZNT, ATB; (C) TNE, TNG, OLT, ALR). Further, using these results has been undertaken a *discriminant analysis* that has led to a good discrimination because all the indicators included in the analysis have a great discriminatory power (the value of the Wilks's Lambda statistic, calculated as the ratio between the sum of squared errors within classes and total variance, is equal to 0.00371 which means close to zero). The classification matrix reflects a 100% degree of correct classification. Based upon discriminant analysis has been elaborated a valid model for classifying companies, the likelihood of wrongly classifying a company (to include it in another class than that it truly belongs to) being null. Class A groups the biggest companies with regard to sales and total assets and which develop an important activity of social responsibility. Class B includes companies with a good return on assets and those from class C are companies with a good social responsibility activity.

Conclusions

In conclusion, it can be said that, although the study presents some limitations (such as the reduced number of companies, the insufficient substantiation of CSP coefficient), it has been identified a link between social and financial performance of companies (size and profitability), which confirms, in a Romanian context, to a certain extent, the previous empirical results. Moreover, it has been developed a transparent framework for evaluating CSP and that has a clear connection with CSR, starting from the methodology developed by Scholtens (2008). The application of the proposed framework has led to the getting of a score for 11 national societies and research show that CSR constitutes an aspect whose importance is in increase within the economic environment from Romania.

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TAXATION OF THE BUSINESS ENVIRONMENT IN THE CONTEXT OF THE EUROPEAN FISCAL POLICY

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***Abstract.** In the present context, when the world's economy is going through a profound economical and financial crisis, a series of factors among which the fiscal ones have a great effect upon the business environment, in general, and upon the small and medium businesses sector, in special. Considering this, the paper aims to analyze the impact of the fiscal policy upon the total fiscal revenues collected at national level in European Union countries and to reveal the most significant modifications in the fiscal regulations applied to the small and medium businesses, considering their special role in sustaining the economic growth, innovations and research activities.*

Keywords: European fiscal policy; business environment; small and medium businesses; economic and financial crisis.

JEL Codes: G01, G28, H2, H3.

REL Codes: 10J, 14D, 20I.

1. Introduction

In the context of globalization, the productions factors mobility has increased and, beside it, the economical integration brings into discussion the fiscal localization of enterprises and, especially, of the capital and labor force. In this context the competition between the European states is facing a new challenge: increasing national territories fiscal drawing. Most times, a state capacity to attract foreign capitals and keep the national ones relays on the fiscal policy it promotes. How else can you keep on national territory enterprises, capitals and labor force, and furthermore draw it others, if compared with your neighbors you promote a non-attractive fiscal policy.

Once with the creation of the common market in 1993, the inevitable result has been the convergence toward diminishing imposing rates from different states: rates have been reduced in order to increase national territory attractiveness or because of a spiral rates reducing „game” in order to stop the national capital from „running” towards more fiscal attractive territories.

Our époque is filled with paradoxes, these being borne by states arbitrations. Thus, analyzing fiscal policies and the unfailing competition among them, we noticed that world's states are aiming to apply competition policies meant to limit „harmful” competition among private economic agents. But, the competition is the freedom to act different from others, so isn't it a paradox to „impose freedom” (Bessard, 2009).

In their fight against „harmful” competition (concept first introduces by OECD through the 1998 rapport – „Concurrence fiscale dommageable – un probleme mondial”), states tend to „forget” to apply upon themselves the same rules they are trying to impose to others. Furthermore, at international level we assist at the creation of true international public

cartels, while one of the main points from the states agenda is just the fight against the private cartels. What is often under-looked is that both types are just as harmful.

Adopting at European level common and unitary rules regarding the nature and use of fiscal instruments is funded upon strong considerations tied up both to the essence of the European integration process and to the existence of a fiscal system able to satisfy: collecting necessary revenues is order to cover public spending with minimum costs but keeping fiscal equity and generating minimum distortions in the reallocation process. Facing these problems on a regular basis, international organisms are trying to find viable solutions both for stimulating economical, financial and social growth and protecting the liberties gained through the Roma Treaty (free movement for goods, people, services and capital as well as the right to freely decide where to locate) which are giving substance to the concept of „single market” (the European *acquis* is imposed by the necessity of not breaking these liberties).

2. European fiscal policy

At European level, even though the efforts made until the present days are considerable, it is difficult to find an optimal solution when you are „negotiating” with 27 different fiscal systems belonging to the same number of different development degrees states, more or less willing to change something at national level. Thus, in a community that wishes to be unitary significant differences emerge between member states, as you can see in table 1.

The structure of fiscal revenues by type of tax (EU-27, %)

Table 1

Country	Indirect taxes	Direct taxes	Social contributions
Bulgaria (BG)	55.1	20.9	24.0
Cyprus (CY)	47.9	33.6	18.5
Malta (MT)	43.7	39.3	17.0
Romania (RO)	43.4	23.0	33.6
Ireland (IE)	43.1	41.0	15.9
Estonia (EE)	43.0	23.7	33.3
Portugal (PT)	41.7	26.5	31.8
Poland (PL)	41.7	24.9	33.4
Latvia (LV)	41.2	30.2	28.6
Lithuania (LT)	40.3	31.0	28.7
Hungary (HU)	40.2	25.7	34.1
Slovakia (SK)	39.4	20.8	39.8
Slovenia (SI)	39.2	24.9	35.9
Greece (EL)	38.4	25.2	36.4
Denmark (DK)	37.1	61.2	1.7
France (FR)	35.4	27.6	37.0
Great Britain (UK)	35.4	46.3	18.3
Sweden (SE)	35.3	39.4	25.3
Luxembourg (LU)	35.2	37.0	27.8
Italy (IT)	34.6	35.2	30.2
Austria (AT)	34.2	33.3	32.5
Nederland (NL)	33.6	31.6	34.8
Germany (DE)	32.7	28.7	38.6
Spain (ES)	32.4	36.1	31.5
Finland (FI)	30.9	41.4	27.7
Belgium (BE)	30.6	38.5	30.9
Czech Republic (CZ)	30.5	25.3	44.2
UE-27	38.4	32.3	29.3
Norway (NO)	28.9	50.4	20.7

Source: European Commission (eurostat), „Taxation trends in the European Union Data for the EU Member States and Norway”, 2009.

We assess that in recent adhered states to the EU-27 the percentage of indirect taxes in the total fiscal revenues cumulated at national level is reaching high values. Thus, Bulgaria is the state in which this percentage is the highest (55.1%), this value being with 16.7 percentage points above the EU-27 average (38.4%) and with 24.6 percentage points above the lowest level registered by the Czech Republic (30.5%). At European level 13 states have registered percentages over the EU average.

In Norway the percentage of indirect taxes in fiscal revenues (28.9%) is with 9.5 percentage points under the average European level and with 26.2 percentage points under the Bulgarian level. What is remarkable is that the Norwegian percentage is not only under the European average but also under every European state, the difference between the European state with the most little percentage and Norway is 1.6 percentage points.

The analysis is revealing that Romania is on the IV place in the European hierarchy regarding the percentage of indirect taxes in total fiscal revenues collected at national level, with an percentage of 43.4%, with 5 percentage points above the European average and below Bulgaria with 11.7 percentage points, but above states like Hungary, France, Great Britain or the Czech Republic.

In the case of direct taxes the situation is presenting it's self the other way around, thus the states with the highest percentages being the ones where the indirect taxes in fiscal revenues were lowest. Thus, in Denmark the direct taxes in fiscal revenues are 61.2% with 28.9 percentage points over the EU-27 average (32.3%), with 40.4 percentage points over the minimum level registered by Slovakia (20.8%) and with 10.8 percentage points over Norway (50.4%). Furthermore, recent adhered countries have percentages under 30%, especially because of a flat tax fiscal system that most use, compared with a progressive one used in other states, especially Nordic ones.

Romania is among states with the lowest percentage, with a value of 23% for direct taxes in fiscal revenues at national level, above Bulgaria (20.9%) and Slovakia (20.8%) but below European average with 9.3 percentage points and with 38.2 percentage points under Denmark, the state with the highest level. Our country is outrun by Hungary with 2.7 percentage points, Czech Republic with 2.3 percentage points or Poland with 1.9 percentage points.

Analyzing the social contribution percentage in the total collected fiscal revenues, we state, again, that recent adhered countries own the highest percentages. Thus, the Czech Republic is the state with the highest percentage (44.2%) registering 42.2 percentage points over Denmark, the state with the lowest percentage (2%) and 14.7 percentage points over the EU-27 average (29.3%). Norway has a percentage (20.8%) with 8.7 percentage points under the European level, with 23.4 percentage points under the Czech Republic and with 18.8 percentage points over Denmark.

Romania is found in the superior part of the European Union countries, with a percentage of social contribution in total fiscal revenues of 33.6%, with 4.1 percentage points over the European average, being outrun by Hungary but only by 0.5 percentage points and being over the Bulgarian level by 8.3 percentage points.

3. Entrepreneurial taxation at European level

Regarding the European entrepreneurial environment, the analysis has been focusing upon capital taxation modalities at European and world wide levels, especially upon profit taxation, with particularities for the special regime applied for small and medium businesses in different countries.

Although it is considered one of the most important taxes, the profit tax is not the main revenue source at central level in the European Union. Thus, in 2007 the percentage of

revenues collected through this tax in the gross domestic product in EU-27 was 3% and most European states had registered values slightly over or under 4% (Table 2).

Weight evolution for profit tax in GDP in EU-27(%)

Table 2

Country	2007	Country	2007	Country	2007
BE	3.6	IT	3.2	PT	3.7
BG	3.2	CY	6.9	RO	3.1
CZ	4.8	LV	2.7	SI	3.4
DK	3.6	LT	2.6	SK	2.9
DE	1.4	LU	5.4	FI	3.9
EE	1.7	HU	2.8	SE	4.0
IE	3.4	MT	6.7	UK	3.2
EL	2.6	NL	3.5	UE-27	3.0
ES	4.8	AT	2.6	NO	11.3
FR	3.0	PL	2.8		

Source: Comisia Europeană (eurostat), *Taxation trends in the European Union Data for the EU Member States and Norway, 2009*.

We can see that in 2007 only the Czech Republic (4.8%), Spain (4.8%), Cyprus (6.9%), Luxembourg (5.4%) and Malta (6.7%) have registered values above the European average and the lowest level was registered by Germany (1.4%) while Norway presents a high value with 8.3 percentage point over the European average.

There are a series of factors that are rising debates based upon the profit tax and one is the mobility of production factors and, in this case, the capital. This aspect is creating the impression that an excessive taxation can lead to the running away of the capital toward lower taxation areas. Like any other tax, the profit tax (Table 3) can create distortions in the European market especially in strong integrated areas. These distortions can affect also the revenue tax, because fiscal pressure level impose to capital can lead to it's not accumulating in some areas, fact that will have as effect diminishing productivity, which, in it's one terms, will determine reduce remunerations for labor force and restrict collected revenues at central level from both taxes, profit tax and revenue tax.

Capital is considered a more mobile production factor than labor force and from here the idea of fiscal pressure transfer between the two from the first to the later and so state will reduce fiscal pressure upon capital in order for it to stay on national level and at the same time will increase it upon labor force in order to reduce loses accumulated at national level by lowering fiscal revenues.

Profit tax quotas (UE-27, 2009, %)

Table 3

Country	2009	Country	2009	Country	2009
BE	34.0	IT	31.4	PL	19.0
BG	10.0	CY	10.0	PT	26.5
CZ	20.0	LV	15.0	RO	16.0
DK	25.0	LT	20.0	SI	21.0
DE	29.8	LU	28.6	SK	19.0
EE	21.0	HU	21.3	FI	26.0
IE	12.5	MT	35.0	SE	26.3
EL	25.0	NL	25.5	UK	28.0
ES	30.0	AT	25.0	UE-27	23.5
FR	34.4				

Source: Comisia Europeană (eurostat), *Taxation trends in the European Union Data for the EU Member States and Norway, 2009*.

States recent adhere to European structures have the lowest tax quotas being situated under the EU-27 average (23.5%), Cyprus and Bulgaria (10%), Estonia (21%), Latvia (15%), Slovakia (19%), etc.

Romania with it's quota of 16%, is situated under the European average with 7.5 percentage points and the Hungarian quota (21.3%) but over the Bulgarian flat tax (10%).

From of the European states six had modified their profit taxation quotas in 2009 face to 2008, five have decreased it and only one had increased it, the rest had maintained them (Table 4).

Taxation quotas modifications (%)

Table 4

Country	Quota	
	2008	2009
CZ	21	20
LU	29.6	28.6
SI	22	21
SE	28	26,3
UK	30	28
LT	15	20

Source: Comisia Europeană (eurostat), *Taxation trends in the European Union Data for the EU Member States and Norway, 2009.*

Taking into account different economical, financial, social or political aspects, beside these modifications, some states have different quotas for small and medium businesses (SMBs) (Vintilă, Moscalu, Filipescu, 2008), pursuing stimulating this sector, as it is shown below.

Belgium – standard quota is 34%. For SMBs with a taxable profit lower than 322,500 euro, taxation is done according to progressive quotas system as follows: 0 – 25,000 euro quota is 24.98%; 25,001 – 90,000 quota is 31.93% and for 90,001 – 322,500 euro quota is 35.54%.

France – standard quota is 34.43%. For SMBs the quota is 15% for a taxable profit less than 38,120 euro.

Luxembourg – standard quota is 28.6%. For SMBs the quota is 20% for a taxable profit less than 15,000 euro.

Portugal – standard quota is 26.5%, and for SMBs a smaller 12.5% quota is applied for a taxable profit less than 12,500 euro.

Lithuania – standard quota is 20% but for companies with less than 10 employees and a taxable profit smaller than 145,000 euro a 13% quota is applied.

Romania – flat tax is 16% applied to both taxable profit and revenue, but for SMBs (Law 571/2003 regarding the Fiscal Code, Title IV, art. 103), from 2009 a 3% quota is applied. We mention that the quota for SMBs has been 2% in 2007, 2.5% in 2008 and 3% in 2009.

Spain – standard quota is 30% but for SMBs the quota is 25% if the total turnover is lower than 8 millions euro and the taxable profit is lower than 120,202.41 euro.

Great Britain – standard quota is 28% but for SMBs a 21% quota is applied for businesses with profits lower than 300,000 GBP.

These measures have aimed at sustaining the SMBs sector, which is upholding the world economy. But, apart from the financial restrictions imposed by legislation regarding SMBs, the majority of states are imposing financial performances limits in order for them to benefit from these facilities, as we have former showed.

Beside these special measures applied to the SMBs sector, the European states have adopted complex fiscal measures in order to create the premises for removing the effects of

the financial and economical crisis, measured regarding changes in fiscal policies like: value added tax, revenue tax, social contribution, profit tax and others (excises, environmental taxes).

The main fiscal measured regarding the *profit tax* are – *Austria* has increased the deduction quota for enterprises from 10% to 13% starting from 2010; *Bulgaria* has introduced a state help schema for a 5 years period for agricultural investment, processing, production, high-tech industry and infra-structure construction, through which investments in these domains, under certain conditions are absolute from tax payments; *Cyprus* has decreased the profit tax from 25% to 10%; *Ireland*, from April 2009 has increased the quota applied to capital winnings from 20% to 25%; *Italy* has introduced a supra-tax of 5,5% for companies in energy and petroleum domains; *Romania* has introduces a 2% tax for agricultural revenues, increased the deductibility limit for voluntary health insurances from 2000 euro to 250 euro/year/employee and facultative retirement schemas from 200 euro to 400 euro/year/ employee and decreased the dividend tax given to non-residents from 16% to 10%, has introduces a supplementary deduction in the taxable profit calculation of 20% from the eligible research and development expenses (art.191, Law no. 571/2003), has introduced the non-deduction (1 May 2009 – 31 December 2010) mode for full expenses regarding modernized road vehicles in possession or in use by the tax-payer, with some mentioned exceptions (OUG no. 34/2009)

4. Conclusions

At European level creating a common set of fiscal regulations is harden by the systems diversity of the 27 member states. Thus, the developing countries of the European Union have a fiscal policy based upon direct taxes, while states less developing apply fiscal policies based upon indirect taxes and social contributions. From here all the difficulties in attempting to harmonized fiscal policies in the European Union. Furthermore, the common market, defined through free movement and localization for production factors, makes, the taxation differences between member states to generate distortions in the market. The harmonization is absolute necessary, but, at the same time, limiting all kind of competition, even fiscal one, between states is not recommended, considering:

- the majority of facilities are given in order to attract investments, which might lead to a non-equitable production repartition at European level;
- fiscal competition has nothing in common with promoting efficiency;
- capital is always the biggest beneficiary of fiscal advantages, because of it's higher mobility.

In the present context when the world's economy is going through a powerful recession period, the small and medium businesses sector – the economic growth engine – has the most to suffer, because of the anti-crisis measures taken at national level by every state. In these conditions, aiming to maintain or increase their profit, small and medium businesses have reacted by decreasing costs, mainly by reducing the personnel, postponing development investments, reducing financing costs by using alternative sources, or the most black situation, closing activity.

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USING THE MANAGEMENT OF ACCOUNT RECEIVABLES TO INCREASE THE COMPANY VALUE

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***Abstract.** The commercial credit is both marketing and a financial operation that influences in a great deal the financial results of the period. The companies follow the increase of sales turnover as a result of instating the commercial credit, seen as an investment which will contribute to the sustainable increase of the company profits.*

The ultimate target of the commercial credit has to be its efficiency, expressed by the marginal profit obtained after instating or modifying this operation. In this article we have tried to present a methodological approach meant to set the trade credit at the analytical level, considering the changes induced onto variables such as the quantity sold, selling price and variable cost margin.

Keywords: commercial credit; short term investment; primary objective of the company; variable cost margin; discount period; credit period; marginal profit.

JEL Codes: G30, G39

REL Codes: 11A, 11D

1. Introduction

Attaining the company's primary objective of increasing its value implies a harmonization between the interests of the company and the interests of the other stakeholders. The latest economic crisis has imposed a new company objective, the sustainable increase of the company value, which involves even a harmonization with nature, the environment and the limited natural resources.

The main vectors of achieving the objective of increasing the company value are the investments. The company has to invest in its employees, in new products and technologies, in tangible and intangible assets, in its image, in the local community in order to create the necessary capacities, abilities and development framework necessary for a long-term and sustainable increase of its sales and profits. Also, essential components of these investments are its clients. Even if the account receivables are short-term oriented and thus they do not qualify for the classical approach and definition of an investment, the company has to plan and implement a well-defined strategy of customer-oriented actions. A part of this strategy involves granting constant commercial credit to its customers, which is actually a short-term but repeated financial investment.

From the perspective of reaching the company's primary objective, the accounts receivable have to be considered as short-term investments, an important component of the overall investment strategy. The companies invest in their clients in order to get higher sales revenues and therefore bigger profits. But nevertheless the increase of the profit does not have to be recorded in the first trimester, semester or even in the first year. It is preferable to register a steady increase of the profits (over several years), even if the rate of increase it is not spectacular. Some authors, such as Stancu (2003) and Palepu and Healy (2006), consider that we can integrate the account receivable investment into a NPV analysis, carried over

several years. We have to mention that the activity of commercial credit can contribute to the increase of company profits from two sources:

1. It can lead to the increase of the operating profit, because the commercial credit entails the increase of sales turnover, which leads to higher profits, if the company succeeds to maintain the variable costs margin;

2. It can lead to the increase of a „financial component” of the operating profit of the creditor company, if the increased selling price will more than compensate the supplementary financing costs induced by instating the commercial credit.

Starting from the works of Helfert (2001), Stancu (2002), Fabozzi and Peterson (2003), Ehrhardt and Brigham (2006), Brealey and Myers (2003) we tried to present a methodological approach to the setting phase of the commercial credit, which is meant to ensure the profitability, liquidity and sustainability of the credit, as an essential component of the operating activity.

2. The financial structure of the commercial credit

The commercial credit policy is defined by the following elements: the discount period (in which the clients pay on spot or after several days motivated by a discount granted against the full invoice price), the credit period (for the clients that opt to buy on credit and pay the full invoice price), the settlement date, the variable costs margin, the annual profitability of the commercial credit, the cost of the discount granted, the cost of the capital invested in clients and the marginal profit obtained as the result of granting/modifying the commercial credit.

We will consider the example of a company that initially sold just in the cash and carry system, without granting any credit. The selling price was 10 lei per unit. In order to increase its sales and implicitly its profits, the company intends to extend commercial credit to its customers.

Usually the granting of the commercial credit can be represented by a scheme similar to the following (Figure 1 below).

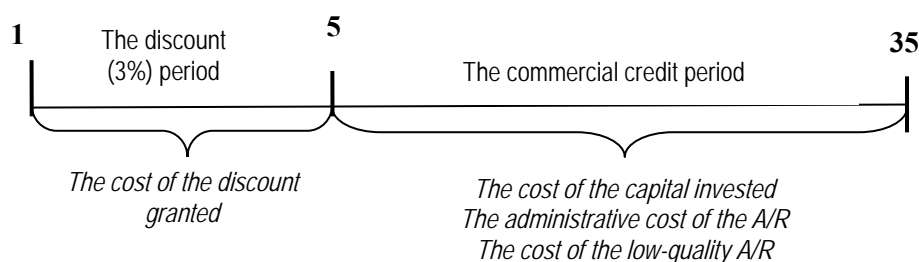


Figure 1. The representation of the company's commercial credit

The clients will opt for the discount period (5 days in our example) or the credit period (30 days in our example) accordingly to the level of the discount proposed by the company, but also in accordance with the characteristics of their own cash flow patterns.

For example, a significant discount (of over 4%) will determine them to accept the proposed discount and to ignore the benefits of a delayed payment. It is obvious that upon the clients that buy on credit the company will obtain a significant gain, as a large discount is a source for increased profitability, which is earned only on the clients that use the credit and pay on term.

A smaller discount (of 2% for example) may not be very attractive for the clients, which will prefer to buy on credit and benefit from the delayed payment.

The creditor company will project the commercial credit according to its concrete financial situation and the short and medium term envisaged objectives.

We will consider that the company used to sell only in the cash and carry system (goods for cash), and now it intends to introduce the commercial credit, allowing its customers to pay after some time from the delivery of the goods. The delivery of the goods to its customers is done in the first day. The clients have five days to pay in order to benefit from the 3% discount (in our case) which is granted for fast payment. The clients that temporary are lacking cash will pay on credit and they will pay the full invoice price toward the end of the credit period (many of them right on the final settlement day – the day 35 in our example).

For commercial reasons the clients are not officially told that the full invoice price was increased compared to the previous selling price.

In order to deal with the financial aspects of the commercial credit, the company has two options at its disposal.

In the first alternative, before granting the commercial credit, the company increases the price of the products delivered by 3.09%, in order to be able to grant a 3% discount to the clients that pay within the discount period, such as the discount price to be equal to the price practiced previously, when it sold only against immediate cash. As a consequence, if the previous price (p_0) was of 10 lei, the company will have to set the full invoice price (p_1) at 10.309 lei once the credit was instated, in order to prevent a loss as a result of granting the credit:

Index of increasing (New full invoice price as 100% – discount) = Previous selling price or:

$$10.309 \times 0.97 = 10 \text{ lei.}$$

The index of increasing the previous selling price (of 1.0309 in our example) can be obtained as follows:

$$\text{Increase index} = \frac{100\%}{100\% - \text{discount}(3\%)} = 103.09\% \text{ or } 1.0309$$

As a result, the new full invoice price (p_1) can be expressed as follows:

$$p_1 = p_0 \times \frac{100\%}{100\% - \text{discount}}$$

The increase of the selling price is needed in order to avoid registering a loss from the discount that will be granted to the customers that pay inside the discount period, as well as for supporting the financing costs for the credit period (between day 6 and day 35 in our example).

In the second alternative, the company maintains the previous selling price of 10 lei ($p_1 = p_0$). Under these circumstances, the company has to support out of its operating profit both the discount of 30 bani (3% at 10 lei) towards the clients that choose to pay inside the discount period as well as the financing costs (banking interests and fees) for the credit period.

Using one of the two variants depends even on the actions of the competitors and the market conditions, but the normal situation is depicted by the first variant.

If the company is looking for increased liquidity (as in economical unstable conditions) the company will set a large discount, which will draw the clients into the discount period. The profitability of the commercial credit may suffer a little, being supported just by the share of the clients that opt for the commercial credit and the delayed payment.

If the economic conditions are favourable, the company may pursue even profitability objectives at the expense of liquidity objectives. In order to reach this objective, the company will set a lower discount, because otherwise the clients will be drawn by the bigger discount and will opt for the immediate payment. This paradox comes from the specific of the discount proposed in the case of the commercial credit, which represents actually a (gross) profit for

the selling company and a cost for the company buying on credit, which pays at term an increased price (increased with the size of the respective discount).

Even if we accept the fact that the clients are not told that the term price is bigger as it includes the financing costs and that they do not know the inner workings of the commercial credit, they will naturally orient themselves toward the discount period or the credit period.

A large discount proposed by the company would lead to a significant financial profit for the creditor company if a large number of clients would opt for the delayed payment and the actual commercial credit. This will be quite unlikely because they will be tempted by the large discount and they will buy against cash.

A lower discount will encourage the clients to buy on credit and to pay an increased price at the settlement term, thus contributing to the realization of the profitability of the commercial credit envisaged by the creditor company. Obviously, the lower discount will not contribute as much as the company would expect to the reach of the profitability objectives.

3. The elements to be determined

In order to have a proper setting of the commercial credit, which will ensure both the profitability and liquidity targets as well as its acceptance by the clients, the company that instates the credit has to determine several financial components, such as: the gross profit due to instating the commercial credit, the supplementary costs emerged from the credit and finally the marginal profit, as compared to the previous state, when the company sold only against cash (Helfert, 2001, Stancu, 2002, Fabozzi, Peterson, 2003).

3.1. The gross profit from extending the commercial credit

As we mentioned previously, the main objective of extending the commercial credit is represented the increase of the profit due to higher sales (Stancu, 2002, Fabozzi, Peterson, 2003). This objective does not have to be approached in the short term, as sometimes it can take several months or even one year until bigger sales to lead to increased profits for the company extending the commercial credit.

The profit the company obtains from granting the commercial credit (Pr_1) can be expressed (Fabozzi, Peterson, 2003) according to the sales turnover (ST_1) and the variable costs margin (Vcm_1):

$$Pr_1 = ST_1 \times Vcm_1$$

The variable costs margin (Vcm) can be calculated as follows:

$$Vcm = \frac{\text{Price} - \text{Variable cost per unit}}{\text{Price}} = \frac{p - vc}{p}$$

The company sales turnover from extending the commercial credit can be expressed as the product between the quantities sold (q_1) and the full invoice price established after granting the credit (p_1):

$$ST_1 = q_1 \times p_1$$

Returning to the calculus of the profit obtained by the company as a result of extending the commercial credit (Pr_1), we will get:

$$Pr_1 = ST_1 \times Vcm_1 = q_1 \times p_1 \times \frac{p_1 - vc_1}{p_1} = q_1 (p_1 - cv_1)$$

Where:

q_1 – the quantity of products sold as a result of instating the commercial credit. Normally, the quantities sold increase after extending the credit, compared to the quantities sold initially (q_0), or $q_1 > q_0$;

p_1 – the full invoice price practiced after granting the credit. Under normal conditions (in which the company does not want to diminish its operating profit as a result of granting the discount and of covering the financing costs for the credit period) this price will be higher than the previous price, that is $p_1 > p_0$;

vc_1 – the variable unit cost, after granting the credit and made up usually of material costs and direct salaries. It is likely that this cost will not differ significantly from the variable unit cost registered initially (vc_0), as these costs does not usually modify with the evolution of quantities sold.

We can notice that the profit obtained as a result of granting the commercial credit depends upon the quantities sold, the new full invoice price and the variable unit costs.

The profit obtained in the initial conditions (\Pr_0), when the company sold its products only against cash, can also be expressed as a product between the sales turnover and the variable cost margin:

$$Pr_0 = ST_0 \times Vcm_0 = q_0 \times p_0 \times \frac{p_0 - vc_0}{p_0} = q_0 (p_0 - vc_0)$$

In the first analysis, the profit obtained as a result of instating the commercial credit is significantly higher compared to the previous profit ($\Pr_1 > \Pr_0$), as both the quantities sold and the variable cost margin are higher ($q_1 > q_0$ and $vcm_1 > vcm_0$) compared to the values registered before.

Nevertheless there are other elements that appear as a result of extending the commercial credit, such as the cost of granting the discount, the administration costs, and the cost of low quality receivables. All these are significantly reducing the marginal profit obtained after granting the credit compared to the profit obtained previously when the company sold only against cash.

3.2. The supplementary costs due to granting the commercial credit

The commercial credit carries on not only extra gains for the company but also some supplementary costs.

Firstly, once the commercial credit is extended, the company has to employ extra personnel in order to keep the evidence of each selling act and of each client, no matter if he buys in the cash and carry arrangement or via the commercial credit. Beside the supplementary costs with the personnel, there are supplementary material costs, rent, communication costs, depreciation and amortization. All these costs create the administration costs of the commercial credit.

Secondly, we have the cost of the discount granted. This is not a cost per se, but rather an unrealized profit, as the company does not earn 3.09% upon the clients that buy against cash, granting them a 3% discount against the full invoice price, paid by the clients that buy on credit.

The cost of the discount granted (Cd) is determined as follows (Fabozzi, Peterson, 2003):

$$Cd = ST_1 \times \text{Share of clients buying on cash} \times \text{Value of the discount}$$

For example, if the new sales are of 10 million lei, 25% of the customers accept the 3% discount and they buy against cash, then the cost of discount will be of 75,000 lei:

$$Cd = 10,000,000 \times 0.25 \times 0.03 = 75,000 \text{ lei.}$$

In this example, the 75,000 lei represent the unrealized profit, as part of the clients did not accept the commercial credit and they choose to benefit from the discount proposed by the company for early payment.

Thirdly, another supplementary cost is the cost of the capital invested (immobilized) in the account receivables. In our example, for the period between the day 6 and the day 35, the company remains without funding, as it delivers to the clients goods in which it invested money that will be recovered only after 30 days. For this period of 30 days the company has

to pay its employees, suppliers, taxes as well as the interests toward the banks that finance the lack of funding as a result of the credit sales.

The cost of the capital invested (Cki) can be determined as such:

$$Cki = \frac{ST_1 \times \text{Share of clients that buy on credit}}{\text{Number of credit periods}} \times Vcr \times Roc$$

The company credit sales in one cycle of sales

Where:

○ *The number of credit periods* is determined dividing 365 with the length of the credit period (365/(35 – 5) or 12,16 periods in our example);

○ *Vcr* stands for the variable cost rate and it expresses the share of one Leu of sales represented by the money invested by the company in order to get that Leu of sales. It can be determined starting from the equation of value, respectively variable costs (Vc) plus the profit (Pr) equals sales revenues (ST):

$$ST = Vc + Pr.$$

If we divide everything by the revenues, we will get:

$$1 = \frac{Vc}{ST} + \frac{Pr}{ST}$$

Or

$$1 \text{ (100\%)} = \text{Variable cost rate} + \text{Variable cost margin.}$$

○ *Roc* is the rate of opportunity cost, respectively the level at which the company could otherwise employ the money it invests in the commercial credit granted to its customers. As opportunity cost rate we can use several measures, such as the RONA or ROA profitability rates.

If we analyze retrospectively the efficiency of the commercial credit, the investment in clients can be determined as follows (Dincă M. et al, 2006):

$$Cki = \frac{\Delta A}{R} \times Roc$$

Where:

$\frac{\Delta A}{R}$ = the increase in the average balance of the account receivables from one year to

the previous, in which the company did not sold on credit.

The product between the variable cost rate and the average sales from one credit cycle gives us the company investment in one credit sales cycle:

$$\text{The Investment for one cycle} = \frac{ST_1 \times \text{Share of clients buying on credit}}{\text{Number of credit periods}} \times Vcr$$

Finally, if we multiply the investment with the rate of the opportunity cost we get the cost of capital invested in clients.

Depending on the quality of the newly attracted clients as a result of instating the commercial credit we can register another category of costs, the cost of the low quality account receivables. This arises from the costs due to slow recovery of the receipts or from the losses coming from the defaulting customers. The cost of the low quality receivables can be expressed as a share from the supplementary sales brought on by the commercial credit or from total sales obtained after instating the commercial credit.

3.3. The determination of the marginal profit from the commercial credit

The efficiency of extending the commercial credit can be synthetically appreciated by comparing the profit obtained after instating the credit (Pr_1) with the profit obtained previously ($Profit_0$), when the company sells only in the cash and carry procedure:

$$\Delta Profit = Profit_1 - Profit_0 > 0$$

The financial efficiency of the commercial credit is realized when the difference is positive or $Profit_1$ is bigger than $Profit_0$.

Nevertheless the profit that will be obtained after instating the credit ($Profit_1$) has to take into account the due supplementary costs:

$Profit_1 = \text{Gross profit from granting the credit} - (\text{Cost of granting discount} + \text{Cost of capital invested in clients} + \text{Administrative costs} + \text{Cost of low-quality receivables}).$

We are reminding that gross profit from granting the credit can be determined as follows (Pr_1):

$$Pr_1 = ST_1 \times Vcm_1 = q_1(p_1 - cv_1).$$

The difference toward the initial profit ($profit_0$) is that the latter does not have associated costs, as the sales were done only against cash and do not imply no efforts to keep the evidence of sales or of recovering the money.

Another approach of the marginal profit from the commercial credit can be done based on the structure of the commercial credit's profit.

Thus the marginal profit obtained from instating the commercial credit can be divided into two components: *the operating part and the financial part*.

The *operating part* is obtained as the company physical sales increase ($q_1 > q_0$) and also because the new variable cost margin ($\square Vcm \square 1$) usually is large enough to cover the new fixed costs (FC_1) and to ensure a bigger operating profit. The new variable cost margin ($\square Vcm \square 1$) is also bigger than the previous variable cost margin ($\square Vcm \square 0$), as the index of price (Ip) is superior to the index of variable costs (Ivc):

$$Vcm_1 > Vcm_0$$

$$p_1 > p_0, vc_1 \geq vc_0.$$

$$Ip > Ivc.$$

Among the supplementary fixed costs we can include a large part of the administrative costs induced by the commercial credit, such as the rent, utilities, salaries, office supplies and other.

The financial component of the profit results from the way of designing the credit period. The discount is actually a percentage increase in price addressable to the clients that buy on credit. The discount is based especially on the financing costs supported by the company for the credit period it offers to its clients. Also the company should make allowances for the losses induced by the low quality A/R that may appear in the credit process.

The financial profit will appear if the new price (p_1) can be set higher than the previous price (p_0) multiplied with the percentage influence of discount:

$$P_1 > p_0 [1 + \text{the influence of the discount (\%)}]$$

The influence of the discount granted can be expressed as follows:

The influence of discount (%) = The discount (in %) \times Share of credit sales

$$\text{The share of credit sales} = \frac{\text{Credit sales}}{\text{Total sales after implementing the commercial credit}}$$

The discount can be set to take into account the influence of low quality A/R. After setting up the credit policy, the effective results obtained after the implementing of the commercial credit can be analyzed by the mean of various financial measures (Helfert, 2001; Friedlob and Schleifer, 2003) and correction measures can be taken by the financial and sales managers.

4. Conclusions

The distinction between the operating and the financial components of the profit is useful in establishing the right measures for ensuring the overall profitability of the commercial credit. The introduction of the commercial credit has to contribute not only to the increase of the sales turnover, but also to the sustainable increase of the company value, which requires a moderate but constant increase of the efficiency and of the profits.

The companies' tendency for fast profits has to take into consideration the reaction of the clients and the response of the main competitors. The negotiation and the observance of the interests of the others that ensure the attainment of the sustainable value growth objective are also needed in the commercial credit if the company wants to be successful in its development approach.

The account receivables are a short term investment and, as such, they cannot disregard the general requirement for optimization (or even minimization), imposed to all the current assets. The size of the commercial credit has to be set and subsequently adjusted according to the useful effects it generates: increased sales and profits. Commercial credit should be extended only to worthy, financial solid clients.

Sometimes the financial considerations can become second best, at least for the short term. For example, if the main competitors of a company choose to instate the commercial credit, the respective company will have to match their offer, even if in a first instance the operation does not lead to profit. Also, a company may plan a gradual profitability from the commercial credit, allowing for short term reduced profits.

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THE INVESTMENT PROBLEMATIC FOR PRODUCING ENERGY FROM RENEWABLE SOURCES IN ROMANIA

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***Abstract.** The higher energy consumption, the increasing of the price for primary energy sources and the continuous worldwide debates for carbon emission in the atmosphere determined the reorientation to energy production from renewable sources (biomass, solar energy, wind, hydro, geothermal etc). Taking into account the low capacity that produce energy from renewable sources, we conclude that there are needed important investment in this sector.*

Keywords: investment; financing; renewable energy; production.

JEL Codes: Q42, L94.

REL Codes: 8D,18D.

1. Introduction

The renewable energy offer the possibility to decrease the carbon emission, to develop new industry sectors, to improve the energetic security by supplying securitization, to create an open electrical energy market (at least at a regional level) and to realize a correlation between energetic resources and sustainable development policy.

There are national sustained efforts, and also global ones, in order to develop new high efficiency energetic technologies and to implement them in order to produce E-SRE. This aspect is caused by the increasing consumption of energy, the increasing price of the primary energetic sources, worldwide interest in decreasing the level of CO₂ emission in the atmosphere. Beside the technologic factors that may delay the rhythm of development to this sector, we can mention non-technique factors that block this evolution:

- The huge level of acquisition cost of the new technologies
- The lack of an efficient promoting mechanism for E-SRE
- State intervention in establishing the energy price, that may generate sometime prices that don't reflect integral the entire costs of producing, transporting and distributing the energy
- The low level of products in order to finance the special needs of this sector

The problems that investors in energy industry are facing with, begin to be solve at a global level by the involvement of a great number of Governments.

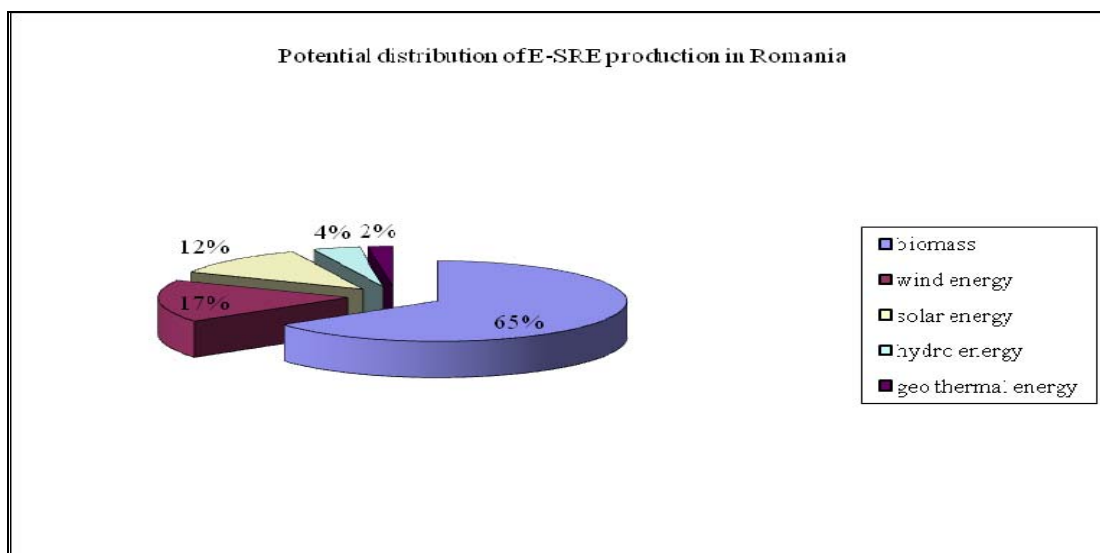
2. Research

In order to identify the weakness and the strengths, also the opportunities and the threats in the field of energetic sector investments, we will use the SWOT analysis. The conclusions of this analysis will give us a clearer image on the actual investments in the energy sector and will point the middle and long term actions in order to achieve E-SRE sustainable development.

Strenghts:

- Romania geographic location offers us the advantage of a various potential of producing the renewable energy. Using the facts from Business Standard Magazine, the potential of wind energy is of 14,000 MW, four times bigger than Bulgaria’ ones, and with all of these the Bulgarian installed power of 160 MW exceed more the Romania one of 12 MW.

Using The Environment Ministry appreciations, Romania has potential for five sources of renewable energy: wind, solar, hydro, thermal and biomass. The repartition of electrical energy production from renewable sources is described in the next graphic:



Source: www.hidroelectrica.ro (SC Hidroelectrica SA).

Figure 1. Potential distribution of E-SRE production in Romania

The geographic distribution of the potential may be observed in the following Table 1:

Geographic distribution of the potential production of E-SRE

Table 1

Zone	Biomass	Wind Energy	Solar Energy	Hydro Energy	Geothermal Energy
Moldova	X	X		X	
Transylvania				X	
Carpathians	X			X	
Sub Carpathians	X			X	
West Champ					X
South Champ	X		X		X
Dobrogea		X	X		

Source: www.mmediu.ro

Lower costs of production per unit of energy. In the hydro-energetic sector in 2007 SC Hidroelectrica SA, the main electrical energy supplier in Romania, used in exploitation capacities with 6,361 MW power, towards 6,325 MW in 2006. Hidroelectrica 1 MW producing cost is at this moment of almost 17 euros, using the declaration of CEO, Mihai David, and the producing cost of energy in thermo unities is almost 100 euro/MW.

The electric energy market represents a great potential market for the renewable sources energy. As it can be seen from the following table, the energy produced in our country is used in a huge percentage for internal consumption, just a small percent goes for the export.

Production and consumption of electric energy in Romania

Table 2

	2005	2006	2007
Total energy production	59729	62428	61397
Total internal energy consumption	56813	58173	59297
Total hydro energy production	20292	18327	15916
Hydro energy produced by SC Hidroelectrica SA	20103	18235	15807

Source: www.hidroelectrica.ro (SC Hidroelectrica SA).

- The low level of employees' wages – the average net salary is in 2009 of almost 1,300 RON.
- The existence of specialized people in the labor market;
- The procedure of profit repatriation is a simple one. The statement of National Bank nr. 4/2005 (the modified one) establishes the foreign currency rules for resident and non-resident persons. Using the 4th article of the statement:
 - Non-residents have the right to earn, to hold and to use financial assets in foreign currencies and in national one (Ron).
 - Non-residents may repatriate and transfer theirs' financial assets.
- The existence in the market of specialized companies that offer quality and professional consultations (fiscal, accounting and law field) to national and international potential investors
- The existence of a legal frame for producing energy from renewable sources. The legal general frame for electric energy production - Law no. 13/2007 – energy law in Romania, that include general aspects to promote the renewable sources.

Weakness

- The decreasing of the country rating – Because of the economical and political instability, Romania recorded in the last period a country rating decrease that may generate a changing attitude of possible future investors. At the beginning of 2009 Moody's maintained „BAA2” rating for Romania, and in September Coface Agency reduced the rating from A4 to B.
- High level of corruption – The Corruption Perception Index realized by Transparency International on 17th of November 2009, assign to Romania a 3.8 point out of 10, placing our country on the last place from European Union members, together with Bulgaria and Greece.
- The economic contraction prognosis for 2009 is of 8%, without too many signs of increasing in 2010
- The great level of external duty – Using the National Bank communicate, in September 2009, Romanian external duty is of 33.85 euro bn., that could generate in the future an increasing of financial pressure in order pay the incoming installments.
- The political incertitude in the last period.
- Instability of macroeconomic rates: the currency volatility, inflation rate (BNR predicted a conversion rate at 4.5 ron/eur at the end of 2009). The measures taken in the last period may generate instability at the level of macroeconomic rates with negative influence on investors' decisions.

Opportunities

- The existence of a legal unitary frame, that is adequate for promoting and using the renewable energy in European Union. In European Union, there were adopted concrete measures in the field of renewable energy, measures that were enhanced by all members of the Union (Directive 2003/87/CE from 13 October 2003 for establishing a trading system for emissions certificates inside the Comunion and to modify the Directive 96/61/CE of the same

Council). The last one was included in the local legislation by HG no. 780/2006 regarding the trading scheme establishment for nicive emission, HG no. 60/2998 regarding the approval of National Plan of certificate allocation (nocive emissions certificates) for 2007 and for the period 2008—2012 etc.).

- Financing mechanisms of the investments in renewable resources production, there are international and national funds for research and development of the projects regarding the energy from renewable sources. In 2009 the Order of Environment Ministry approved the Financing Guide of the Program towards producing the energy from renewable sources: wind, geothermal, solar and hydro. Between 09th -27th November 2009, there is organized the projects proposal session. Also, the Order of Economy Ministry no. 1226/2009, mention the approval of the final list of investment projects for increasing the energetic efficiency and the using of electrical renewable energy sources in the public sector for 2009-2010.

- World wide promotion of E-SRE production.
- The responsible debate of climatic changes problem by governments, fact that determined the adoption of a common decision for decreasing CO₂ emission in atmosphere.
- The continuous availability of conventional energy sources – this means the decreasing of vulnerability towards ending or increasing the fossil combustibile price, if we judge the present dependence for these limited resources (for example at this moment Europe depends on Russian Gas).

Threats

- Financial crisis show us the investors' difficulty to get necessary resources for investing in this industry. The actual economic crisis generated a dramatic decrease of the investment level, that is combined with a degradation of existed production capacities (a great part of hydro energy production capacities in Romania was realized in 1975-1989, and in the present there is a huge need of capital to moderize and retechnologize them).

- The decreasing of petrol price. From an historic maxim price of 147 \$/barill in 2008, in this moment the price is around 80\$/barill.

3. Investments in renewable energy capacities in Romania

From the previously above mentioned we can notice that Romania has a highly potential market for investors in this field of activity.

Regarding profitability investment in hydropower production, for example, the studies realized by specialized institutions appreciate that micro hydro centrals projects became profitable in case of an energy selling price between 20 euro/MWh and 36,6 euro/MWh. The initiations and application by the State of E-SRE promotion mechanisms (issuing and valuing of green certificates, CO₂ rights emissions, and all suppliers compulsory acquisitions of an annual quote of E-SRE from the total acquired and distributed energy) may generate a good scoring in feasibility evaluation of such projects.

In Romania, HG no. 1892/04.11.2004 establish the promoting system of electric energy production from renewable sources, by combining the system of compulsory quotes with the system of green certificates trading (certificates issued for renewable energy produced and distributed in the system). By this act the green certificate is defined as – the document that certify a 1 MWh quantity of electric energy produced by renewable energy sources.

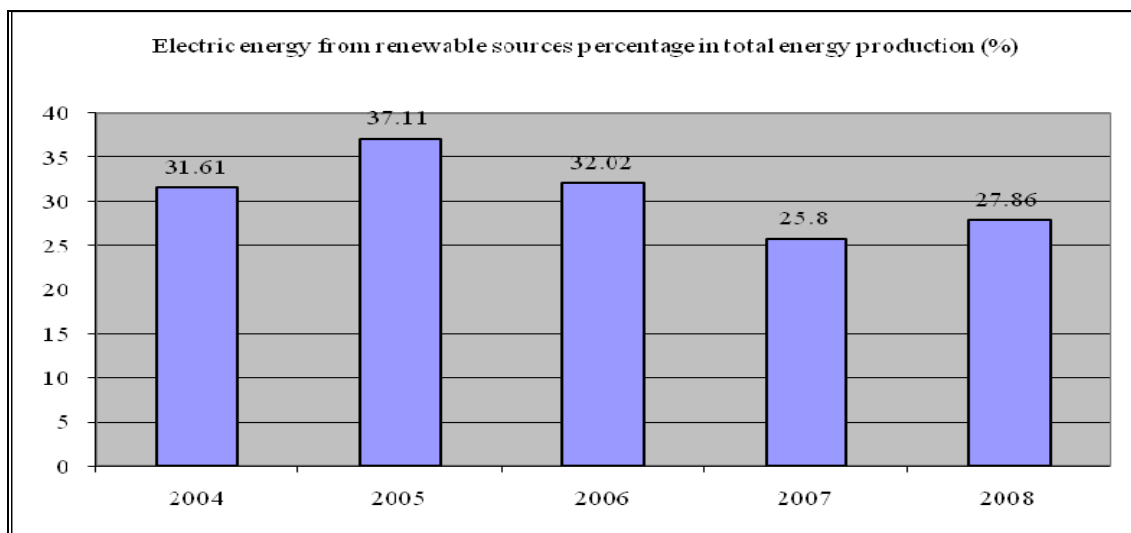
For example, in 2008, the compulsory quota of green certificates acquisition by electric energy suppliers is of 0.316% from the total electric distributed energy to the final clients, and the level was established by ANRE by Order 127/11.12.08.

The organizational and functional rules for green certificates are mentioned in Order ANRE no. 22/2006 and HG no. 958/18.08.2005 established the minimal and maximal value for trading a green certificate in the period 2005-2012. This must be situated between the equivalent in Ron of 24 euro/certificate, and the equivalent in Ron of 42 euro/certificate,

calculated at a currency rate established by National Bank of a Romania in the last working day of December for the precedent year.

For year 2020, the E-SRE production target for Romania from the total brut internal energy consumption, is established at 24% by Directive 2009/28/EC of European Parliament from 23 April 2009, Directive regarding the promoting of renewable energy sources utilization.

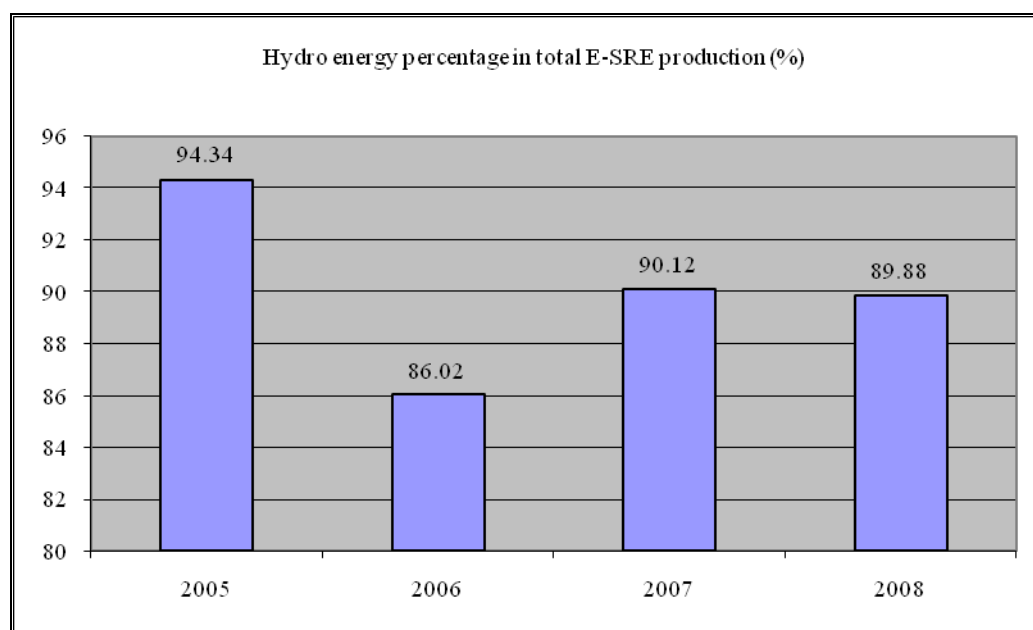
In present in Romania, the greatest part of renewable produced energy is generated by hydro energetic field. Using the data from Hidroelectrica SA web site, the percent of renewable electric energy production in total energy production recorded the following values:



Source: www.hidroelectrica.ro (SC Hidroelectrica SA).

Figure 2. Electric energy from renewable sources percentage in total energy production (%)

From the total production of E-SRE the percentage of hydro energy is the greatest one.



Source: www.hidroelectrica.ro (SC Hidroelectrica SA).

Figure 3. Hydro energy percentage in total E-SRE production (%)

In 2006 SC Hidroelectrica SA, the biggest hydro energy producer in Romania recorded investments from own sources of 740,592,000 lei and also from banking credits of 559,408,000 lei. Investments were orientated for the projects continuing started before 1989, new technology and modernizing the existing centrals. (www.hidrotehnica.ro)

In 2007 SC Hidroelectrica SA invested 1,050,000,000 lei, 750,000,000 lei from own sources and the rest from banking credit. 2007 represented an important year in approving the feasibility studies for two national projects Stejaru-Bicaz and Tarnița-Lăpuștești.

Romania still has an important hydropower potential for those who wants to make investments in this field. The natural resources offered by our rivers can determined the new potential investors to develop new hydro electric capacities. In 2005, the Romanian hydropower potential was used at rate of 54%. (Opaschi)

There are also currently investors who achieved hydroelectric power generation already in service that were privatized by Hidroelectrica SA. The number reached 150.

As regards energy production from biomass as the primary source, in Romania was inaugurated by the Austrian company Holzindustrie Schweighofer, two biomass cogeneration plants, one in Radauti with a total production capacity of 4.9 MW and one in Sebes, with a capacity of 2.4 MW. Holzindustrie in Schweighofer Romania aims to become market leader in energy production using biomass and intend to realize a new investment in this area by building a new biomass cogeneration plant with a production capacity of 8.5 MW. The total value of investments for this three projects totals about 45 million. (www.shweighofer.ro)

The Blue Planet Investments Campaign hold in present in România a portfolio of 12 wind ongoing projects, in different area: Dobrogea, Moldova, Banat having the deadline in 2010-2014. (www.blueinvestments.ro)

The Romanian interim Minister of Economy, Adrian Videanu, mentioned at the beginning of November, the signing of the first six non-reimbursable financing contracts for investments in modernizing and creating new E-SRE production capacities. The beneficiaries of the these projects are: Romconstruct Top SRL, Balkan Hydroenergy SRL, Unicom 3N 2000 SRL, Mayoralty of Municipality Beiuș, SC Hidroconstructia SA with a total value of the projects of 269 milioane lei (using Videanu's declaration). The installed power of these projects is of 31.557 MWe electric power and 30.55 MWt thermo power.

In international field, is desired the realization of a huge project by a German consortium (with estimation production costs of 400 billion euro) in order to produce electrical energy using the Concentrated Solar Power solar energy from Sahara Desert and its' distribution to the German and European markets. So 15% from the total European energy needs could be ensured by this project by the year 2050. (The Guardian, 1 Noe 2009)

4. Conclusion

As we noted, the market of energy production from renewable sources is a market with great potential, but also a market with high investment costs.

Romania offers multiples possibilities for investors to obtain E-RES, with adequate legislative support, with many facilities offered by the government and with possibilities of obtaining grants.

A solution for attracting capital necessary to the companies in this industry is represented by the capital markets.

Climatic modification may generate a changing in the investors' preferences in the capital market. In this case they may find interesting shares offers of the companies specialized in E-SRE production.

The politics that should be adopted by different governments in order to facilitate the investments in the industry of E-SRE production, may be focused on:

1. The allocation of financial stimulants to the companies that decrease their's emissions by new investments; this may attract new investors to this sector. The incentives may be decreased once the E-SRE production technologies prices are lower

2. Strategies of elimination the non-economic barriers negotiated between the governments of different states, for example the easier access to the special prices to the electrical networks

3. The elimination of some taxes for the investors in the capital market, that buy shares of E-SRE production companies

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FINANCING TECHNOLOGY TRANSFER THROUGH VENTURE CAPITAL

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***Abstract.** Venture capital is considered in the literature the resource for financing research-development-innovation. Therefore, addressing the concept of venture capital is primarily the definition and its classification according to national and international experience.*

Keywords: venture capital; investors; financing; innovation and technology transfer.

1. Venture capital – a resource for financing R & D-innovation

1.1. Definition of risk capital

Sources of risk capital is in the organization of Spanish and Portuguese expeditions of centuries XV and XVI. At that time, seafarers and adventurers entrepreneurs possessed not only the art of navigation and crew skills. Therefore, they found their „sponsors” (capitalist adventurers) to finance expeditions designed to bring wealth of new worlds.

The basic idea of financing these expeditions was maintained in the modern understanding of venture capital, except that the hazards are lower and are unlikely to venture industrial entrepreneurs rather than allowing reality.

The success of companies, established in Boston Area (USA) or in Silicon Valley (USA), during 1970/1980, showed that industry was in an evolutionary trend that small businesses could create wealth and that funding should follow or even to precede this development.

Venture capital, the terminology is poor translation of the term American „venture capital” (Battini, 1988). The same terminology is used and specialized in French literature, namely „Le Capital – risque” without any explanation about how venture („Venture”) has become the „risk”.

Pierre Battini proposed the following definition of venture capital: „Venture capital is a special source of funding provided unlisted companies that are new or have an important development”.

Venture capital is a special source of funding for the following important features:

- This source of funding outside the traditional banking circuit;
- Method of decision of these financiers is original in that it is not divided on traditional criteria of holders of claims;
- Shareholders-carry venture capital acts as such and not as mere spectators.

In a simplified expression, venture capital is an input of own funds, made by institutions involved, more or less in business operation, in order to make a profit from reselling the securities they hold. This aim explains towards sustainable papers, which can demonstrate a compatible development with the hope of profit.

Unlike classic banker, seeking economic security, venture capital investor is, rather, as a partner working on a more distant horizon, and therefore uncertain.

Of those shown in literature (An Introduction to Venture Capital, 1999), it can highlight and another definition of venture capital: Venture capital funds provide long-term contribution to help unquoted companies, to their growth and development.

Venture capital investing is part of the company (shares or other securities) and therefore, the profit of investors is dependent on growth and business profitability.

1.2. Classification and venture capital investors

After the stage of a company's existence, there is risk capital (Battini):

- founding capital: financing business training in first years of existence;
- development capital: ownership of existing companies, which have development potential;
- capital transmission: for power transmission operations in the company, the more motivated by associations or by a team of managers.

Criteria by which you can determine what types of investors in venture capital are:

- a) the legal and tax:
 - Venture capital company (SCR).
 - Financial company innovation (SFI).
 - Common funds at risk (FCPR).
- b) specialization by type of investment: usually venture capital investors specialize in one type of intervention (establishing capital, development capital) without excluding a prudent diversification.
- c) specialization by sector: almost one third of the investors have a sectoral specialization, driven by real prospects of recovery of specific expertise, sectoral specialization may be in areas such as informatics, biotechnology, health, etc.
- d) the regional dimension: there may be three categories of investors with regional vocation, namely, those who have primarily an economic function, those who replaced entirely independent venture capital professional and structures created by regional financial institutions.
- e) sources of funds for venture capital organizations: there may be four categories of the founders of venture capital organizations, namely:
 - Government or local authorities;
 - industrial groups;
 - Banking and other financial institutions groups;
 - independent teams.

This classification is useful bidders investment projects to optimize the choice of a consistent financial partner.

Venture capital financing is a combination of medium term, between a team of managers and a team of financiers.

Initiation and completion of such combinations involving the following steps:

- preliminary contact;
- choice of financial instruments;
- active partnership;
- investors exit.

2. International experience of financing innovation and technology transfer through venture capital

2.1. Positive trends in venture capital funding

American pragmatic thinking before that, turning the CDI results, adequate funding is one of the venture capital. Evolution of funding by venture capital presented a sharp increase in the US during the 80s, as noted in Figure 1 (NSB98-1).

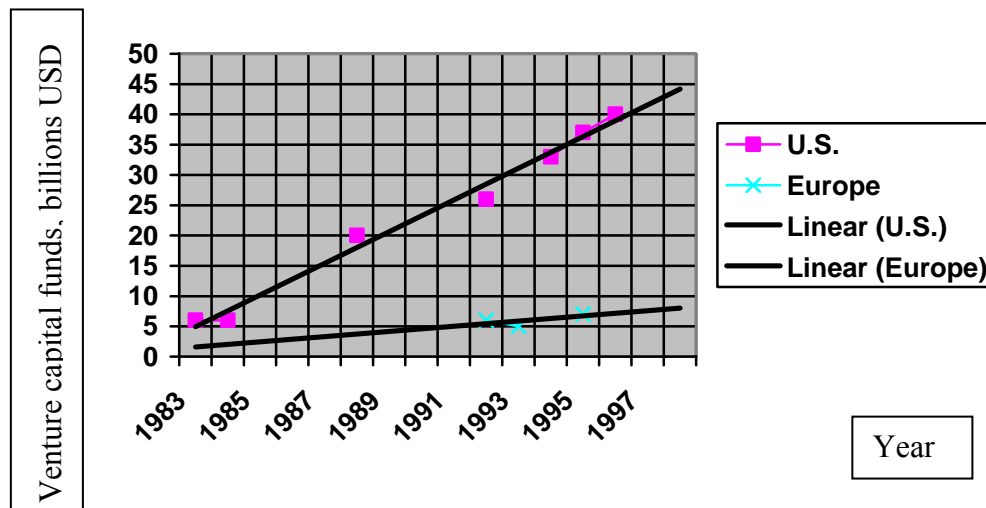


Figure 1. Evolution of funding by venture capital in the U.S. and Europe

These funding sources have been targeted primarily towards innovative firms and allowed the funding application CDI results. Even in the early '90s such funding towards growth slowed after 1992, it was strongly revived. In the same period, the US, GDP per capita increased from USD 26,426 in 1990 to 27,197 USD in 1997.

In Western Europe, venture capital financing was especially prevalent in the '90s, so this type of financing has increased from 6.1 billion USD in 1992 to US \$ 8.5 billion in 1996. In the year 1995, European funding through venture capital represented 19.5% of the US. Among Western European countries, England has invested 47.5% of total European venture capital funds, France – 15.3% and Germany – 12%. In England, GDP per capita increased from USD 18,364 in 1990 to 19,108 USD in 1995, while in France rose from 20,051 to 20,675 USD per capita, and in Germany, from 21,523 to 22,586 USD per capita.

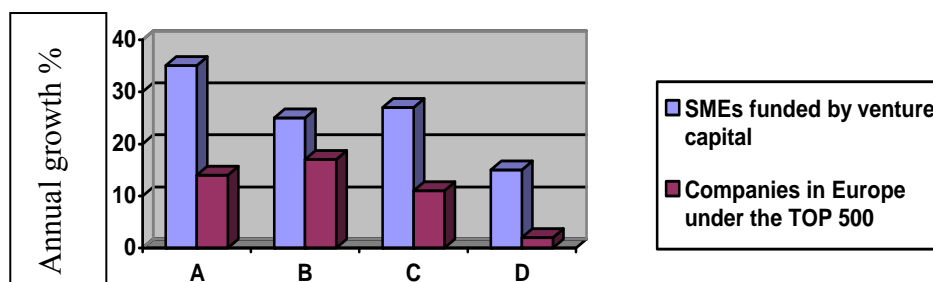
Following the example of US success, the role of venture capital in Europe increases. Companies experiencing very rapid growth requires access to risk capital in order to find financial resources for their investments. These venture capital funds consist of accumulated capital market by specialized operators. European investors buy shares or invest in securities convertible into companies in which they become shareholders. Operators of venture capital investing with the idea not to receive immediate dividends, but in order to enable the company to expand and, ultimately, to obtain a gain from capital invested.

The role of these operators is to identify companies with good prospects for their injection with sufficient funds to increase their level can be listed.

Few companies meet these traits and it is estimated that only 4% of all European businesses are attractive enough to attract venture capital (CE, 200).

For the period 1991-1995 it was performed an analysis of the economic impact of venture capital on small and medium enterprises in Europe, compared with the performance of top 500 companies. Figure 2 shows the results of this analysis.

Following venture capital funding, SMEs have increased the number of employees by 15%, compared to only 2%, but increased the 500 top companies. They have increased turnover by 35%, more than managed companies „TOP 500”. Most managers of these SMEs have shown that without an injection of risk capital should be made smaller increases or even zero growth.



A = Turnover. B = Gross profit. C = investment. D = Employees.

Figure 2. The economic impact of venture capital in Europe (1991-1995)

2.2. Difficulties in financing through venture capital

In 1996, almost 8 billion ECU were collected in European capital risk funds, which represent a small fraction of actual funds available for venture capital investment. Gradually receiving some technological sectors of the total financial investment: an average of only 24% of European investment is moving towards technological development, compared with 70% in the US.

Information and communication technologies have received 16% of total European investment in 1995, compared with 13.5% in 1996. Investments in biotechnology decreased during the same period, from 8% to 6.5%. However, in absolute terms, new technologies attract more venture capital (441 million ECU in 1996, compared with 320 million ECU in 1995), although the number of recipients starting investment (start-up) did not change significantly (939 in 1995 and 941 in 1996).

Venture capital operators noted a positive trend of targeting these funds to innovative firms, but are concerned about low earnings starting capital, which remains essential for inventions resulting from research.

Financing needs of innovative SMEs are determined by three factors:

- Stage of project development;
- The extent to which the project is innovative;
- Development stage company.

The main barriers to business start-up capital investment are:

a) Obstacles to financing through direct investors:

- Risk;
- The market fragmented and ineffective;
- Unrealistic goals of the developer;
- Tax risk.

b) barriers to venture capital financing:

- Relation between risk and return low;
- Technology transfer organizations have limited resources;
- Poor management capacity.

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ASSESSMENT OF THE EFFICIENCY OF INVESTMENTS USING THE INTERNAL RATE OF RETURN AND THE PROFITABILITY INDEX

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Abstract. *Despite their shortcomings, the IRR and PI methods continue to be a widely employed evaluation techniques in capital budgeting. However, the internal rate of return (IRR) is often associated with a problem related to the fact that this technique assumes that the cash flows can be reinvested at the IRR instead of the more appropriate discount rate. This is often associated with leading to a project-ranking problem between the IRR and the net present value (NPV). An attempt to correct the flaws associated with the IRR has been made via the creation of a modified internal rate of return (MIRR). In this paper, we show an alternative for MIRR calculation that offers the same project-ranking resulted by using VAN. Furthermore, we use the reasoning developed for modified profitability index (IPM) calculation, a useful indicator for investment selection of different sizes that offers, also, compatibility with VAN criteria.*

Keywords: investments; profitability index; cost/benefit ratio; net present value; internal rate of return.

JEL Code: G31

REL Code:11D

Introduction

Financial theory and practice recommend that in assessing the economic efficiency of investments several indicators to be used. This is because a single indicator does not reflect the efficiency of investments in all aspects⁽¹⁾. However, using several indicators can lead to conflicts making it difficult choosing the best project. This is noted most often when using simultaneously the net present value (NPV), internal rate of return (IRR) and profitability index (PI). Although alternatives were proposed for these indicators, especially for IRR, to resolve potential selection conflicts, they are more difficult to understand by practitioners to be used frequently in assessing the efficiency of investments. For example, for the IRR to provide the same order of selection for project variants as NPV, IRR was reflected in the proposed reinvestment operating cash flows (AS Linn (1976)). In turn, D.M. Shull (1992) used the same method to calculate the overall rate of return (OIRR), aiming to use the latter to lead to the same ranking of investment projects offered by using NPV.

The concerns for IRR and IP calculation so that the two indicators to lead to the same ranking of investment projects offered by NPV are resulted from its significance: the NPV reflects the market value of the company after its decision to adopt a particular project. The equation for determining the NPV can be written as:

$$NPV = \sum_{i=1}^n \frac{CF_i}{(1+k)^i} - I \quad (1)$$

where CF_i is the expected operating cash flows to be obtained in the year i , k – project’s cost of capital, I – the investment expenditure.

It can be noted that the three indicators lead to conflicts in the selecting process of project variants due to the following issues:

- 1) they allow a different rate of return for the operating cash flow reinvested;
- 2) when the projects differ in amounts of capital to be invested.

Firstly, in calculating NPV it is considered that the operating cash flows (CF) are reinvested at a yield equal to the cost of capital (k). In reality, what is reinvested is not the operating cash flow, but the surplus remaining after payment of all obligations (to the capital suppliers and taxes). This can be seen as a limit of NPV reflection⁽²⁾. In contrast, the IRR considers the operating cash flow reinvestment using as rate of return the IRR itself, while the IP accepts that the investment would yield a rate of return at the level of discount rate.

Second, the selection conflicts of project variants resulted from the simultaneous use of the three indicators are due, also, to different amount of capital to be invested. I. It can be shown that, when seeking the optimal project from different variants characterized by different levels of capital expenditure, the company may have all the funds needed to implement any of them. Thus, we may consider that the company may have the necessary funds even if it will choose the project with the highest level of investment spending. Therefore, it can be assumed that the company will make an investment with a level of expenditure that corresponds to the difference between the total funds available and financial costs of the project chosen. This assumption is not mentioned in literature. It means that, in adopting the project characterized by a lower level of investment spending to total capital available, the company will have unused funds in that project, but these can be invested in order to achieve a level of profitability at the level of the opportunity cost.

Note that this difference in funds can be reinvested at the same rate of return used to calculate NPV, so that the IRR and PI resulted to use the same assumption used by the NPV. The NPV of this „extra investment” is zero. This means that each project with a wide choice of investment spending less than the maximum amount of funds may be attached to two cash flows: one associated with the project and the second belonging to the difference between the maximum level of funds available and the expenses necessary for the analyzed project. If the difference of funds can be used to undertake for another investment, the corresponding cash outflows will be $(I_{MAX} - I)$, which belongs cash inflows at every year from 1 to n equal to $(I_{MAX} - I)(1+k)^n$, I_{MAX} being the total present value of funds available to be invested; I - the present value of investment expenditure associated with the project below the level I_{MAX} ; k - cost of capital³. Using for NPV the equation (1), we consider by default that the investing funds will generate a rate of return equal to the cost of capital, so that the corresponding NPV for $(I_{MAX} - I)$ is zero. However, IP and IRR, as reflected in literature, cannot take into account this difference.

NPV is an absolute value added by a project to the company's value as a result of achieving a surplus of benefits higher than the investment expenditures. In contrast, IRR can not estimate the added to the company following the implementation of a specific project; in this case it is used an unrealistic assumption that the cash flows will be reinvested resulting a rate of return equal to IRR. The equation of which can be determined IRR may be written as:

$$I + \sum_{i=1}^n \frac{CF_i}{(1 + RIR)^i} = 0 \quad (2)$$

It is obvious that, for the IRR to use the same method for calculating the NPV it should be used the cost of capital as the rate of return obtained from cash flow reinvestment. In turn, IP shows the relative profitability of any project, or the present value of benefits per one monetary unit of cost, in which case it is used the assumption of cash flows reinvestment at a rate of return at the level of cost of capital.

In 1992 Shull presented a method for calculating the IRR to be used to select the projects according to the market value added, so that the overall rate of return (OIRR) to offer compatibility with NPV in the selection of investment projects. In what follows, we argue that by using the equation for OIRR where the proposed takes into account the above observations,

we obtain the same order of selection of investment projects offered by NPV, reasoning that we use to determine the modified profitability index.

Assessing the efficiency of investments using the modified internal rate of return

Shull called the modified overall internal rate of return (OIRR) as the rate of return resulting from the future value of operating cash flows (which includes the surplus remained after all business liabilities, obtained in the previous year). OIRR can be illustrated as follows:

1) as an internal rate of return as (MIRR) or, the average, that takes into account that the expected cash inflows that will be used inclusively to cover any loss of future years. In this case, the terminal value involved in the MIRR equation will be a present value of cash surpluses arising after covering the losses. In the same context, the investment expenditures of the project are represented by the present value of funds to be invested plus any net operational loss;

2) as a rate of return (IRR*) which considers the terminal value as a function of cash inflows (without cover losses in the future years).

The overall modified internal rate of return OIRR proposed by Shull is⁽⁴⁾:

$$\text{OIRR} = \left(\frac{\text{TV}}{I} \right)^{\frac{1}{n}} - 1 \quad (3)$$

where TV - terminal value calculated by compounding the cash flows, I - the present value of cash outflows, n - duration of the investment.

Given the above observations, to calculate OIRR using equation (3) we consider the present value of cash inflows from the moment 0 to n. So, we obtain the total financial effort at the moment 0, and on the other hand, the discounted net benefits at the time n. With the investment of a global operation to obtain at certain times and losses, the relation (3) can be written as:

$$\text{OIRR}_A = \text{MIRR}_A = \left(\frac{\text{TV}_A + (I_{\text{MAX}} - I_A)(1+k)^n}{I_{\text{MAX}}} \right)^{\frac{1}{n}} - 1 \quad (4)$$

VT_A – the value composed of net operating cash flows; I_{ax} – the maximum present value of funds that can be invested; I_A – the investment expenditures of the project A.

We assume that for the project A implementation the investment expenditure will be bigger than for the project B:

$$I_A > I_B$$

$$\text{In this case, MOIRR}_B = \text{MIRR}_B = \left(\frac{\text{TV}_B + (I_A - I_B)(1+k)^n}{I_A} \right)^{\frac{1}{n}} - 1 \quad (6)$$

$$\text{and MOIRR}_A = \text{MIRR}_A = \left(\frac{\text{TV}_A + (I_A - I_A)(1+k)^n}{I_A} \right)^{\frac{1}{n}} - 1 = \left(\frac{\text{TV}_A}{I_A} \right)^{\frac{1}{n}} - 1 \quad (7)$$

$$\text{If MOIRR}_A = \text{MIRR}_A \Leftrightarrow \text{MOIRR}_B = \text{MIRR}_B \quad (8)$$

$$\text{this means that } \left(\frac{\text{TV}_A}{I_A} \right)^{\frac{1}{n}} \Leftrightarrow \left(\frac{\text{TV}_B + (I_A - I_B)(1+k)^n}{I_A} \right)^{\frac{1}{n}} \quad (9)$$

$$\text{or } \frac{\text{TV}_A}{(1+k)^n} \Leftrightarrow \frac{\text{TV}_B}{(1+k)^n} + (I_A - I_B) \quad (10)$$

$$\text{hence we obtain } \frac{\text{TV}_A}{(1+k)^n} - I_A = \text{VAN}_A \Leftrightarrow \frac{\text{TV}_B}{(1+k)^n} - I_B = \text{VAN}_B \quad (11)$$

Correctness of our reasoning can be demonstrated also for if the investment costs of project B are higher than those of project A.

Example

We will use the cash flow data shown prior discounting in table 1 for projects A, B, C, D to illustrate the indicators using the equations above. We assume that the projects are equally risky. Note that cash flows are expected values and they adjusted for tax, depreciation and salvage value effects. Also, since any project require both fixed assets plus an addition to net working capital, the investment outlays shown include any necessary changes in net working capital. Finally we assume that all cash flows occur at the end of the designated year and the cost of capital is constant, 20% per year, for each project.

Cash flows for projects A, B, C, D and their IRR and NPV

Table 1
(m.u.)

Time (years)	Cash flows for projects:			
	A	B	C	D
0	(40.00) ^a	(40.00) ^a	(40.00) ^a	(80.00) ^a
1	20.00	36.00	0.00	0.00
2	(40.00) ^a	(20.00) ^a	0.00	0.00
3	100.00	100.00	150.00	150.00
IRR (%)	26.74	58.24	55.36	23.31
NPV (m.u.)	6.76	33.98	46.80	6.80

^aRepresents the net investment outlay or initial cost. The parantheses indicate a negative number, or a cash outflow.

The results obtained for NPV and IRR reflects the contradictions in selecting the optimal project. Thus, the project C seems to be optimal according to NPV, while IRR indicates that B as optimal. The order of ranking given by NPV is: C > B > D > A, and using the resulting IRR: B > C > A > D.

In this case, we proceed to determine OIRR for the four investment options. Thus, in the following table we sum the cash flows to be obtained in the first year of operation (compound for one period using discount rate) to the cash flow for year 2 including operating losses and it results:

Cumulative cash flows for years 1 and 2 for project options

Table 2
(m.u.)

Time (years)	Cumulative cash flows:			
	A	B	C	D
0	(40.00)	(40.00)	(40.00)	(80.00)
1	0.00	0.00	0.00	0.00
2	(16.00)	23.20	0.00	0.00
3	100.00	100.00	150.00	150.00

Similarly, we discount the net operating losses to the moment 0 and, also, all positive cash flows obtained in the above table for the year n ; the results are centralized in the table below including for the levels of OIRR, MIRR and NPV:

The results obtained for MOIRR, IRRM and NPV for the projects A, B, C and D

Table 3
(m.u.)

Time (years)	Cash flow for OIRR and MIRR calculations:									
	A	D-A	Total	B	D-B	Total	C	D-C	Total	D
0	(51.11)	(28.89)	(80.00)	(40.00)	(40.00)	(80.00)	(40.00)	(40.00)	(80.00)	(80.00)
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	100.00	49.92	149.92	127.84	69.12	196.96	150.00	69.12	219.12	150.00
OIRR (%)	25.07	20.00		47.30	20.00		55.36	20.00		23.31
MIRR (%)			23.28			35.03			39.91	23.31
NPV (m.u.)			6.76			33.98			46.80	6.80

Note that the results obtained for the net present value from the table above are the same with the results in Table 1 where we used unaggregated cash flows. Also, we get the same ranking of investment projects offered by NPV and MIRR: C > B > D > A. In the table below, we centralize the cash flows and the results obtained for IRR*:

The results obtained for IRR* for the project options

Table 4
(m.u.)

Time (years)	Cash flow for IRR* calculation:									
	A	D-A	Total	B	D-B	Total	C	D-C	Total	D
0	(66.77)	(12.33)	(80.00)	(53.89)	(26.11)	(80.00)	(40.00)	(40.00)	(80.00)	(80.00)
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	128.80	21.13	149.93	151.84	45.12	196.96	150.00	69.12	219.12	150.00
IRR* (%)	23.87	20.00		41.24	20.00		53.36	20.00		23.31
MIRR (%)			23.28			35.03			39.91	23.31
NPV (m.u)			6.76			33.98			46.80	6.80

According with the results obtained, the levels for OIRR and MIRR are the equal, without be the same with those for IRR*. In the same context, for NPV we obtain the same values with those from Table 1. Using NPV, OIRR and MIRR the ranking is the same: C > B > D > A and C is optimal.

The ranking according to the levels of the indicators calculated

Table 5
(m.u.)

Ranking IRR* (%)	Ranking MIRR (%)	Ranking OIRR (%)	Ranking NPV (%)				
I C	53.36	I C	39.91	I C	55.36	I C	46.80
II B	41.24	II B	35.03	II B	47.30	II B	33.98
III A	23.87	III D	23.31	III A	25.07	III D	6.80
IV D	23.31	IV A	23.28	IV D	23.31	IV A	6.78

Assessing the efficiency of investments using the modified profitability index

In the project analysis it is used also the benefit-cost ratio (profitability index):

$$PI = \frac{(NPV + I)}{I} \quad (12)$$

where NPV – the net present value; I – the investment expenditure for the project.

A project is acceptable if its PI is greater than 1,0; the higher is PI the higher the project's ranking. Mathematically, the NPV, the IRR and the PI methods must always reach the same accept/reject decisions for independent projects; if a project's NPV is positive, its IRR must exceed the cost of capital and its PI must be greater than 1,0. However, NPV, IRR and PI can give different rankings for pairs of projects, which can lead to conflicts between the three methods when mutually exclusive projects are being compared.

The profitability index may lead to a different ranking of investment projects to the one provided by NPV in circumstances where the investment costs differ from one variant to another, including when the difference between the maximum amount to be invested and the version analyzed is neglected.

By definition, benefit cost ratio considers the present value of cash inflows divided by the present value of cash outflows. The adjustment of this equation requires the inclusion of appropriate present value of the difference ($I_{MAX}-I_A$) in the equation of profitability index in its modified version (IPM). Thus, for the project A, the modified profitability index can be written as follows:

$$MPI_A = \frac{PV_{(+A)} + (I_{MAX} - I_A)}{PV_{(-A)} + (I_{MAX} - I_A)} \quad (13)$$

where $PV_{(+A)}$ – the present value of cash inflows; $PV_{(-A)}$ – the present value of cash outflows; I_{MAX} - the maximum present value of the available funds that can be invested ; I_A - the present value of the amount to be invested in the project A.

Our reasoning in MPI calculation accuracy can be proved from the levels of this indicator which must lead to the same ranking of investment projects offered by NPV. For this we assume that:

$$MPI_A = \frac{PV_{(+A)} + (I_{MAX} - I_A)}{PV_{(-A)} + (I_{MAX} - I_A)} \Leftrightarrow 1 \quad (14)$$

$$\text{then, } PV_{(+A)} + (I_{MAX} - I_A) \Leftrightarrow PV_{(-A)} + (I_{MAX} - I_A) \quad (15)$$

$$\text{and, } PV_{(+A)} - PV_{(-A)} = NPV_A \Leftrightarrow 0 \quad (16)$$

On the other hand, to verify the accordance with NPV criteria, it is necessary that:

$$MPI_A = \frac{PV_{(+A)} + (I_{MAX} - I_A)}{PV_{(-A)} + (I_{MAX} - I_A)} \Leftrightarrow MPI_B = \frac{PV_{(+B)} + (I_{MAX} - I_B)}{PV_{(-B)} + (I_{MAX} - I_B)} \quad (17)$$

$$\text{Being known that } VP_{(-A)} + (I_{MAX} - I_A) = VP_{(-B)} + (I_{MAX} - I_B) = I_{MAX} \quad (18)$$

$$\text{than, } \frac{VP_{(+A)} + (I_{MAX} - I_A)}{I_{MAX}} \Leftrightarrow \frac{VP_{(+B)} + (I_{MAX} - I_B)}{I_{MAX}}$$

$$\text{and, } PV_{(+A)} - I_A = NPV_A \Leftrightarrow PV_{(+B)} - I_B = NPV_B \quad (19)$$

Example

Using the data from the table 1, we compute PI for each project:

Cash flows for projects A, B, C, D and their NPV and IP

Table 6
(m.u.)

Time (years)	Cash flows for projects:			
	A	B	C	D
0	(40.00)	(40.00)	(40.00)	(80.00)
1	20.00	36.00	0.00	0.00
2	(40.00)	(20.00)	0.00	0.00
3	100.00	100.00	150.00	150.00
NPV (m.u.)	6.76	33.98	46.80	6.80
PI	1.17	1.85	2.17	1.085

In this case there is no contradiction in choosing the best project. However, ranking projects according to NPV is: $C > B > D > A$ while according to IP, we have: $C > B > A > D$. In the table below we centralize the IPM levels calculated using the equation (13) for the four projects:

The results obtained for IRR*, NPV and MPI for the project options

Table 7
(m.u.)

Time (years)	Cash flow for MPI calculation:									
	A	D-A	Total	B	D-B	Total	C	D-C	Total	D
0	(66.77)	(12.33)	(80.00)	(53.89)	(26.11)	(80.00)	(40.00)	(40.00)	(80.00)	(80.00)
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	128.80	21.13	149.93	151.84	45.12	196.96	150.00	69.12	219.12	150.00
IRR* (%)	23.87	20.00		41.24	20.00		53.36	20.00		23.31
NPV (m.u)			6.76			33.98			46.80	6.80
IMP			1.084			1.42			1.58	1.085

In the table above, the financial variables involved in determining MPI, for example for the project A, are computed as follows:

- the sum of net cash inflows discounted:

$$20/(1+20\%)+100/(1+20\%)^3=74.54 \text{ m.u.}$$

- the present value of the investment's cash outflows, summing the capital expenditures and the net operational losses:

$$I_A = 40 + 40/(1 + 20\%)^2 = 67.77 \text{ m.u.}$$

- taking into account the maximum amount of capital that can be invested, $I_{MAX} = 80$ m.u., than $(I_{MAX} - I_A) = 80 - 67,77 = 12.23$ m.u.

In this context, the MPI for the project A is:

$$MPI_A = \frac{74.54 + 12.23}{67.77 + 12.23} = 1.084$$

Following the ranking of investment projects according to the IPM using data from the table 7, we find: $C > B > D > A$, resulting C optimal.

Conclusions

Basically, the NPV method exhibits all desired decision rule properties, as such, it is a good method for evaluating projects. Because the NPV method is better than IRR and PI, we are tempted to explain NPV only, state that it should be used in as the acceptance criterion. However, the IRR and IP are familiar to many corporate executives and they are widely entrenched in industry. Therefore, it is important to be understood the IRR and PI methods and their limits in evaluating process of investments. Also, it s useful to be compared alternatives in terms of their MIRR or MPIs. However, when such comparisons are made, it is essential that the analyst be fully aware of how the IRR, MIRR, IP nd MIP are developed and where they can be used in a rationale manner.

Notes

⁽¹⁾ See M. Diaconu, 2008, *Financial Decision Regarding Company's Investments Under the Impact of Budgetary Policies*, Lumen, Iași.

⁽²⁾ However, in the cash flow estimation it is used the reinvestment of surpluses at a rate of return on short-term investments.

⁽³⁾ To simplify the analysis, we suppose that the cost of capital is constant from one period to another.

⁽⁴⁾ See D.M. Shull, *Efficient Capital Project Selection Through-Based Capital Budgeting Technique*, *The Engineering Economist*, vol. 3, no. 1, 1992.

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ASPECTS OF DIVIDEND POLICY IN ROMANIA

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***Abstract.** In a time of crisis, dividend policy is more important in decision of investment than in regular conditions. In Romania, some companies chose to share dividends, relying on the positive effect of measure, trying to keep investors close, while other companies chose to take precautions in crisis, keeping the entire profit for hard times.*

Keyword: share; dividend; BVB (Bucharest Stock Market); dividend policy; financial crisis.

JEL Codes: G01, G10, G12.

REL Codes: 11B, 11E.

In addition to the difference of course, dividend is another important form of capital gain on the market. Factors influencing dividend policy are of many kinds. Among them most important are:

- Legal regulations, which restrict the provision of dividends in certain circumstances;
- Availability of cash, meaning that a liquidity of crisis may create difficulties in providing dividends;
- Company's debts – for some companies with large debts, the tendency is to retain a greater share of their profits to cover;
- Possibility to accelerate or postpone investment projects, a factor which allows a company to more easily comply with the above dividend policy established;
- Effects of dividend policy on capital cost: managers must take into account about the effect of dividend signal;
- Degree of concentration of shares and preference of shareholders; capital of some companies is concentrated in hands of one shareholder or a group of shareholders. Thus, their preferences dictate the adoption of a dividend granting practices.

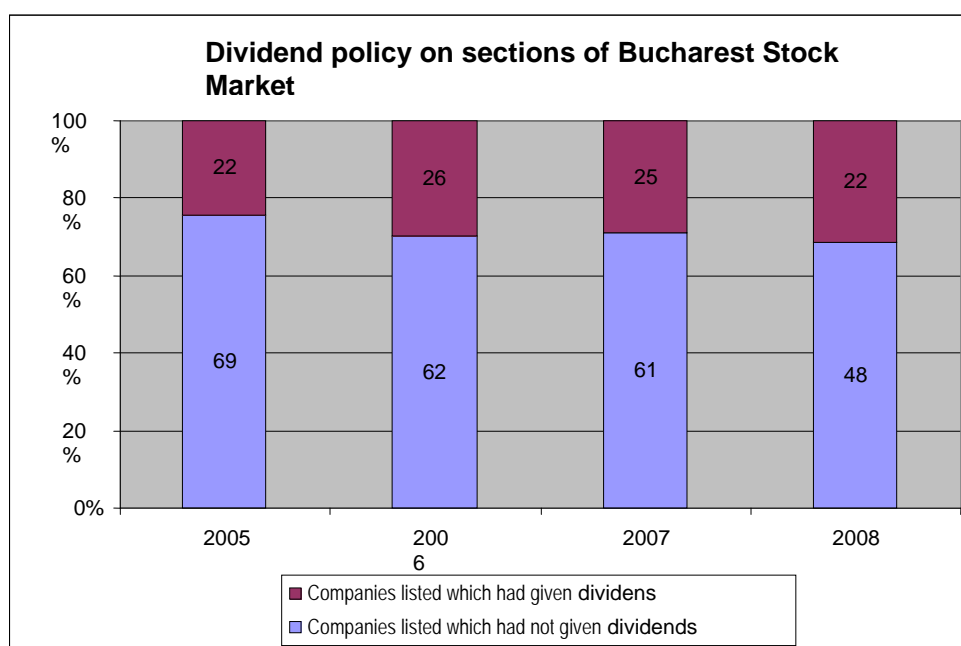
Thus, in accordance with some circumstances, firms adopt a dividend policy consistent with the objectives set. In recent years, it could identify companies with a dividend policy more stable than others, companies whose shareholders have voted in every year, the allocation of shares of net profits close to the form of dividends. Therefore, the shares issued by these companies began to be hunted by the very terms of dividends, becoming interesting even for the investment funds, open or closed. Recent years have brought significant increase in stock, many of them registered good progress with a dynamic that exceeds that of the profits made. This was due to the fact that most companies, in three or four years ago, gave dividends, have reduced funds for dividends in terms of corporate profits to investment guidance. Also, the amount of dividends given by companies can not really mean a win in the surge of quotations determine very low dividends yields. But the market has not reacted as in three or four years ago the ads on dividends, meaning that their value did not justify the purchase of shares in some cases. However, stronger movements took place on issuers, which have announced the granting of free shares as dividends. The reason is simple, this policy bringing higher gains if Stock Market examines developments in recent years.

In the last four years, the statistics on the number of companies which have dividends of all companies listed on the two sections of the exchange (Bucharest Stock Market and Rasdaq) look like this:

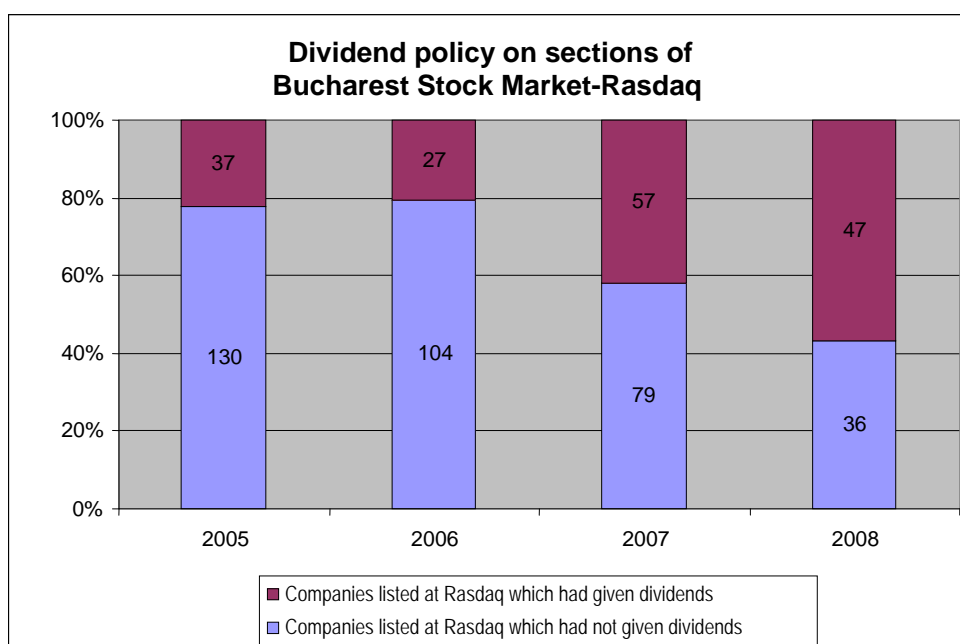
Year	Companies listed	Companies that have dividends
2005	258	59
2006	219	53
2007	222	82
2008	153	69

Source: *www.bvb.ro*

Detailed on Bucharest Stock Market and Rasdaq, we obtained the following graphic:



Source: *www.bvb.ro*



Source: *www.bvb.ro*

Regarding the attitude of companies providing dividends, it can be remarked that most have chosen not to distribute dividends, with one exception, the 2008 alternative capital market Rasdaq.

Taking into account the dividend rate, the rate of net profit allocated to fund dividends, in the last three years, have been following benchmarks:

	2005	2006	2007	2008
Median	52.26	52.21	51.97	62.53
Min	1.09	8.10	1.75	12.60
Max	100.00	94.29	99.19	100.00

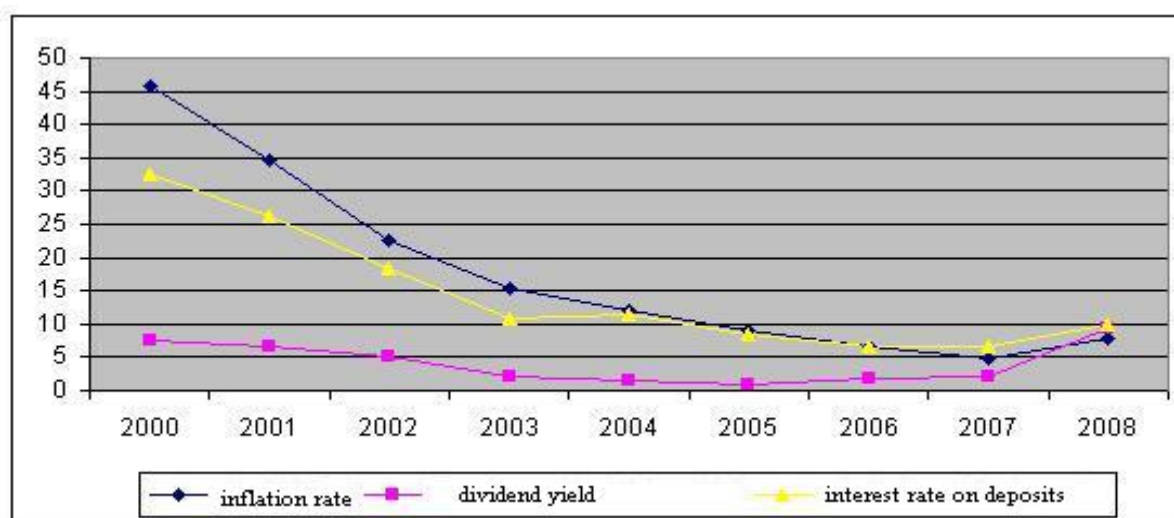
Source: *www.bvb.ro*

In terms of yields offered, the values for the period 2000-2008 are presented in the table below:

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
Yield dividend	7.48	6.70	4.97	2.00	1.45	0.94	1.72	2.20	9.4

Source: *www.bvb.ro*

A logical conclusion shows that dividends are not so attractive, which does not justify a purchase of shares in terms of dividend policy. This is reflected very clearly in the following chart, graph comparing the dividend yield with the inflation rate and the average of interest rate on bank deposits recorded in the same period.



This chart allows us to perceive a paradoxical situation. The three rates are just about equal in 2008, when the economic crisis began, and that is far from being called a normal period. But in periods of economic boom is highlighted a general financial policy of firms to neglect the granting of dividends, which led to a greater disregard of the recipients of funds to place them on the capital market.

Losses from 2008, of over 80% of the value, registered by the companies listed on the regulated market of the Bucharest Stock Exchange made the role of analysis, regardless of its nature, technical or fundamental, to fall a lot, the developments being driven by the fear of the investors. The classic landmarks had disappeared for investors, there is no foundation, shares fell so much that they seem cheap, but there is the fear that they may depreciate further.

There are companies that in the recent years had a steady dividend policy and rewarded their shareholders with approximately equal rates every year. For example Aerostar

Bacau (ARS) has granted dividends at a rate of 65-75% of net profit in each of the last five years, having also a high efficiency. Also, Alro Slatina (ALR) went on a distribution rate of over 100 % in 2001-2004, and in 2005 and 2006 the company has allocated a significant part of the profit to shareholders (84% and 75%). Bermas (BRM) and Turbomecanica (TBM) also used a constant policy of distribution of dividends.

But many listed companies that have made profits in 2007 have decided to reinvest it in order to finance future activities. If the dividends are rare on the BSE, an alternative to increase the attractiveness of the shares is the capitalization of profits and the granting of free shares. This practice has been implemented in recent years by a larger number of companies that have begun to use the capital market as a driver of business financing. If several years ago only a few companies accustomed the investors to such a policy, recently more and more issuers turned to this method. Moreover, the orientation of the issuers to granting shares instead of dividends in cash is an increasingly common policy on BSE and it's possible that in the coming years the number of the persons that will receive cash will decline. The only issuers who will go on this policy will be most likely those in which employees have significant packets.

What matters the most at the present moment are the policy dividends and their efficiency. In 2008 it appeared that although the shares depreciation was significant, the offered dividends lowered the losses. The market is too weak, so the fear and the desire for liquidity are weighing the heaviest. Basically, in these times of crisis everyone wants to have money and security that are provided by the liquidities/cash. Because the Bucharest Stock Exchange doesn't have a long history, as compared to that of New York, for example, there are no thresholds for technical analysis. At BSE is observed an increasing trend, then a large drop, because there wasn't formed a stock-exchange cycle. Thus all the parts were dissolved with the outbreak of the crisis period. Making a comparison between the strong buying period of '98/'99 and the significant sales of mid-2007 and the previous year, it can be observed that the investments were made without analyzing the fundamentals of the companies. In 2008 the international environment was bad, while the internal one was good. Things have changes in 2009 and the macroeconomic situation in Romania is very poor, which is reflected by the local capital market development.

Dividend policy has fundamentally changed because of the crisis. If before 2008 awarding dividends was a form to attract investors into trading listed titles on BSE, now things are very different. Some chose to give dividends, relying on the positive effect of the measure, seeking to keep close their investors, while others preferred to take precautions, keeping the entire profit for bad times. Among cautions there are Impact, Teraplast, Zentiva or Contor Group, companies that will not distribute dividends, although they ended the year 2008 with profit. At the opposite pole there is, for the first time for Rompetrol Well Services, the division of oil services from Rompetrol Group, which proposes to the shareholders, for the first time since listing, the distribution of a dividend. Among the companies that will provide dividends is also Alumil or Transgaz Medias. In 2008, 22 issuers of the BSE granted dividends, from the profit account in 2007, with yields between 1.5 % and 8 %.

In the current economic conditions, marked by uncertainty, the dividend policy can be a very relevant indicator for investors regarding the company's plans in which they want to invest. Some will choose to be more cautious, preferring to maintain the dividends in the context of financial blockage, which in a sense is a beneficial solution, but raises questions about the level of liquidity of the company. On the other hand, if dividends are distributed without making public other anti crisis measures, it can be raised question marks regarding the managerial capacity.

It is possible to witness in 2009 some changes because the liquidity needs and the funding sources have now become priorities for companies. But it is also possible to see dividends from companies that had no continuity in granting them, or even from those who

haven't assigned dividends at all in the past, especially at companies where there are a majority of shareholders.

In March 2009 it was observed an increasing trend of 20 % on some shares listed on BSE. This increase was attributed to the fact that the dividends bid could decrease the losses recorded because of the low share prices. In a time when the Bucharest Stock Exchange evolves in a context of global financial crisis, the dividends given by the listed issuers are those which weights the most in the investment decision.

On the regulated market of the Bucharest Stock Exchange, the highest dividend yield is that of Alro Slatina (ALR). The company announced that it offers a net dividend of 0.24108 lei/share, which raises the dividend yield (DIV Y) to 32.88% according to the quote established in the trading session at the end of March. The news was greeted with enthusiasm by investors, the shares of the aluminium producer immediately advancing to 14.29 %.

Alumil Rom Industry (ALU), the second giant of the aluminum market in Romania, distributed a net dividend of 0.2436 lei/share, for the profit of 9.49 million lei achieved in 2008. The dividend yield granted is 31.44 %. Both companies from the aluminum industry recorded a decreasing net profit because of the reduction of the demand in the context of the global financial crisis, which was also reflected in the proposed dividend value.

Orsova Shipyard (SNO) is another significant presence in the top of the highest dividend yields because of the distribution to each shareholder of a net amount of 0.63 lei/share. The dividend value is the same as the one provided for the year 2007, although the net profit obtained the last year rose twice, at 15.4 million lei.

Companies dividend yields form BSE financial year 2008					
Company	EPS 2008	Net dividend	Allocation rate	Couse 31 martie	DivY (%)
Alro Slatina	0.3420	0.2410	84.11%	1.3600	32.88
Alumil Rom Industry	0.3039	0.2436	95.43%	1.4300	31.44
SN Orsova	1.3485	0.6300	55.62%	5.0500	22.20
Aerostar	0.0816	0.0395	57.60%	0.4800	14.73
Transgaz	20.2645	8.7948	51.67%	116.1000	13.53
Rompetrol Well Services	0.0891	0.0201	26.94%	0.3250	11.03
Ves Sighisoara	0.0084	0.0030	35.71%	0.0667	6.66
Uztel Ploiesti	0.3164	0.2436	91.66%	6.9000	6.22
Titan	0.241	0.0105	51.87%	0.3690	5.00
Transelectrica	0.5367	0.2520	55.90%	9.9000	4.47
Comelf Bistrita	0.0891	0.0315	42.20%	2.5500	2.16
Oil Terminal Constanta	0.0019	0.0007	47.37%	0.1300	1.01

Source: Prime Transaction.

Companies that have decided not to distribute to the shareholders the profit obtained in 2008 and to use it in the form of reserves or investments are Petrom (SNP), Antibiotics (ATB), Zentiva (SCD) and Bermas (BRM). Also Petrom has disappointed the shareholders by proposing not to distribute the dividends for the earnings of 1.022 billion lei made last year, ending a string of three years in which the company distributed the profit to the dividends fund.

Zentiva has not offered any dividends in 2009 for the year of 2008, although the net profit of 23.2 million euros is 5.4 times higher than in 2007. This movement is not, however, a surprise because the company did not give dividends since it was listed on the stock-exchange. Another absent from the list of those who granted dividends, from BSE, is the beer producer Bermas, which decided not to pay dividends, although is doing so for seven years, the main reason being the sharp fall in profits.

Besides, there is a feature of the season dividend related to 2008, namely the decision of some major issuers to not distribute dividends to shareholders and thus targeted profit to self-financing. There is a need for liquidity on both sides, but in this economic environment which is deteriorating, leakage of cash from corporate treasuries doesn't represent a rational solution. The dividend policy for the year 2008 of the companies listed in the Stock-exchange regulated market is far from being uniform, being practically in resonance with the uncertainties in the economy.

In time of crisis, the dividend policy is of grater importance for the investment decision than in normal conditions, and after the catastrophic declines in the stock exchange, the dividend earnings reached a very attractive scales for some companies. Even in times of crisis, we can see that the companies listed on BSE believes that the distribution of profits is a method to earn the loyalty of the investor.

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COMPUTER COURSES – A TRAINING MODEL TO BENEFIT FIRMS

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***Abstract.** Improving the quality of education through the diversification of contents and methods and promoting experimentation, innovation, the diffusion and sharing of information and best practices as well as policy dialogue are UNESCO's strategic objectives in education. Educational systems are under increasing pressure to use the new information and communication technologies (ICTs) to teach students the knowledge and skills they need in the 21st century. We argue here for a particular view of games—and of learning—as activities that are most powerful when they are personally meaningful, experiential, social, and epistemological all at the same time.*

Keywords: education; public intervention; economic advantage; investments; efficiency.

JEL Codes: E44, H52, I22.

REL Codes: 4D, 8H, 13C.

1. Introduction

„The future of a nation is determined by how it prepares its youth”, said the great Dutch humanist Erasmus, in the seventeenth century.

Educational systems worldwide are under increasing pressure to use information and communication technologies (ICTs) in teaching students the knowledge and skills they need in the 21st century. The 1998 UNESCO International Education Report, „Teachers and education in a changing world”, describes the radical implications that ICTs have on traditional teaching and learning processes. It predicts the changes of teaching and learning processes and how teachers and students will gain access to knowledge and information.

Along with emerging technologies, the teaching profession is evolving from a phase in which the teacher was the central figure, a phase based on reading, to one centered on the student and on the interactive learning environment.

A study conducted in 2000 by Craig A. Anderson from the University of Missouri, Columbia and Karen E. Dill of Lenoir-Rhyne College, suggested that exposure to violent video games increases aggressive behavior both long term and short term.

On the other hand, a more recent study, in 2005 – conducted by two researchers, Dmitri Williams, professor of oral communication at the University of Illinois, Urbana-Champaign, and Marko Skoric, a lecturer at the School of Communication and Information of Nanyang Technical University in Singapore seems to contradict the position of the Commissioner, claiming that a violent game will not cause substantial increases in aggressive behavior in the real world.

Will computer courses change the way we learn? We consider here certain types of games – and learning – as well as activities that are the strongest influences when they have a personal, experimental, social and epistemological value all at once. From this viewpoint, we describe a way of redesigning the learning methods based on characteristics of games, but are

strongly related to learning theories in an era when the market is dominated by new technologies. Therefore, we try to find the future of learning, and look beyond schools, in the emerging space of video games. We believe that computer courses are important as they transpose players in simulated worlds: worlds that, if well constructed, not only simulate isolated facts or skills, but meet particular social practices. Thus, computer courses allow players to be a part of important communities in practice and result in ways of thinking that organize those practices. Most educational games have been produced without a coherent learning theory in mind or any research in the field.

Computers changing our world: how we work ... how we buy ... how we have fun ... how we communicate ... how we engage in politics ... how we take care of our health ... and the list goes on and is in constant development.

Also, computers definitely change how we learn, which is evident if we look at computer courses. We should consider games, not only because those that are now available on the market will replace schools as we know them, but because they offer solutions on creating new and more effective ways of learning in schools, communities and the workplace - new ways to learn in the new era of the information. We should consider computer courses because, although they are mainly popular among teenagers and young people, they are much more than mere toys. We should consider computer courses because they create new social and cultural worlds that help people learn through interactional thinking, social interaction, technology, in order to achieve the things that interest them.

It should be stressed clearly that computer courses are not a panacea. Like books and movies, they can be used in antisocial ways. Games are a simplified representation of reality, and today's games, often incorporate – or are based on – sometimes violent and misogynistic themes. Critics argue that the lessons that people learn from today's video games are not always desirable. But even most vehement critics agree that we can learn something from computer courses. The question is: how can we use the power of video games as a constructive force in schools, at home or at work?

In response to this question, we referenced a particular type of games – and learning – the activities that are most influential when they have personal, experimental, social, and epistemological value all at the same time. From this perspective, we describe a way of developing learning environments based on the educational properties of games, but in conjunction with an appropriate learning theory existing in the new technological era.

Computer courses have become a highly profitable new business, which falls within the so-called category of „Edutainment” (educational entertainment – n.r.), writes The Financial Times.

Many manufacturers create these games and also diversify the existing ones, for educational entertainment. The potential is huge, but still remains untapped.

2. Computer courses as virtual learning worlds

The first step to understanding how computer courses can transform education is changing the perspective that games are just „entertaining”. More than one billion euro industry, more than a toy for both children and adults, computer classes are important because they bring people into contact with new worlds. They determine players to think, speak, and act, to relate to each other – inaccessible roles in other circumstances. A 16 year-old child, playing „Lineage”, can become an international financier, selling and buying goods in different parts of the virtual world, speculating on currency and exchange. A player of „Deus Ex” can experience life as a special government agent, where links between state and terrorist violence are present.

These rich virtual worlds are what make games so educational. In the world of games, learning no longer means confronting worlds and symbols from the words they represent. Students can gain experience walking in virtual worlds with masses smaller than Earth, or can make flights, that require actual knowledge about gravitational forces, in different parts of the

solar system. In virtual worlds, players can experience and understand the concrete realities of complex concepts without losing touch of the idea of the abstract and the real problems they are accustomed to. In other words, game virtual worlds are important because they make it possible to develop „understanding”.

Although the stereotype of the player is a teenager with a computer, games are a real social phenomenon. The clearest example is the masses of online players: games where thousands of participants are simultaneously online at any time, participating in virtual worlds with their own economies, political systems and cultures. But a careful study shows that most games – from console action to PC strategy games – have robust communities of participants.

In the classrooms the only audience consists of the teacher and the other students, unlike online communities where students look for new sites, enter forums where there are large communities and a broad audience. The virtual world is strong, in other words, because playing games also means developing a set of effective „social practices”.

By participating in these practices, players have the opportunity to explore new identities. It is now classic the case of „The Sims Online”, a game where Arthur Baynes, 21 years and Laura McKnight, who was only 14 years, run for presidency, and she was disqualified for age. From situations arising from this game and real world debates it has generated, there is today a virtual political system where young people of all ages can discuss politics, creating electoral campaigns, alliances and platforms. Virtual worlds of games are rich in educational content that make it possible to experience powerful new identities.

By creating virtual worlds, games integrate knowledge and facts. But just to know and to do, games bring together knowledge, ways of doing, ways of being and ways of achieving.

3. Epistemic games for initiating and processing

We argued that games have a rich learning content, because they make it possible to create virtual worlds, and because activating in such worlds makes it possible to develop understandings, effective social practices, powerful identities, shared values and ways of thinking for important community. To do this, we must understand clearly how the epistemic structure of those communities developed, maintained and changed. Some parts of practice are more focused on creating and developing epistemic structure than others, so analyzing epistemic structure, in fact, we find out what can be left out of the practice.

4. A new model of learning - an economic advantage for economic agents

The last century identified learning with school. But new information technologies change this perception. Today's technologies make libraries accessible to anyone who owns a wireless PDA. Social interaction is accessible to anyone that has a phone by pressing a button. As a result, people have the unprecedented freedom to join resources to create their own learning trajectories. But classes have not yet adapted. Learning and training theories grounded in the educational system that intend to teach a large number of students a standardized curriculum are obsolete in this new world. Good school leaders struggle for new technologies and new practices.

While the general public and some market policies have not acknowledged the mistake in keeping the old standards, the students did. Schools are seen as increasingly irrelevant to many students that passed their first exams. But to understand the future of learning, schools must look beyond, to the emergence of video games. Computer courses are important because they familiarize players with simulated worlds: worlds that are not just representations of isolated facts or skills, but meet social practices as well. Sometimes computer courses make it possible for players to be part of communities of practice which results in developing ways of thinking that organize practice.

Our students learn from computer courses. The question is: who will create these games and will they be based only on theories of learning and education and will they serve only social educational purposes? U.S. Army, an established leader in simulation games, is

building games like *Full Spectrum Warrior* and *America's Army* – games that introduce civilians to military ideology. Other security games are in development and also games for education on health issues, from games to help children suffering from cancer learn to take care of themselves, to games that help doctors to do a simulated operation. Companies have developed games for learning history (*Making History*), engineering (*Time Engineers*), and the mathematics of design (*Homes of Our Own*).

Interest in games is encouraging, but most educational games have been made without a coherent theory of learning or emphasis on research. Important questions and answers are needed about this relative environment. We must understand how to make games for the economic environment to create complex virtual worlds. We must understand how games mediate the apprehension for a certain theory or practice. We must understand how spending 1000 hours in a social, political world and a virtual economic system develops identities and imprints values. We must understand how the players actually develop special skills by navigating complex systems and how these skills can serve learning in other complex areas. And above all we must achieve leverage between these understandings to build games that develop the epistemic structure of science.

Computer courses have the potential to change the educational structure that we know. The answer to these fundamental questions will make possible the use of video games to move beyond the existing educational system grounded academic traditions, which are derived from medieval education and established in schools from the industrial revolution, and then create a new learning model based on virtual worlds as a way of preparation for the real world.

By their nature, computer courses are designed not only to teach players to shoot a gun into a monster or to pass trials than the need the player to jump over a gap of 100 meters or climb a very steep mountain. Because games enable users to go through similar situations to reality, they can analyze hazards and control unforeseen situation in real life.

Computer courses have already been adopted in education in some schools in Britain. "Teachers select games that could help students to learn, and they apparently react very well to this experiment", said British Education Department officials.

The phenomenon of "Edutainment" will expand in coming years more and more. Approximately 40% of the American system of education will use, until 2008, simulations of real life and fun games for education, according to a study by the IT research company International Data Corporation. Furthermore, the market represented only by "Edutainment" will be worth about 10.8 billion dollars by 2007, analysts have said the company.

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PERFORMANCE INDICATORS IN FINANCIAL DECISIONS MODELING

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***Abstract.** The „performance” of an organization has a complex character and reflects a concrete image over the financial and economic situation of an analyzed company and the necessity of identification an intelligent and performing information systems which to support the decision makers in the strategic management process. The analysis of the most important financial and economic indicators at the level of some organizations from the same sector of activity, the selection of performance ratios and generating a particular econometric model of analysis help companies to move from the desire to obtain performance to action through better and faster decisions.*

Keywords: performance; financial ratios; econometric model; multidimensional analysis; data mining techniques.

JEL Codes: C51, O12, L15.

REL Codes: 7Z, 10B, 10D, 11Z.

1. Introduction

Most of the decision makers in today's business world are facing frequently the pressure to make critical business decisions without timely access to reliable and relevant information on the operational and financial performance of their business. Usually, the data inputted in the IT systems of the company are very numerous, sometimes heterogeneous or provided from heterogeneous sources, are widespread into the system, and their transforming in information which can be analyzed for taking decisions is, in most cases, a lengthy and difficult process. More than that, even if access to information is there, the capability of personalization and selection from large quantity of data is often missing.

The process of decision making, regardless of the size of the company, is a rather complex one, implying data processing, information and knowledge. The data warehouse (DW) and business intelligence (BI) systems, as well as the Decisions Support Systems (DSS) are designed to help the companies to answer in real time to complex questions (Boldeanu et al., 2007, pp. 733-747). There are more different techniques in this respect, and the choice of the right instrument leads to finding the relevant answers for a certain company. The process is a dynamic one, and these answers are changing along with the business strategy of the respective company.

The business environment of today's world is driven by new concepts like stakeholder value and service management, concept which have become extremely important to satisfy employees, customers and shareholders. The way in which a service company can use different performance measurements for management control purposes is very important as it should make possible the identification of the most appropriate measures applicable for strategy implementation (Boldeanu, 2009).

2. Modeling and analyzing financial performances

A multidimensional analysis of the financial data provides a clearer image on the „business” of decision making factors in every company, as such data may be classified

according to various criteria imposed by the decision maker, statistics and even forecasts may be issued.

The mathematical-economic methods which use the various financial ratios proved their usefulness in the decision-making process of capital investors. Most of the time, these models involve linear relations between a set of financial ratios and the company return ratio.

A company performance measures in determining the financial state should not be sensitive to the choices of accounting methods and procedures, but must assess the current management decisions, the risks of investment decisions and not punish managers for circumstances that are beyond their control (Damodaran, 2002). Under these circumstances a good better choice could be EVA (Economic Value Added) or any other performance measure that would consider „adding” value through previous investments. Nevertheless, ROE (Return on Equity) is often used in econometric analyses with financial data (Han et al., 1999). Due to the data accessibility and the ease in being understood, as well as to the interest granted to this ratio by capital investors, we decided to apply ROE instead of EVA in generating an *econometric model* to empirically investigate the relation between various ratios from the financial situation of a company and the performance thereof.

As a dependent variable used, we employed ROE, as we believed that it synthesizes best the concept of company performance if it is to synthesize it by means of one indicator only. Return on Equity is perhaps the most commonly used profitability measure (Bertoneche et al., 2001).

2.1. The purpose of the research

The purpose of the model we want to develop is to empirically investigate the relationship between various indicators resulting from the financial situation of a company and the performance thereof.

Starting from this goal, the research carried out an analysis to identify possible connections between the data to analyze and result of an economic and financial performance characteristic to a number of 162 companies from the pharmaceutical sector grouped on geographical regions, using an ordinary regression of the type of the least squares method (OLS).

In this case, the analysis performed focuses on the explanation or prediction of the Return on Equity (ROE), using all available data within the company. The most frequently used method for this type of analysis is multiple regression, a method we will also use but with a few elements, let's call them experimental, as a variation from the traditional regressions.

Furthermore, besides the specific company factors, we also added effects related to the company country of origin (Inflation GDP deflator, GNI/capita, health expenses/GDP), as assessment through experimental analysis of their impact. We preferred this approach to adding dummy country variables.

We do not claim that the list of the variables above is exhaustive; the ROE indicator may also be influenced by other factors besides the ones already specified, which we will gather in a stochastic variable called error by obtaining a classic regression equation (1).

$$\begin{aligned}
 \text{ROE} = & \beta_1 + \beta_2 \text{Beta} + \beta_3 \text{Leverage} + \beta_4 (\text{Cashflow} / \text{Liabilities}) + \\
 & \beta_5 \text{EBITDA} / \text{Interest cover} + \beta_6 \text{Current Ratio} + \beta_7 \text{Quick Ratio} + \\
 & \beta_8 \text{ROA} + \beta_9 \text{EBITDA_Margin} + \beta_{10} \text{Assets Growth} + \\
 & \beta_{11} \text{Sales Growth} + \beta_{12} \text{Value-to-Book ratio} + \\
 & \beta_{13} \text{Market Capitalization} + \beta_{14} \text{Total Assets} + \\
 & \beta_{15} \text{Operating Income} + \beta_{16} (\text{GNI} / \text{Capita}) + \\
 & \beta_{17} \text{GDP_Deflator} + \beta_{18} (\text{Health_expenses} / \text{GDP}) + \varepsilon
 \end{aligned} \tag{1}$$

2.2. Research methodology - hypothesis and variables

The econometric model is interesting through the large number of factors which contribute to the changes of the ROE indicators and helps us to identify and validate the main, essential factors, in our opinion and the one of other specialists mentioned all along the paperwork, factors which determine the financial and economic performances of the company.

The data set refers to the financial statements for the financial year 2007 and 2008 and was obtained through access to the online database (Onesource, 2008), under Companies-Global section. These are stock market companies having as main object of activity “*pharmaceutical substance manufacturing*”. We considered the companies with activity in the same field, since there are factors specific to each industry and we wanted to avoid adding dummy variables for the industry. In fact, if we were to compare the rating models of various commercial banks, they would come up with quality criteria, including with respect to the industry category, in order to be able and grasp the specifics of the said field of activity.

As to the company specific factors (included among independent variables), we decided to group them in four major categories:

- *Risk factors (solvency):*
 - Beta
 - Leverage
 - Cash flow/Liabilities
 - EBITDA/Interest cover.
- *Liquidity factors:*
 - Quick Ratio
 - Current Ratio.
- *Growth dynamics factors:*
 - Return on Assets (ROA)
 - EBITDA Margin
 - Assets Growth
 - Sales Growth
 - Value-to-Book ratio.
- *Company size factors:*
 - Market Capitalization
 - Total Assets
 - Operating income.

Furthermore, besides the specific company factors, we also added effects related to the company country of origin (Inflation GDP deflator, GNI/capita, health expenses/GDP), as assessment through experimental analysis of their impact. We preferred this approach to adding dummy country variables.

In the model construction we will use a quadric logarithmic function (2). This function has the following characteristics (assuming appropriate values assigned coefficients): when the variable x increases, the function y first increases quickly, then reached a maximum after which subsequently begin to decline slowly. The disadvantage of such function is that their parameters cannot receive a simple and easy to understand economic explanation.

$$y = a + b_1 \times \ln x + b_2 \times \ln^2 x \quad (2)$$

The regression equation obtained in the end reflects the relationship between the return rate ROE and factors belonging to the efficiency and the growth dynamic, as well as factors related to liquidity.

$$\begin{aligned} \text{ROE} = & - 239 - 0,00400 \times \text{SalesGrowth} + 908 \times \text{AssetsGrowth} - \\ & 0,0205 \times \text{EBITDAMargin} - 1,99 \times \text{ROA} - 241 \times \ln^2 (\text{QuickRatio}) \end{aligned} \quad (3)$$

From the model presented we can state that the main ROE factors are:

- Assets one year growth ratio, with the highest influence, which proves that the pharmaceutical industry is a place where large players enjoy success, since they have the resources to support significant expenses for research and development.
- ROA
- EBITDA Margin
- Quick ratio (immediate liquidity)
- Sales one year growth ratio.

Based on the comments above, we can add to these factors the R&D Expenses/Total SG&A expenses, as well as a dummy variable for the manufacturing of original and not generic medicines. One of the first factors to be eliminated was beta, which represents quite a strong opposition of the traditional CAPM theory.

There is no predefined solution to develop a good model. A satisfactory result comes more from the application of econometric rules and from the high number of trials and the analyst's intuition regarding the factors to be added, the relationship type (linear, quadratic), the effects of the combined factors type (cross-factors, such as a regression of the $\beta_i \times \text{EBITDA Margin} \times \text{Indebtedness degree}$ type).

In order to receive an answer to the question “*What will be the ROE evolution in the next period and which are the factors that positively influence ROE and which is their degree of influence?*”, it is enough to set the trend of influence factors (ROA, EBITDA Margin, Quick Ratio, Sales increase ratio, Assets growth ratio), and then, based on the model, to obtain a future ROE evolution, taking into account, though, the error margin within the limit set for the model.

For the purpose of testing the proposed model, we applied the regression equation obtained on the data of the year preceding the year we took into consideration (i.e. we derived the regression based on the data in 2007), and we applied it to the data in 2006 in order to note the derivations of the ROE value, estimated by applying the E(ROE) model as against the real ROE and to represent them graphically, the results being more than merely encouraging. The deviations register a normal distribution histogram around zero and we believe that, by eliminating elements of the outlier type (extreme cases) and by introducing variables that would reflect the macroeconomic conditions specific to each year, the model may have a certain functional and predictive viability.

The described model may be the object of decision making support application, may be used in analyses of the data mining type in order to identify significant clusters, decision making trees, pertinent associations among variables etc. These elements allow for a complex

analysis of the economic-financial indicators that might lead to making strategic decisions for the improvement of economic-financial performances.

3. Data mining techniques in analyzing financial performances

Data mining algorithms and techniques represent one class of automated tools for data pre-processing and analysis and they are used to automatically extract knowledge from the data. The discovered knowledge is referred to as patterns found in data, patterns that must be interesting (novel, valid, potentially useful and understandable) to the user. These patterns are typically represented in the form of clusters, classes, trends, relationships, and summaries of the original data. However, in most of the cases, these data mining results are communicated to the business user in a format that is difficult to understand and/or interpret. To overcome this problem of representing business data and data mining results in an accessible format, researchers investigate the possibilities and limits of using information visualization techniques for this purpose (Fayyad et al., 1996).

The Data mining procedure has two objectives: the first one for *description* consisting in finding significant variables and their influence and the second one for *prediction* (Năstase et al., 2008, pp. 97-109). Unlike the ordinary queries addressed to current data bases, using a query language as SQL, data mining classifies and groups data from different and, eventually, incompatible systems, looking for new associations.

Techniques used in data mining allow users from the different management levels to analyze financial data in detail, to make a better description of date organized after the procedures of classification, generate clusters and group data for making predictions and extract the exceptions of the analyzed financial data (Boldeanu, 2008).

If we consider making a market research on a different area of activity, for example pharmaceutical industry, we can use the financial reports to extract indicators of financial status of a company. We have used data from 162 companies in order to identify possible connection between analyzed data and to determine which are the inputs and the outputs of a data mining model. ROE is the predictor in our case and he will be analyzed to identify which are the most important factors which influence it (Figure 1).

Rules of association and classifications and predictions demonstrate ones more a model of equation which confirm our econometric model presented previously.

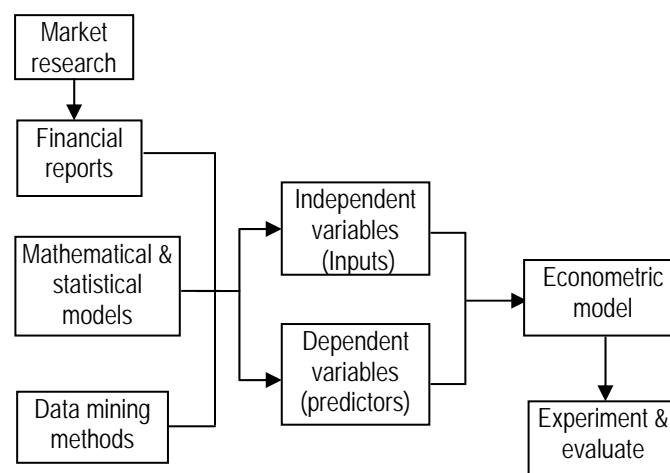


Figure 1. Schematics for data mining methods in financial decisions modeling

Data mining is not in fact a „*universal prescription*” for any management problem, but we can say that its contribution confines oneself to the following categories of operations (Gheorghe, 2004):

- Data description
- Dependences analysis
- Classifications and predictions
- Clusters analysis
- Exceptions analysis.

All these techniques used in financial operations simplify the process of taking decisions. The most adequate data mining techniques are: neural networks, decision trees, genetic algorithms, linear or non-linear regressions, Bayesian networks, cases argument.

All these operations mentioned previously must be translated in terms of business questions in order to use information visualization for resolving business tasks. For the problem of financial ratios we have derived the business questions that arise and the data mining tasks as follows, adapted after an article of Marghescu (Marghescu, 2007):

- a) Outlier detection: Does the data present outliers or anomalies? Are there any companies that present unusual values of financial ratios?
- b) Dependency analysis: Are there any relationships between ratios?
- c) Data clustering: Are there clusters (companies grouped on specific fields with similar financial performance, for example on geographical region) in the data? How many clusters do exist and what is the most powerful relationship?
- d) Cluster description: What are the characteristics of each cluster?
- e) Class description: Are there any relationships (common features) among companies located in one region or another? What are these common features?
- f) Comparison of data items: Compare two or more companies from the same industrial sector with respect to their financial performance.

Using different components of business intelligent applications we can be illustrated modalities to run analyses of Data mining type, for the identification of the clusters, the analysis of the associations or dependencies between significant factors which influence the economic and financial performance at the micro-economic level and the decision trees which reflect the importance of certain factors in determining ROE, as main measure of economic and financial performance.

4. Conclusion

Advanced technologies like data mining and new software applications which offer business intelligence support can bring added value to the multidimensional analysis of the financial indicators through easier ways of analysis and visualization of the financial reports and by improving time of analysis and the bigger amounts of data taken into consideration.

The importance of analyzing performance ratios, to make comparisons with the companies from the same field of activity, to detect new tendencies and to make profitable changes require the use of advanced specific tools for multidimensional analysis, performance equipments, qualified personal for interpreting the analysis and the strengths to take important decisions for the prosperity of the company.

The integration of advanced techniques of undirected analysis of the data mining type such as cluster analysis, decision trees, dependence analysis and neural networks allows for the identification of models and may analyze the performance of a company answering essential questions such as (Boldeanu, 2008):

- Which are the most pertinent associations between the variables influencing the ROE?
- Which are the factors that positively or negatively influence ROE and which is their degree of influence?

The classifications made in this study and the econometrical model can identify certain performance indicators useful for any financial and economic performance analysis of the companies. The model proves data mining results in the context of data description, factors classifications and dependency analysis and cluster analysis.

Note

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THE CRISIS IN THE ECONOMIC SYSTEMS IN TERMS OF THE CHAOS THEORY

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Abstract. *The crisis begins when one or several variables of the economic system tend to move towards the borders of the “safety beach”; their behavior becomes unstable and abnormal, in other words, it becomes chaotic. The intensity of the installation of this abnormality increases and at some point becomes so great that manages to destabilize the entire economic system. On the basis of the system-business model we’ll see how a rapid increase in sales can lead, after a period of time, to negative trends of other variables, causing eventually a descending trajectory (downward path) of the cash-flow and also a dangerous proliferation of various economic and financial risks.*

Keywords: attractor; feedback; dependence on initial conditions; feedback error; phase space.

JEL Codes: B41; D81; E32; G01; G30.

REL Codes: 9Z; 11A; 17B.

1. Introduction

In its essence, the chaos theory may be summarized by the following statement: even if a system is composed of few elements and these elements seem to have very simple behaviors, their interactions can generate a greater complexity than we can control. Chaos theory postulates that knowing the simple and precise rules which marked in the past the behavior of a system would constitute the key to future knowledge of that system. Therefore, according to the chaos theory, not always simple and specific rules lead to future behaviors as simple and precise, and the good knowledge of the initial conditions is not always a consistent premise for the predictability of the future states of the system.

2. Basic concepts of the chaos theory

Typically, a deterministic system (based on strict and verified causal relationships) should be absolutely predictable. And it really is, but with the following important clarification: only if the current state is known very accurately, this can determine rigorously the entire future behavior of the system. Chaos theory brings the following two important observations on this statement (Vazquez, 2008, pp. 26-29):

- ✓ No matter how scrupulous the measurements of a system’s parameters and variables may be, they will always imply even small errors. The knowledge of the current state of a system can never be absolutely complete and accurate. It is the so-called *principle of uncertainty*.
- ✓ It is possible that the volume and complexity of the calculations necessary to determine the future states of the system should be that big to exceed the available cognitive, computational, and decisional capacities. This is the so-called *principle of undecidability*.

The common action of these two principles – uncertainty and undecidability – leads to the appearance of a new feature even among apparently simple systems: unpredictability. The corollary of unpredictability is the process of „stretch and fold”, described by Jack Cohen and Ian Stewart as follows (Cohen, Stewart, 2008, pp. 215-216): „*If the dynamics troubles the system as a piece of dough, stretching it and folding it back, close together states are always*

separated. On the other hand, distant states can be suddenly folded together. The system cannot be set to anything simple, because simple structures are disrupted, but can neither entirely escape, because it is always folded back into the same space.” Such complex behaviors, generated by simple conditions and deterministic rules are called chaotic. In chaotic systems the tiny changes of initial conditions can cause significant fluctuations of the final results. These systems are able to amplify the insignificant initial differences, so that, in time, major changes will be generated. The reported phenomenon is called „*sensitivity to initial conditions*.” It is also called the „butterfly effect” (Lorenz, 1993, p. 34): „If a butterfly flaps its wings in Tokyo, a month later it could set off a hurricane in Brazil!”

The functioning and regulation of systems of any kind, simple or complex, is based on the so-called feedback circuits or reverse connection tress. Feedback is a sequence of the type „... - information about the value of a variable of the system – decision – action – result (changing the value of the variable) - ...” . There are stabilizers or negative feedbacks (so-called because the action provided by the decision leads to the diminution of the adjusted value of the variable) and explosive or positive feedbacks (so named because the action prescribed by the decision aims to increase the value of the adjusted variable). Both types of feedback, starting from an initial state apparently simple and stable, can generate irregulate and discontinuous behaviors, namely chaotic. Thus, in the case of negative feedback the transmission of information to the decision-maker is not automatic, but it lasts. Likewise, the decision-making requires a certain time, as well as its transmission to the place of enforcement. To all these delays are added informational inaccuracy and the objective –limited capacity of the decision-maker. Consequently, whether the decisions are taken out of phase, and applied to situations that have evolved, hence which no longer correspond to the initial situations, whether the decisions are not optimal, that is not the best in terms of the criteria chosen for functionality. In both cases, defined by the generic feedback error, occur behavioral deviations with possible tendencies to chaos (Donnadieu, Karsky, 2002, pp. 101-103). In the case of positive feedback, the propensity to chaotic behavior is more evident and emphasized: the simple amplification of the value of the variable of adjustment can determine the „derail” of the system off the normal trajectories, just like a car driven with high speed, at the slightest, but sudden change of the displacement angle, this can be thrown away of the road.

To understand why systems behave stable and regular in certain conditions, and in others show unstable dynamics (chaotic) it is necessary to examine the concept of *attractor*. Any attractor represents the totality of factors/causalities, which, on long term determine a certain well-shaped behavioral tendency/configuration (Stacey, 1993, p. 59). Normal, regular and stable behaviors are born as a result of the action of some *stable or „friendly” attractors*. Instead, chaotic behaviors result from the action of the so-called *strange or „selfish” attractors*. Attractors do nothing but to push the system in certain directions according to certain rules. In economics, the most obvious attractory forces which mark the behavior of the economic systems, and also the financial ones, are the control over property, over capital, technological compatibilities and interdependences, geographical proximity, the strategic interdependencies of chains to create values and business systems, fashion, historical dependence or habits, legislation, but also the values, conventions, rules or traditions that define the culture of one community. (Dumitraşcu, Dumitraşcu, 2004, p. 208). We will see there are other attractors, with much more subtle action, but not less powerful.

3. The mechanism of crisis installation in the economic systems

Fundamentally, the crisis is a problem of behavioral sensitivity of the economic systems (households, companies, local economies, regional economies, national economies, etc.). Sensitivity reflects the variability of the behaviors of the observed economic system. The more complex the economic system is, the greater its sensitivity and vulnerability are. What does it mean, in fact, the increase of system’s complexity? It has the significance; first of all,

of the multiplication of the number of attractors that determines its behavior (Auger, 2008, pp. 111-113). When the complexity reaches a higher degree, the economic system is, basically, „broken” by the divergent forces of the attractors without being able to stop on a particular behavior pattern. Thus, its behavior begins to oscillate, becomes irregular, jumping from one trajectory to another. As a matter of fact, this is the crisis – the behavioral instability of the economic system, representing at the same time the corollary of chaos. *The crisis constitutes an almost permanent chaos, the chaos which is no longer the exception, but the rule. The complexity of the economic-financial systems leads to rapid escalation of the frequency of appearance of crisis.* Rigorously, the crisis constitutes that state of transition when the economic system has left the „orbit” of an attractor, but it didn’t stabilize yet on another’s „orbit”: a certain order was abandoned, but it neither reached another one (order), the system hesitating between the ways it may choose.

We saw that a greater complexity means greater sensitivity. In terms of augmented sensitivity the crisis becomes an almost normal state of the economic system, and can be described as the state „between the attractors” or the status between different behavioral patterns. In this way, the crisis is situated in an intermediate area, of interface of different possible behaviors of the economic system. A system affected by the crises „jumps” from one behavior to another without deciding on which one to choose in the end. The crisis status can be compared with a struggle, with a turbulent agitation of the system that fails in finding a firm path.

What is the mechanism of the appearance of the crisis in the economic and financial systems? One or several important variables (if it is about, for example, the company system, these can be – sales volume, costs level, labor productivity, debt, profitability, etc.) are „captured” by specific attractors which train them in autonomous evolutions in relation to the overall logic of the system. These autonomous behaviors are intense and destabilize the entire system, significantly weakening its homeostatic capacity – the ability to maintain the internal balance by absorbing external shocks. The system enters in „atrial fibrillation”, its overall movement is increasingly caught in vicious circles. These vicious circles are by their own nature feedback errors or positive destructive feedbacks, which induce and amplify the system’s behavioral discontinuity and irregularity, thus jeopardizing also its integrity and not only the efficacy of its functioning (Malarewicz, 2008, p. 89). Vicious circles produce an accumulation of errors which are amplified by the „snowball” principle, exponentially: each new error or deficiency attracts or generates others. Under these conditions, the collapse is only a matter of time, since the economic system has become hypersensitive: even an insignificant impulse can cause its explosion. Hypersensitivity is emphasized by the phenomenon of contagion, which means that any shock, no matter how small, experienced in every aspect of the system is rapidly spreading in the other areas. Modern financial markets represent systems in which the described features are particularly striking. After successive shocks the system loses its ability to „self healing”. Any local incident is harder to isolate and neutralize, risking to turn into a very big accident insomuch as to disrupt the entire system. The financial crisis that we are currently going through was triggered by such a „local event” – the bankruptcy of Lehman Brothers and ING banks – which has spread violently throughout the worldwide financial system. An economic system in crisis consumes most of its energy and resources only to ensure its simple survival.

The crisis represents the negative, destructive, destabilizing aspect of the chaos of the economic systems. But the same chaos also provides more opportunities for development, change, adaptation, evolution and innovation. The ugly face of chaos results from that vicious circles – feedback errors and positive destabilizing feedbacks – which we mentioned above. The beautiful face is the product of virtuous circles – innovative-adaptive feedbacks.

Vicious circles appear when certain important variables of the economic system are captured by the „selfish” attractors. This seizure activates an entire network of risks which until then had probably only an implicit character. Risks, mutated into active, are coupled and synchronize by acting on the system in a very hostile manner. In this way they form vicious circles that induce the crisis. How may these vicious circles be broken? How can an economic system get out of crisis? This is possible only through a substantial inflow of external energy, powerful enough to pull out the economic system from the orbit of the “selfish” attractor, and in this manner, capable to dissolve the vicious circles. The most enlightening examples of such energy flows are external finances (such as the loan received by Romania from IMF) or the adoption of new regulations in regard to financial affairs which should control better the risks afferent to the sector. Getting out of the crisis practically means the formation of new circles through the appearance and coupling of some positive emerging phenomena – synergies, economies of purpose, multiplication and propagation effects, scale economies, etc.

In explaining the appearance of the crisis mechanism within the economic systems, an important place holds the *Volterra Paradox*: in time, the system no longer responds at the stimuli that are usually applied, but instead displays opposite behaviors to those normal and expected. For example, when on a variable of the system is operating to increase, this variable will initially increase, and then gradually will evolve in the opposite expected direction, respectively, will decrease, etc. To refine the approach to economic crisis in terms of chaos theory, it is also necessary the introduction of the concept *phase space*.

The „geometry” of dynamic systems operates in a conceptual space called phase space, which comprises not only the behaviors that took place, but also those which could occur under certain conditions (Andreewsky, Delorme, 2006, p. 73). In other words, the phase space is a space of possibilities. The simplest phase space can be given by only two variables that describe the system state. One such space is, in fact a plan within which each point is associated simultaneously to both values. In a space-plan every possible combination of values of the two variables is represented, and each combination is described by one single point. The movement in phase space is not arbitrary, but takes place under the action of the attractors which have caught the system’s behavior.

Now we have a minimum of conceptual elements necessary to build even a descriptive (qualitative) model of the development of the crisis in an economic system. Let us assume a relatively simple economic system – company. We will shape this system on the basis of two interrelated variables: volume of sales (turnover) and cash-flow (the cash-flow of the period) which evolves periodically and out of phase. Apparently between the turnover and the cash-flow there is a positive correlation: the increase of sales leads to the increase of cash flow, and cash flow amplification offers additional resources to expand operations and thus to further increase the turnover. But this positive correlation functions only in certain circumstances, while in others it doesn’t. So, a too rapid growth of the turnover may determine in time a decrease of the cash flow and, consequently, a reduction of future sales. It is an illustration of the Volterra Paradox. In this dynamic the following influences can be detected:

- ✓ A too rapid growth in sales, especially if it becomes a normal development of the sector, followed by most operators, will lead to the market saturation and thus to a decrease in sales and of the future cash flow.
- ✓ The expansion of the turnover may be fastened mainly by giving commercial credits to clients to encourage the purchase orders, which means a delay of the period’s collections and thus a reduction of the cash flow.
- ✓ Multiplying the number of clients will increase the percentage of bad-paying customers, with negative impact on collections and on cash flow.
- ✓ The expansion of the turnover means the extending of the operating system (increase of volume of fixed assets), thereby increasing financing needs both on short and long term, with obvious negative effects on cash flow.

- ✓ Expanding the market for sales growth may require significant allocation of marketing budgets, which will diminish the cash flow.
- ✓ Self-financing, regarded as a brute cash flow, may not be sufficient to support the general financing needs generated by the increase of the turnover, companies turning to debt, a process that will reduce the future cash flow from the payments made to reimburse the debt.

The mechanism of being in crisis of the business-system is illustrated in Figure 1:

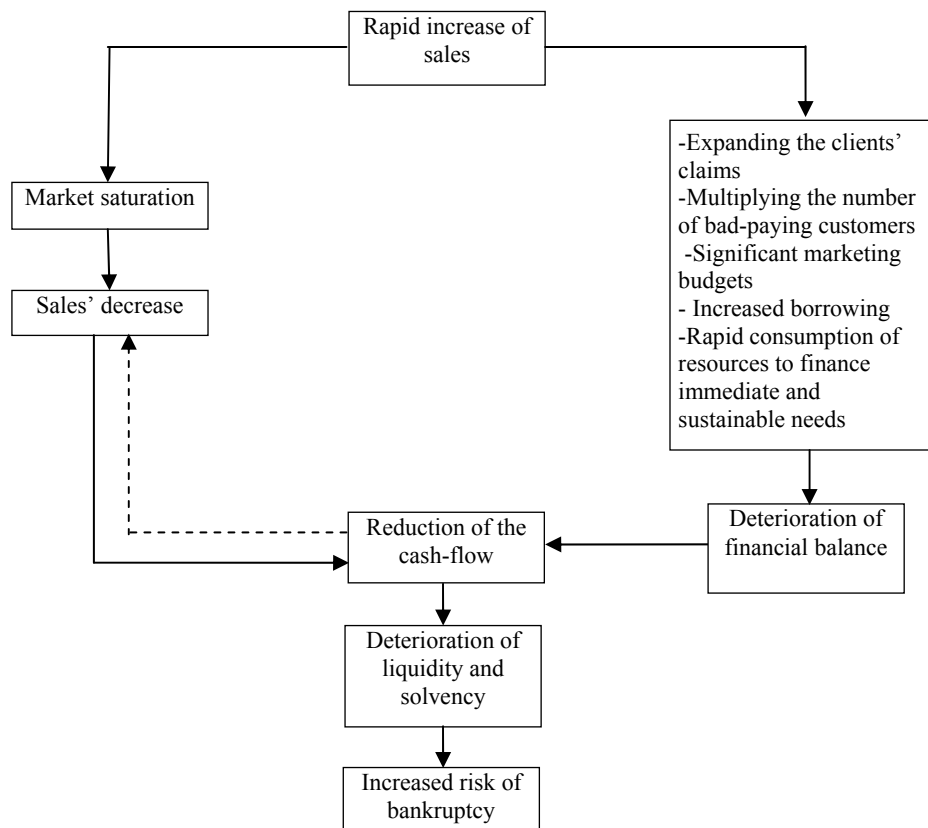


Figure1. Crisis installation mechanism in the company-system

We observe how a too rapid acceleration of the growth of the turnover can lead to the financial suffocation of the business-system. The two interrelated variables – the turnover and the cash-flow – don't have the same period of evolution. The compulsion of one, in this case, the turnover, will determine the deterioration of the values registered by the other variable – the cash-flow. This dynamic became possible because the company-system left the stable attractor, the „friendly” one, which determined its behavior in the past, and entered more and more into the area of influence of a chaotic, „selfish” attractor. The stable attractor was represented by a prudent management policy of development, balanced and rational, based primarily on the criterion of growth sustainability. The chaotic attractor is the new fastest policy of development which neglects important prudential restrictions, based on overly optimistic forecasts in regard to future market developments. The company entered into a „whirlwind” of growth at any cost, and this increase, in time, has proved to be inconsistent from the financial point of view. In this process are detectable many feed back errors and positive destabilizing feedbacks. Imagine that an entire sector or even more sectors are covered by such a „fever” of growth. In fact, this happened, at least if we think about the displays of the crisis in Romania. Let us remember only the sudden fall of sales in retail sector of durable goods or the full storage platforms of car dealers or the collapse of real estate

business. All these and others made their calculations on the basis of some unrealistic scenarios, but markets evolve cyclically, they cannot increase endlessly.

Every element of the process described in fig.1 generates specific risks which, by combined action make the system fragile, leading to the pronounced weakening of the conditions of the financial balance: (Vintilă, 2000, pp. 35-47):

- ✓ The risk due to the rapid increase of financial needs in regard to the available resources
- ✓ The risk due to the debts of bad-payers
- ✓ The risk of unrecoverable invested costs in expanding the operating system and marketing budgets
- ✓ The risk specific to borrowing
- ✓ The risk related to the reduction of liquidities and solvency.

The combined action of these risks „engirdle” the system leading to chronic the financial balance and therefore to the dangerous increase of bankruptcy risks.

4. Conclusions: The chaos between risks and opportunities

In an economic system each variable has its own rhythm, evolving with a fluctuating intensity. Thus, not only that different variables evolve with different speeds/rhythms, but even one or the same variable, in different time intervals can vary whether faster, whether slowly or can even stagnate. With these arrhythmias, the issue of harmonization rhythms of different variables is no longer in punctual terms. This harmonization can be achieved only within some „safety beaches”: as long as a variable doesn't leave her „safety beach”, the functioning of the system is normal, reliable, regular, and controllable. But when the variable in question abandons the middle area of the „safety beach”, heading to its borders, the system loses its stability, and its sensitivity increases. At the borders of the „safety beach” the system's sensitivity is maximal: any shock or impulse, no matter how small, can perturb it, making its behavior chaotic. Maintaining the values of the adjustment variable in the center area of the „safety beach” takes place under the action of stable or „friendly” attractors – forces which fuel the negative stabilizing feedbacks and positive innovative-adaptive feedbacks. The displacement of the variable to the borders of „safety beach” occurs under the action of „selfish” attractors, which highlight feedback errors and positive destabilizing feedbacks. Basically, the dynamics of a system is the result of the confrontation between „friendly” and „selfish” attractors. When „friendly” attractors are stronger, the system evolves stable and regular. When „selfish” attractors are more powerful, the system's behavior becomes discontinuous, irregular and chaotic. *Chaos marks the borders of the „safety beach”*. Beyond this border the destruction of the system can take place anytime (Bonami et al., 1993, p. 225). What does it mean, in this context, „normal behavior” of the variable that describes the economic system? It is the evolution around the average values observed over a long enough period of time. Significant deviations from these averages can be considered anomalies capable of making the system chaotic. An additional question is: How can the signals of chaos be detected, since this is essentially unpredictable? The installation of chaos can be rather inferred than calculated. But the intuition of chaos can be stimulated by means of rational-analytical tools. We consider here two possibilities for „early warning” of chaos:

1. Normally convergent indicators (turnover, cash flow, performance margins, profitability, etc.) enter in an area of divergent co evolution. When the behavior of the economic system is normal, the evolutions of the convergent indicators have the same orientation and similar rhythms. The chaos of the economic system often occurs through the appearance of some disproportions and significant breaks in the evolution of convergent variables (we have seen how in the case of a very rapid sales growth the cash flow responds with a negative evolution).

2. Normally divergent indicators, at one time tend to have convergent evolutions. For example, the incomes decline, while the costs increase, or the incomes and the costs increase, but the rate of growth of the incomes is inferior to the rate of costs' growth that the last ones „reach” the first ones.

Repetitiveness of some behavioral patterns is essential to understanding the system's capacity to maintain its stability or, contrariwise, its susceptibility to become turbulent. The more frequently a certain behavioral pattern can be recognized, the evolution of the system can be considered more stable. The more diversified the behavioral patterns of the system, the more pronounced its inclination to turbulence (chaos). A critical feature directly associated to the propensity of the economic system to become chaotic, but also to stabilize its behavior, it is the normal length (duration) of its operating cycle. A typical example of operating cycle, specific to microeconomic systems, is the business cycle: the sequence of operations carried out by a firm starting from taking the order from the client and ending with cashing the invoice/bill emitted to the respective customer. Systems with short operating cycles are, typically, more sensitive and can register more frequent and ample oscillations in their functioning, but at the same time have a more pronounced capacity of rebalancing: they are „familiar” with turbulence. Systems with long operating cycles are more stable, fluctuations in their functioning are rarer and less spectacular, but if a sufficiently serious shock succeeds to disturb them, it takes a huge energy to stabilize them. The current economic crisis provides various examples in this direction: the most affected were the companies from the sectors characterized by long cycles business (construction, metallurgy, shipyards, machinery and automobiles, chemicals, etc.), although the crisis erupted first in areas with short business cycles, (banks, financial services, retail, etc.) for the reason stated above, we expect that recovery from crisis to begin in areas with short business cycles, stabilization in the sectors with long business cycles is slower and cumbersome. In chaotic systems –moved out of the line from the borders of the „safety beach” – a special type of inertia is frequently manifested: breaking the „selfish” attractor, which caused the abnormal evolution, doesn't determine the system to return to its normal behavior, the turbulence still persists. This type of inertia is called *hysteresis*.

Chaos is not just disorder. Chaos is also a tremendous source of opportunities for development, change, and innovation. But taking advantage of the opportunities offered by chaos is possible only if the economic system has a strong capacity of self-organization based on communication skills, learning, development, and distribution of knowledge and cooperation up to the constituent elements (Ashby, 2004, p. 64). We believe that the economies and companies better endowed with such resources will get out of the crisis faster and more efficient.

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TESTING THE IMPACT OF THE DETERMINANTS OF CAPITAL STRUCTURE FOR ROMANIAN-LISTED FIRMS

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Abstract. *This paper investigates the determinants of capital structure of Romanian listed-firms using a panel data model. The average debt ratio of Romanian firms is below the figure in most developed and developing countries due to the influence of macroeconomics factors (i.e., economic growth, inflation rate, interest rate) on capital structure. The financing behaviour of Romanian listed-companies follows the “new Pecking order theory”, which states that firms use as financing sources first retained earnings, then equity, and finally debt.*

Keywords: capital structure; debt ratio; macroeconomic conditions; firm-specific factors; panel data.

JEL Code: G 320.

REL Code: 11 E.

1. Introduction

The analysis of optimal capital structure and determinants of the firms' financing decisions has been the main focus of the financial research for more than five centuries. This research started with the pioneering work of Modigliani and Miller (1958), known as *the theorem of the irrelevance of the capital structure*. According to this theorem, the market value of a firm is independent of its capital structure, under the assumptions that the capital market is perfect and there is no taxation. However, in reality, the market is not perfect, therefore the subsequent studies have mostly focused on the market imperfections and its influence on the firms' financing decisions. Following their work, a variety of modern theories of capital structure (i.e., trade-off theory, pecking order theory, agency theory) and theoretical and empirical models have emerged (Booth, Aivazian, Demirguc-Kunt, Maksimovic, 2001, De Miguel, Pindado, 2000, Rajan, Zingales, 1995). Despite their differences, most of the aforementioned theories and models converge in their main assumption: under the information asymmetry, transactions costs and capital market imperfections, the capital structure is relevant for the market value of the firm (Schwiete, Weigand, 1997).

The current state of the capital structure research can be described by Myers (2001) statement: „There is no universal theory of capital structure and no reason to expect one”. The existence of a general theory of optimal capital structure is not possible due to the diversity and complexity of the capital structure determinants.

In the literature, the determinants of the capital structure were divided in two categories: (1) external factors, which include the macroeconomic conditions of each specific country and (2) firm-specific factors, which include characteristics of firms. The most important external factor, which explains the differences in the determinants of capital structure in developed and developing countries, is represented by the macroeconomic conditions (i.e., economic growth, inflation rate, interest rate). Firm-specific factors are represented by profitability, tangibility, firm size, growth opportunities, financial distress costs, etc. The capital structure studies have indicated that the differences in terms of financing behaviour of the firms in developed and developing countries are explained by the correlations between internal factors and firms' debt ratios.

The aim of this study is to identify the determinants of capital structure of Romanian listed-firms using a panel data model. Furthermore, we validate this model on the Romanian capital market and analyze the similarities as well as the differences in the determinants of capital structure in Romania and other countries (i.e., developed and developing countries).

2. Characteristics of the Romanian capital market

The reopening of the Bucharest Stock Exchange (BSE) in 1995 was a significant moment for the development of the Romanian capital market. The main indicators and exchange indices had up to 2008, for more than a decade, a continuous increase emphasized and sustained by the EU integration process. 2008 was one of the most intricate year in the modern evolution of the Romanian capital market. The turnover was extremely low and BSE indices showed high correlations with the international markets, inducing an extremely high volatility of the domestic credit. Furthermore, BSE indices registered one of the highest losses of European indices.

An important year in the evolution of the BSE was 2005, when BSE merged with the former stock market RASDAQ with the purpose to create a single stock exchange market, more capitalized and more liquid. Nowadays, there are 101 companies quoted by BSE and 1585 companies quoted by RASDAQ which are divided into three tiers: Tier 1, Tier 2 and Tier 3.

In order to analyze the financing decisions of the Romanian listed-firms, we use data from the period 2004-2008. From the used sample, we excluded the financial firms (i.e., banks, insurance companies) because the balance sheets of these firms are different from those of non-financial companies and firms with negative operating results. The final sample contains 109 firms, 26 of them being listed by BSE and 83 by RASDAQ.

3. The analysis of the financing resources of the Romanian firms

In general, a firm uses two categories of financing resources: (1) internal financing resources which include reinvested net result and issuance of equity and (2) borrowed resources which include short term and long term loans. The use of internal financing resources is less risky for a firm, but may interfere with the decisions of some shareholders. More specifically, the shareholders can choose between an immediate sure gain obtained from the distribution of dividends and a future uncertain gain resulted from the reinvestment of profits. However, the decision of the shareholders is influenced by the degree of their risk aversion. If the shareholders prefer a less risky investment, they will choose to obtain dividends. Thus, they cease to a potential gain. When the internal financing resources are insufficient, due to the poor financial results or the distribution of dividends, firms have to use external financing resources by issuing debt. The proportion of debt a company has relative to its assets is called debt ratio.

In the literature, the debt ratio is calculated as ratio of total debt to total assets (Chen, 2004; Delcours, 2007) or as ratio of total debt to total debt plus equity (Rajan, Zingales, 1995, De Miguel, Pindado, 2001) in market and book values. Because of the data limitations, we use book values rather than market values.

The overall debt ratio is defined as ratio of book value of total debt to total debt plus equity and its average value is 35%, below the value registered in developed countries (66% for G7 countries – Rajan, Zingales, 1995) and quite similar with those in developing countries (51% - Booth et al., 2001). There are no differences between debt ratios in each year, but there are significant differences between minimum and maximum debt ratio, which indicates that financing decisions of Romanian firms are influenced rather by the firm-specific factors than by macroeconomic conditions (Table1).

The overall debt ratio of Romanian firms for the period 2004-2008

Table 1

Overall debt ratio	2004	2005	2006	2007	2008
Average	0.37	0.37	0.36	0.33	0.34
Maximum	0.91	0.9	0.92	0.81	0.91
Minimum	0.03	0.01	0.02	0.01	0.02

The long-term debt ratio is defined as ratio of long term debt to total debt plus equity and has an average value of 10% , which is lower than those for developed countries (41%) (Rajan, Zingales, 1995) and for developing countries (22% – Booth et al., 2001). The variation of long-term debt ratio from one year to another is very low, but the difference between maximum and minimum long-term debt ratio is very big (Table2). A big number of enterprises have a zero long-term debt ratio, which means that Romanian firms either prefer the short-term loans when they choose to use debt financing or have a defective management which can not obtain long-term loans.

The long-term debt ratio of Romanian firms for the period 2004-2008

Table 2

Long-term debt ratio	2004	2005	2006	2007	2008
Average	0.09	0.09	0.1	0.09	0.11
Maximum	0.83	0.77	0.73	0.64	0.61
Minimum	0	0	0	0	0

3. The determinants of the capital structure of Romanian firms quoted by BSE

The debt ratio is influenced by some factors, both macroeconomics and firm specific factors. These factors vary, within certain limits, from one country to another, according to the specificity of the capital market and to the features of the firms' management. In these conditions we have to identify the determinants of the capital structure of the Romanian firms.

3.1. The influence of the macroeconomic conditions on the capital structure of Romanian firms

As we aforementioned the overall and long-term debt ratios of Romanian firms are lower than those of developed countries. This fact is due to the differences between Romania and developed countries regarding the macroeconomic conditions. One of the most important macroeconomic factor is the *economic growth*. During the period 2004-2008, Romania had a positive economic growth (see Table 3).

Economic growth in Romania during the period 2004-2008

Table 3

– % –

Year	2004	2005	2006	2007	2008
Economic growth	8.30	4.10	7.70	8.00	7.10

There is a negative correlation between economic growth and firms' debt ratios explained by the fact that, in the economic growth periods, firms prefer to issue equity rather than to use debt as financing resources. This financing policy supports the hypothesis of the market timing theory which states that firms issue equity when their values are high and repurchase equity when their market values are low (Baker, Wurgler, 2002).

Another important macroeconomic factor, which influences the majority of the economic variables, is the *inflation*. Zwick (1997), De Angelo and Masulis (1980) explained the manner in which inflation determines the use of debt by firms. Due to the high inflation,

the real cost of debt decreases and thus, the request for corporate bonds increases. In addition, if the income from corporate bonds is higher than that from equity and the inflation falls, then the request for corporate bonds increases.

In Romania, the inflation rate during the period 2004-2008 was low compared to the previous periods (1991-1994 and 1997 when was a hyperinflation; 1997-2003 when the inflation rate took values between 15, 3% and 59, 1%):

The inflation rate in Romania during the period 2004-2008

Table 4
– % –

Year	2004	2005	2006	2007	2008
Inflation rate	11.90	9.00	6.56	4.84	7.85

Inflation uncertainty increases the firm's business risk, the volatility of the firm's operating income and the probability of insolvency (Hatzinikolaou et al., 2002). This means that when a firm decides the capital structure must take into account the inflation uncertainty and must choose to issue equity capital which results in a low debt ratio.

The last macroeconomic factor that influences the capital structure of firms is the *interest rate*, which represents the cost of debt. The lower debt ratio of Romanian listed-firms could be explained by the high reference interest rate established by the National Bank of Romania. The average reference interest rate in Romania during the period 2004-2008 is presented in the following table:

Average reference interest rate in Romania during the period 2004-2008

Table 5
– % –

Year	2004	2005	2006	2007	2008
Reference interest rate	20.27	9.54	8.44	7.46	9.44

The reference interest rate represents the base for other interest rates of the economy. Therefore, a high reference interest rate imposes a high level of interest rates for debt to firms. The firms which are forced in this case to pay more for debt financing, use other financing resources: reinvested net result and issuance of equity.

In summary, even if the macroeconomic conditions have an influence on the firms' financing decisions, the firm-specific factors play the crucial role in this process due to the differences between debt ratios.

3.2. The influence of firm-specific factors on the capital structure of Romanian – listed firms

Most of the capital structure studies focused on the influence of firms-specific factors regarding the financing decisions and integrated these factors into models which were validated for different capital markets. Among these factors there are profitability, firm size, tangibility, growth opportunities, financial distress costs, nondebt tax shields (Chen, 2004, Delcours, 2007, Rajan, Zingales, 1995).

Based on the previous empirical results and the availability of the Romanian data, in this study we analyze the influence of profitability, firm size, tangibility, growth opportunities on the overall and long-term debt ratios. The variables and the proxies used in the econometric model are summarized in Table 6.

Variables and proxies of these variables

Table 6

Variables	Proxies
<i>Dependent variables</i>	
Overall debt ratio	Ratio of book value of total debt to total debt plus equity
Long-term debt ratio	Ratio of book value of long-term debt to total debt plus equity
<i>Independent variables</i>	
Profitability	Ratio of earnings before interest, tax and depreciation to total assets
Tangibility	Ratio of tangible assets to total assets
Firm size	Natural logarithm of net sales
Growth opportunities	Ratio of sales growth to total assets growth

3.2.1. Regression model

In order to identify the determinants of capital structure of the Romanian listed-companies, we use a panel data model since the sample contains data across firms and over time. The regression model can be defined as follows:

$$Y_{it} = A + X_{it} \times B + Z_i + \varepsilon_{it} \text{ with } i = 1, 2, \dots, 109; t = 1, 2, \dots, 5.$$

Y_{it} represents the dependent variables, X_{it} is a $1 \times k$ vector of observations on k independent variables for the i th firm in the t th period, B is a $k \times 1$ vector of parameters, Z_i denotes an unobservable individual effect, and ε_{it} denotes the disturbance term.

Two methods were used in order to estimate the model, that is, fixed effects and random effects. The estimation results are reported in Table 7.

Estimation results

Table 7

Dependent variable: Overall debt ratio

Independent variable	Fixed effects	Random effects
Profitability	-0.344***(0.000)	-0.316***(0.000)
Firm size	0.067***(0.000)	0.036***(0.000)
Tangibility	-0.315***(0.000)	-0.294***(0.000)
Growth opportunities	0.001 (0.329)	0.002 (0.277)
R ²	0.86	0.14
Adj. R ²	0.82	0.13
<i>Dependent variable: Long-term debt ratio</i>		
Independent variables	Fixed effects	Random effects
Profitability	-0.124*(0.077)	-0.63***(0.011)
Firm size	-0.022*(0.077)	0.0008 (0.8045)
Tangibility	0.0385 (0.327)	0.0673**(0.043)
Growth opportunities	0.003* (0.0837)	0.002 (0.2121)
R ²	0.72	0.02
Adj. R ²	0.65	0.01

*** Significant at 1% level

** Significant at 5% level

* Significant at 10% level

The fixed effects method has a statistical advantage over the random effects method due to the highest R^2 for both, overall and long-term debt ratio.

3.2.2. Model estimation results

The empirical results suggest that the coefficients of profitability, firm size, and tangibility are statistically significant for the overall debt ratio, while the coefficients of profitability, firm size, and growth opportunities are significant for long-term debt ratio. As can be noted in Table 7, the coefficient of firm size is positive and highly significant for overall debt ratio and negative for long-term debt ratio, while the coefficient of tangibility is negative for overall debt ratio and positive, but statistically significant, for long-term debt ratio. Therefore, the large-size Romanian firms prefer for financing the short-term loans, but when they use long-term loans may employ tangible assets as collateral.

The relationship between profitability and overall, as well as long-term debt ratio is negative and statistically significant. This result supports the pecking order theory which states that more profitable firms use less debt since these firms can use available internal financing resources. Another explanation for this result could be related to the assumptions of the “new pecking order theory”. According to this theory, banks from the developing countries provide short-term loans rather than long-term loans, thus firms have to finance their investments with equity. However, in these countries shareholders’ protection laws are weak and managers prefer retained earnings as financing resource.

Concerning the relationship between firm size and overall debt ratio, it can be noted that this is positive and statistical significant, which suggests that large firms are more diversified, less prone to bankruptcy, and implicit they have a higher debt ratio. On the other hand, the correlation between firm size and long-term debt ratio is negative which suggest that large firms prefer long-term loans for their financing.

Firms with high proportions of tangible assets have a lower debt ratio which is opposed to the assumptions of the trade-off theory and to the results obtained for developed countries (Rajan, Zingales, 1995, Titmann, Wessels, 1988). According to the trade-off theory, the tangible assets are used as collateral for debt. However, in developing countries the use of tangible assets as collateral for debt is impeded by certain factors, such as underdeveloped legal systems, illiquid secondary market, etc. As consequence, the studies of these countries indicate negative correlation between tangibility and debt ratio (Booth et al., 2001, Nivorozhkin, 2005).

The coefficient of growth opportunities is significant for long-term debt ratio indicating that banks recognize the value of the firms’ growth opportunities and offer them long-term loans.

4. Conclusions

The purpose of this study was to evaluate the impact of the determinants of capital structure on the debt ratio of the Romanian listed-firms by using a panel data model. The overall debt ratio of the Romanian firms (35%) is much lower compared to that of the developed countries (66% for the G7 countries) and less lower than that in the developing countries (51%).

The lower debt ratio can be explained, first of all, by the Romanian macroeconomic factors (the 2004 -2008 period) such as: (a) a positive economic growth which supported the issue of equity as a financing resource, because their market value is increased during the economic growth periods, (b) the inflation uncertainty which determines business risk growth and probability of insolvency, therefore firms will choose equity as financing resources and (c) a higher reference interest rate which determines a higher cost of debt and thus firms focusing toward other financing resources, meaning internal financing resources.

For the period 2004-2008, we noticed a significant difference between the maximum and the minimum debt ratio, indicating that the capital structure of the Romanian firms is

influenced in a higher proportion by the firm-specific factors. Among these factors, profitability, firm size, and tangibility influence the total debt ratio of the Romanian firms, while profitability, firm size and growth opportunities influence the long-term debt ratio.

Regarding the firm size coefficient, we found that this is positive and statistically significant for the overall debt ratio, but negative for the long-term debt ratio. About the tangibility coefficient, we noticed that this is negative for the overall debt ratio and positive, but not statistically significant for the long term debt ratio. In other words, the large listed-firms prefer short-term loans as financing resources rather than long-term loans, and when they use long-term loans the tangible assets may be used as collateral.

Based on the results of the correlations between debt ratio and the specific-firm factors, we can state that, from the capital structure theories, the „new pecking order theory” (Chen, 2004), is the one which explains the financing behaviour of the Romanian listed-firms. This theory states that firms use as financing resources first retained earnings, then equity and, finally, debt.

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FRAUD RISK MANAGEMENT

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***Abstract.** This paper aims to highlight certain aspects of the fraud risk faced by all organizations, regardless of the specific activity. Also, in this work are presented some practical examples in order to show how the risk of fraud is managed. The implications of this risk can be unlimited and may lead to bankruptcy when the organization affected. In general, the risk of fraud is more threatening in times of crisis and also threatens the financial stability of organization.*

Keywords: fraud; internal audit; internal control; management and risk assessment; corporate governance.

JEL Code: M4.

REL Code: 14J.

Introduction

In a more speech arts, internal audit is the conductor and the orchestra plays the role of internal control system. Although he can not play every instrument in the orchestra, conductor has sufficient knowledge and experience that can relate whole orchestra. Internal audit compartment may not include lawyers, engineers, technicians, specialists in human resources or other staff, but has the ability, authority and means to ensure a correlation between the different compartments of the organization. All for the effective management of risk, created by an effective internal control system.

Unfortunately, the effectiveness of that inefficiency of the internal control measures within the organization can not be measured, just appreciated. This makes the establishment of procedures to improve it to be subjective and vary from a team of specialists to another.

Internal audit compartment, through the specific tasks that they carry out, they take contact with the various processes within the organization. This means that, in particular, the internal audit section has an overview of the processes and risks within the organization.

In addition, the internal audit department has all the information to intervene in risk management, he is obliged to do in light of his involvement in the internal control system of the organization.

1. Elements of risk management. The role of internal audit in risk management

When we talk about risk management concepts of reversibility and irreversibility are important. There are risks when products they generate an irreversible effect. These may be:

- the irreversibility in recruiting resources;
- the irreversibility in the organization's position on the market;
- the irreversibility in the products provided, etc.

If all decisions may be reversible when it comes to risk the reversal is null. The Internal audit compartment is privileged because it deals with the risk of a preventive manner, which reduces the level of irreversibility.

In the current environment that enables the organization is becoming more unstable, non linear and in constantly changing. The need to anticipate risks has become increasingly pronounced to limit the irreversibility due to production risks. Internal audit started becoming more involved to waive a strictly financial to become involved in other areas such as strategic audit.

Risks when occurs they have an impact on the financial statements. The issues of risk and its repercussions on the financial statements is a topical issue. The risk associated with its overall organization activity is business risk (business risk) and represents the total risk of the organization and its actions that may materialize.

Internal audit involvement in risk management business has developed as follows:

Audit evolution

Table 1

Timing	Audit objectives
1900-1960	Supervisory The idea that risks can be mastered by an analysis of operational and administrative controls
1960-1990	Business Risk Identifying risks and determining their effects on financial statements
1990 - present	Risk of business (in a strategic perspective) Assessment of strategic position relationships with both internal and external organization

Currently, the internal audit tends to have a global orientation, in all processes of the organization, just a simple check of accounts. Audit action regarding risk management extends throughout the organization as being seen as a whole.

Numerous times the risk of fraud is occurring without being detected by the auditors, even in a compartment that they audited him. It is therefore very important that when an audit is performed, auditors should take into account the possibility of a risk of fraud in the section you audit or, worse, even in compartments involved in the flow audited.

2. The risk of fraud. Detection and analysis

A method of detection of fraud risk analysis is the microscopic level of activity audited.

All those simple operations they carry out, seemingly trivial operator can hide behind a fraud very well set, very well organized and taking place for some time without a person noticing. On the official website of the Institute of Internal Auditors is given the following situation where the risk of fraud was discovered by a microscopic analysis of operations.

An audit mission almost completed, the operations conducted in the compartment of a bank customer from India revealed by microscopic analysis, a major fraud.

Although almost completed the audit mission, the auditor has made a final review of transactions deposits and cash withdrawals from bank run. A check of operation at all receipts and payments, trying to answer the following questions:

- 1) each deposit of total deposits operations over a certain amount (say \$ 5000) from X;
- 2) how many operations drawing on the same amount of total withdrawals exceed \$ 5000 during the X;
- 3) how many cases were performed in which both deposits and withdrawals of the same amount the same day or within a short period of time.

The answers to the first two questions were thankful for the auditor (less than 2% of total transactions). The third question statement seemed at least strange. More than 600 transactions were found for the period under review. For auditors, an average of 24 deposits and withdrawals of the same amount in a single day has raised doubts.

By further analysis it was found that it was only 10 accounts from which the 10 owners and they make a deposit withdrawals. It was bizarre that at least one person shall place a sum in an account and then withdrew the same amount of that account.

After closer analysis with bank management and internal auditors have the support of local police uncovered a network of counterfeiters of money to work on the area bank. False account holders deposited money in those accounts and then withdraw money from bank cash desks. Since the bank was high frequencies, and those people were very kind with bank officials no one has no question mark on the legitimacy of such transactions.

From actual cases of fraud, among the most effective methods to prevent the risk of fraud are:

- completion of scheduled audits;
- knowledge workers;
- investigating changes undue financial status of employees;
- imposing mandatory enforcement holidays;
- careful analysis of the past and future employees in their recruitment phase;
- investigate all suspicious circumstances;
- indictment proceedings against employees who commit fraud;
- implementation of high ethical standards.

In order to detect the risk of fraud, the interviews conducted by auditors are important. There are several important aspects of interview techniques that should be taken into account namely:

- during the interview the auditors would have to reproduce the descriptions made by respondents and see whether those submitted by her sense, logical;
- well that auditors longer to stop from time to time during the interview to allow speakers to speak and to express various points of view;
- it is desirable that the interview should take place in a set of auditors who are not familiar listener, but also the auditor to do the other party to feel "like home";
- the auditor to consider as good faith interlocutor;
- auditors should not play roles of "good cop - bad cop".

The main indicators of fraud of which any organization can have are:

- 1) accounting anomalies;
- 2) symptoms related to internal control;
- 3) analytical anomalies;
- 4) symptoms related to the lifestyle of employees;
- 5) symptoms related to change employee behavior;
- 6) information and referral.

Accounting anomalies occur because usually it is impossible for a person who commits fraud in an organization could not alter the accounting records (accounting documents, accounting journal entries, general ledger, accounts).

Symptoms related to internal control. Fraud occurs when pressure, opportunity and rationalization of resources come together. When internal control is absent or avoided, the opportunity to commit fraud comes.

Analytical anomalies are those procedures or relationships that are too unusual and too unrealistic to be believable. This includes transactions or events that occur at times and in strange places or being made or involving people who normally would not participate in their implementation. This includes also transactions or amounts that are too big or too small, or occur too often or too infrequently, or which result in too many or too few operations. Normally, as revealed in the example shown above, analytical anomalies are all unusual operations, unexpected.

Symptoms related to the lifestyles of employees. Most people who commit fraud are under pressure from a financial point of view. Sometimes financial pressures are real, sometimes not. After committing fraud, usually employees after they meet the financial needs continue to evade funds to improve lifestyle. They buy new cars and other assets, exotic vacations, reshaping the house or move to more expensive homes, buying expensive jewelry

or clothing, or simply spend more money on food or allocate more resources to current expenditures.

Very few people who commit fraud save money. Usually, they spend everything they have illegally avoided. As you become more confident in the scheme of unlawful removal of the assets of the organization, they escape and spend ever more. Soon, their standard of living is beyond what can normally allow.

Symptoms related to change employee behavior. Studies in psychology found that when a person, especially for the first time, commits a crime it becomes overwhelmed by feelings of fear and guilt. This translates into a high stress, stress that the guilty will try to dispense the product directly to change its behavior. These events may occur in the following forms: insomnia, increased consumption of alcohol abuse in relation to smoking, feeling irritable and suspicious, unable to relax, fear of being caught, the inability of people in the eye, visible discomfort among circles of friends, contemplating the possible consequences visible, tend to work the legs, sweating, etc.

The person who commits fraud is not a specific behavior that can be recognized, but it and change it, and this sudden change in behavior may signal a possible fraud. People who are kind may become aggressive and those who are aggressive may suddenly become nice.

Information and referrals are a good source of fraud detection. Most times, the auditors are blamed that they found more fraud. Not taken into account but that is a very important point that, given the nature of fraud, auditors are in the worst position to discover the fraud, at least inadvertently.

Each fraud has certain stages:

- stage of performance;
- phase of recovery of traces;
- phase conversion.

Fraud may be discovered in each of these stages, but not necessarily by internal auditors. Auditors must start the trace information or complaints received from others in at least two stages of deployment of fraud.

The first stage of a fraud involving the stealing of resources, information or other assets of the organization, manually, with computer, telephone, etc. At this level, fraud may be referred by someone who sees „outflow” unauthorized sites. Generally not the internal auditor is a person who is around an employee who commits fraud, but his other colleagues. Also, normally during the conduct of audits (2 to 4 weeks) fraud does not occur. Those best able to detect fraud at this stage are usually co-workers, head of the hierarchy, or other employees who have dealings with the carrying out a fraud.

The second phase, covering all, including those actions made by the person who committed fraud to hide them. This includes measures taken by the person who carried out the fraud and destruction of documents, records, etc.. At this level the internal auditors can detect fraud by detecting altered records or by application of cash shortages or fixed assets of audit tests performed. However, employees of accounting or co-workers are the most able to detect these anomalies.

The third stage is the recovery of assets stolen conversion, turning them into cash and spending cash. If the fraud is stealing cash only, at this stage include only amounts spent illegally removed. Normally all amounts stolen are spent almost immediately. At this stage, fraud can be detected through changes in products, almost inevitably, the result of lifestyle spending amounts stolen. At this stage, auditors have little how to detect fraud. They have no way of knowing what kind of jewelry bought suspects fraud, they have no vision on the lifestyle of employees.

Overall, in all three phases of fraud, co-workers and superiors are in the best position to detect fraud. It is estimated that large companies 43% of cases of fraud were detected as a result of complaints and information received from various employees, which makes this method of detection of fraud is by far the most effective and widespread. Opening a channel of communication especially for the risk of fraud, is an excellent way to fight fraud.

Each of these signs of fraud have a major role in fraud detection mechanism. When the information inherent in the 6 categories are combined, resulting a huge fraud detection power.

3. ELRIC

In some materials, the IMF proposed a blend of corporate governance with risk management, operational risk and fraud in central banks through a mechanism called Elric.

External audit mechanism:

Practices and procedures used by an independent auditor to provide an opinion on the financial statements, if made in accordance with the legally prescribed;

Provides an assurance given in respect of quality control procedures for the integrity of financial transactions of the bank;

Follow-up implementation of the recommendations of the audit.

Legal framework:

Government interference in the operations of central bank independence may weaken the bank and increase its risk exposure.

Financial reporting:

Promoting transparency with regard to reporting practices, including the publication of financial statements.

Internal audit mechanism:

The work of internal audit is an independent business, organized with the objective to add value and improve operations of the organization;

Helps organization achieve its objectives by improving the techniques of risk management, control and corporate governance processes;

Internal audit activity strengthens the integrity of the control functions of the central bank;

Complete external audit work;

Ensures compliance with laws and internal rules;

Makes operational and financial audits.

Internal control system:

- Internal control is a process that includes all policies and procedures required by bank management to help in:

- Improving business efficiency and effectiveness;
- Respect the law, rules, policies, plans, rules and procedures;
- Prepare timely financial information.

System focus of internal controls is in particular the banking, accounting and operations management of international reserves;

- With the „Elric” vulnerabilities are identified and grouped. They are grouped into several categories:

- High risk;
- Medium risk - high;

- Medium risk - low;
- Low risk.
- The significant risks identified should be covered by an economic program.
- An appropriation is necessary and the departments involved;
- All risks are reviewed regularly to monitor their previous group and discover any possible risks overheating.

4. There is generally a valid prescription for fraud risk management?

Many practitioners are asking if there is a generally valid recipe for fraud risk management. Generally accepted opinion is that there is no universal recipe for success in managing the risk of fraud. These recipes depend on the specific organization, its size, industry, market, etc. working on. Each recipe depends on the resources that the organization is willing to allocate for this purpose. There are many factors that influence risk management, there are many recipes that can be applied to their good management.

Although organizations face the same types of risks, how each risk category puts his mark on an organization is different from one organization to another. In addition, each organization has a particular approach to risk management, based on:

- Experiences in risk management;
- General risk industry;
- Financial resources available to the organization;
- Its size;
- Experience of staff with responsibilities in risk management, etc.

In each organization, all types of risks are latent. Whenever a hazard or another may occur, with the favorable development conditions triggers, the triggers. For this reason it is very important that these risks are mapped and analyzed dynamically. An employee may not intend to provide a secret within the organization, or to divert a certain amount of money but lack the smallest of the organization's control system, causes that person to start a venture that could lead to production then chain risks, the consequences sometimes even lead to bankruptcy.

If an official is known to one of the oldest bank (Barings, the oldest investment bank in the UK), which by conducting unauthorized transactions on the stock market eventually led to the failure of that bank Barings.

Nicholas Leeson, in early 1990, was employed at Barings and was sent to the Stock Exchange of Singapore as director of operations on the derivatives market. Initially he operated hedge transactions unauthorized bank account, which first made a profit of 10% of annual turnover of the bank. Subsequently, he began to lose, Leeson and hiding losses in an account 88,888 (considered a lucky number in Chinese mythology).

Big mistake was that bank management has allowed Leeson, as a manager, to settle one operation. Leeson made losses in 1992 totaled 2 million pounds, reached later in 1994 to 208 million pounds. On January 16, 1995, Leeson was a term speculative operation, relying on the fact that the Asian market will not move widely in the short term. However, the earthquake in the morning of January 17, 1995 threw down the Asian market and Leeson's operation. Although later tried to make investment and other operations in order to further reduce the losses, Leeson has not managed to bridge the gap of 88,888 account.

Losses arising from bank reached 827 pounds, which reached 1.4 billion pounds of losses from exchange, twice the bank's capital investment. Leeson was accused of fraud and sentenced to 6 years and half in prison.

Many specialists felt that part of the blame rests with the system of internal audit and risk management practices of the bank. If the internal control system was effective, the risk can be eliminated. Costs of organizing the internal control system were much lower, while the

bankruptcy of that bank was given a heavy blow to the shareholder, customers and suppliers and the banking system as credible.

In general risks occur because of the internal control weakness at some point. It is sufficient for activity, part of the process are not covered by the working procedures, supervision of the management or other instruments of internal control that risk to materialize. It is much easier and efficient to invest in risk prevention, than in eliminating the effects and cover losses arising from their materialization.

The most dangerous attacks against organizations tend to become increasingly more, the computer. For this reason, many internal audit departments have developed specialized teams within their audit data. Attacks can materialize in the form of computer viruses, especially in the form of data thefts and financial resources that may have some disastrous effects of these organizations even bankruptcy.

It takes a very close correlation with the computer compartment Internal Audit in organizing effective internal control system in terms of information technology. It is recommended that the Internal Audit Department within the organization to work closely with specialist IT firms, especially those who have delivered some computer applications.

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REVENUE GENERATION INDEXES USED IN THE LODGING INDUSTRY

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***Abstract.** Revenue management in lodging industry presents a series of particularities. Many studies were written in order to understand the technological supports used by hotels as well as the strategies of controlling room inventory allocation at the right time, at the correct price. Settling the right time means bringing the best value to both producers and consumers. In practice, revenue management means settling the prices according to the estimated level of demand so that the price sensitive customers to buy at „the correct price” and the price insensitive customers to buy whenever they want.*

Keywords. revenue management; occupancy; ADR (average daily rate); revenue generation index.

JEL Code: H2

Our objective in this study is to analyse different ways used in lodging industry in order to manage revenue. Such a demand is imposed by the fact that in a world where the presence of major hotel groups has a huge impact on the economies where hotels are settled understanding the way revenue management is done in these groups is a necessity as well as a challenge.

Revenue management in tourism has two strategic levels: length of stay and settling price according to demand. Different industries use this practice of revenue management⁽¹⁾. This practice is specific to industries that evaluate differently a service whose length in time is known. Those attributes are found in industries such as airlines, lodging, rent a car, restaurant industry⁽²⁾. Length of time control can be internal and external. Internal control takes into account settling and redesigning the way the service is provided, a good forecasting of arrivals and inventory control effectiveness – length of stay and overbooking. External control includes reservation costs or reservation guarantees (specific to the lodging industry and to airlines) or restrictions of consumer behaviour – clients can cancel a reservation only by paying a fee that can be equal to the price of the flight or a percent that may be even 100% of a night of accommodation for a late check out or for a late arrival.

Demand evaluation proved to be a successful story in a series of industries whose income is based on price discrimination. Researchers proved that different markets have different needs when it comes to pricing and this is the reason why prices should be designed in order to fulfill best the customers' needs. By offering multiple price levels corresponding to the willingness to pay for the same service companies can increase their income by reducing the consumer surplus value.

Revenue management

In late 1980s and early 1990s, the lodging industry adapted revenue management from airline yield management, as an essential way to offer and control differentially priced time-sensitive products. Such a measure was imposed by the necessity to grow hotel's income and shareholders' equities. In early 1970s, airlines began introducing deeply discounted fare products that were designed to fill seats that would otherwise fly empty. Such practice had two consequences. On one hand the income considerably grew. On the other hand it gave the possibility to price insensitive customers to become price sensitive decreasing the revenue. To control the risk of revenue dilution, the airlines instituted two innovations corresponding to the new fare products. First, these deeply discounted seats typically had a reduced number as

well as twenty-one-day advance booking requirements to limit their availability to travelers who could plan in advance. The systematic process of predicting demand and controlling seat inventory allocation marked the beginning of what is called „yield management” (Cross, 1995)⁽³⁾. Price discounts that followed airline deregulation encouraged the initiation of a rate mix sold at each flight in order to maximize revenue⁽⁴⁾. Lower fares offered a better occupancy bringing the price sensitive consumers and the average price was maintained due to the last minute buyers⁽⁵⁾.

Marriott International was one of the pioneers in adapting yield management techniques to the hospitality industry. The adoption of these yield management techniques enabled Marriott International to add between \$150 million and \$200 million to its top line (Marriott, Cross, 2000). By the late 1980s, yield management began to be a part of the standard operating procedure for many hotels, enabling them to offer a broader range of rates to guests and take a larger series of data and to allocate the guests to the right number of rooms and the correct price.

Lodging industry was confronting distinctive problems from the airlines despite the fact that at a first look they both resembled a lot. They both managed a relatively fixed capacity of perishable assets generally sold in advance at modest costs compared to the capital involved; they were both used revenue management systems that recommended overbooking and discount levels for a specific property. The major difference was given by the fact that unlike airlines where passengers fly at published schedules and generally adhere to the specific flight itinerary. Passengers purchase their service with the limitation of nonrefundable tickets. Hotels can not use the effects of a known length of stay as airlines; guests independently determine their length of stay, the price of the stay is not the object of nonrefundable policy. Beyond that, hotels’ room sales are often blocked by group commitments and extra revenues are used by hotels frequently. These characteristics add a huge complexity to the hotel problem⁽⁶⁾. Forecasting and controlling inventory by price and length of stay could add another \$25 million to \$35 million in incremental revenue to a major hotel chain. As hotels and others adopted the discipline, the *yield* term from the airlines was discarded and the discipline came to be known as revenue management (Cross, 1997, p. 140-141). The adoption of these techniques was translated into revenue gains of sometimes above 6 percent had been reported, but typically, hotels attributed a 2 percent to 5 percent increase in revenue from these approaches (Sanket, Bowman, 2004). As a result, *revenue management* became a practice used world wide by 2000.

Occupancy, Average daily rate(ADR) and Rev PAR. Ways to maximize income

The internet development in late 80s and of electronic commerce from the end of the 90s brought dramatic changes of perceptions and tourism consumption. This change was translated in two ways. On one hand investors and banks became interested in profits from lodging industry, this was translated into different historic economic development moments of real estate crisis of different intensities. Demand creation imposed an efficient process of managing demand in a way that it gave possibility to revenue managers to forecast predictable demand and „cherry pick” demand for obtaining the best price combination and the best occupancy for any property, any time. The 9/11 changed radically the revenue approach in tourism industries. It’s effects were devastating for service providers⁽⁷⁾. Using the merchant model through online intermediaries is an example of uninspired decisions in order to recover occupancy loses. The merchant model is being translated for revenue management creators discounts of 25-30% to online merchants such as Expedia, Hotels.com (Starkov, M., Price J., 2005). The merchant model was perceived as a way of maintaining occupancy despite reducing the revenue obtained per available room. The merchant model induced the habit of checking first the online distributors sites and then on the service producers’ sites. According

to Smith Travel Research, the year after 9/11, industry profits in US hotel industry were reduced by \$642 million as a result of introducing the merchant model (Bowers, Freitag, 2003).

The period that followed 9/11 until the lodging industry recovered made many companies reconsider the way revenue management is approached. This way revenue management became more than a system of managing yield. Revenue management became an instrument that allowed the understanding of demand according to the market segments and lengths of stay. Such a change was important for understanding the market as well as the price and its impact on consumption from the individuals' point of view as well as from the way business groups evaluate the provided services. Practitioners from the lodging industry started studying the way the prices are created when it comes to groups depending on length of stay, requested catering services, rented conference rooms and estimated consumption for restaurant, minibar or room service. A correct understanding of the way consumers evaluate this kind of services and offers made by service providers created the belief that revenue management can bring other revenues beside room revenue. A study from 2006 that analyzed the yield management practices confirmed the fears of the people from the industry referring to managing reduced demand as a result of price transparency after 9/11 and reducing prices for obtaining a better occupancy regardless the method that was being used. The above mentioned study showed how a downward spiral in prices can result from an inadequate application of the principle that a certain inventory predicted to be empty should be made available at the lowest price without simultaneously taking into account the growing demand. These effects occur when systems do not take into account accurate assumptions regarding consumer behavior. (Cooper, Homem-de-Mello, Kleywegt, 2006).

Optimising prices and room inventory sold takes into account the maximization of revenues. If prices are not correctly settled, then revenues do not maximize at that level of market. If price is not optimal, however, the Revenue Management optimization" system will not capture all the available revenue in the marketplace. If rates are lower than the customers are willing to pay, a „consumer surplus" is generated. If rates are higher than customers are willing to pay, the hotel sells fewer rooms than it could have, despite leaving discount rates open and the consumers who have chosen such a service would feel entitled to spread negative word of mouth. In both situations the hotel loses revenues and leaves money on the table. Hotel services demand is inelastic but as a result of the huge revenues obtained from renting space the interest for the industry grew significantly. The pricing problem presents a substantial challenge with multiple economic implications. The typical hotel must have rates available for at least 365 days in the future. Let us assume that the hotel must set rates for three rate segments and ten room types. If we multiply this decision by seven lengths of stay and you have 76,650 potential rate decisions every day meaning $365 \times 3 \times 10 \times 7$. Each decision must account for a multitude of factors, including occupancy levels, price sensitivity of demand, and competitive price positioning. To add to the complexity, each of these factors may vary by season and by day of week. We must mention that the evaluation process is complex and a small error can have an extreme financial damage. Aggravating the fact that the decision process is complex is the cost for even a small error in price may have a massive financial damage. A \$1 reduction in average daily rate (ADR) in a five-hundred-room hotel with 70 percent occupancy would decrease annual room revenue by \$127,750 (Steed, Gu, 2005).

The relationship between price and demand seems only apparently easy to understand, but elusive to measure. The difficulty to measure the impact of price on room demand has multiple dimensions in reservation decisions. External factors such as seasonality, day of week have a difficult to measure impact on reservation price and consumer behaviour. The price response can be measured for a certain property at a certain moment. Adding to the

complexity of settling the effects of price upon the consumer behaviour a guest's willingness to pay varies as the arrival date approaches. The consumer price sensitivity will be determined by the available alternatives. The price elasticity gets new analysis specters.

Rate transparency and price optimization have a major impact in quantifying the way consumer measures the price elasticity and positions it between the services prices provided by the competitors. The internet offers consumers the possibility of knowing all the competitors' prices. Hotels do no longer know more than consumers do on market prices when selling. This is the reason why the pricing errors are much more visible nowadays and customers can react quicker to punish misaligned prices by booking away from hotels that have rates too high or pouncing on rates that are below market. Similarly, prices are more transparent to competitors. Hotels can monitor their competitive position with tools, such as MarketVision, PriceTrack, and RateVIEW, which shop rates and availabilities in their competitive set. However, the „race to the bottom” has not occurred, because hotel products are more differentiated than airline products are, and hotels have been able to use their own web sites to amplify differences in product attributes. This differentiation creates opportunities for hotels to position themselves favorably in relation to competitors' prices. The combined forces of differentiation and transparency create a compelling case to apply price elasticity to optimize positioning in the marketplace, and not just to match competitors' rates. In the new transparent environment, decision factors from the lodging industry we have researched do not depend only on pricing, but also on market positioning. Price positioning does not depend exclusively on its own actions. This is the reason why companies must find the appropriate price level and induces the clients' appreciation. Clients are not interested only in a mighty economy but service producers loose a lot of money for unjustified price reduction. Strong companies from the lodging industry use these data in order to optimize the price functions and to analyze the price strategy, the price sensitivity and the strategy approached depending on the distribution channel and the strategies used by competitors. At these methods the traditional methods of competition check supply extra services and value thought the free products and materials they offer.

The optimizing price systems are able to settle rates for each property, at a certain arrival date depending on the forecasted demand, elasticity of demand for that market share and competition prices. The optimizing systems use these data for simulating different situations of demand in order to be able to recommend the best choice. Such characteristics are incorporated in an yield management architecture in order to determine the number of rooms sold at certain price depending on length of stay and other control variables. Optimizing evaluation means a coordination between the buying habits of the customers and the market dynamic in order to forecast the customer's choice referring to price. A correct evaluation of the customers implies the understanding and accepting a fair price. The specialists' opinions regarding the raising of price are divided.

The companies from the top are using sophisticated procedures of analysis in order to measure the checking decisions' impact on controlling inventories. Many hotels make a considerable effort as their managers' position depends on the way the price strategies are applied. On the audit results from the group the audited reported property gets a numerical grade. The obtained grade depends on the way the imposed norms from the group are applied on each brand and how correctly the investors money are used.

The revenue management creators settle the budget levels according to the historical and future reservations referring to the forecasting of a specific market. The budgets are created using comparisons between the situation of the market and the optimistic forecasts referring to the future. The budget comparisons are important in settling the financial forecast. In practice the total sales reported to the budget are being analyzed although the budget is created a long way before. Exceeding budget takes place as a result of a market growth. There

are at least two situations when hotels do not respect budgets: first when the budget is exceeded as a result of positive results of the market and second when the imposed norms from the group are not correctly applied. Performance of revenue management must be evaluated in the context of the market situation.

Occupancy and average daily rate ADR are correlated with efficiency of room revenue management. In this context, we here by mention that occupancy is calculated by dividing the number of sold rooms to the number of available rooms and multiplying the result with 100. Average daily rate ADR is a result obtained or the obtained revenue for all the rooms sold in a certain period. The obtained revenue for an available room RevPAR is a much more efficient way to measure because it includes occupancy as well as average daily rate ADR. RevPAR is the obtained result from dividing the obtained income to the available rooms ready to be sold.

Many research papers prove that in most of hotels RevPAR is the bellwether metric for other indexes that will be created in lodging industry (Ismail, Dalbor, Mills, 2002). Despite its usefulness, the comparisons based on RevPAR can be deceiving, particularly when average RevPAR across brands is distorted by extreme values at either end of the distribution. For example, brands that have a disproportionate mix of major market locations or luxury properties would have a deceptively high average RevPAR (Enz, Canina, Walsh, 2001). The research of Enz, Canina, Walsh, 2001, shows that hotels which are part of a known group have a higher average daily rate ADR than the independent properties. The average daily rate is reduced by the locations which have a smaller occupancies and whose prices level is smaller than the average. Those properties are participants to the distortion creation⁽⁸⁾. Despite all this RevPAR can be a valuable indicator of revenue efficiency when one is comparing an individual hotel's performance over time or to a well-defined competitive set.

Revenue management indexing

In order to better analyze the activity the lodging researchers developed a way of evaluating known as revenue generation index RGI. Revenue Generation Index – RGI – is a ratio of the hotel's RevPAR divided by the RevPAR of the competitive set. The RGI comparison is a more accurate assessment of revenue productivity for a particular property, especially when considering the economic environment in which the hotel is operating. $RGI = \frac{RevPAR_{hotel}}{RevPAR_{competition}}$. Practice proved that using RGI contributes to a better

evaluation of income effects of a certain property especially when considering the environment a property operates. Because many factors such as brand positioning, quality of service and sales effectiveness can drive RevPAR and RGI a few leading hotels have sought to develop methodologies that isolate revenue management efforts from other demand influences. New metrics far beyond traditional measurements of market share, RevPAR, and RGI include simulation models specifically to measure the effectiveness of revenue management decisions. The importance of these new metrics is tied to the ability to make informed decisions from using these new indicators.

Marriott pioneered the development of a revenue opportunity model (ROM) to measure the effectiveness of inventory controls. The concept can be applied to measure pricing performance. A Revenue Opportunity Model ROM evaluates the impact of revenue management decisions by comparing the actual decision to two scenarios. To be precise, the first scenario compares the actual revenue achieved to what would have been attained in a „no control” scenario without the benefit of intervention by revenue managers, and the second

scenario is connected to the optimal revenue that could have been achieved (in hindsight).

(Davenport, Harris, 2007, p. 43). $ROM = \frac{\text{Obtained Revenue}}{\text{Optimal Revenue}}$

ROM can be tracked during the years in order to identify the problems and the opportunities the company met. Practitioners check by using this indicator how effective was the decisions they took. Such an index helps the strategy creators to have a larger horizon and to understand better the market and the way their properties interact with the market they are part of.

RevPAR, RGI and ROM take into consideration, in general, the revenue generated by individuals and do not take into consideration the revenues that might have been created by groups, public spaces, catering and other sources. It is important to take into account that these indexes don't analyze the quality of the obtained revenues, since some of the revenues are more profitable than others. Similarly, the Omni group developed a similar report of analyzing performance. We analyze what decisions might have been taken and what the results might have been, what are the patterns in a period of time compared with the method „first in, first served“. For example if the results obtained were 500.000\$ and the Omni system show that if the decisions taken would have been different the results should have been 550.000\$ then it means that income was not maximized. This is why hotels search constantly ways of creating new indexes in order increase financial efficiency and the level of profit on each unit of sold product/service in order to avoid the money lost as a result of the offers inefficiently used.

GOPPAR (the gross operational product per available room) analyses how well the entire business is managed. As hotels expand analysis to catering and the efficiency of public spaces they obtain the competence of revenues on each square meter within one hour⁽⁹⁾. GOPPAR offers a better perspective on the efficiency of income basing on different functions a hotel has during a day. GOPPAR is a statistic tool which is useful to lodging industry practitioners⁽¹⁰⁾.

In the future it is forecasted that one of the distinctive signs that will mark the next development stage of revenue management is paying attention on external market factors while searching for the optimum level of potential demand⁽¹¹⁾. Understanding the consumer behaviour can be applied in order to settle the group rates. Consumer behaviour understanding can be applied in order to understand the consumer's decisions when it comes to food and beverage, space functions, restaurants and promotional offers response (Orkin, 2003). It is assumed that the more hotels will use these indexes the concept of revenue management centered on client will be more familiar. Such a concept means analysing revenue using as an analysis base the preferences of each consumer that exists in the hotel's data base and then forecasting demand basing on the preferences of each guest in order to create a cycle of planning demand. The systems Customer Relationship Management CRM capture, store, and analyze additional information about each customer, including demographic profiles, booking source profiles, sales data, requests, complaints, and survey responses. However, for the majority of hotels, these rich data sources are not tightly linked to revenue management systems, and in fact they may not be regularly accessible to revenue managers (Noone, Kimes, Renaghan, 2003).

We conclude the exposure by considering that in the era where revenue management could be the only tactical approach of room revenue ended. Understanding all the economic and uneconomic factors that affect the industry is extremely important, as most of the presented indexes take into account mostly the individuals, ignoring the groups and their effect on occupancy and revenue. For the future practitioners wish for revenue management to consider all the contributions to creating revenue as being part of all the aspects managing a hotel means⁽¹²⁾. This study is an original paper, part of a PhD thesis that will be presented soon. We believe that the paper's goal of analysing in a proper manner the way revenue

management is analyzed in practice succeeded by using a representative international bibliography.

Notes

- ⁽¹⁾ Such a practice of managing revenue is specific to industries with relatively fixed capacity, predictable demand, perishable inventory and customers whose willingness to buy at peak times varies depending on their price sensitivity.
- ⁽²⁾ This study will focus on the lodging industry.
- ⁽³⁾ Since yield was an important airline statistic representing revenue per passenger mile.
- ⁽⁴⁾ The new rate mix induced new economic behavior from the consumers' side and well as increasing costs on human capital and technology.
- ⁽⁵⁾ Robert Crandall, CEO American Airline from that period said „Yield management is the single most important technical development in transportation management since we entered the era of airline deregulation. We estimate that yield management has generated \$1.4 billion in incremental revenue in the last three years alone”. (Smith, B. C., Leimkuhler J. F., Darrow R. M., 1992, 31).
- ⁽⁶⁾ Any accepted reservation implies refusing other reservations that might be more profitable. A one night stay on Wednesday can imply refusing another guest that wishes accommodation for several nights.
- ⁽⁷⁾ Occupancy was reduced with 20% for hospitality and prices on short and long terms were reduced. After the number of flights was reduced as a result of panic the hospitality was forced to give.
- ⁽⁸⁾ The luxury hotels have the biggest level of average daily variation and RevPAR as this market share has the smallest variation of occupancy comparing to other activities. The 2 and 3 stars hotels have normal distributions of the average daily rate ADR and RevPAR.
- ⁽⁹⁾ On the basis of GOP (gross operational product) it is analyzed the performance of all operational department managers.
- ⁽¹⁰⁾ GOPPAR allows a better analysis of how efficient is the alternative functions of revenue during a day. The problem of these measurement techniques is that it analysis only the measured demand and not the potential of the market. Market share is not an essential method to measure the efficiency of revenue management. Practice proves that this index number should be used as a component of another index that measures the revenue that should be obtained. Such a fact might give the possibility of seeing how revenue from each guest should be obtained in order to be able to see the potential of all market shares.
- ⁽¹¹⁾ Most of the characteristics are based on client, especially on his desire to pay.
- ⁽¹²⁾ When it comes to marketing or the strategies used in order to optimize the price taking into account the price transparency and their variation depending on time.

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**INTERNAL AUDIT PERFORMANCE MODELING
USING COST BENEFIT ANALYSIS.
SENSITIVITY OF INTERNAL AUDIT SURPLUS VALUE
WITHIN THE CONTEXT OF THE FINANCIAL CRISIS**

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***Abstract.** The article looks into the performance issues, and the cost – benefit approach on audits, viewed in a broader sense (project management) but also analyses the limits of this approach, that can provide a quantitative dimension to the surplus value.*

With this purpose, the quantitative analysis will observe from a theoretical and illustrative point of view a project management theoretical model used to quantify the surplus value of an audit, using the net added value method, project management and balanced scorecard method.

Finally, conclusions were drawn regarding the sensitivity of surplus value brought by internal audit within the context of the economic crisis.

Keywords: public internal audit; project management; cost – effectiveness analysis; balanced scorecard; net present value.

JEL Code: G34.

REL Code: 14J.

1. Introduction

Starting from the definition of the internal audit as an independent and objective activity that gives an entity a certain assurance regarding the degree of control over its operations, guides it in order to help it improve the business and contributes by adding an extra value, we considered useful an analysis of the added value brought by internal audit, that also provides a quantitative tool for analysis. The need for this analysis is dictated by the fact that the value of internal audit derives from its ability to help internal control advance, internal auditor becoming a true value creator through the savings it generates, the opportunities it creates and the losses avoided as a result of its activity. Audit has many levers in can use in creating added value, and it is important that audit identifies the key points and those important areas where the added-value would mean much to managers and implicitly to the organization, but also to propose improvements in this regard, which quantified mathematically, can give a tangible image of the internal audit activity. Internal audit performance is not given though just by the surplus value itself, but also by the resources and costs implied by the audit missions, and this is why it should be regarded as a function of the expected effects and effort involved in producing them, as well as the three classical indicators:

- program effectiveness represents an optimal dimensioning of the ratio between efforts and effects;
- effectiveness is determined as the ratio between what has been accomplished and what has been proposed to achieve;

• economy associated with a program can be viewed through the light of attaining the desired effect with minimum production cost.

2. Using cost-benefit analysis to assess the performance of internal audits

Cost-benefit analysis is based on identifying, estimating and comparing benefits and costs of a program. A method used for this purpose is the method of net present value (NPV), against which program performance can be estimated. This is a method by which firms base their investment decisions and which was applied also by the public sector.

Customizing the net added value formula for an audit mission we will consider the following formula for calculating the NPV:

$$NPV = -P + \frac{(B-C)_1}{(1+k)} + \frac{(B-C)_2}{(1+k)^2} + \dots + \frac{(B-C)_n}{(1+k)^n} + \frac{RV_n}{(1+k)^n} \quad (1)$$

where:

B = benefits associated with an audit mission;

C = costs associated with implementing the recommendations;

RV_n = residual value;

P = initial investment (practically the cost of the audit mission);

k = discount rate used;

n = length of implementation.

We simplify the model by considering the residual value to be zero, and also the hypothesis that the implementation of recommendations takes place in a single year with no costs incurred. (RV_n = 0, n = 1, C = 0)

$$NPV = -P + \frac{B}{(1+k)} \quad (2)$$

According to this method, can be considered profitable those missions for which NPV is greater than or equal to zero, which means that the expected net benefits will cover its initial costs.

Cost benefit analysis is based on identifying, estimating and comparing benefits and costs of a project (audit mission can be seen as a project) without having to exclusively quantify benefits in a monetary form.

Cost-effectiveness analysis is considered an alternative of cost-benefit analysis, based on net present value, only that, unlike it, it is not necessary to evaluate the effectiveness of a program in a monetary form, but the most appropriate physical or natural units can be used. In order to quantify the surplus value within the cost-effectiveness analysis, we propose the use of performance indicators given the fact that generally, organizational results are quantified through their usage.

3. From the discount rate to the social time preference rate

The first problem that arises is that of the discount rate (k) that can be used. In an investment project within a private firm, in the estimation of NPV could be used a discount rate which reflects a weighted average cost of capital, or a rate of return required by investors.

Estimating the rate in Romania is also a very difficult step, whether the model used is Modigliani Miller or build up.

In the case of a public entity, however, theoreticians (Stiglitz, 1981, Aronson, 1985, Cullis, Jones, 1998) talk about the use of a so-called social time preference rate, which is considered to be the rate at which individuals are willing to substitute current consumption for a later time.

4. Usage of project management in estimating the cost of internal audit

A second issue of formula (2) is the determination of audit costs (P), which can not avoid doing an audit mission with a project management approach. Project management

emerged as a tool for planning, coordination, implementation and control of complex activities in modern industrial, commercial, social, cultural and political projects. Any modern activity is regarded as a project, with a certain complexity level, which requires a new vision, starting from the needs' analysis and ending with the possibilities of efficiently re-using the project results. Public internal audit mission can be also considered as having the characteristics of a project to be pursued, with its own specific features. Thus, passing through the standard audit path - law on public internal audit - we reach the general norms aimed at regulating methodological work of public internal audit structures within the Public Finances Ministry, respectively to the procedure p - 06 development of internal audit program, set in its own Norms regarding the exercise of public internal audit, approved by OMFP no. 445/2004.

The the purpose of this procedure is also defined, namely „ensuring that all aspects of public internal audit mission objectives have been taken into consideration, ensure the division of tasks, activity planning and supervision”.

To be noted that after the audit program, the costs incurred by the audit mission can be analyzed, but we cannot overlook the difficulties to follow a balance between resources allocated to specific procedures, as first needs are dependent on the deployment of on the spot intervention and sometimes, during the course of the mission, planned resource disturbances can occur.

There are frequent instances when certain procedures require additional time resources or specific work-related resources are unexpectedly reduced (unscheduled tasks in another area of activity, sickness, etc..).

We can remind also that some tests are subjected to the findings of other previous test. The number and volume of identification files and problem analysis depend on the test findings. The necessity to conduct conciliation meeting is subject to the reaction of the audited structure towards the content of the draft report.

Certain problems specific to project management need to be addressed:

1. What is the timeframe for completion of the mission?
2. What are the times of beginning and end of each audit activities within the program?
3. Which activities are critical, in the sense that they must end exactly at the scheduled time, so that the deadline of the mission will not be exceeded?
4. How much can the non-critical activities be delayed, so that the deadline for achieving the mission will not be exceeded?
5. How can resources be allocated to various activities so that the mission be carried out quickly and with minimal cost?
6. What are the costs of the audit engagement?

Methods such as PERT (Program Evaluation Review Technique), CPM (Critical Path Method) and Gantt charts are methods of analysis used for project management. We will not develop their theoretical aspects, but we notice that indifferently of the chosen method, the first step in project planning is to define activities, resources and setting precedence relations between them.

Software products such as Primavera or Microsoft Project allow real-time analysis of issues arising during a project and in particular during the conduct of internal audit mission, and they are especially good in determining the cost of a mission.

We will briefly present below the main steps to be followed if the Microsoft Project software is used for the public internal audit program.

1. Setting the resources to be used in the audit mission and the costs involved, working times of the audit engagement
2. Activities, times, and persons involved are established, as well as the precedence relationship between them.
3. Reports are generated, the cost of the missioni is calculated and Gantt charts are created.

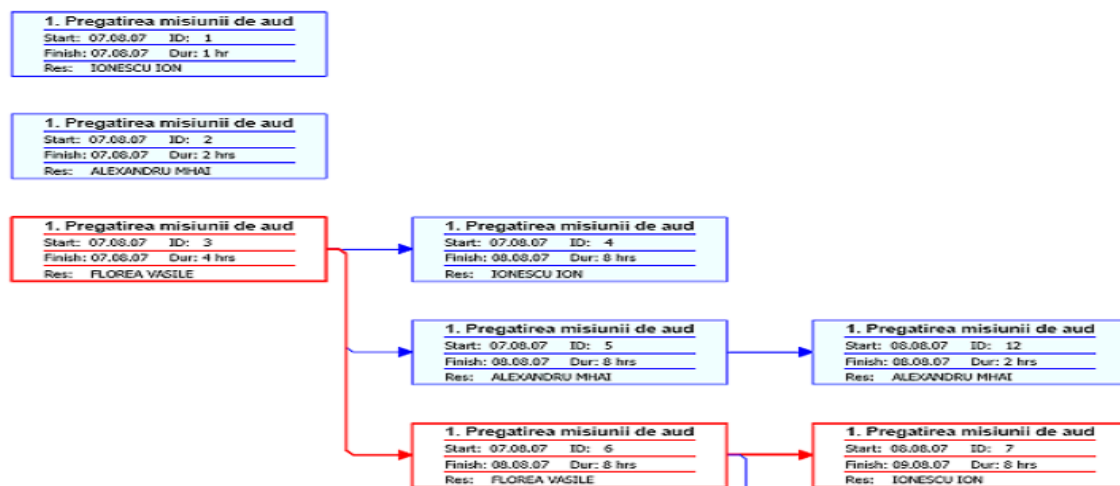


Figure 1. Cost analysis, resources, operations

5. Performance benchmarks and the usage of the balanced scorecard concept in determining the surplus value of internal audit missions

The third and biggest problem is in relation to the identification and evaluation of the benefits (B) obtained through the public internal audit. Should be said from the start that the identification and assessment of the surplus value delivered by the internal audit is related to maximizing the performance of programs that characterize the audited entities. The analysed model will use a version of the concept of Balanced Scorecard. In 1992, Robert S. Kaplan and David Norton introduced the concept of „Balanced Scorecard”, in an article published in Harvard Business Review – a concept for „measuring” an organization's activities in relation to its vision and strategies. The concept provides managers with a comprehensive picture of performance. Since then, the scorecard's have become a „required” tool. Taking into account the subject of our paper, that of treating audit as an „investment”, a version of the „balanced scorecard” concept will be introduced in the analysis of cost-effectiveness, as a measure of performance and effectiveness. The audit performance will thus be determined as the overall surplus value brought to the organization. In this study we thus ensure the comparability of two audits missions conducted at various organizations. The definition of the „added value” concept may vary considerably from one department to another, or from one organization to another. Thus, the type of work or service offers also the possibility of quantifying the added value. In some cases, what adds the most value to an organization, or an area within an organization, could be considered a loss of value elsewhere. Therefore, the influence of individual circumstances raises the question: „How can auditors identify practices that will add the most value, given their specific situation?”

Once the objectives of the organization are established, may still be difficult to establish the appropriate instruments to measure the outcome, especially in complex areas. Instruments to measure efficiency make the link between efforts and results of services:

We will briefly mention that the criteria necessary to ensure the soundness of these indicators must be taken into account: importance, clear definition, easiness to understand and use, comparability, ease of verification, unambiguosity.

Performance indicators can cover a variety of issues such as productivity, number of staff employed, the cost of producing or procuring outputs unit (output), average time for the conduction of certain activities or provision of a service.

Performance measurement is based on examining how a program has achieved the objectives or requirements, by constantly reporting to the performance standards agreed. In this sense, setting the targets can make the organization or a specific area of services to work better. Targets may provide forward-looking information in perspective and not just on the

level of activity of a service, but also if the the objectives were achieved or not. In this sense it is used as a model the Benchmarking.

Benchmarking can be defined as a process of research, usually by comparison, in order to identify and implement good practice in performance. As its name suggests, performance benchmarking consists in the use of performance indicators to compare entities as a whole or the performance of an entity's organizational structures.

Having in view the above theory, we can quantify the impact of audit reports recommendations by the impact they have on performance indicators.

Quantifying the surplus value through the analysis of its impact on performance indicators for each recommendation is briefly presented below.

The example is related to tax administration and for its simplification we consider equal impact weights on Balanced Scorecard.

Impact of recommendations on performance indicators

Table 1

Objectives	Risks	Findings	Consequences	Causes
Reduction of arrears to the consolidated budget	Impairment losses subject to increase enforcement of arrears	The value of buildings subject to enforcement no longer cover the value of claims	Increasing arrears in the consolidated state budget	Was preferred the application of enforcement measures without the transfer of debt to be taken into consideration
Increasing human resources performance	Professional training in the tax administration regarding information systems is insufficient	Number of hours of professional training do not cover the specific needs	Decreased staff performance	Training is conducted exclusively by means of lecturers
Confidence in the ability of state's tax administration	The results of tax administration are not effectively publicized	Press relations department do not communicate within the required timeframe their answers to petitions	Decreased confidence in the ability of the state administration	Lack of effective communication
Compliance procedures	Failure to respect the specific dead-lines of tax administration	Retentions on cash in bank accounts are provided at a large time difference	Reduction of the general consolidated budget revenues	High number of cases that require application of this procedure

Recommendations	Measures	Performance indicator	Indicator Value	Target	Indicator value/target	Quantification of recommendation's impact	Quantification of the impact
Using the debt assignment after the bankruptcy risk analysis	Financial	Arrears value / amount of tax claims as they result from tax declarations	0.37	0.27	0.729	0.749	0,02

Recommendations	Measures	Performance indicator	Indicator Value	Target	Indicator value/target	Quantification of recommendation's impact	Quantification of the impact
Designing a centralized system for analysis and response to requests made to petition or to information of public interest	Partners	Average response time to taxpayers' requests	20	15	0.75	0.8	0.05
Developing an expert system for analysis of forced execution procedures	Internal processes	Administrative procedures/ number of employees	5	10	0.5	0.55	0.05
Professional preparation through the use of movie-like presentations posted on the intranet of the organization	Development	Average value of annual professional evaluation	4.02	4.30	0.934	0.940	0.006

Quantification of whole audit mission surplus value will take into account the sum of all these indicators. Arrow showed that there is no constitutional rule to simultaneously satisfy what may be considered a list of „reasonable” needs. It can be said therefore that there is no satisfactory constitutional rule through which individual preferences are aggregated, which is a major difficulty for decision making.

By being aware of these limits, aggregation of indicators can be made using models in which there are several criteria with specific weightings according to an analysis of the Balanced Scorecard.

To simplify the model presented, and to obtain a concrete result we will consider that the indicators have the same weight. Consequently the impact of audit recommendations mission is 0.126. This factor will be multiplied by a value depending on the size of the audited entity or its importance (eg 100,000) which actually quantifies a monetary impact derived inclusively from the social impact of an enterprise or institution.

As a practical application of these considerations we can quantify the performance according to the formula (2).

$$NPV = -P + \frac{B}{(1+k)} = -20 + 12600 / 1.15 = 10,936$$

6. Sensitivity of the surplus value within the context of the financial crisis

In order to formulate our conclusions, we will perform a sensitivity analysis according to two terms of relation (2) considering the size of the entity between 0 to 500 and k between 0 and 0.5. In the graphic study we will consider the cost of the audit mission equal to 20 and the coefficient given by the recommendation to 0.126.

Basically, this comparison can give an answer on the real opportunity of an audit in different structures in different periods, depending on k .

```
> f := (x, y) -> -20 +  $\frac{0.126 \cdot x}{1 + y}$ 
      f := (x, y) -> -20 +  $\frac{0.126 x}{1 + y}$ 
Specify the ranges, and then plot the function.
> plot3d(f, 0..500, 0..0.5)
```

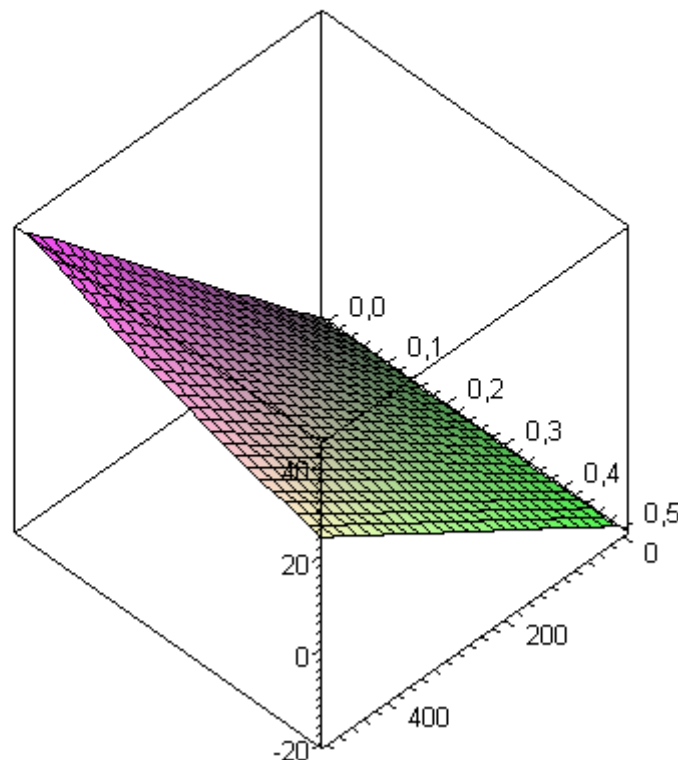


Figure 2. NPV sensitivity analysis

Conclusions

The factors upon which the surplus value of audit mission depend are the audit cost when viewed as a project, the discount rate, the impact of recommendations on performance, and the size of the organization. Note that the higher the discount rate, the lower the NPV. During economic development times, the pressure on auditors is much smaller than during economic crisis. Increased turnover or the importance of a public entity leads to an increase in audit's profitability. Integrating the presented analysis method with the usage of appropriate software methods (to include the usage of project management in the audit missions), quantifying the impact of recommendations on performance indicators in organizations can lead to the development of internal audit by quantifying its own value. The limits of this approach consists mainly in the subjectivity of the evaluation of recommendations (which can be found afterwards during the follow-up missions) and the discount rate. Given the lack of other numerical approaches, cost-benefit method can be considered a relevant method for estimating performance of public internal audit, for which however must be identified and assessed all the elements involved.

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INCENTIVE AND DETERRENTS OF FISCAL POLICIES ON MONEY LAUNDERING BEHAVIORS

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***Abstract.** This study provides an overview of the relationship between fiscal policies and money laundering modeled by a least squares function. The report analyzes statistically data collected from USA, Russia, Romania, and other eleven European countries, rendering eight linear regression models. The study illustrates that none of the total variance present in the regressand (level of money laundering), which is „explained” by the variance present in the key components of fiscal policies. In our opinion, this model will provide critical auxiliary judgment and decision support for anti-money laundering service systems.*

Keywords: *money laundering; underground economy; fiscal policies.*

JEL Codes: G18, G28, O17.

1. Methodology

In order to explain money laundering behaviors we rendered eight linear regression models, each of them tightly bound to a key component of the fiscal policies. Data collected from USA, Russia, Romania, and other twelve European countries was analyzed in relation to Personal Income Tax, Corporate Income Tax, Tax revenue as percentage of GDP and Implicit tax rate on Labour⁽¹⁾. None of the models indicated a strong or statistically significant linear relation between fiscal policies and money laundering. Each of the four initial models was then rerendered excluding the weakest estimations. Again no relation was statistically significant.

2. Estimating money laundering levels – a micro-economical approach

In order to illustrate the correlation between fiscal policies and money laundering the author designs a model that evaluates money laundering levels before the initial placement. The model estimates money laundering in a micro-economical approach based on three types of data: the level and nature of criminality in a country (expressed as total number of crimes reported per each type of crime); average level of dirty money generated by each particular type of crime; national wealth. As a starting point the author used the AUSTRAC report which estimates the proceeds of each type of crime in Australia. Based on this estimations and using the United Nations Centre for International Crime Prevention database the author expanded the results to USA, Bulgaria, Russia, Romania, Switzerland, Cyprus, Greece, Slovakia, UK, Austria, Luxembourg, Germany, Holland, France, Spain. By taking into account the most profitable eleven predicate offences of money laundering and multiplying the average revenue per crime⁽²⁾ by the total number of crimes committed in each country⁽³⁾, the author obtains a preliminary set of data. The preliminary data was then adjusted with GDP/capita. By this the author assumes that the benefits of a criminal activity are proportional to the GDP/capita, for illustration a robbery in a wealthier country yields more criminal proceeds. The results of the estimates are presented in Table 1.

Money laundering/GDP*Table 1*

	Money laundering/GDP
UK	1.60
Russia	3.40
Romania	3.10
Greece	1.90
Switzerland	2.10
Cyprus	2.20
Bulgaria	2.90
Austria	1.70
Luxembourg	1.20
Germany	2.20
Holland	1.70
France	2.10
Spain	2.80
USA	3.90
Italy	3.70

This data series constitutes the independent variable of the econometric model.

3. Personal income tax

The fiscal policy was firstly pursued on the Personal Income Tax component. This is a direct tax on the revenue of individuals. Eurostat provided the data used, the baseline year being 2008.

Personal income tax*Table 2*

	Personal income tax ⁽⁴⁾
UK	40.00
Russia ⁽⁵⁾	30.00
Romania	16.00
Greece	40.00
Switzerland ⁽⁶⁾	40.00
Cyprus	30.00
Bulgaria	10.00
Austria	50.00
Luxembourg	39.00
Germany	47.50
Holland	52.00
France	45.80
Spain	43.00
USA ⁽⁷⁾	35.00
Slovakia	19.00
Italy	44.90

This data series constitutes the dependent variable of the econometric model.

3.1. The relationship between personal income tax and money laundering – a linear regression model

In order to explain money laundering behaviors we analyzed the relation to Personal Income Tax. Data collected in eleven countries was modeled by a least squares rendering a linear regression model. The model illustrates the quantitative relationship between key Fiscal Policy component: the Personal Income Tax (Dependent Variable Y); money laundering LEVELS (Independent Variable X). The study illustrates that the variance present in the regressand, (level of money laundering), is not "explained" by the variance present in the key component of the fiscal policy (Personal Income Tax). The relationship between the two variables could not be estimated by a linear $Y=a+bX$ function⁸. Changing fiscal policies by changing Personal Income Tax levels has no effect on money laundering levels. We present the testing of the model⁹.

Regression statistics

Table 3

Regression statistics	
Multiple R	0.286206
R Square	0.081914
Adjusted R Square	0.016336
Standard Error	0.805639
Observations	16

Regression Statistics confirm the invalidity of the relation.

Variance analysis

Table 4

ANOVA	df	SS	MS	F	Significance F
Regression	1	0.81074	0.81074	1.24911	0.282535389
Residual	14	9.08676	0.649054		
Total	15	9.8975			

Table 4 contains the variance analysis of the regression .

The value of Significance F is 0.28, higher than 0.05. The null hypothesis is not invalidated. The regression model is not valid (significant at 5%). Using the least squares function we obtain the following coefficients:

Coefficients Estimation

Table 5

	Coefficients	Standard error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	3.0705	0.6435	4.7719	0.0003	1.6904	4.4506	1.6904	4.4506
Tax on personal income	-0.0188	0.0168	-1.1176	0.2825	-0.0548	0.0173	-0.0548	0.0173

The Standard Error measured at 0.6435 for the a coefficient and 0.0168 for b, the P-value is 0.2825. For a significance level of $\alpha = 0.05$ we can not reject the null hypothesis. It does not suffice to discard the null hypothesis for the Intercept. Model parameters are contained by the following intervals: $1.6904 < a < 4.4506$; $-0.0548 < b < 0.0173$. We can ascertain that the second interval contains the "0" value, therefore we can not conclude that

$a^b \neq 0$. The Line Fit Plot adds to the invalidation of the model: Estimated Y values differ significantly from real values.

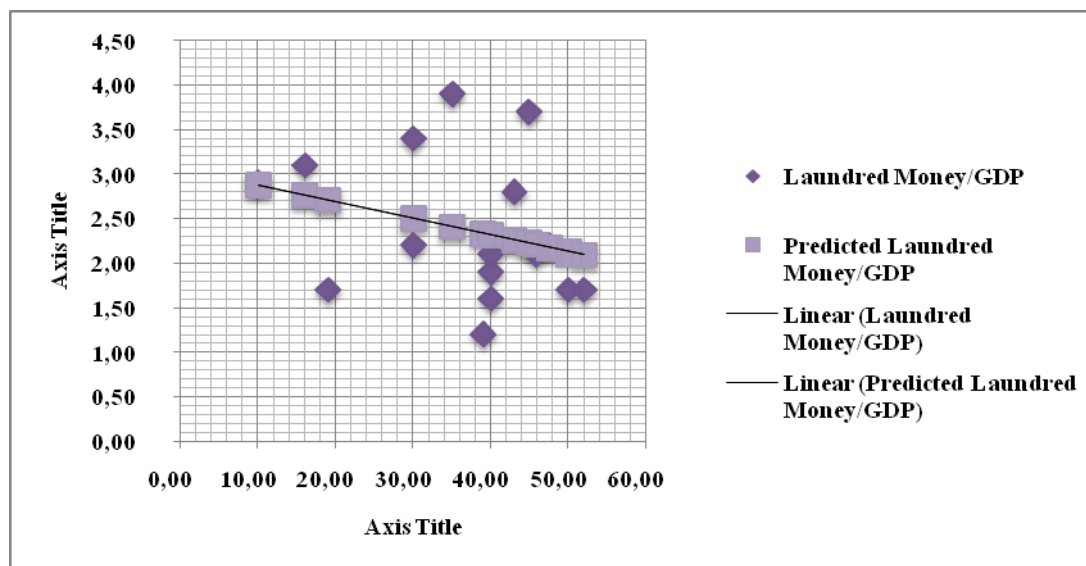


Figure 1. Line fit plot

Adjusted values

Table 6

RESIDUAL OUTPUT			
Observation	Predicted laundred money/GDP	Residuals	Standard residuals
1	2.3197	-0.7197	-0.9247
2	2.5074	0.8926	1.1468
3	2.7702	0.3298	0.4238
4	2.3197	-0.4197	-0.5392
5	2.3197	-0.2197	-0.2823
6	2.5074	-0.3074	-0.3949
7	2.8828	0.0172	0.0221
8	2.1320	-0.4320	-0.5550
9	2.3385	-1.1385	-1.4627
10	2.1789	0.0211	0.0271
11	2.0944	-0.3944	-0.5068
12	2.2108	-0.1108	-0.1424
13	2.2634	0.5366	0.6895
14	2.4135	1.4865	1.9098
15	2.7139	-1.0139	-1.3026
16	2.2277	1.4723	1.8916

On the adjusted values of the model we can ascertain that we obtain the best estimates for Bulgaria and Germany (items 7 and 10 in Table 6), and the weakest for USA and Italy (items 14 and 16).

Given the short data series and consequently the high influence of each country on the study we move on to repeating the analyses with the omission of the weakest estimates (USA and Italy) in an effort to obtain a valid model by eliminating deviant results. The findings of the adjusted model are available in Annex 1. Both models support the same conclusions and can be improved via increasing the quality of the analyzed data by including a higher number

of countries and/or a higher number of predicate offences. We can not establish at this moment if this changes would necessarily lead to a valid econometric model.

4. Corporate income tax

In order to explain money laundering behaviors we analyzed next the relation to corporate income tax. This is a direct tax on corporate income. Eurostat provided the data used, the baseline year being 2008.

Corporate income tax

Table 7

	Corporate income tax ¹⁰
UK	30.00
Russia ⁽¹¹⁾	20.00
Romania	16.00
Greece	25.00
Switzerland ⁽¹²⁾	26.00
Cyprus	10.00
Bulgaria	10.00
Austria	25.00
Luxembourg	29.60
Germany	29.80
Holland	25.50
France	34.40
Spain	30.00
USA ⁽¹³⁾	39.00
Slovakia	19.00
Italy	31.40

This data series constitutes the dependent variable of the econometric model.

In order to illustrate the correlation between fiscal policies and money laundering we continued to use the model proposed by the author and presented before. We kindly remind that the model evaluates money laundering levels before the initial placement. This data series constitutes the independent variable of the econometric model.

4.1. The relationship between corporate income tax and money laundering – a linear regression model

This model illustrates the quantitative relationship between key Fiscal Policy component: the Corporate Income Tax (Dependent Variable Y); AND MONEY LAUNDERING LEVELS (Independent Variable X). The study illustrates that the variance present in the regressand, (level of money laundering), is not „explained” by the variance present in the key component of the fiscal policy (Corporate Income Tax). The relationship between the two variables could not be estimated by a linear $Y=a+bX$ function. Changing fiscal policies by changing corporate income tax levels has no effect on money laundering levels. We present the testing of the model.

Regression statistics

Table 8

Regression statistics	
Multiple R	0.057719466
R Square	0.003331537
Adjusted R Square	-0.067859068
Standard Error	0.839409917
Observations	16

Regression statistics confirm the absence of the relation.

Variance analysis

Table 9

ANOVA	df	SS	MS	F	Significance F
Regression	1	0.032974	0.032974	0.046797	0.831853136
Residual	14	9.864526	0.704609		
Total	15	9.8975			

Table 9 contains the variance analysis of the regression .

The value of Significance F is 0.83, again higher than 0.05. The null hypothesis is not invalidated. The regression model is not valid (significant at 5%). Using the least squares function we obtain the following coefficients estimation:

Coefficients estimation

Table 10

	Coefficients	Standard error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95,0%	Upper 95,0%
Intercept	2.2446	0.6931	3.2384	0.0059	0.7580	3.7312	0.7580	3.7312
Tax on corporate income	0.0057	0.0264	0.2163	0.8319	-0.0509	0.0623	-0.0509	0.0623

The Standard Error measured at 0.6931 for the a coefficient and 0.0264 for b, the P-value is 0,8319. For a significance level of $\alpha = 0.05$ we can not reject the null hypothesis. It does not suffice to discard the null hypothesis for the Intercept. Model parameters are contained by the following intervals: $0.7580 < a < 3.7312$; $-0.0509 < b < 0.0623$. We can ascertain that the second interval contains the "0" value, therefore we can not conclude that $a^b \neq 0$.

Adjusted model values

Table 11

RESIDUAL OUTPUT			
Observation	Predicted laundred money/GDP	Residuals	Standard residuals
1	2.4158	-0.8158	-1.0060
2	2.3587	1.0413	1.2840
3	2.3359	0.7641	0.9422
4	2.3873	-0.4873	-0.6008
5	2.3930	-0.2930	-0.3613
6	2.3017	-0.1017	-0.1254
7	2.3017	0.5983	0.7378
8	2.3873	-0.6873	-0.8475
9	2.4135	-1.2135	-1.4964

RESIDUAL OUTPUT			
Observation	Predicted laundered money/GDP	Residuals	Standard residuals
10	2.4146	-0.2146	-0.2647
11	2.3901	-0.6901	-0.8510
12	2.4409	-0.3409	-0.4204
13	2.4158	0.3842	0.4738
14	2.4671	1.4329	1.7669
15	2.3530	-0.6530	-0.8052
16	2.4238	1.2762	1.5738

On the adjusted values of the model we can determine that the best estimates re obtained for Cyprus an Germany (items 6 and 10 in Table 11), and the weakest for USA and Italy (items 14 and 16).

Given the short data series and consequently the high influence of each country on the study we move on to repeating the analyses with the omission of the weakest estimates (USA and Italy) in an effort to obtain a valid model by eliminating deviant results. The findings of the adjusted model are available in Annex 1. Both models support the same conclusions and reinforce the findings of the previous models. All models can be improved via increasing the quality of the analyzed data by including a higher number of countries and/or a higher number of predicate offences. We can not establish at this moment if this changes would necessarily lead to a valid econometric model.

5. Conclusion

We set out to illustrate the quantitative relationship between key Fiscal Policy components and money laundering levels. By analyzing the eight series of data available, for the proposed significance level of 5%, a linear relationship between Money Laundering Levels and Fiscal Policies could not be ascertained. The study finds that changing fiscal policies by changing Personal Income Tax, Corporate Income Tax levels, Tax revenue as percentage of GDP and Implicit tax rate on Labour has no effect on money laundering levels.

Notes

⁽¹⁾ Although this article bases this conclusion on all eight regression models, only two are presented in extensoModels based on Tax revenue as percentage of GDP and Implicit tax rate on Labour and the rerendered models are available in „Anexa1”.

⁽²⁾ Identified in Australia's case by the AUSTRAC report.

⁽³⁾ According to the *United Nations Centre for International Crime Prevention database*.

⁽⁴⁾ Refers to the tax rate for the highest income bracket adding surcharges of general application.

⁽⁵⁾ According to Mazars Russia, International Audit and Advisory organization, www.mazars.ru

⁽⁶⁾ According to KPMG Suisse www.kpmg.ch

⁽⁷⁾ According to Internal Revenue Service www.irs.gov

⁽⁸⁾ Model parameters have been obtained using the EXCEL software.

⁽⁹⁾ Using dispersion analysis.

⁽¹⁰⁾ This takes into account corporate income tax (CIT) and, if they exist, surcharges, local taxes, or even additional taxes levied on tax bases that are similar but often not identical to the CIT.

⁽¹¹⁾ According to Mazars Russia, International Audit and Advisory organization, www.mazars.ru

⁽¹²⁾ According to KPMG Suisse www.kpmg.ch

⁽¹³⁾ According to Internal Revenue Service www.irs.gov

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Section V
Financial markets and institutions

EFFECTS OF STRENGTHENING STOCK EXCHANGE

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***Abstract.** Strengthening markets is a defining process of globalization and financial deregulation which reconfigured stock exchange in the world. Choosing consolidated financial architecture allows optimization of market liquidity. Thus, cost of capital for issuers is even lower as the liquidity of the securities is greater and a liquid market may allow investors achieve low transaction costs and more comprehensive risk coverage. In our study we tried to highlight the main views that are found in the literature on this subject and to present trends in the Romanian market.*

Keywords: stock exchange merger; consolidation effects; market liquidity; cost synergies; the trading platform.

JEL Codes: F36, G15, G34.

REL Codes: 10B, 10F, 10J, 11B, 11G.

Introduction

In the EU, strengthening the stock exchange is manifested by increasing number of institutions that can operate cross, which means that transactions are offered in several European countries. Strengthening exchanges entail benefits to the financial markets, such as standardization of trading platforms, increased liquidity; minimize costs, and a lot of technical effects, financial, economic and political.

Therefore, on this subject have been conducted many studies focusing on important issues: the actors, economic and financial forces involved in key consolidated grants, legislation and regulation of exchange activity in the context of strengthening the strategies adopted by European markets vis-a-vis global trend of consolidation.

1. Studies of stock exchange consolidation

The approach to banking consolidation, a number of authors (Madhavan, Focault, 1995) presents European financial market characteristics. It is characterized by a high degree of fragmentation, but on the other hand expects the European Directive on financial markets (MiFID) to modify, how radical European scholar environment, facilitating the creation of new platforms stock, thus increasing pressure on existing Stock exchanges.

Meanwhile, on the US market one remarks a stock exchange consolidation and a proliferation of electronic trading platforms, on the stock market. Microsoft is still listed on Nasdaq but is traded on 15 different regional stock markets, too. This increase trading platform resulted in the enactment of legislation which is regulated in the US stock market (Regulation NMS – National Market System). Consolidation trend began in Europe with the

creation of Euronext and the attempted rapprochement between the LSE, Euronext and Deutsche Börse.

In this context, it is important to interrogate on the cost and benefits of fragmentation and consolidation of financial markets. Largest segment of activity is the exchange platforms for carrying out transactions. Stock exchanges obtain income from activities such as listing, fees, sales of financial and activity compensation (or monthly adjustment). In the year 2005, the main source of income for stock exchanges were represented by fees for admission to – 25% in North America, Europe 7% and 12% in Asia, commissions on transactions – 34% in North America, 42 % in Europe, i.e. 47% in Asia and other services – 39% in North America, 45% in Europe, i.e. 35% in Asia. Stock exchanges are also competing for these activities. For example, competition between Nasdaq and NYSE is manifested in terms of listing companies.

The proceeds of the stock exchange of transactions directly with increasing number of companies listed to share, but also indirectly, by encouraging many investors to hold portfolios of securities traded (Pagano, 1998). In Europe, competition for admission to the companies is less strong. In these markets, companies are choosing to be listed, firstly spot and waiting for the European market integration to foster exchange competition in this segment.

The study subjects remember interrogation if the coexistence of several markets for the same financial activities maximizes liquidity is enhanced or not. Some studies (Nielsson, 2009) examine the effects of mergers on stock exchanges, how Euronext consolidation affects the liquidity of firms. The author examines the type of companies benefit most tested in terms of liquidity, stock following the merger.

The results show asymmetric liquidity gains following the formation of Euronext, in that positive effects are recorded in the large companies and those selling foreign securities. The author has shown that there is significant liquidity in the small-scale firms and average, and those that operate only domestically. The merger is associated with growth of Euronext shares, while the London Stock Exchange (LSE) has seen a dramatic. The author has found how clear an increase in competitiveness in terms of attracting new companies to listing.

Another idea emphasized by Thierry Foucault (1995) is that of the cost of participation in multiple markets, which can be significant. Investors bear the costs of searching for information, on the supply available in each market. A study of the London Stock Exchange since 2001, estimated that the cost of cross-border transactions in Europe is 4-6 times higher than in the US because many systems compensation adjustment and delivery.

Other authors (Barclay et al.) showed that stock markets are characterized by network externalities (an investor or broker who takes a decision to achieve a market transaction, affects the decision of other market participants). This implies that stronger demand and supply for a given asset can increase market liquidity. However, these increases in liquidity encourage operators to make more transactions, which amplify the initial effect of concentration in one market orders.

There are little empirical tests designed to validate, how directly, the presence of network externalities in the analysis of effects related to market concentration.

Arnold and al. (2004) have studied the fusion of many US regional exchanges, in the second half of the century XX. Between 1940-1980 the number of regional exchanges in the US went from 18 to 7 (market shares). The authors focused on three mergers: Philadelphia and Baltimore (1949), Chicago, St. Louis, Cleveland (1949), Los Angeles and San Francisco (1967). Their study showed that each fusion was accompanied by a total traded volume increased from 6% to 24% depending on the volume traded before the merger. This empirical result confirms the idea of the existence of a multiplier effect associated building trades in the same market.

Results of the price spread (ask-bid) are less striking. Studies on the NYSE and AMEX indicate that price differences have decreased from 5.38% to 6% after each merger.

Another authors (Barclay et al., Barclay, 2000) compared the liquidity of shares listed on the market 200 NASDAQ during the period of market opening and outside the official opening time. These two periods are two official markets, and investors can, to a certain extent, choose to conduct transactions at one time or another, that on one market or another. Volume of transactions is more important during opening hours therefore, operators prefer to conduct transactions while the other operators are active, in agreement with the presence of network externalities.

Other empirical studies have examined the share of foreign markets and national actions many rated. For a sample of 111 European companies listed simultaneously in Europe and on a US or a European country, the authors showed that the average fraction of volume performed on a foreign market increases immediately after listing, but immediately reduced to a level close to 5%. This phenomenon called „flow back” is consistent with the presence of forces that determine the concentration of transactions in national markets.

2. Causes of market fragmentation

There are a number of reasons why many markets can coexist for a financial asset that is:

- Captive customers: competing markets may have, each, of a captive customer. For example, small investors who want making transactions in shares many rated are usually captured on the national market as foreign market access costs are prohibitive;

- Horizontal differentiation: investors, depending on their type (private, institutional, informed or none informed) or according to size of orders, may have particular preferences for a given organization. For example, large-scale transactions are executed on a market separate from the central square, allowing bilateral negotiations between markets;

- Vertical differentiation and imperfect competition between markets. If the two markets coexist, then the liquid provides, in terms of investors and issuers, a product of the highest quality. Tariff equal to their transactions, investors and issuers prefer that market more liquid, which in turn can exploit the situation to practice high commissions. Two markets can be practicing different fees for different service quality;

- Imperfect competition among bidders liquidity: coexistence of several markets may allow increased competition among bidders, increasing thus liquidity. Launch of the London Stock Exchange in May 2004, a platform for exchange (EUROSETS) for shares listed on Euronext Amsterdam, shows this well. Euronext Netherlands dominate market shares. Deutch brokers accused of using that dominance Euronext for the practice of high commissions and encouraging the introduction of competing platforms in order to have a competitive environment.

3. Benefits and obstacles of building stock exchanges

Given the increasing liquidity, the main effect of enhancing the stock, it is important to note that the benefits arising from consolidation of stock exchange.

A first advantage concerns the establishment of common trading platform: strengthening stock exchanges can create compatible platforms, eliminating the need for additional investments in various trading systems. A capital market requires different fixed costs incurred in developing, modernizing and operating system. Because such systems have similar architectures, a fusion of the market (using a common platform for more stock exchanges) can be an extremely effective decision.

The use of common trading platform can come and benefit from investment banks and brokers, given the significant costs incurred for maintaining liaison with different trading systems.

The second advantage would target high liquidity of the capital market: the compatibility of trading platforms reduce the costs of cross-border transactions, involving as attracting new investors to the capital market and the emergence of significant indicators

(expression of a major liquidity). Liquidity suggests the possibility of buying or selling an asset in a low and affordable while similar to those associated with past transactions, assuming that no other information available. When buyers and sellers are few in number and occasionally works on the market, there may be very large price fluctuations, as sales orders / purchase and are not market counterparties only a great time.

Last but not least, a third advantage refers to the fragmentation of lower capital market: trading parallel to a national title on different exchanges contributes to capital market fragmentation. Creating pan-European stock exchanges may help solve this problem, taking into account the fact that greater price stability and a more accurate way of determining it could result in a higher concentration of orders released. A reduction in market fragmentation benefit after a longer period, which is a long-term consequence of the consolidation process.

The phenomenon of consolidation of stock exchanges may face some obstacles.

Thus, in terms of product differentiation, the potential economies of scale offered by a single pan-European stock exchange for example, does not express necessarily the most efficient capital market structure. Investors and issuers prefer a greater number of stock exchange offer different products aimed at different categories of customers.

On the laws and regulations in the capital market there are a number of different points. Within the EU there are several authorities for supervision and regulation of capital markets, each country having a particular set of rules. Disparities between national rules discourage cross-border operations as investors and companies to be family members with legal regimes of countries it intends to operate. In Europe, major differences occur in specific conditions of listing and trading rules, and in terms of tax treatment of transactions specific capital market.

Consolidation may be hindered by the costs involved in obtaining necessary information in international transactions. Information costs are a key reason the preference of investors to hold domestic assets despite the benefits of portfolio diversification.

Compensation schemes and setting-delivery is another barrier to consolidation. Once a transaction is executed settlement occurs: the buyer and the seller confirm the terms of the contract and settlement institution establishes the obligations of the parties followed by the actual transfer of funds, the securities that the buyer and seller. Operations involving independent institutions or controlled by the exchange. Fragmentation of these institutions engages additional compensation processes, delivery, settlement, resulting in higher costs from transactions.

4. Criteria for analysis of NYSE-Euronext merger

Euronext was created in 2000 as a pan-European stock exchange by pooling markets of Amsterdam, Brussels, Lisbon and Paris derivatives market in London (Liffe) is characterized by an open and federal model, based on the central negotiating platform, decentralization of decision centers, local points of entry, unbundling negotiating compensation and regulatory-delivery (a model of horizontal integration), outsourced technology, a local regulatory framework.

Euronext has developed an effective business model, good for issuers and investors (reducing costs by negotiating with 30% in four years, developing cross-border transactions) and Euronext shareholders (the high level of profitability of 40% in 2006). They favored the independence of compensation structures, installation and maintenance-delivery to local regulations, in accordance with the expectations of customers and users.

In turn, the NYSE is the world's first stock exchange, on the stock market. It has an unparalleled international attractiveness and which are traded the most famous American and foreign companies.

NYSE-Euronext alliance has been characterized since the design of fusion, the following benefits: • primary market development, • synergy costs, • extends the distribution platform of negotiating, • access to members, • new products and new services.

Primary market development is to attract new borrowers and stimulate the enterprises to be listed. NYSE-Euronext alliance negotiates 80% of large companies worldwide (with listing firms). The international attractiveness of the alliance will entail an increased number of issuers in Brazil, Russia, India and China. However, for emerging countries, NYSE-Euronext platform offers a more attractive, with an estimated flow of international listing of a number of 200-250 enterprises (this flow was confirmed by creating Alternext - ALTERNEXT junior market, launched 2005).

Synergy costs NYSE-Euronext alliance grouping comes from trading and negotiation platforms and network strengthening members of both exchanges.

Negotiation platform Cash markets (NYSE) have two components: NYSE Hybrid, which is a quotation system and electronic trading period in 2006 and another component, ARCA. In exchange, on Euronext market there is only one negotiation platform, NSC. By pooling the negotiating platforms, the estimated savings were 215 million euros annually for three years, following the rationalization of infrastructure and information systems used to work under the new negotiating group. Unified platforms create synergy by reducing the cost of access equipment (605 members of NYSE and Euronext 207 of which 40 members of both). Derivatives market Euronext has 425 members, and NYSE-ARCA 150, of which 25 municipalities).

Euronext had 227 access points but had no trading screens in the US, orders to American institutions went through investment banks in London. The alliance with NYSE Euronext allowed installing their own screens in the US, the American institutional investors with direct access trading platform and order books of Euronext.

In the US, the main method of negotiation is „algorithmic and proprietary trading” which consist in generation of automatic transactions and formatted for quick sale or purchase of a portfolio consisting of a number of individual titles, under certain conditions. This mode of trading provides 40% of total transactions in shares of NYSE market. Takeover by Euronext in this model lead to more liquid companies listed on Euronext.

NYSE-Euronext alliance provides a geographical extension of banking and financial intermediaries size European average, especially European intermediaries who can access the U.S. market liquidity of shares following the NYSE technology. The possibility of extending the areas for European intermediaries can be done without cost from their lead.

In recent years, it was noted the growth of stock market size because they have chosen to strengthen its business by forming alliances or merging with one another. Important is the effect that consolidation has on stock markets, the market liquidity of traded instruments based on the fact that the latter affects the cost of capital. Thus if a particular title is of low liquidity, it is difficult to sell, the margin between the buying and selling is high, making the title that have reduced demand, the effect is reflected in the price.

It is interesting that the consolidation of stock markets fusion has a significant impact on earnings per share, most companies unrecording profit growth. What should be noted, however, is significantly increased level of GDP/capita, expected effect due to increased trading volume (Niellson, 2009).

Formation Euronext influence firms differently depending on their size. According to studies, one company is considered large if its market value is within the upper sample to 10% of all firms at the time of starting the process of merger (January 2000), while small firms in the sample fell below the 10%.

Firms with internal exposure (whose securities are traded only on the domestic market) were not affected by the fusion stock exchange. The same can be said about companies with exposure to foreign markets where the impact is positive and significant. Studies have shown that if firms generally do not benefit in terms of liquidity effects involved the merger, however, those companies whose securities are traded and external markets to experience a better situation, in terms of increased liquidity. This supports the notion that foreign investors

prefer to place their available capital in securities issued by companies over which they have an informational advantage.

In the light of the size of firms, the merger did not affect dimension to small and medium companies whose securities are traded only domestically. The effect is positive and significant for large firms whose securities are traded in foreign markets. Thus, large firms profit grew by 0.13% compared to mid-sized companies whose securities are traded only domestically. This development has great economic significance by the fact that the analyzed period components Euronext companies have increased profit by 0.14% monthly.

Comparison before and after the merger of companies traded on the exchange rate of profit shows an increase in this indicator but only for large firms with business in foreign markets. To determine the impact of trading under the new conditions on the market price of securities one introduces Amivest liquidity ratio indicator. Thus, a greater quantity of securities can be traded without significant changes on the price unless such securities are characterized by high liquidity in the market. Amivest rate measured change in volume of trading in the conditions change with a unit market price of the title and is calculated as the ratio of monthly volume of transactions in euro monthly sum of absolute values of daily percentage price changes title. A high rate Amivest shows that investors can trade a substantial amount of evidence without substantive changes in the price.

Establishment Euronext has increased trading volume of securities issued by large companies. The question is whether increasing the volume of trading on Euronext has affected the work carried out on other European exchanges by taking on an increasing number of orders from trading on other stock markets, thereby leading to improved market share held by Euronext compared with the Stock exchange not involved in the merger.

Observations (Nielsson, 2009) were conducted from January 2000-August 2006 for a total of six major exchanges in Europe that have accumulated over 90% of European market for transactions in shares. It was found that the merger was associated with an increase of 2.18% market share of Euronext significantly increased if one takes into account that Euronext had a market share of 2.5% when start the merger process and that the change in market share is generally a slow-moving variable. This increase in market share of Euronext was made largely at the expense of the London stock exchange (LSE) that the period saw a substantial reduction in its market share. Although theoretical studies agree with the statement that Euronext had a market share increase as a result of the merger, however, remains the question of the increase was made mainly on account of the London stock exchange and no other European exchanges. A speculative answer is that the new pan-European stock exchange became a direct competitor of the London stock exchange the latter losing their predominant position to be the largest exchange in Europe.

Creating Euronext showed a decline in the number of newly listed companies during the course of the merger. The number of domestic companies listed on Euronext fell from 164 in 2000-2001 to 54 in the following period (2003-2004) to record a slight increase from 85 in 2005-2006.

5. Views of investors on the consolidation of stock exchanges

At The International Conference in Tokyo (December 2007) on „Strengthening Stock Exchanges: What are the listed companies” results of a survey among investors revealed that the consolidation process at the stock level is a fundamental trend, evident in Today, being a financial necessity. Future periods will bring the development of stock markets as a result of alliances, mergers and acquisitions in this area, something that will stop when each geographical area there will be one or two stock exchanges and it is not desirable global stock exchange worldwide - stock exchange that could prove hard to control. Investors believes that the new trading platform will be developed especially in Europe, following the implementation of MiFID should have the effect of market liberalization for trading securities.

Effects of consolidation in the stock companies are perceived to be a better visibility in other geographical areas, which will attract more new investors, trading can continue charging lower transaction costs and increased liquidity.

In the light of investors, key issues are caused by stock exchange consolidation of transparency, fair evaluation, good corporate governance, communication facilities to all investors.

6. Stock market in Romania in the context of the phenomenon of stock exchange consolidation

Contrary to the phenomenon that occurs worldwide, to strengthening of stock market in Romania is doubtful that the stock market follows an atypical trend, as opposed to consolidation. In Romania, investors can run on stock market transactions by choosing the Bucharest Stock Exchange (BSE) and/or Sibiu Monetary – Financial and Commodities Exchange. By analyzing these segments can be seen that competition occurs between them (mainly in derivatives trading), differences of size and attractiveness. The two Stock exchanges are in the position of competitors on the derivatives market, although in 2006 attempted merger with SCE BSE. By merging the two exchanges wanted to create a single stock market in our country that would have benefited from the experience and financial resources of both components, thus increasing the strength and position of the Romanian stock exchange in the region.

Although the merger is not completed testing, we can state that the effects of competition between the two exchanges are beneficial because it stimulated the activity of each operator used trading systems are developed and optimized, and we are witnessing a diversification of financial instruments traded and the supply of services.

Compared with other stock markets that provide the public investor products, the Romanian exchange market is small and does not exercise a special attraction force. On the London Stock Exchange or the New Yorkers, we note that factors such as range of products offer stock, concern continues to anticipate the needs of investors, multiplying investment alternatives increases confidence in trading systems, which positively affects transactions volume and liquidity on these exchanges. The year 2007 mark the launch of BSE-derived products, the NYSE-Euronext platform that year were approximately 949 million contracts traded on the platform LIFFE and 336 millions ARCA Options Platforms and the London Stock Exchange (LSE) have traded 31.4 million contract. Throughout the Romanian market were traded at the level of a year, approximately 3.5 million contracts.

Competition between the two markets are not only stops the forward market (which both currently operate), but concerns the future and spot market because the exchange of Sibiu desire to create their own spot market.

Although between the two exchanges there are many differences, their merger would create a solid market, which could provide investors with a wide range of instruments traded, with good quality services. By merging the two components, the stock market in Romania should acquire a greater visibility in the region.

Discussions on strengthening European Stock exchange must be placed in a wider perspective, not limited to European borders. The European stock exchanges to make alliances with market from other continents, to create integrated systems dissemination of information and regulatory negotiation – delivery.

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SOME CONSIDERATIONS REGARDING THE IMPACT OF FINANCIAL GLOBALIZATION ON THE CONTEMPORARY FINANCIAL SYSTEMS

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***Abstract.** As consequence of globalization, in the past two decades, the international financial markets have become more and more interdependent. The financial globalization brought significant benefits to the national economies and to investors, but altered at the same time the structure of markets, generating new risks and challenges for the market participants and for the surveillance and regulation institutions. In this paper the authors analyze the effects of financial globalization, aiming at providing a broader image on today's financial markets, respectively of the dynamics of financial entities, of structural changes caused at their level and of the dynamics of financial instruments.*

Keywords: globalization; integration; financial crisis; financial markets; derivatives.

JEL Codes: G01, G20.

REL Codes: 11A, 11B.

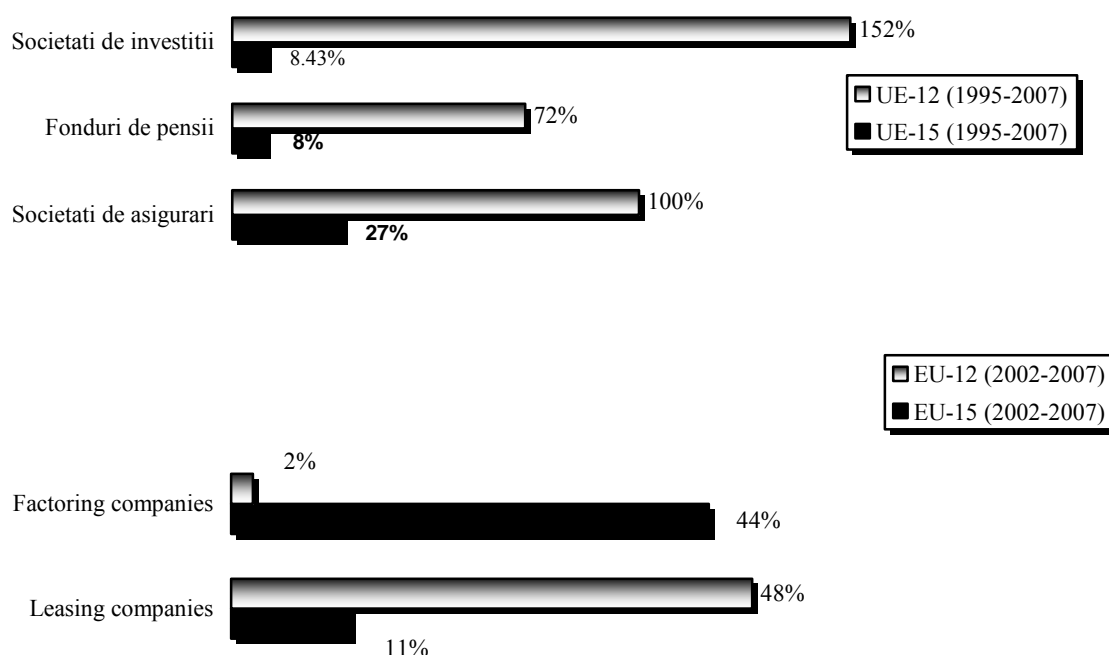
1. Introduction

In the past two or three decades, most countries proceeded to the elimination of the commercial barriers and the obstacles in the way of free circulation of capitals. Innovations in the technology area made access to information much easier, led to a better assessment of risks and to diminishing the risk of bank services at global level. Alongside these factors, there was also the expansion of international commerce, as well as the continuous growth registered by the foreign direct investment flows. All these led to supporting the development and the creation of integrated cross-nations networks meant to meet the demand of banking and non-banking financial services beyond borders. Of course, this assumed optimizing the knowledge in all these areas in order to reach an adequate expertise level.

The credit institutions had to find additional income sources, because the increase of competition from the non-banking financial companies diminished the profit margin coming from the traditional bank businesses. This trend was manifested mainly in the Western European countries in which the phenomenon of consolidating the bank institutions was relatively diminished. By comparison, in countries such as United States of America and Great Britain, there was visible a phenomenon of banks merging with other banks or with insurance companies or with stockbrokers. These mergers were achieved in order to benefit of certain economies of scale, but also in order to remain competitive by maintaining or increasing the market share.

The non-banking financial institutions entered the competition with the credit institutions for taking over the savings of the population and the cash surplus of corporations, diminishing constantly the price for acting as intermediary and of financial instruments. Thus, they collected a higher and higher proportion of available money and their holders redirected their investment behavior towards high yield bonds issued by institutions – as the trust funds – having a better orientation towards advantages such as diversifying risks, diminishing the fiscal burden and increasing economies of scale. Institutional investors under the form of pension funds contributed to rendering efficient the capital markets by developing them and by creating some new financial instruments as asset-backed securities, derivatives, floating

rate credit instruments, index-tracking funds and synthetic financial products. The development of non-banking financial companies' activity took place especially in developing countries. As can be seen in Figure 1, during the analyzed period, the growth paces of assets of investment companies and of insurance companies increased by rates that surpassed 100% in most countries that accessed recently the European Union, while in old member states of the European Union they had a moderate increase under 50%. The same can be noticed also for the dynamics of pension funds and leasing companies. Only as regards factoring companies the situation was reversed.



Source: authors own calculation.

Figure 1. Growth pace of assets of non-bank agents at the level of European Union old (EU-15) and new member states (EU-12) (%)

2. Financial securitization, consequence of financial innovation

Diversifying the activity developed by bank institutions and the occurrence of some new non-banking financial companies on the market were possible also following the financial innovation that made available to these entities the adequate financial instruments for meeting the demand newly occurred on the market. Most times, the instruments that occurred were not totally new but represented the result of altering some traits of financial products already existent or of a combination of existent traits in a new manner (Pirtea et al., 2008).

The line of financial innovation comprised also securitization. This may be defined mainly as a financial operation by which the receivables together with the cash flows they generate and their economic value are recovered by an institutional vehicle that purchases them (that may be a commercial company or an entity created as a securitization fund), in order to use them for guaranteeing the issued securities. The securities resulting following the securitization process are named "asset-backed securities", term that may be translated by financial securities guaranteed by assets or bonds or loans guaranteed by assets.

On the markets where securitization was introduced on a large scale, there have been noticed a series of social and economical benefits. It was noticed that a strong market of assets resulting from securitization facilitates and encourages allocating efficiently the capital by submitting the credit guarantee activity to the capital market discipline. From the point of

view of the legislative power, securitization offers a useful mechanism by which financial institutions may control their loans, interest rate and market risk associated to their investment activities. This leads to a decrease of the individual risk of these institutions and thus, to a reduction of the systemic risk.

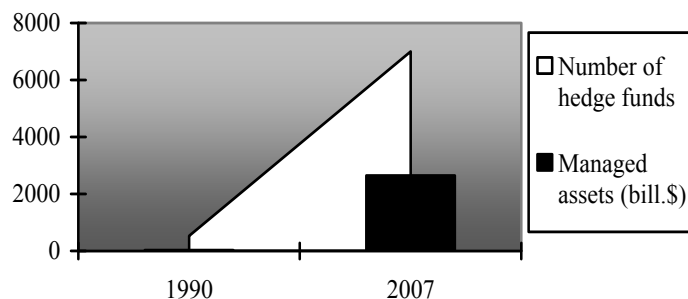
Thus, securitization played a key role in developing the global characteristic of financial markets. By segmenting the large risks into a number of small risks and covering the latter by diversified financial products, the financial experts have considerably broaden the number of participants on the international markets and supplied access to the market segments and trading terms that were not available previously. The companies and governmental authorities used more intensely the capital markers for financing their own activities. Various and numerous investor groups became interested in holding in their portfolio innovation credit instruments or derivative securities that bear risks relatively controllable by complex systems (expert type) for decision making and mathematic modelling.

3. Increased importance of hedge funds in the economy

Until a decade ago, very little was known in connection to the activities of hedge funds. However, beginning on 1990, when the information and telecommunications network developed, the operations of allocating funds, more and more important from the institutional investors to this type of funds, became visible. The investors did that following their wish to diversify the investments achieved and to obtain a better yield than the one offered by the global capital markets.

The increased importance of hedge funds made necessary the existence of a mechanism for regulating them. Therefore, at the level of European Union occurred the Eurohedge, an institute competent for monitoring these funds. Although, among different states of European Union there are still major regulating differences; in Luxembourg and Great Britain, for example, the regime is much liberal than in France and Great Britain. As a result, the volume of assets managed by this type of funds had a positive dynamics as can be seen in the figure below (Figure 2). The number of these funds increased also significantly as the barriers in the way of capitals expansion were canceled by the states. Thus, if in 1990 there were 530 such funds worldwide and the assets managed by them reached less than USD 30 billion, at the end of 2007 they surpassed 7,000 and the funds managed by them reached almost USD 2,650 billion. Their unprecedented expansion was due to the existence of exchange rate and interest volatility which made that the investment alternatives for those having surplus money become very attractive. On the other hand, we believe that the activity of hedge funds was intensified and will intensify also in the future at an increased pace following the growing demand from the institutional as well as individual investors in the developing countries. By comparison to that existing in the developed economies, this demand has not been saturated yet. For now, in the developing countries of Central and Eastern Europe the investment made by institutional investors do not head at a greater degree towards hedge funds mainly due to legislative reasons (strict regulations), but probably in the future diversifying investments towards other investment forms under the form of alternative investments will be allowed.

The accuracy of data on hedge funds and their performance, although improved as this industry grows, is far from being perfect. In the context of the present day crisis, they have been considered even trigger factors. A powerful argument from our point of view for this is diminishing the regular yield obtained by this as the financial crisis occurred; it was characterized mainly by the crediting market crisis and decline of capital markets at world level that led, on their turn, to an acute lack of liquid money. Although the hedge funds are deemed funds that obtain performance in the growth and reduction market conditions, the financial crisis affected and continues to affect for another period the yield of hedge funds. Once the financial crisis will be defeated the hedge funds will be again, probably, the center of attention of institutional investors.



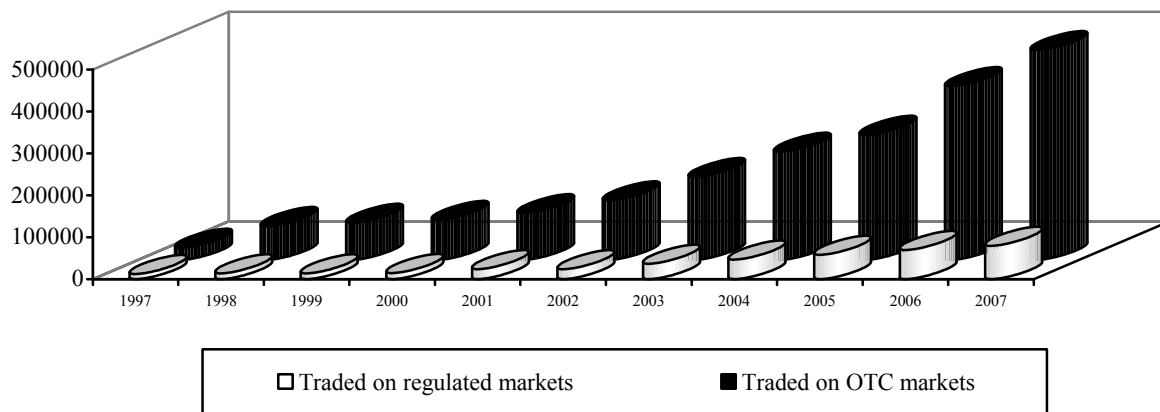
Source: realized by the authors according to the data supplied by Hedge Fund Research⁽¹⁾.

Figure 2. Dynamics registered by hedge funds during 1990-2007

4. Development of the financial derivative markets

The derivatives market, although the last arrived on the stage, developed especially during the last 30 years. The need for derivatives markets was not felt until the early 1970's when globalization of business that took place constantly was confronted with the increased volatility of exchange rates and with the increase or fluctuation of inflation rates. As the activity of companies became more international, they were exposed to some higher and higher risks and, consequently, their management manner became a major concern of the business environment. The development of the markets for financial derivatives in such a short period was due to the need felt by investors for financial derivatives that are used for protection purpose against a series of unwanted situations or certain predictable events, as well as to the fact that these financial derivatives offer additional gain possibilities by speculation and arbitration. More, by using the arbitration operations the markets for financial derivatives allow adjusting and rectifying the price for financial assets used as support on the markets where they are transacted spot or on sight (Pirtea, Iovu, 2007).

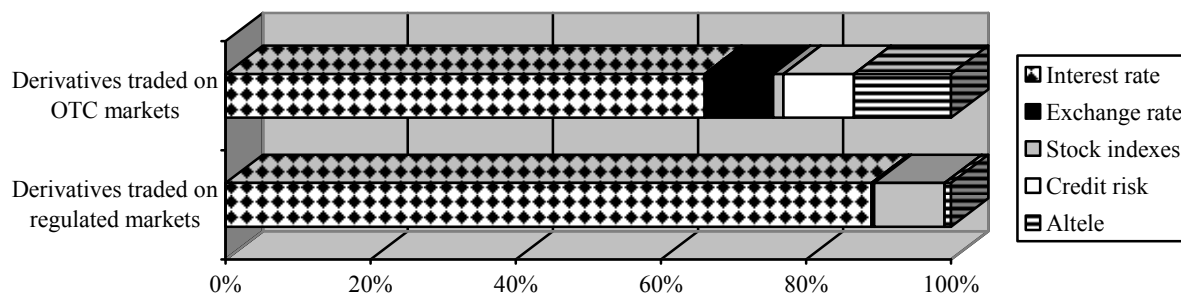
Given the financial globalization, the usage degree of financial derivatives increased year by year during the analyzed period (1997-2007), thus that can be seen that at a total value of contracts with derivatives (on the regulated markets, as well as on OTC ones) of USD 41,237 billion in 1997, it has reached a value of USD 674,440 billion. It was a significant increase, of over 1,500%, a fact that proves the increasing importance of these types of financial instruments in the economy and the wish of economic entities to diminish the commercial or financial risks in their operations (Figure 3).



Source: realized by the authors, own calculation according to the data supplied by Bank of International Settlements.

Figure 3. Evolution of derivatives market during the period 1997-2007 (bill. USD)

On this derivatives market, according to the last statistical data, there can be seen a greater concern of economic entities for three important segments, these being derivatives having as support the interest rate, the exchange rate and derivatives for transferring the credit risk (credit default swaps, that are traded only on the OTC markets). It is obvious the desire of international economic operators to cover the risks corresponding to financing, the three categories of risk resulting practically from their financing operations (Figure 4).



Source: realized by the authors, own calculation according to the data supplied by Bank of International Settlements.

Figure 4. Structure of transactions with financial derivatives according to the risk covered in 2007 (%)

No matter the purpose for using derivatives, valued by investors for their high volatility or for covering the primary market risk by those that want to achieve hedging operations, it is clear that these instruments became in time an integrated part of the present financial environment. Even if due to their complexity they are deemed responsible for several massive loss situations, we believe that the demand for these instruments is far from diminishing; au contraire, it is stimulated permanently by developing new products.

5. Integration on the national stock markets

Consequence of globalization, the integration phenomenon of national capital markets is part of a vast integration process of financial services at world level, a trend that was initiated by the European Union and declared by it on numerous occasions. The development registered by the capital markets along the time led to increasing the market competitiveness, the stock exchanges acting as private entities that, in order to increase the importance at national and international level, used mergers, taking over and even creation of new entities in the same country (Pagano, Steil, 1996).

After several failed attempts, the first attempt to integrate the European capital markets was achieved in 2000 when the capital markets in Amsterdam, Brussels and Paris merged in one market named Euronext Stock Exchange, meant to offer transaction services for securities and financial derivatives on an expanded and regulated cross-border market. More, integration on horizontal was insured by the storage and clearing systems in connection to these stock exchanges, being materialized in creating the Euroclear Group and the clearing system Clearnet Group. Since then and until now, considerable efforts have been made for consolidating it permanently, by integrating the existing European markets in order to create a single market, more liquid and more efficient, with promotion possibilities of some new financial instruments. After the initial merger of markets in Amsterdam, Brussels and Paris, Euronext absorbed also the London derivatives market, LIFFE, as well as the Portuguese capital market in 2002. Implementing the horizontal market model promoted by Euronext, created for generating synergies by incorporating the strong points of each local market, proved to be very successful by applying a global broad vision at local level. Then followed integration at technological level and, of course, adapting the market rules and the legal framework in which the derivatives markets operate. In 2007, a new change occurs, NYSE takes over one of the oldest American stock exchanges, with one of the greatest stock

exchange capitalization in the world, Euronext, thus resulting NYSE Euronext. The universe of developing markets of the world continued to expand in time. Also in 2007, Chicago Mercantile Exchange (CME) merged with Chicago Board of Trade (CBT). In this way was created one of the greatest stock exchange markets in the world, possessing a broad range of financial instruments.

Likewise interesting was the manner for vertical extensive integration between the infrastructures existing in Germany, Luxemburg and Austria, thus being created the so-called Deutsche Börse Group. It relied on Eurex Clearing for achieving the clearing operations. In 2007, Deutsche Börse Group merges with International Securities Exchange (ISE), founded in 2005, and it became shortly after the greatest market of derivative financial instruments of options type. This merger allowed the German stock exchange to expand its activity on the American market for trading derivatives, of options type.

As regards the other capital markets, the Italian and Spanish ones remained until now separated of any major integration process. However, the Scandinavian and Baltic capital markets, having a more diminished importance at European level, used such integration processes both on the horizontal and on the vertical level. Thus OMX Group was formed, an integrated capital market made up of Baltic and Scandinavian markets in Stockholm, Helsinki, Copenhagen and Reykjavik. In 2007, OMX Group was taken over by NASDAQ, the greatest stock exchange company in the world, thus forming Nasdaq OMX Group.

By this markets integration process manifested now everywhere, even in Romania (merger by absorption by the Bucharest Stock Exchange of Rasdaq market and failed initiative of merger with Sibiu Monetary – Financial and Commodities Exchange), is followed, in fact, the consolidation and increase of the competitiveness of markets, diversifying the financial instruments and offering an integrated services package that would answer to the broad needs of investor clients using services and information of financial type.

6. Contagion effect of financial crises on the economic and financial system

In theory, creating a global capital market governed by competition that operates without barriers should stimulate increasing the efficiency of financial system, allowing a diminishing of the financial cost and a better allocation of capital between countries and activity sectors that would lead to a faster growth of the global economy.

Globalization did not brought along only positive effects on the financial system and economy. It made also possible the faster transmission of perturbations at European and global level, given the tight interconnection of international financial centers achieved by multiple information transport electronic manners in real time, as well as by the defragmentation of the international financial market due to the contagion effect.

One of the most adequate examples for this is the Asian financial crisis in 1997 that began in Thailand but that affected not only the Asian continent, but also a great part of developed countries such as Russia and, it might be said, it was the basis of initiating a series of financial crises on the South-American market in Brazil. Precisely a decade later, in 2007, the real estate speculation bubble in the USA burst, the development of sub-prime mortgage bonds market purchased by financial institutions all over the world leading to a strong contagion effect of the American financial crisis characterized by a loan crisis and a global recession. In this case, the contagion effect occurred following the sophisticated globalization system of credit markets, leading to affecting the portfolios and to severely limiting the access to liquidity in the world.

But the global financial crisis in 2008 did not occur without having been predicted before. There were numerous analysts that warned us on the development of this speculative bubble and the development of sub-prime mortgage bonds and on the negative consequences if it „bursts”. It was always common knowledge that there is a connection between globalization and financial instability. On one hand, trade liberalization, financial markets liberalization, financial innovation led to visible positive economic effects for many of the

developing economies. These economies benefited increases of the income per capita, a thing predicted by the neoclassical growth theory (Solow, 1956). However, on the other hand, all these results of globalization are difficult to control and they may become easily causes for financial instability.

For example, the financial derivatives have as subject matter protecting the economic entities against instability of exchange rates, interest rate, volatility of bonds exchange rates, but on the other hand, the new instruments are instability factors in themselves, the market of derivative instruments reaching today a vastness and a complexity that seem uncontrollable. Derivative products are an efficient risks management instrument but, at the same time an instability factor, being one of the favorite instruments of speculators due to their leverage. The unregulated and lacking transparency derivatives market that encountered a growth in the financial sector in the past years allow the easy and rapid transfer of risk in economy and encourage the entities that operate in the economic and financial system to take greater and greater risks, waiving prudence. Securitization of the mortgage loans by issuing mortgage bonds in order to be sold by the banks to different investors, the bank obtaining thus additional funds for granting new loans and eliminating at the same time the matter of the corresponding risk, was the main factor that triggered the sub-prime crisis in the United States of America. The tremendous development of hedge funds when their activity is mostly regulated and non-transparent may lead to great negative effects.

7. Conclusions

The financial globalization, like we showed in the above paragraphs, brought significant benefits to the national economies and to investors, but altered at the same time the structure of markets, generating new risks and challenges for the market participants and for the surveillance and regulation institutions. Given that the entire world became a globalized economy characterized by a more and more integrated and connected financial system becomes difficult enough, from our point of view, for a financial crisis in a certain economy not to propagate by the contagion effect also on other economies. Although the global economy survived other crises so far, the present financial crisis is truly the most difficult to manage since the 2nd World War and this given the fact that the causes of past crises did not include financial products so innovative and complex as the ones today. Unfortunately, one of the most negative consequences of this crisis is losing credibility in the financial system, credibility that will be remade only in time and as consequence of some firm and common actions initiated at global level.

The contagion effect of crises is just one of the negative effects of globalization that, for being diminished or avoided, requires a series of measures at world level because the matter is also global. The actions initiated for the individual cases cannot be effective for solving some problems as the systemic financial crises. It is necessary the common and coordinated action of governments in wealthy countries (USA, Great Britain, Germany, France, Japan and China). They might be able to take, among others, efficient action that would lead to the following: better assessment of risks by the rating agencies, careful monitoring of phenomena in the main financial centers by the regulation and surveillance bodies, a more strict regulation of transactions with secured financial products, with derivatives having a high complexity, maintaining the transparency of transactions with such financial instruments.

The economic and social effects of shocks on the international financial markets might be diminished by integrating them in a global markets system in which an articulate institutional system co-exists that has sufficient authority for implementing until the end its decisions and policies adapted to today's political, financial and economic context. On the other hand, the role of international financial bodies (IMF, World Bank, Bank of International Settlements, etc.) must be adapted permanently to the transformation and restructuring process

of the world reformed economic system, thus for it to be able to supply solutions to any future global financial crisis, assuring like this the financial stability. Re-regulating the financial markets should offer a set of measures for intensifying the control on some areas outside the jurisdiction of central banks or monitoring commissions of capital markets. More, the risk and rating methodologies must be rethought. More and more it is spoken of the moral chance matter that concerns the rating agencies that are financed for the activity developed, most times, just by the issuer for which the assessment process takes place and for which the rating agency must set out the risk degree it assumes for investors.

Notes

⁽¹⁾ *Hedge Fund Research* is one of the greatest international centers specialized in collecting, disseminating and analyzing the data on the global activity of hedge funds, as well as of their yield, next to *Lipper Tass* and *The Center for International Securities and Derivatives Market (CISDM)*

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THE GLOBALIZATION OF THE ELECTRONIC TRANSFERS IN BANKS

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***Abstract.** The globalization of electronic bank transfers is addressed by certain impact factors which develop electronic relationships via the Internet: the tax, "computer crime", the protection of consumer data, investment costs, the new payment arrangements, telecommunications infrastructure, intellectual property rights, types of fraud registered in computer crime, establishment of minimum and optional list of facts incriminate plus language and cultural issues. Accordingly, globalization electronic transfers is charged with implementing computer applications for "official electronic, including e-banking, Internet banking, mobile banking, Unibank and eBanka. The problem is completed by describing globalității eBanka systems (architecture, data monitoring, operation), plus bank service type Telebanking.*

Keywords: e-banking; Internet banking; mobile banking; Unibank; eBanka; Telebanking.

JEL Code: G2.

REL Code: 10B.

1. Development electronic relationships through the Internet.

Global framework for electronic transfer via the Internet, which includes banking, digital cash payments, foreign exchange, commerce, etc., is being substantiation through organizations/ associations and addressing key works since 1998, the essential aspects of the legal framework dedicated to electronic transactions. Development of electronic relationships through the Internet is influenced by factors:

(a) legal framework on: specific issues concerning the legality and normatively manifests in the following areas: (a1) the tax: the fundamental characteristic of the electronic transfer is globalization, in which boundaries are invisible and this is why the tax should be simple, easily modified or upgraded to comply with the requirements of electronic commerce, while blurring the fiscal framework can generate failure to provide predictability and predictability for investment in commerce, (a2) „computer crimes”: report European Committee on Crime Problems defines the concept of „crime related to computer-computer-related crimes” or „computer crime” by the following definitions: (a2a) „Computer abuse is any illegal or unethical behavior which concerning illegal behavior or unauthorized automated data treatment and/or data transmission” or (a2b) „Any illegal action in which a computer is the tool or object of the offense, ie, any offense of which the middle or end is influencing computer function”. Key global organization dealing with tax problems is the OECD;

(b) consumer data protection (privacy): refers to the phenomenon that the modern world is facing a vacuum of legislation in ICT, the most important economic sector of all developed countries;

(c) investment costs: the effort may be considered establishing a company, purchase of computers (servers and workstations against the scale of business) communications band

(which can be extended with the increasing volume of business), e-commerce software and security technology (firewalls);

(d) acceptance of new methods of payment: is considering the use of electronic money/digital since 1997 using credit cards based on SET, which resulted in use via the Internet by consumers, a common form of payment in Western countries (Card) with the same certainty as outside the Internet, since 1998, occurred payments of small amounts over the Internet, electronic checks and card payments between company sites, for the year 1999 to provide development card smart sites. E-money sparked major controversy regarding the private nature of how money is spent, the problem of traceability of transactions, David Chaume, a digital money guru, believes that an economic system which issues (keep from) commercial transactions conducted by cyberspace is harmful only in the physical world, since there are no Cyber protective walls;

(e) existence of appropriate telecommunications infrastructure: is considering issues of accessibility, reliability, compatibility, synchronization, modularity, operating life, etc., since the operation, logic and Internet security have been designed for an open, but not necessarily safe; TCP/IP does not have basic security services and encryption-decryption facilities, fundamental to the security of e-commerce Internet site.

(f) Intellectual Property Rights (IPR): are covered by WIPO, a body which adopted the two treaties concerning the operation system ensuring protection of intellectual rights in the digital world, this benefit is added to the Berne Convention, signed by many countries, including Romania, which requires a minimum set of standards concerning the issue of intellectual property protection;

(g) main types of fraud used in computer crime: there was a lot of versions of interfering in electronic transactions, of which the most important are: (a) substitution Piggy (committed when an unauthorized person is declared an authorized user to obtain access to a computer or a computer network), (b) vacuum cleaner programs (recorded passwords entered by authorized users when accessing the computer systems), (c) Trap (set of instructions that provide the Systems of computer misuse by destruction or circumvention of security systems), (d) fraud-Series (violating the calculation and rounding of figures, plush results being transferred to computer accounts of the offender), (e) cleaning (read data existing waste computer memory after running a program, which can be accessed by the final data processing, waste, leading to acquisition of data, similarly, the user authorized/unauthorized) and (f) zap (generic term which means deleting data from the database stored on a local hard disk or placed on a file-server);

(h) establish a minimum list and optional on the facts incriminate: contains a number of legal concepts on culpable informatics-related electronic theft, of which the key is computer fraud, viceroy data/software for computer systems, ICT false information, Unauthorized use of the system computer (workstation or computer inside the CR independent), damage to data/programs for computer systems, Unauthorized use of the program to protect the computer system, computer sabotage, computer espionage, Unauthorized Access, Unauthorized Interception, software piracy protected computer system, Unauthorized reproduction of protected topography etc. microproces. (i). linguistic and cultural aspects: refers to general features of nationwide and regional issues, given that assimilated English-speaking or English-speaking countries have superior features compared to other categories of countries and peoples.

2. Globalization electronic transfers performed through „official electronic” e-banking, Internet banking, mobile banking, Unibank, eBanka

„The official electronic chaff” is a complex concept that is associated with specific e-banking services, Internet banking, mobile banking, Unibank, eBanka etc. These services

offer bank customer similar services, significant differences being given by freedom of movement provided and channel used for customer-bank communication. E-banking allows creation/management of time deposits, view account balances firms, electronic payment, transfer and exchange, etc. Furthermore, banks with international networks can view and make transactions in the accounts of subsidiaries in different countries, from headquarters headquarters abroad (Citybank, ING Barings, ABN Amro, BDR-Group Societe-General Reiffesen-Bank, etc.). Internet banking provides increased flexibility and high efficiency for customers ordering payments and transfers, because they are not constrained by the relationship with the bank, its movement counters or headquarters they work, which is why technology is used Internet-Café, Internet banking site requires safety of the communication over the Internet. During operation of technology Internet-banking all data is automatically creditor company while the company that ordered the payment through Internet, must specify only the name of the recipient money, because the rest of the data is automatically copied from computer memory, which is why when supplementing reduced four times. In these circumstances, there is total freedom in contact with the bank, and bank transfers and exchanges, money orders, check transactions history and operations can be performed directly from a mobile phone. mobile banking service was introduced Demirbank company for the first time in Romania, for which no fee is charged, the client is connected to the service via a WAP mobile phone and subscription to the service, to mobile networks. The use of mobile banking services in the client bank must sign a contract with the bank, receives „user-name” and password, and then can use this phone for banking transactions in compliance with one condition: the money in the account can be transferred only to a predefined list of companies. UniBank is system which enables real-time banking and a global view on the situation of the banks, in terms of transition to the new chart of accounts and the emergence of new payment instruments. UniBank system construction principles are: (a) maximum standardization of operations add bank accounts, (b) separate management accounts of various subsidiaries, (c) uniform treatment of transactions in different currencies/ROL (d) the use of accounts the same synthetic for a single client, (e) independence of client accounts, (f) the operation of automatic scoring between central bank-subunit, (g) making automatic scoring between subunits of banks, (h) can work under overdraft, (i) open to implementing new features UniBank, (j) view of the financial situation of the bank's automatic, programmed separately and correlated the levels, preliminary, actual and projected, (k) data security and security of access to information. The UniBank use, in addition, data replication principle subunits in the central bank, which facilitates global vision of the company's financial situation with banks and customers, in which, according to the quality of communications, the gap of time between transmission of data and their use may decrease to the operation of all banks in real time, moreover, data integrity and consistency is ensured by working under transactional data provided by the server and the constraints defined in the schema. Hardware support allows double saving the database, each data FS facilities have backup, elements that allow the reboot to a previous state in case that both copies of BD were destroyed. This system is designed in client-server architecture, used for large BD. UniBank system requires special hardware: (a) the FS zone, can be implemented through a classic server database (MS SQL Server, Oracle, Sybase, etc.), while (b) the client zone uses a platform based on a 32-bit OS (Windows XP/Professional, Windows NT Workstation) and at least a Pentium computer with 32MB RAM minimum, the role of WAS. UniBank allow access focused on following levels of security: passwords WAS specific feature, name plus password required for access to FS's and passwords for access to applications UniBank.

eBanka implements the concepts called „Bank of Electronics”, „Home Banking” or „Electronic Banking” through a system designed and conducted in collaboration with a Romanian bank as a competitor and used the usual banking companies; this system adds electronic banking software modules and open a „one-stop e-banking” at customers. eBanka admits bad places orders to customers and the automatic transmission to partner banks, where

they are checked, processed and handled, still, after processing, customers and connects banks, for relaying orders from customers to confirm processing performed in parallel with complementary operations by bank current account (receipts, payments, interest, commissions, etc.) Client can obtain at any time of day or bank statement for a specified period of time; in parallel, customers receive information intelligence on bank accounts (deposits, credit lines, letters-guarantees, etc.), including data on services provided by the bank (exchange rates, interest rates, fees, facilities/banking. products, etc.).

3. EBanka system architecture

EBanka based system architecture is a client/server specific components as follows:

(a) component Server: is installed on the server program eBanka bank's client is connected to the internal RC bank and perform data exchange with BD system located on the central FS; this component achieved the following functions: (a) validate and authenticate bad customer requests for replication, by activating the automatic following security procedures: (a1) validation process, which determines the veracity of the client public key and (a2) authentication procedure, called after the validation was correct, verify public keys, private eBanka client and server, (b) security system by controlling access to the FS BD located through an „access control lists”, which allows customers to identify the ID and password, for restricting access only to their data from the database of the FS, (c) synchronization BD-BD FS customers multiple replication processes scheduled at set intervals or by direct request of the client, (d) synchronization eBanka BD BD-bank system, ODBC technology. EBanka system can be developed using the platform Lotus Notes/Domino product standard worldwide communications and security products for IBM Lotus tandem.

(b) Client component: is installed on client WAS and have the following characteristics: (b1) maximum security, ensured by the following elements: (b1a) BD is encrypted with private key customer (ID), (b1b) client authentication the entry fee is by ID and password, secret constant managed by the Bank, (b1c) authentication of payment orders issued to persons who carried the name and password are managed directly by the client, (b1d) authentication persons approving payment orders is managed by username and password client, (b1d) provide different type of access to information at the right field for each type of user, (b2) graphical interface easier to understand and use, (b3) to user assistance data entry is done by warnings in case of error, (b4) to reduce the risk of error is operational by checking semantic field level, (b5) maximum automation of data entry phase, (b6) the location and optimal organization use of data by viewing multiple criteria.

4. Monitoring of data eBanka system

Monitoring of eBanka system is achieved through the following information flows:

(a) eBanka client-server information flow eBanka: sync ionizations made BD-BD server customers by telephonic lines switched/leased at intervals determined by the bank for each customer; the call to the server and data transfer is done automatically by fear sis without administrator intervention SIFBM;

(b) information flow eBanka-file server input buffer SIFBM: is considering sending orders in SIFBM, since the buffer containing the data files provided by the home-banking customers and are accessed by the operator or automatically SIFBM Vali banking system after release, data are transferred to BD-eBanka, where applications are processed SIFBM;

(c) information flow out of the buffer file-server SIFBM eBanka: automatic data acquisition performed at intervals determined by the bank to obtain statements and the situation of bank accounts, issued in proportion to their expanding SIFBM.

Functional modules fulfill the role of automation eBanka maximum following activities: (a) full processing orders and statements, (b) automating the exchange transactions, (c) providing random or predetermined frequency of the statement of accounts to customers,

(d) providing analytical data banking informations of transactions, processing completed, the processing performed for each client and type of operations, etc.

5. Operation eBanka

Operation eBanka is done for to activation following standard scenarios:

(a) prepare payment orders (POs) to send to the bank: bank operator lists POs daily frequency processing specific bank customer, then insert the data associated with the PO, while the funds available for the automatic current account customer adding the following features OP disposes of informations: (A1) placing the amount in figures is accompanied by automatic display of letters, (A2) using the default list for the election of the payee, bank and current account, (A3) for the automatic complete mandatory fields out of form (A4) creation of orders number, (A5) updating and displaying the current account balances available when completing the PO, (A6) automatic registration of bank official ID who has completed, processed and approved orders;

(b) approving POs banking operators authorized signature: users with the right of approval may authorize the electronic signature all POs prepared by the controller by inserting the name, ID and password, in which case they go through the OP – sites and, if validated their informational content, will fill in the „authorized signature” value „Approved”, when approved, POs group is ready for automatic sending to the bank, when replication;

(c) connection and automatic circulation of documents to/from bank: can be done at prescribed intervals by automatic bank by connecting via modem, phone line of banking customer, the server eBanka to achieve replication operation, the process realizes BD synchronization of all customers involved in processing POs with BD located on FS. After replication, the documents sent by the client are processed by the bank. Four banking companies scheduled automatic connection every day at FS eBanka, which is unique for each client, for best use of telephone lines at which FS eBanka is contact. After the replication process, the customer receives the specific information the possibility of obtaining bank accounts and supplementing the appropriate statements and receipts of payments made in the database eBanka to time, and other data relating to accounts, exchange rates, interest etc.

(d) verification by the customer through the account of the current situation: WAS is done on the local client and allows triggering issue statements on current account, by checking the stock of the situation daily receipts and payments.

System security architecture eBanka focuses on Lotus Notes/Domino, by enabling facilities encryption, electronic authentication and certification on the basis of RSA encryption algorithm based on public keys and private keys, each user is assigned by the bank eBanka a unique identifier Client (ID), used when launching eBanka system. Users must be specific ID and password, then every operation carried out, they identify themselves by name and password, depending on the types of rights that users have specific functional module operated.

Electronic banking with all same operates customers, be they physical or juridical persons, by implementing a „bank” dedicated, allowing interconnecting and work in real time with BD eBanka located at the bank; users can achieve their business ndiferent the time or place which are and may receive, in real time, useful and vital informations. Bank has savings achieved by diversifying the range of services, minimize space costs, employee number and activity. Electronic banking is an effective solution, cost and performance for banks and their customers.

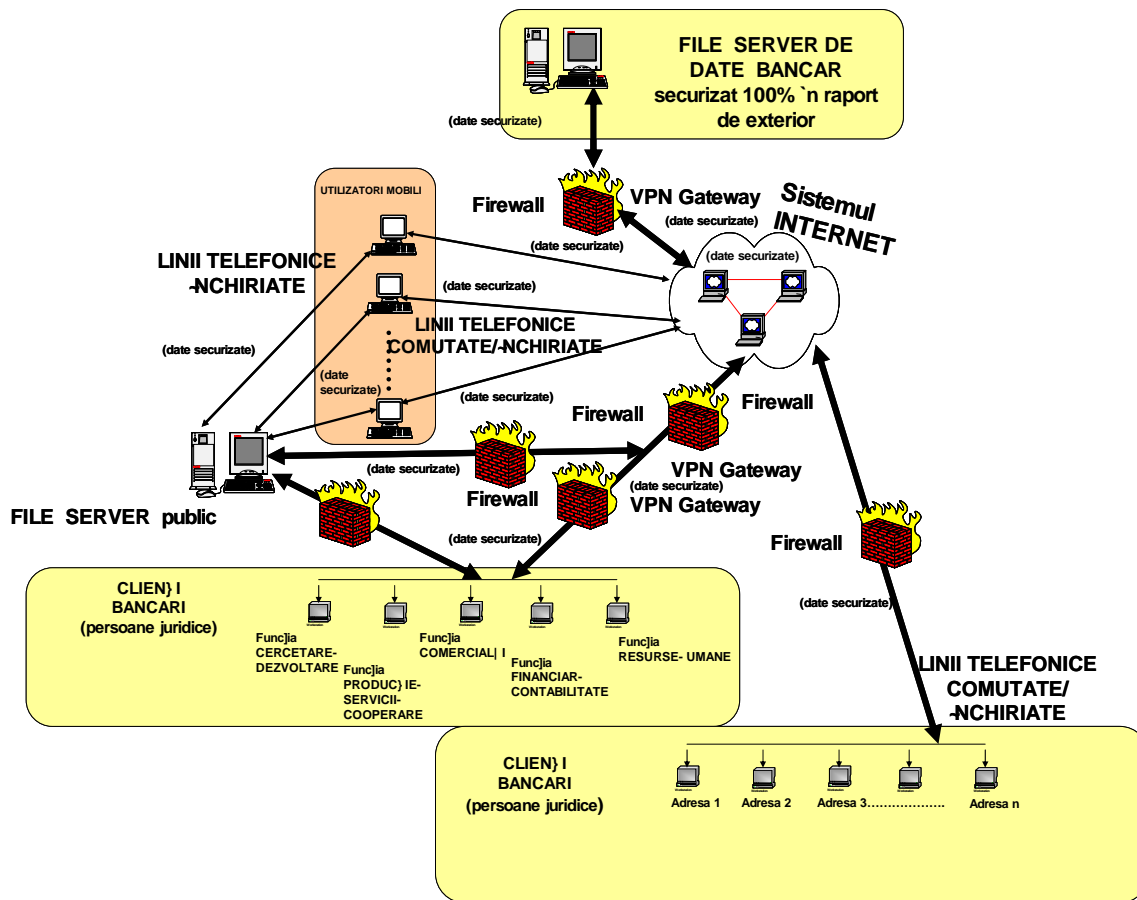


Figure 1. Proposal for operating system versions Telebanking

6. Banking service of Telebanking type

Telebanking is a convenient and effective way of saving time, by maintaining permanent relationship with the bank through an online service that banking customers can access banking services from any location at any moment, including the use of lines Internet connection, security is ensured by the most modern systems of public and private key encryption, which guarantees maximum security. Bank offers customers the possibility of direct connections, 24 hours in 24, 7 days in 7, by carrying out banking transactions without physical movement in the bank (Figure 1).

Telebanking Service offers the following processing ways: (a) General view informations on accounts and bank credibility, (b) granting/changing the password or password Telebanking authorization, (c) obtaining data on rates of major currencies and updates bank exchange rates, (d) the automatic creation of bank deposits in lei of the available current account (s) viewing information on bank accounts of clients (stores, deals, loans, transfers of amounts, current balances, etc.) , (f) validate the abolition of bank deposits by specific request of customers, (g) placing POs in the bank or cash lei, (h) bad OP valid by the bank or cash (if it is needed), (i) OP view previously entered the current day, (j) view their statements relating to operations carried out (in practice it is alizarea video statements by document number, period of time or client code).

The main benefits of using Telebanking services are: (a) time savings of customers without restrictions of time and space. (b) security and confidentiality in carrying out FMB, (c) maximum efficiency by running the same day the OP received by 14.30 hours or next

business day if sent after hours, (d) Training is free for users Telebanking system. The customer has access to the latest version of each service access Telebanking. In terms of the bank, Telebanking is a new marketing method, which leads to increased loyalty and satisfaction of bank customer, the imposition of new attractive banking services. Telebanking allows the bank to communicate with customers in a dynamic context, engaging and effective through WAS graphics displayed for client. Innovative aspect of the use of this service is reliable, fast and efficient system for Internet, because banking customer is physically connected by various architectural options. Telebanking Service is functionally characterized in the following circumstances: (a) banking operations are triggered by the computer located at home/office, without formalities imposed by RC and communication protocols, b) personal computer allows access of the bank web sever which identifies the user and allow access to the application take Telebanking application by loading a „fere stream” in the browser via the Internet, (c) the user does not need a computer to perform transactions in his personal account, why it can work with Telebanking application, on any Internet-connected computer system or telephone line switched/dedicated to the bank, (d) there is the possibility of providing users access to bank accounts, passwords ranked based on access levels (deposits, loans, placing PO, view statements, transactions, balances, etc.). The service writing checks deTeleBanking deleted, addresses, OP by making electronic payments directly from Internet.

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WEB PORTAL SPECIALIZED IN PROVIDING EDUCATION AND FINANCIAL ASSISTANCE TO THE BANK PRODUCT AND SERVICE CONSUMER

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***Abstract.** The present work aims at presenting the results of the research study initiated within a PNII project, which had as final objective the creation of a specialized web portal dedicated to support the Romanian bank product and service consumer in acquiring the necessary level of knowledge and skills in order to make proper financial decisions. This project intends to evaluate the ways the general public is informed, as well as to offer necessary support in assessing correctly the undertaken risks when the level of indebtedment increases. The present work presents the results of the study elaborated by the research team concerning the level of education and information of the population about bank products and services.*

Keywords: bank services; portal; financial risk; training.

JEL Code: A20.

REL Code: 4A.

1. Introduction

Project motivation

Many of the bank clients are aware of the fact that saving, investing, crediting and anticipating future evolutions of financial commitments are essential for their life quality, as well as for their financial security. However, more than often they do not possess the necessary knowledge and information to cope with these elements properly. This leads to the situation where bank clients undertake financial obligations which later prove to have been assumed without a clear understanding of the ensuing financial risks and impact.

Project objective

The present project's main objectives are to create and to provide the general public with free instruments, necessary for a proper management of their own financial resources. It sets as its goal to evaluate the ways the general public is informed and to offer the necessary support in making an appropriate assessment of the risks assumed when increasing the degree of indebtedment. The main objective of the project refers to an increase in the level of financial education of the population, by means of presenting both the benefits the clients can have while using different bank instruments, and the risks to which the bank product and service consumers can be exposed to.

Project aim

The specialized web portal which will be created within the project aims at assisting the Romanian bank product and service consumers acquire the necessary level of knowledge and skills to make appropriate financial decisions. The authors start from the conviction that,

whatever the financial situation of the citizen, the financial education will only have a positive impact upon:

- Ensuring financial stability for the whole family;
- Properly understanding and interpreting the financial terms, the contractual clauses and the financial mechanisms in their entirety;
- Improving the quality of life;
- Ensuring a bank-client (individual person) partnership built on a consistent relationship and based on the fact that all rights and obligations are undertaken in full awareness.

The authors consider that, as the financial institutions offer more and more sophisticated products and services, it becomes mandatory that their beneficiaries should get all the information necessary for their understanding. For example, the banks provide credits in foreign currencies on a large scale, the offers are even made in exotic currencies, still only a restricted group of people is familiar with the ensuing risks. Extending housing loans with low interest rates in the first year, when the interest adjustment mechanism is not properly presented to the general public, represents an element requiring solid knowledge from the part of the consumer.

If initially the information, education and assistance-related activities put into practice by means of the portal are to be directed to all the bank product and service consumer categories, the authors intend to furthermore develop special programmes dedicated to special consumer categories: debtors with financial problems, first-time house buyers, young people, credit card uses, first-time clients, consumers with low incomes, retired people, etc. Among those, the most vulnerable are the young and the senior citizens.

2. Applied research methodology – basic elements

In order to achieve the stated objectives, a mixed research methodology was used, including deductive positive research, as well as inductive critical interpretative research. The deductive approach, also known as „top-down approach” evolves from generally accepted theoretical concepts, builds a set of hypotheses which are to be tested, picks up observations concerning the hypotheses and tests them using specific elements. The inductive approach, also known as „bottom-up approach”, evolves from specific observations which intends to bring to a more general level, in order to obtain general, theoretical concepts. These two approaches are able, in the authors’ opinion, to offer a strong interconnection of theory and research work, merging quantitative and qualitative research methods.

The methodological approach was mostly positive and required the following steps:

- The selection of the research area.
- Research area literature review.
- Delimitation of the conceptual framework boundaries which included the specialists’ points of view regarding fundamental concepts and the relationships that arises among these concepts. At this level, the descriptive, exploratory and evaluative research techniques were used.
- Decisions regarding key questions.
- Formulation of the starting hypotheses to be verified through empirical research.
- Development of a consistent research strategy including:
- Selection of data collection methods (experimental, observation qualitative methods, questionnaires);
- Data analysis methods selection.
- Performing of the research, which implies:
- Building of a set of questionnaires including dependent variables as well as independent variables (concerning the type and size of the studied systems etc.);
- Choosing the analyzed population;

- Building a representative sample;
- Data processing. Statistical tests are to be performed and the formulated hypothesis is to be accepted or rejected depending on the results of those tests;
- Final confirmation or rejection of the hypotheses.
- Final conclusions formulation.

3. Analysis of the level of the general population's level of financial education

3.1. Studies and research concerning the level of financial education abroad

In the United States, the Federal Reserve is constantly and consistently preoccupied with public education. In November 2007, the FED set up a centralized „call center”, by means of which people can contact by phone or e-mail the experts from the central bank, in order to file complaints against financial institutions or to get information concerning bank products and services, as well as their rights as consumers. Those interested can find here several brochures and guides explaining in an accessible language the risks and benefits of various financial products, from credits with low interest rates in the first year to credit reports, electronic banking and current accounts.

The Financial Services Authority – the monitoring authority of the financial sector in the United Kingdom – is enabled by its status to contribute to the improvement of the level of public financial education. As a consequence, the institution is fully involved in the dissemination of information on products and services provided by banks. In this respect, the FSA has issued several publications with recommendations on how to use financial services. As in the United States, the institution has designed a specialized web portal providing brochures, guides, calculating sheets and comparative studies of credits, saving accounts or private pensions.

In Poland, the effort of providing the population with financial knowledge started in 2003, when a specialized web portal started functioning, by means of which distance course are offered, including illustrations, animations and short films. There is also an area dedicated to primary and secondary school teachers, where they can find easy-to-use lesson plans for their economy classes, or suggestions on effective and unconventional ways of teaching.

In Hungary, too, the campaign of providing the consumer with financial education started one year before joining the European Union. The programme consisted in solving the complaints coming from bank clients, issuing brochures and other publications containing helpful guidance, as well as launching a media campaign, in order to draw the public attention on the daily important financial issues. The comparative studies and sheets of financial products were by far the most successful.

In February 2007, the banks from Romania also started a series of projects meant to improve the relation with their clients. The most complex and durable project of this type is the one aiming at educating consumers, as Radu Gratian Gherea, the president of the Romanian Bank Association stated, while showing that the project is a long-term, almost continuous initiative. The Committee for Special Initiative, a partnership between the Romanian Bank Association, The National Romanian Bank, the Ministry of Finances and the Consumer Protection Agency, was entrusted with the creation of a strategy and a programme of consumer education, supported by the Convergence Programme, managed by the World Bank.

The research studies applied in different countries in order to assess the public financial knowledge have shown the following aspects:

In the United States, there has been revealed (Mandell, 2004) the low level of knowledge concerning the main categories of bank products and services and the financial management elements, as well as the poor understanding of some extremely important investment-related categories, such as: shares, bonds etc. The lack of financial knowledge within the American population was also highlighted in a study by Hilgert și Hogarth (2002) which used data obtained after questioning over 1,000 adults from 18 to 97. These studies

have shown noticeable differences between various social and demographical groups: people with lower education, women, senior citizens scored less than other analyzed categories.

În 2006 Lusardi și Mitchell elaborated a study meant to evaluate the financial knowledge of people over 50. The results prove that only half of the respondents could formulate correct answers concerning methods of capitalizing on the interest rates of their own savings or the influence of inflation on these savings. Only a third of the respondents were able to indicate the benefits of diversifying risks on the security and performance of their personal portfolio. The results obtained by Lusardi and Mitchell are in accordance with the study elaborated by Moore (2003), which showed that the major part of the participants were not aware of the fact that, in the last 40 years, the share performance was higher than the bonds and that the mutual funds do not guarantee a certain level of performance for the invested amounts.

In Australia and New Zealand, the ANZ Banking Group (2005, 2008) elaborated an extended study on the consumer's financial behaviour. The research included the analysis of over 3,500 questionnaires, in order to assess basic aspects concerning investments, the private pension system, financial operations and simple arithmetics. Although 67% of the respondents declared that they understood the methods of capitalizing on the interest rate, only 28% could answer correctly to a series of financial calculations as such. As in the United States, a direct link was proven between the level of general education and the level of financial education of individuals. Over 54% of the respondents erroneously stated that investing in instruments with fixed income (bonds) generated a higher performance as compared to shares in the last decades.

In Europe, the results are similar. Thus, in the United Kingdom, Miles (2004) reveals a poor knowledge of the interest rates and of the mortgage system among the debtors. It is shown that young people, especially those with lower education and income, have a less sophisticated financial behaviour. Hogarth, Anguelov și Lee (2005) prove that, in most cases, the individuals with lower levels of financial education avoid using bank services, which is reflected in a lack of transactions in their current accounts.

Another subject of interest refers to people's knowledge of the terms of a mortgage contract, this being debated mostly in the United States, where most families own real estate properties. Thus, Campbell (2006) emphasizes the fact that family decisions on what type of mortgage to choose or how to refinance it should be analyzed in close relationship with their financial knowledge. Campbell shows that most individuals are confused when it comes to mortgage conditions. He also stresses the fact that, between 2001 and 2003, the period in which the interest rates dropped drastically, refinancing a mortgage was a solution chosen mostly by young people, persons with higher education or more expensive properties. These aspects were also confirmed by Bucks and Pence (2006), who examined the extent to which the population correctly appreciates the value of property and clearly knows the terms of mortgage. They showed that most debtors, especially those with adjustable interest rates, underestimate the extent to which the interest rates can evolve. They also proved that, in a large proportion, people with lower levels of economic knowledge and those with lower incomes are not aware of the terms of their mortgage contracts. Stango și Zinman (2006) analyze the consistent tendency of population to underestimate the interest rates associated to a string of loans, while showing that the individuals underestimating the annual interest rate are most probable to continue to increase their indebtedment level, instead of saving.

3.2. Study concerning the level of financial education of the Romanian population

At present, in Romania, the data or analyses concerning the financial behaviour of the population on the micro-economic level, in terms of saving, indebtedment or accumulation, are scarce, while the impact of the respective behaviour strongly affects the general welfare.

The authors of the present study aim at evaluating the ways people are informed, while offering the necessary support in the appropriate assessment of the risks undertaken when the level of indebtedness increases. The results of the study have shown that the Romanian individuals have little knowledge of the characteristics of the financial products and services they use. The research activities have unfolded on several levels, such as:

- Evaluating the level of financial education and determining the distribution of financial knowledge on categories of population, while considering the main demographical, social and economic features;
- Reaching a general view on the degree of saving and understanding concerning the main features of a proper saving management;
- Analysing the crediting relations within the test group;
- Assessing the level of use and knowledge of the entire array of reimbursement instruments for financial products and services.

The test group and set of questionnaires have been established while taking into account the following key-elements:

- The test group included 1,049 subjects over 18 years old, distributed according to their historical region of origin;
- The research also considered classifying respondents in age and sex groups, using data taken from the National Institute of Statistics in this respect.
- The questionnaire included 53 items.

The process sorting and processing data from the questionnaires imposed the creation of a dedicated application and a database.

3.3. Conclusions of the study

We further present in a concise manner the results and conclusions deriving from our research, while closely following the main drivers of the analysis.

The demographical features with the highest impact on the level of financial education are:

- people in the age group from 18 to 25 (32,00 points) and those over 65 (30,89 points), especially women falling into this category (28,56 points);
- people with elementary education (29,33 points) and those with highschool education (35,89 points) have lower scores than people with college (39,97 points) and further higher education (44,00 points).
- people living in the province of Dobrogea (34,05 points) and those from Oltenia (34,03 points) have lower scores as compared to those living in Bucharest (39,34 points), Muntenia (36,53 points) and Banat (37,54 points);

The social and economic features which most influence the level of financial education are the following:

- employers (44,55 points), full-time employees (39,76 points) and freelancers (37,16 points) have higher scores than the unemployed (29,01 points), the retired (33,26 points) and the housewives (21,52 points);
- people with monthly family incomes lower than 1,000 Ron (31,94 points) and those with incomes between 1,000 Ron and 2,000 Ron (37,23 points) have inferior scores compared to people with family monthly incomes higher than 5,000 Ron (40,90 points) and those with incomes between 3,000 Ron and 5,000 Ron (41,16 points);
- people who do not save (33,65 points) and those saving less than 10% of the family income (39,14 points) have much lower scores than those saving over 30% (42,23 points);
- those not using the Internet on a regular basis (27,59 points) rank below those using it at their workplace (42,51 points).

People with higher scores, ranking in the first fifth of the top (level 5 of financial knowledge) have superior options compared to other categories in the following areas:

- are willing to pay a fee to a specialist in when making a financial decision;

- before making such a decision, they use to get information from specialized TV shows, financial websites, specialized publications or by consulting specialized brokers;
- use more often their bank card when shopping;
- are more confident when filing a complaint against a banking institution at the Consumer Protection Agency, when sending petitions to the National Bank of Romania or when consulting a lawyer;
- can easily analyze the information from a bank statement.

Also, people with higher scores (level 5 of financial knowledge) have chosen the following financial products and services to a greater extent: personal loans, leasing or mortgage loans; time deposit or saving accounts; credit cards; car, house, life and health insurance policies; private pensions; Internet banking.

Distribution of financial knowledge within population categories

There have been identified groups of population having a level of financial education below the average scored within the entire test group (37,3 points):

- people in the age group from 18 to 25 (32 points) and over 65 (30,89 points);
- women (35,89 points), especially women over 65 (34,5 points);
- people with elementary school education (29,33 points) and highschool education (35,58 points);
- single people (35,08 points);
- people living in the countryside (33,02 points);
- people living in the province of Oltenia (34,03 points) or Muntenia (36,53 points);
- the unemployed (29,02 points), the retired (33,26 points) and the housewives (21,52 points);
- people with monthly incomes below 1,000 Ron (31,94 points) and those with incomes between 1,000 Ron and 2,000 Ron (37,23 points);
- people paying a rent (35,21 points) and people living with their parents (33,43 points).

As opposed to the above-mentioned results, there are groups of population having a level of financial education superior to the average scored within the entire test group (37,3 points):

- people in the age group from 25 to 45 (39,32 points) and those from 45 to 65 (40,50 points);
- men (40,78 points), especially men between 45 and 65 (41,72 points);
- people with college education (39,97 points) and those with post-college education (44,00 points);
- married people (39,32 points);
- people living in urban areas (38,23 points);
- people living in Bucharest (39,34 points) and those living in the province of Banat (37,54 points);
- employers (44,55 points) and full-time employees (39,76 points)
- people with a monthly family income over 5,000 Ron (40,90 points) and those with incomes between 2,000 Ron and 3,000 Ron (39,44 points);
- people owning a house (39,19 points) and those paying for a housing credit (39,40 points).

The behaviour of people with a high level of financial knowledge

The analysis of the questionnaires has revealed differences as to the level of financial education between those ranking in the first 20% respondents from the point of view of their score (level 5) and the lowest ranking respondents (level 1). The authors have also taken notice of the fact that demographical, social and economic factors can influence the desire of

some people to get certain financial products and services and the information sources listed below.

Rights and obligations of the financial product consumers

Knowing the rights and obligations of the financial and bank product and service consumers represents an important aspect of the financial education. The respondents' knowledge of the rights and responsibilities incumbent on the respective consumers have been carefully tested, while analyzing their opinion concerning proper ways of solving potential conflicts with financial institutions. The necessity of the specialized financial education programmes has also been evaluated. The consumers are generally little aware of their rights and obligations in the relation with financial institutions:

- approximately 43% of the respondents consider themselves satisfactorily or fully informed when making a financial decision;
- only 16% of them consider they should complain at the Consumer Protection Agency or to draw up a petition to the National Bank of Romania if they encounter difficulties when dealing with a financial product, such as a mortgage, a credit card, an insurance policy or a private pension, which cannot be solved directly with their providers;
- only 52% were aware of the fact that there is a limit of 50.000 Euro for the guarantee of a bank deposit;
- only 23% of the people tested who have credits have read the loan contracts before signing them.

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ANALYSIS OF THE ROMANIAN CAPITAL MARKET VOLATILITY

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***Abstract.** The increasing availability of financial market data at intraday frequencies has led to the development of improved ex-post volatility measurements. In the process of structuring the portfolio, a key variable is the global volatility. The objective of this paper is to analyze the Romanian Capital market volatility inside a GARCH framework in order to identify the structural changes and also to provide some empirical evidence about the market time-scale invariance property. The data for our empirical study consists of ROTX stock index transaction prices during the period 11/6/2007 and 11/20/2009.*

Keywords: volatility; capital market; GARCH model; structural changes.

JEL Codes: G11, G17.

REL Code: 11B.

1. Introduction

Estimating the volatility of asset prices has been an area of great interest in the recent past, mainly due to the range of applications and, at the same time, absence of a single widely accepted model for the same. Volatility of asset returns is a key input for several financial applications like portfolio decisions and risk management. The definition of volatility is still an unresolved issue: several alternative measures for volatility have been proposed in the literatures by various authors (Poon, Granger, 2003).

Contemporary research in volatility modeling was motivated by the pioneering work of Engle (1982) on ARCH. Engle established the basic idea of modeling volatility as a time-varying function of the current information. The family of GARCH models was later introduced by Bollerslev (1986), and also discussed independently by Taylor (1986). The GARCH (1, 1) model remains the workhorse in the GARCH family. These models have been extensively used in studying volatility clusters in financial time series (Bollerslev et al., 1992, 2001, 2003, and others).

The main problem with volatility modeling is that, unlike prices, volatilities are not directly observable, and they can only be estimated in the context of a model. However, Andersen et al. (2001) concluded that by sampling intra-day returns sufficiently frequently the *realized volatility* (measured by simply summing intra-day squared returns) could be treated as the observed volatility. Significant work has been done in the international context using these features of asset markets, which has helped in understanding the market microstructure (e.g., Andersen et al., 1999).

Gokcan (2000) finds that for emerging stock markets the GARCH(1, 1) model performs better in predicting volatility of time series data. In a different market-specific study,

Yu (2002) observes that the stochastic volatility model provides a better volatility measure than ARCH-type models for the New Zealand stock market.

In the process of structuring the portfolio, a key variable is the global volatility. Changes in this variable affect the yields and the associated structures of the portfolios, and also their specific extrinsic risk. Thus, the objective of this paper is to analyze the Romanian Capital market volatility inside a GARCH framework in order to identify the structural changes.

The data for our empirical study consists of ROTX stock index transaction prices during the period 11/6/2007 and 11/20/2009.

The ROTX is a capitalization-weighted price index and is made up of 15 Romanian blue chip stocks traded at Bucharest Stock Exchange (BSE). Calculated in EUR, USD and RON and disseminated in real-time by Wiener Börse, the ROTX is designed as tradable index and is used as underlying for structured products.

Current composition ROTX EUR

Table 1

Title	Number of shares	RF	FFF	Capitalization EUR	Index portion (%)
Antibiotice	454,897,291	1.00	0.50	35,315,639	1.64
Azomures	526,032,633	1.00	0.25	9,058,093	0.42
Banca Transilv.	1,059,696,183	0.96	1.00	503,559,194	23.36
Biofarm	1,094,861,499	1.00	1.00	53,683,466	2.49
BRD-Groupe SG	696,901,518	0.36	0.50	401,260,628	18.61
COMPACT	218,821,038	1.00	0.50	7,433,856	0.34
CONDMAG	230,395,355	1.00	0.75	25,216,050	1.17
ERSTE GROUP BANK AG	377,925,086	0.05	0.75	414,950,785	19.25
Flamingo International	779,050,011	1.00	0.50	2,728,467	0.13
Impact SA	200,000,000	1.00	0.75	19,262,649	0.89
Petrom	56,644,108,335	1.00	0.10	342,544,165	15.89
Rompotrol	21,099,276,002	1.00	0.50	173,655,579	8.06
TRANSELECTRICA	73,303,142	1.00	0.25	52,629,564	2.44
TRANSGAZ	11,773,844	1.00	0.25	107,899,642	5.01
Turbomecanica	369,442,475	1.00	0.75	6,404,797	0.30

RF – Representation factor

FFF – Free float factor

Inside the ROTX index structure are issuers from different sectors of activity, who, during the analysis, had a non-uniform development. This has led to a differential impact on the index's volatility.

2. The methodology

In order to evaluate the evolution of the ROTX index volatility, there could be adopted a strategy in two stages.

- 1) The preliminary evaluation inside an ARMA- *Component* GARCH model;
- 2) The usage of the first stage GARCH volatility estimation in an error-correction model by describing the observed level of the index as a linear function of this volatility.

More exactly, the *component* model from the GARCH class, which is in fact a (nonlinear) restricted *GARCH (2, 2)* model, allows mean reversion to a varying level m_t , modeled as:

$$\begin{aligned}\sigma_t^2 - m_t &= \varpi + \alpha(\varepsilon_{t-1}^2 - \varpi) + \beta(\sigma_{t-1}^2 - \varpi) \\ m_t &= \omega + \rho(m_{t-1} - \omega) + \phi(\varepsilon_{t-1}^2 - \sigma_{t-1}^2)\end{aligned}\quad (1)$$

Here σ^2, m are the global volatility and, respectively, the “long-run” time varying volatility. The $\sigma_t^2 - m_t$ is a transitory component which converges to zero with the powers of $(\alpha + \beta)$.

Thus, with the *conditional variance* described by the relation (1), the mean equation is:

$$Y_t = X_t' \theta + \varepsilon_t \quad (2)$$

In the first stage (with only the statistical significant autoregressive and moving average parameters retained):

$$X_t = \sum_{i=t-k}^{t-1} \chi_i X_i + \sum_{i=t-k+1}^t v_i MA_i \quad (3)$$

In the second stage (with $\sigma_t^{2\text{ conditional}}$ the conditional variance estimated from the previous stage):

$$X_t = \mu \sigma_t^{2\text{ conditional}} \quad (4)$$

Since we are using the *Generalized Error Distribution* assumption, the contribution to the log-likelihood l for observation t is given by:

$$l_t = -\frac{1}{2} \log \left(\frac{\Gamma\left(\frac{1}{\tau}\right)^3}{\Gamma\left(\frac{3}{\tau}\right)\left(\frac{\tau}{2}\right)^2} \right) - \frac{1}{2} \log \sigma_t^2 - \left(\frac{\Gamma\left(\frac{3}{\tau}\right)(y_t - X_t' \theta)^2}{\sigma_t^2 \Gamma\left(\frac{1}{\tau}\right)} \right)^{\frac{\tau}{2}} \quad (5)$$

3. Results

Using the available data, for a time span between 11/6/2007 and 11/20/2009, the estimation and “historical” volatility of ROTX index are:

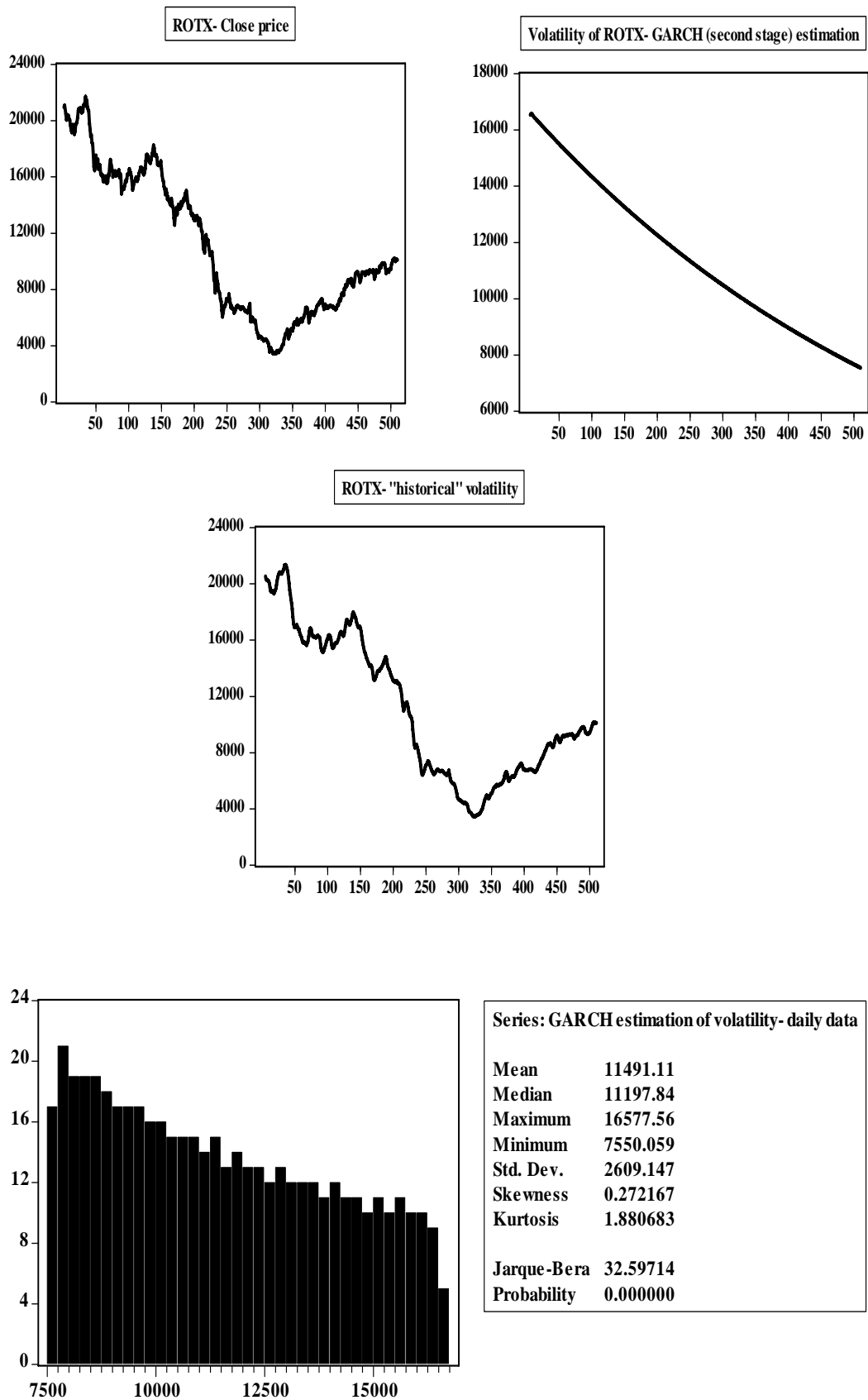


Figure 1. The ROTX index, its volatility – GARCH estimation and „historical” volatility

It could be noticed that after an initial shock in volatility for the end of 2007 there is a slow downward adjustment in the volatility evolution (at least till the half of 2009). Also by using the *Quandt – Andrews Breakpoint Test* of GARCH estimation it appears that the end of March 2008 is a major structural changes point and the null of no such points over the analysis time span could be rejected (Table 2). The idea behind the *Quandt-Andrews test* is that a single *Chow Breakpoint Test* is performed at every observation between two observations, τ_1 and τ_2 . The k test statistics from those *Chow* tests are then summarized into one test statistic for a test against the null hypothesis of no breakpoints between τ_1 and τ_2 . The individual test statistics can be summarized into three different statistics: the *Sup or Maximum* statistic, the *Exp Statistic*, and the *Ave* statistic.

Quandt-Andrews unknown breakpoint test

Table 2

Null Hypothesis: No breakpoints within trimmed data			
Number of breaks compared: 353			
Statistic	Value		Prob.
Maximum LR F-statistic (Observation 3/13/2008)	6.148606		0.1507
Exp LR F-statistic	1.111514		0.1673
Ave LR F-statistic	1.548759		0.1806

One particular aspect concerns the preservation of the *time-scale* invariance of the ROTX index- its capacity to preserve the same characteristics of data with the shift from low and high „resolution” on time-scale as an indication that there is a „fractal” core of the index evolutionary pattern.

For instance, by applying for the last part of the analysis interval (10/11/2009-11/20/2009) the same estimation methodology on 1 minute data it results a shape of the estimated volatility like in Figure 2.

It appears that in terms of the distributional parameters, there is an important difference between daily and intra-day data.

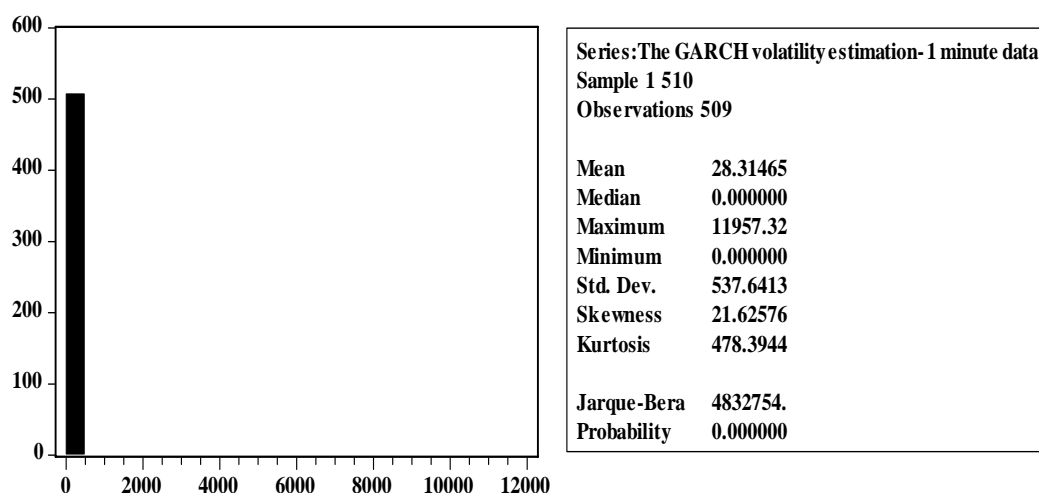


Figure 2. The ROTX volatility- 1 minute data (histogram)

4. Conclusions

The carried out analysis reveals the impact of factors on capital market development, such as: political instability, changes in the macroeconomic, global and sectoral context, the role exerted by foreign financial intermediaries in their depiction of transmission channel for international turbulence.

In the context of capital market in Romania, with a low liquidity, with a narrow range of financial assets and a cap that has not yet reached a critical threshold, these factors have an impact with a high amplitude, causing a „short term functional” instability.

The exogenous variables affected the decision-making procedures, mainly on the basis of psychological, non-fundamental or non-technical criteria.

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OPTIMAL SOLUTIONS IN BANKING MANAGEMENT: USEAGE OF INTRANET SITE OR PRIVATE NETWORKS

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***Abstract.** Banking companies face an essential dilemma is for the credibility and effectiveness of operation: who is the best solution for the bank to tranzacțiile secure, fast, effective and compatible? Variations consist in the age of Intranet site or Virtual private networks. Intranet solution involves identifying problems in the short/long intranet site development, plus specific organizational and technological issues. Solution with Virtual private networks, seen as a reliable data transfer by financial and banking systems, impose to define their semantics, standards, protocols used, and dedicated hardware-software systems.*

Keywords: Virtual Private Network (VPN); Point-to-Point Protocol (PPP); Point-to-Point Tunneling Protocol (PPTP); Internet Engineering Task Force (IETF); MultiProtocol Label Switching (MPLS).

JEL Code: G2.

REL Code: 10B.

1. Items on computerization of banking via the Intranet

1.1. Short and long term issues of development intranet site

The real power of the Intranet site is visible through the effective use of short/long. Intranet can benefit banking company (SB) only after the start to be considered as part of the redesign work. The system is able to cause increase of productivity and employee information to change the culture of banking company. Intranet site allons to identify information flows, which is able to optimize them, the system will lead to motivating employees to develop processes and mechanisms that may lead to optimization of existing information flows. The main problems that arise on short and long-term development intranet systems are: (a) the success of Intranet systems focuses on the transformation of a banking company in banking company a "no paper" and the connection resources to BDL's Intranet/BDD, (b) banking company must inform employees about the possibilities and alternatives that can provide labor productivity growth through Intranet sites, including benefits that may result from use of their stock, (c) the objectives in the short/long can be obtained by resolving the problems of technological, organizational, or informational structural of banking company, (d) implementation of intranet systems can be realized by promoting the web for all the organizational structures of banking company, (e) senior management of banking company must have measures to change the culture of information staff, (f) banking company operative management shoulder involved in staff training for generation, storage, handling and management of banking documents, through improvement of their appearance and functionality in HTML format.

1.2. Technological and organizational issues specific Intranet systems installation

Major banking company, such as Netscape and Microsoft, quickly develop key technologies for Internet sites, focusing in particular on the idea of transformation Intranet sites closed and open systems static and dynamic Web pages and published by optimizing their best on the Intranet. The problems facing a banking company after the launch of an intranet, are in our opinion the following:

Table 1

Technology issues	Organizational aspects
granting of access passwords and user ID for our Intranet standard	Intranet site-promotion in the banking company in order to attract employees to its development
granting of access passwords and user ID for banking company managers, administrators and system engineers	achieve combination and interconnections of culture focused on the usage of paper with one based on electronic documents
-installation of security measures on the Intranet, to eliminate unauthorized access to confidential information or	preventing monopolization's intranet by a department/group of persons
use in the Intranet site of BDL/BDD already implemented	participation of third parties (customers, employees, auditors, consultants, etc.) in computer activities by updating the specific data and generate controlled by them
-achieving conversion of traditional documents, on paper, electronic documents	behavior-training employees on the Internet to protect discussion forums online and other interactive features for users
continuous improvement Intranet-site facilities to maintain its top user preferences	measurement of total operational effectiveness/partial Intranet site
pluriserver-s-installation in the company's organizational structures	- obtain additional funds for ongoing IT solutions actualization Intranet

In case of very high companies, there may be two solutions to the positioning server ages:

1. solution with a server: it is ideal for distributing information and data to all departments and customers intranet systems, by interposing a WebMaster between intranet and users;

2. solution with multiple servers: feasible for very large banking companies, where is are geographical dispersion, distributed processing time and space, many departments and many customers Intranet. Intranet is the ability of power distribution systems in the banking company data, which is why there must be a primary WebMaster placed on a main intranet server (Figure 1).

Intranet systems implementation leads to technological and organizational problems. As an important feature of the Intranet system is its ability to produce changes in a company, then on the short term, efforts to implement the team's intranet will focus on technology issues for the future organizational problems become priority; there are common situations when the intranet systems coexists personalized HTML documents personalized, HTML and official papers.

Most users will use the system of document and they know the best. These new sets of dynamic knowledge tool, viewed as personalized HTML documents or official HTML). In all cases there must be a controllability of informational content of all types of documents. Yesterday's document control is inversely proportional to their typology. Installing multiple servers banking company departments involves the age of internal Web, leading to maximum distribution of information. Documents and Web applications will be reviewed by a

webmaster before distribution network. This filter offers a comprehensive and total control over information flow and distributions. The method allows uniform compliance standards regarding information and minimalization of management controllability.

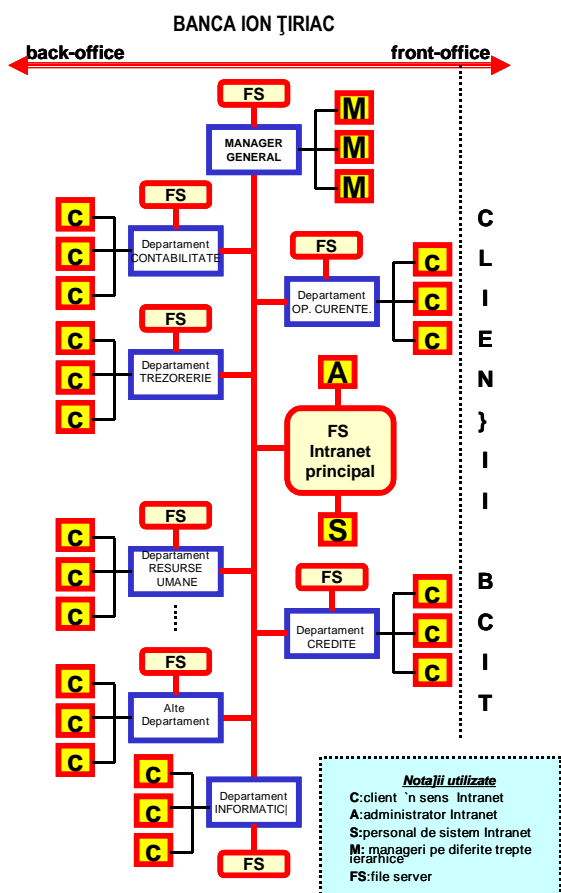


Figure 1. Proposal for an Intranet solution for multiserver banking

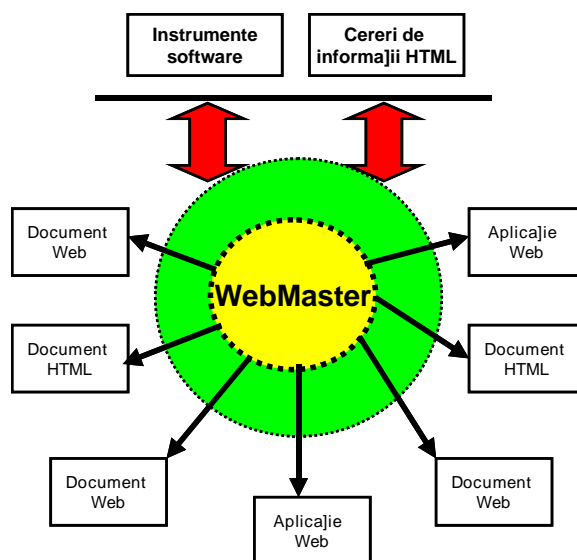
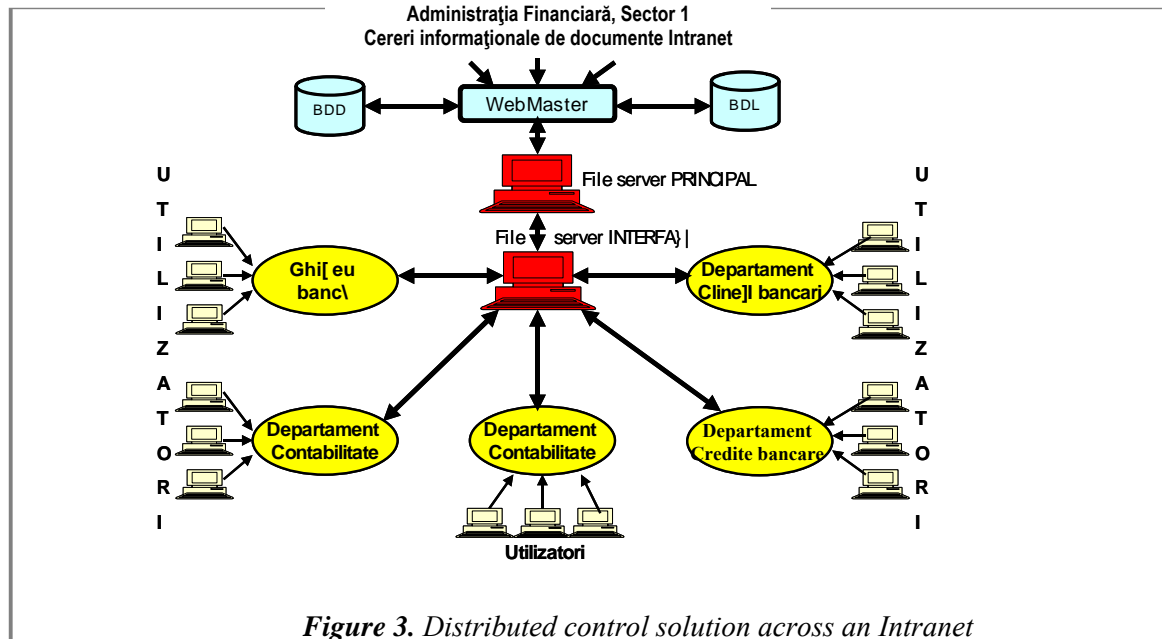


Figure 2. Centralized Management Intranet

Can be achieved by different models to ensure, first, control over the operation's Intranet and, on the other hand, maintaining the informal freedoms specific such a system. This model is based on accountability of directors of departments in monitoring and managing their intranet pages. They may set of strategy and guidelines for employees on differential access to web pages and content of the confidential nature of information circulated on the Intranet. These elements lead, in our opinion, to the following conclusions: (1) Intranet systems lead to improvement of existing architecture network computers using LAN/WAN, (2) Intranet ensures influence universal factors success: reduces costs, leading to productivity growth and facilitates the exchange of information, (3) Intranet site is dedicated to complex business technology, fast, safe and effective, (4) employees must use the facility's operational intrnet, (5) banking company should promote maximum usage of Intranet systems as their main utility is the usefulness of the information and run complex operating. Virtual private network, a reliable data transfer by SGI.



2. Virtual private network

2.1. Semantics virtual private network

Virtual Private Network (VPN) provides a protective tunnel for the transfer of data across various points over the Internet. VPN acts as a direct and secure connection between in the purpose of client (on the general, as users place on the premises of banking company/distance) or between two local computer networks (Local Area Network-LAN) through public Internet network. VPN can be made the implementation of information systems at governmental, nongovernmental and regional level. These types of networks can be used in the banking company, insurance-reinsurance, stock, etc. institutions. VPN allows users to access company servers and/or connection with its various subsidiaries through associated security architecture developed extranet sites. VPN allows direct connections, called „tunnel” which can provide acceptable security features, which are virtually impossible to intercept data and unauthorized access to a VPN. They have a low cost advantages deriving from the connection, reducing the number of ports of entry, eliminating the lines of point-to-point connectivity, while company employees can take advantage of fast data connections VAN specific sites, unlimited low speed provided by modems. Bob Lonardier, analyst at technology consultancy company information Hurwitz Group, believes that all the factors listed above will result in a cost point of equality between VPN solutions and focusing exclusively on Internet use, in about 6-9 months. These benefits have created a boom in VPN technologies usage. Thus, 56% of banking company with more than 1,000 employees and 70% of banking company children in the US already have VPN solutions or implementation stage. According to a survey by CIO Insight publication Datamonitor, it is forecasting an increase of sales of hardware-software VPN to 585% million in 2005 to \$ 16 billion in 2009.

2.2. Standards and protocols used to connect private networks virtual

VPN requires the existence of software components at both ends of the connection by which to ensure the exit traffic encryption and decryption of input traffic. This software can run on a PC or a dedicated hardware platform, the supervision of an operating system: Windows, Linux or NetWare. These hardware platforms are actually dedicated data associated with a concentration of banking company. Items related to authentication, access control and encryption protocol is achieved through **point-to-Point Protocol (PPP)**. PPP is a protocol-

oriented TCP/IP and used for transmitting IP packets via a serial link point-to-point. There have been developed and other links of the „tunnel” between the devices, called **point-to-Point Tunneling Protocol (PPTP)** and **Layer 2 Tunneling Protocol (L2TP)**. PPTP is a protocol of „tunnel” through which PPP frames are encapsulated in the type of networks using TCP/IP. **Protocol L2TP** is a combination of PPTP and Cisco Systems proprietary system, called **Layer 2 Forwarding (L2F)**. **L2TP VPN** sites dedicated operation, the facility is a fusion between PPTP and L2F. It has been initiated by Cisco company, as an encapsulation protocol used for PPP frames, so standard homogeneous structures of data transmitted between network nodes and their transmission on a LAN network such as TCP/IP.

L2TP has a privacy transmission system, called **IP Security (IPsec)**. IPsec is a comprehensive set of security protocols, which was developed and administered by the **Internet Engineering Task Force (IETF)**, ensuring secure communication via the Internet. To ensure quality of service (**Quality of Service-QoS**) it has to enable network administrators to assign priorities to ensure IP protocols for specific users or applications, bandwidth sufficient to report the importance of data packets. The optimal solution is to mark data packets, the router so that automatically recognize the high priority packets. In this sense, came standard technology called **Multiprotocol Label Switching (MPLS)**. This is an IETF protocol used in IP traffic management, ensuring that the two routers, to send each other ofb priorities routing through a sophisticated system of labeling. Because this label is there are removed reading operations of the header, which leads to eliminating the need to identify the next node address. MPLS is a solution leading, among other systems, at QS. In addition to those listed, VPN uses and other standards or protocols, especially useful within exit traffic encryption and decryption of input traffic.

2.3. Hardware and software systems dedicated interconnections in the networks of private virtual.

VPN uses a set of hardware and software systems provided by various companies to price, performance and users. These hardware-software systems are marketed differently, by possibility of delivery of VPN and VPN to banking company headquarters and to subsidiaries, all these elements require a comparison of these systems, focused on the following criteria: typology VPN (for the head office or branch banking company), the purchase price, the estimated costs for a number of users connected to a VPN, additional extensions to hardware-software systems, the cost of VPN configurations and scores obtained by testing these components. VPN structures most used and effective are:

1. Architecture with VPN totally implemented at a banking company is characterized by connections between its headquarters and its branches through Internet system positioning. Each node of the architecture contains a typical local network (LAN) and VPN connections are made through a protective tunnel data transfer. Connections between headquarters and remote users, are achieved through ISP. VPN architecture implemented all at an banking company can be used effectively by banking companies, insurance-reinsurance, stock exchange or banking company which carry complex commercial transactions.

2. Hybrid MSP-VPN architecture is based on the idea that the heart of the topologies are connecting to a remote server, an authentication service and a common connection. Nodes of a network architecture contain typical local (LAN) and a VPN, and connections are provided through a protective tunnel data transfer. Connections between network nodes (branches) and the central node are implemented through a network-type MSP. The name of this architecture derives because of these features. All connections between distant users and headquarters are made based ISP. MSP-VPN hybrid architecture may be appropriate for carrying out the banking company complex commercial transactions, stock exchanges, banking companies, insurance-reinsurance or financial administration.

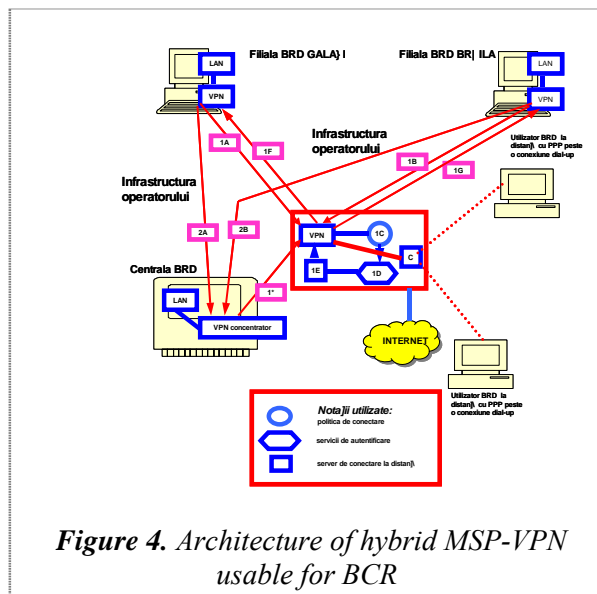


Figure 4. Architecture of hybrid MSP-VPN usable for BCR

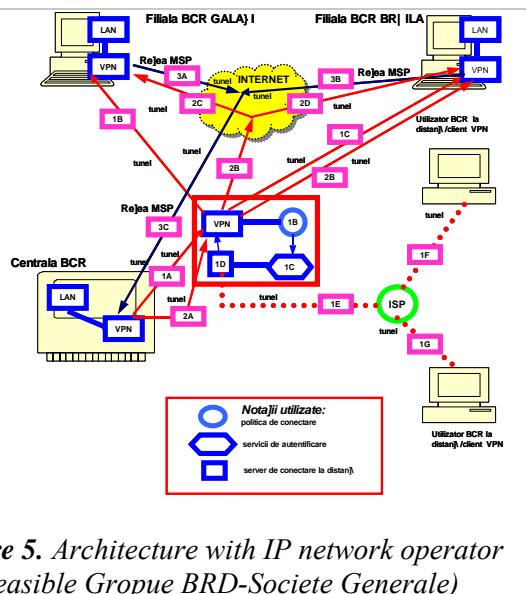


Figure 5. Architecture with IP network operator (feasible Gropue BRD-Societe Generale)

3. Architecture with supplier/operator easily to the Intranet has the particular existence of an infrastructure operator at the banking company, to which there are added authentication services and connectivity policies. Central node (based banking company) and satellite nodes (branches banking company) have a LAN, plus a router. Connections between users are remoted and headquarters of banking company are implemented by VPN. To maximize security the central node and satellites, all system interfaces with the Internet are protected by the VPN network. Architecture with supplier/operator of the VPN is easily feasible for banking companies, insurance-reinsurance, financial administration, banking company which carry complex commercial transactions, stock exchanges, state administrative institutions or government agencies.

4. Architecture with IP network operator contains satellite nodes in network architecture consisting of typical local (LAN) and VPN, while the central node has a VPN concentrator and LAN data. This architecture uses a server remote connection, authentication and policy service connection, while the connections are secured through a protective tunnel data transfer. Connections between BRD users are remoted and headquarters of banking company are implemented through a remote server connection. Central node (based banking company) may have access to the Internet system, while satellite nodes in the architecture can access the Internet only via the central node. Operator IP network architecture can be implemented by banking company which carry complex commercial transactions, stock exchanges, banking companies, insurance-reinsurance, financial administration, government agencies or administrative institutions of the state.

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FINANCIAL CRISIS AND CHANGES IN THE MONETARY BASE

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***Abstract.** Amid the global economic and financial crisis it is important to put into the question the role played by the monetary base in making monetary policy decisions. Even if the NBR's main monetary policy tools was the changes in interest rate level, the other monetary policy tools used were as purposeful to influence liquidity in the economy and, finally, to changing the structure of monetary base. If it pursued the evolution of the money supply counterparts structure in correlation with the main macroeconomic variables (like non-government credit expansion, increasing of current account deficit) could see the imminent economic and financial decline.*

Keywords: monetary base; monetary policy interest rate; money multiplier.

JEL Codes: E51, E58.

REL Codes: 3B, 8J, 10B, 19L.

1. Introduction

In 2007 – the year of beginning of the financial crisis in the US – Romania authorities felt that the economic activities and financial sector will not be affected by the crisis, even if the real estate prices were so high, the lending volume increased exponentially due to the high consumption. This was just an illusion. Romania, like many other emerging countries was strongly affected by the crisis.

In this unstable environment, the monetary authority is faced with many problems like real economy's reaction to the monetary policy measures, and especially, banking system's reaction. Under these conditions, both in the US and other countries, the specialists attention was drawn to the significant changes occurred in the monetary base. (Anderson, 2008, p.12, Gavin, 2009, pp. 49-50)

The important issues to be raised at this point are related to the causes of the sharp rise in the monetary base in some of the economies affected by the crisis and to the drastic changes in the monetary base structure which may lead to further inflationary pressures. This study focuses on analyzing the evolution of Romanian monetary base after 2007 and the causes that generated change in the monetary base with direct implications on inflation.

2. The monetary base structure in Romania

The change of the NBR's monetary strategy (from the monetary aggregates targeting to the inflation targeting) involved changes in terms of intermediate and operational targets. In the first case (monetary aggregates targeting) money supply control was a priority for National Bank of Romania's monetary policy. Inflation targeting requires taking measures that directly concerns the level of inflation, measures to identify the main factors that influence the evolution on prices. For this reason, tracking the evolution of money supply in the economy holds a secondary place

„Monetary aggregates targeting has lost the support he had in these countries – situation encountered in the past in most developed countries, following the disintegration of previously stable relationship between monetary aggregates and inflation; this evolution is mostly linked with the increasing importance of money in the economy that occurred after inflation down to moderate levels, the privatization and development of banking sector and after capital account liberalization. However, European Central Bank takes into account explicitly the growth rate of money supply, in the process of formulation of monetary policy

by promoting a heterodox strategy with two pillars: 1) assessing short and medium terms prices determinants with an emphasis on activity in the real economy and on financial conditions of the economy (economic analysis); 2) recovery of long-term relationship between money and prices (monetary analysis).” (Isărescu, 2008, p. 13).

When financial instability persists, I think that emphasizing the efficiency of monetary policy in light of the effects generated on inflation by the changes in interest rate policy (especially in monetary policy rate) is appropriate in the short term. In the long term, I think you should reconsider the importance of monetary aggregates, in general, and especially of the monetary base. This is sustained by the European Central Bank to.

Through the monetary policy instruments used, the Central Bank can influence money supply components.

Theoretical studies (Goodhart et al, 2009: pp1-2) show that the monetary authority is faced with the decision to choose like monetary policy operational tools to use the monetary base control or interest rate control. What should be noted is the fact that this decision should be considered in the broader context of monetary policy as the main component of macroeconomic policy, but, in the same time, we must consider the macroeconomic fundamental objective – price stability by reducing inflationary pressures (McCallum, 2005, pp.287–291).

NBR’s decision was to use the interest rate (monetary policy rate) like important operational monetary tools. The changes in the level of monetary policy rate affect the banking system interest rates and, in the same time, the money supply. The final effect of these changes aimed at the level of liquidity in the economy. (most of the times in excess).

„The basic intuition, why an interest rate instrument is preferable for this latter purpose, is almost trivially simple (Goodhart et al., 2009, pp. 1-2) A panic, or crisis, involves a loss of confidence, with sharp losses in asset values and enhanced asset price volatility. In these conditions there will be a marked increase in the demand for safe, liquid assets, for broad money if confidence in bank solvency survives, for base money if it does not. If the Central Bank holds interest rates pegged, it will quasi-automatically satisfy that increased demand for money. If it holds the monetary base constant, that extra demand for money will drive up interest rates, exacerbating asset price losses and worsening the crisis. In particular, changes, especially declines, in asset markets can be sudden, and that can drive sharp swings in sentiment/confidence.” If the central bank opts for handling interest rate and to maintain its positive in real terms, then, in the economy will ensure a greater demand for its currency, mainly for saving.

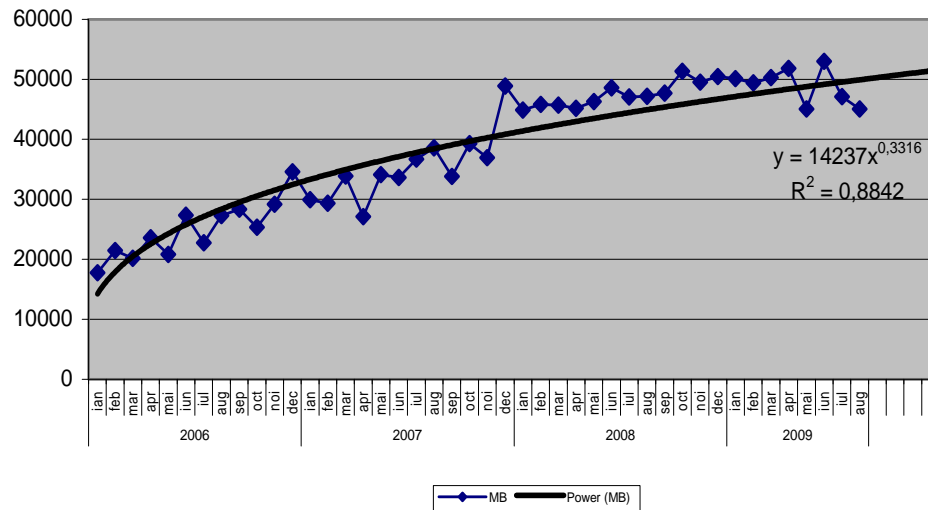
On the other side, if the central bank would maintain constant currency basis, any additional demand on the market liquidity would be pushing up interest rates which would generate a higher demands for loans, emphasizing the adverse effects of the crisis.

However, we can speak of a vicious cycle of monetary policy which may create, in conditions of financial crisis, greater pressure on financial stability and, not for the least, on the evolution of inflation. So if it intends to maintain the monetary policy rate at the high level (like in Romania during the 2007), the effect is to attract foreign capital which is equivalent with the central bank intervention on the market by buying foreign currency. These forex interventions are able to reduce the phenomenon of artificial appreciation of domestic currency (in the case of Romania, these interventions are not so successful, why the quotation on the Romanian forex market had reached to EUR/RON: 3.12).

Purchases of foreign currency generate monetary expansion (both the monetary base, as well as the broad money supply). Increasing the money supply generates inflationary pressures, which require the central bank to ensure sterilization of money supply (through fine-tuning operations, like deposit facility), and last but not least, to take the decision to increase monetary policy rate.

These are all reasons to consider the evolution of Romanian monetary base, given that the non-governmental credit has declined sharply. Another problem is related to the rapid growth of governmental credit.

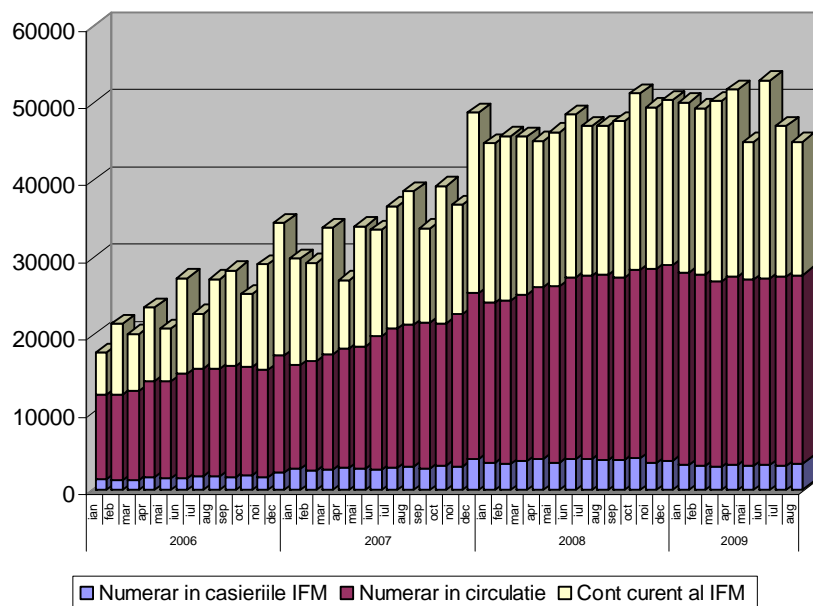
The evolution of the monetary base in Romania confirms, once again, its downward trend amid increasingly strong manifestation of the effects of economic and financial crisis. (Chart1).



Source: NBR and own calculations.

Figure 1. Evolution of Romanian monetary base (mil. Ron)

This evolution is determined by changes within the structure of monetary base (decreases in all components, but also reductions to offset the increase in other components). According to the NBR's definition, the monetary base consists of currency in circulation, cash held by financial-monetary institutions and current accounts of the financial-monetary institution to the central bank. The evolution of the monetary base structure is highlighted in the chart below (Figure 2).



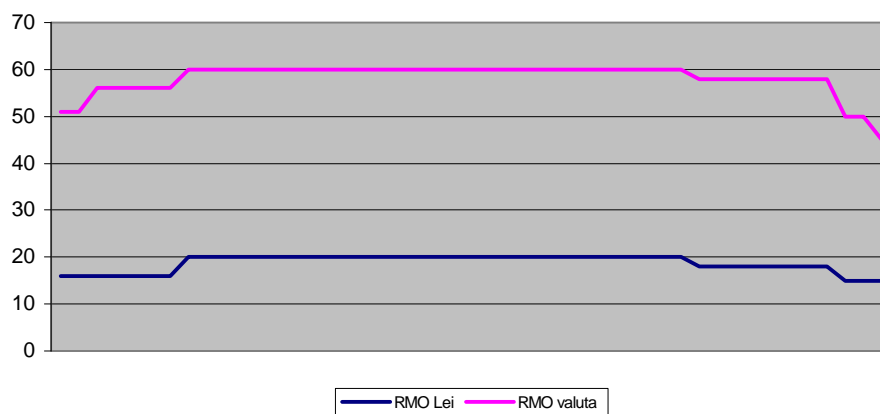
Source: NBR and own calculations.

Figure 2. Structure of monetary base (period January 2006- august 2009, nominal value)

3. Factors determining the evolution of the monetary base

Analyzing the chart above, you can see a sustained increase in level of cash held by economy and deposits of financial-monetary institutions established by the NBR. The increase of cash in circulation is correlated with the level of prices, it imposing the existence of cash in amounts to ensure optimal running transactions. On the other hand, the increase in deposit liabilities to the Central Bank is generated by the evolution of required reserve ratio especially for the foreign currency resources. This measure aimed at reducing currency lending. However, on the Romanian market the evolution of foreign currency lending was opposed to adopted measures.

The global financial crisis imposed a reduction of the required reserve ratio to ensure the liquidity on the market and to prevent a blockage in the banking system, and thus to avoid bankruptcy of financial institutions (like Lehman Brothers in US) (Figure 3).



Source: NBR.

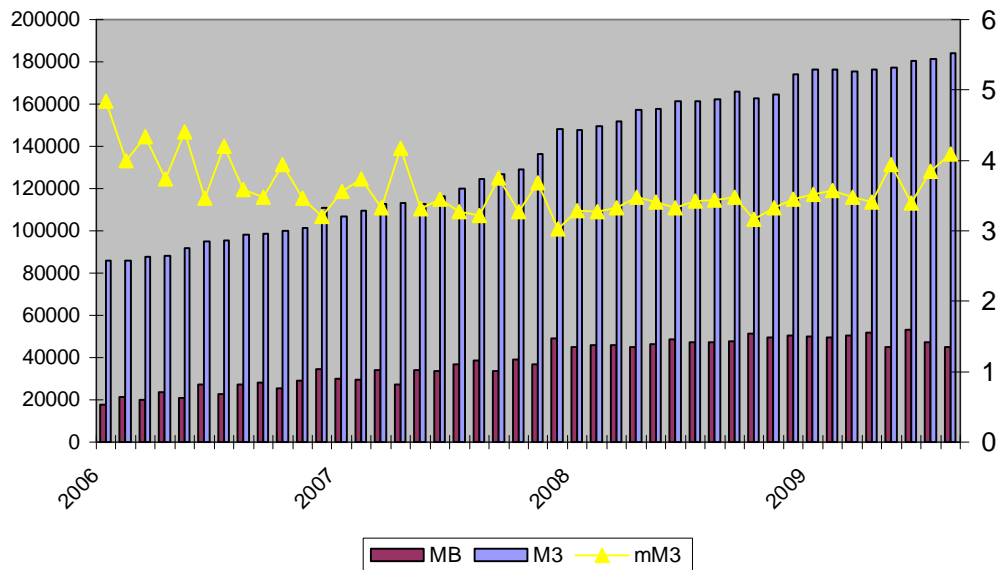
Chart 3. Required reserve ratio (%)

During the 2009, the lending falls, in spite of reduced required reserve ratio by the NBR (in order to unlock the lending process). The causes are multiple: the diminishing of financial resources of potential customers, the reduction of economic activity for companies, the increasing of unemployment, the low confidence in the evolution of Romanian economy and last but not least, the changing of lending conditions. If until recently, the Romanians allocate for consumption their income and often some of the borrowed resources, at this point they seem to reallocating its resources (financial resources much lower than previous years).

If we consider closely the evolution of the Romanian monetary base, we should appreciate its constant evolution as opposed to the other countries. All this should be correlated with significant reductions in consumption.

On the chart below, we can see that the monetary multiplier is relatively constant (about 3.5). That is important for the next evolution of inflation. The reducing of monetary base and the need for liquidity in the economy generate an increase in the level of monetary multiplier.

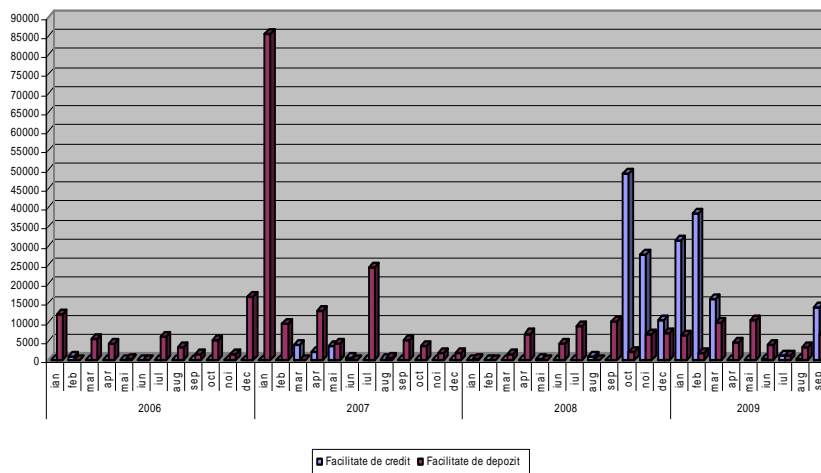
The main causes are the reductions of required reserves ratio and of monetary policy rate, just for stimulate the lending. Another explanation is linked to improving the external perception towards the future evolution of Romanian economy (Figure 4).



Source: NBR and own calculations.

Figure 4. Evolution of monetary base, broad money (M3) and money multiplier

The evolution of the monetary base was especially influenced by the evolution of required reserve ratio. By reducing the rate for foreign currency deposits, NBR has tried to improve the liquidity of Romanian forex market and thus to reduce the pressure registered on the Romanian leu. Under these circumstances, the NBR becomes net creditor for the monetary market, just to neutralize the negative effects of reduced liquidity (Figure 5).



Source: NBR and own calculations.

Figure 5. NBR's lending/deposit facility

If we consider the evolution of M3, that is in contradiction with GDP evolution (economic loss). It emphasized reducing velocity of money amid rising money demand for saving. The main problem at this point is significant increase of the state borrowing to cover the deficit, especially on the money market.

4. Conclusions

This study provides some ideas on the role of monetary base in the context of financial crisis. The financial crises generate diminishing of inflationary pressures. On the other hand, the contraction in private consumption is accompanied by an increase in monetary base. That

can generate contradictory developments of prices. For this reason is important to reanalyze the role of monetary base in decision making by central bank. Inflation is not a risk under current conditions, because economies are in recession. (Croitoru, 2009)

For this reason, the dispute “rules versus discretion” is always present. In this case, the argument is that the handling of monetary policy rate does not automatically lead to determining the optimal level of this rate. For this reason central bank need to share its interventions between monetary policy rate (which generates short term effects) and controlling monetary base (which generates long term effects) to prevent high levels of inflation.

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D-CAPM: EMPIRICAL RESULTS ON THE BUCHAREST STOCK EXCHANGE

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Abstract. *The downside capital asset pricing model measures the downside beta of risk and is proposed by Estrada (2002) as an alternative to the capital asset pricing model to measure the risk of emerging market investments. The basis for this argument is that investors are not particularly worrisome of upside risk, while downside risk is always a problem. This article attempts to test the validity of D-CAPM in the case of Bucharest Stock Exchange. Research findings indicate no meaningful relationship between downside beta coefficients and ex-post risk premiums of the selected stocks, except the period of crisis.*

Keywords: downside risk; asset pricing; beta; semi-variance.

JEL Codes: G12, C21, C12.

REL Codes: 9B, 11B.

1. Introduction

In the classical theory of portfolio, according to the CAPM model, the expected returns of securities are entirely explained by their market risk measured through beta coefficient. Empirical research over the past decades in developed markets and emerging markets have found in most cases a direct relationship, but not so strong as the CAPM foresees. Authors like Fama and French (1993) or Carhart (1997) have built versions of the CAPM in which returns are explained through some additional factors, such as size, book-to-market or momentum^{effect(1)}.

In 2002, Javier Estrada proposes an original alternative of the CAPM namely Downside-CAPM, based on the assumption that investors are particularly worrisome of downside risk measured through semi-variance. He assumes that variance is not always the best measure of risk, being appropriate only in the case of a normal or at least symmetrical distribution of returns. But this assumption, in most cases, is not accomplished in reality. In addition, the risk occurs only when the returns fall below a certain target which is usually the expected return.

Thus, in the D-CAPM model, the risk of a financial asset i can be estimated based on a sample T through *semi-variance*, which is given by:

$$SV_i = \frac{1}{T-1} \sum \text{Min}[(R_{i,t} - \bar{R}_i), 0]^2 \text{ therefore, } DSR_i = \sqrt{SV_i}$$

where DSR is the downside risk and \bar{R}_i can be replaced by a benchmark return.

In this framework, *cosemivariance* can be estimated by the relationship:

$$coSV = \frac{1}{T-1} \sum \{ \text{Min}[(R_{i,t} - \bar{R}_i), 0] \cdot \text{Min}[(R_M - \bar{R}_M), 0] \}$$

Consequently, the *downside beta* of a financial asset i , the equivalent of beta from the CAPM model, is equal to the ratio between cosemivariance and market's semi-variance:

$$\beta_i^D = \frac{coSV_{iM}}{SV_M} = \frac{M \left\{ \sum \text{Min}[(R_{i,t} - \bar{R}_i), 0] \cdot \text{Min}[(R_M - \bar{R}_M), 0] \right\}}{M \sum \text{Min}[(R_M - \bar{R}_M), 0]^2}$$

Using the above expressions, the relationship of D-CAPM proposed by Estrada (2002) is given by:

$$E(\tilde{R}_i) = R_F + \beta_i^D \cdot [E(\tilde{R}_M) - R_F]$$

According to Estrada, the D-CAPM has a number of advantages over the classical model. First, measuring risk through downside risk is more accurate than using the standard deviation especially in the case of emerging markets, where the deviation of the returns' distribution from the normal law is more pronounced. Second, the method is easy to apply and theoretically well-founded.

This paper aims to study if the downside beta explains better the cross-section of returns than the classic beta in the Romanian capital market. This relationship is tested by regressing the daily risk premiums against the beta and downside beta coefficients of 35 stocks listed on the Bucharest Stock Exchange, over the period of 2002-2008 and also over the subperiods of growth and decline of the Romanian capital market. The results of such an approach are important both for portfolio managers who adopt active strategies and for evaluators who try to quantify the cost of capital.

2. Empirical research

Mao (1970) reported that investors are more concerned about the probability of return being lower than a target rate of return. In other words, investors dislike downside volatility and the main concern for most investors is downside risk, which is the likelihood of returns falling below a target rate of return. Markowitz (1959) also recognized the importance of this argument and suggested the use of semi-variance, or lower partial moment, which is more appealing than variance.

The appropriateness of using downside risk was also demonstrated by Hogan and Warren (1974) and Bawa and Linderberg (1977). They generalized the downside risk (lower partial moment) into the CAPM and developed a mean-lower partial moment capital asset pricing model. Nantell and Price (1979) examined the difference between the systematic risks that are derived in a downside risk framework and a mean variance framework. Their findings depicted that systematic risk in a downside risk framework differs from systematic risk in a mean variance framework if the return distributions are in log-normal form.

A growing body of research has also demonstrated the superiority of systematic downside risk than traditional systematic risk and has encouraged the use of downside beta as an alternative for traditional beta in portfolio management.

For example, Estrada (2003) has drawn a parallel between the standard framework based on mean-variance behavior (MVB), the CAPM, and beta, and an alternative framework based on downside risk; that is, on mean-semi-variance behaviour (MSB), the D-CAPM, and the downside beta. The study was conducted based on monthly returns on 23 developed markets and 27 emerging markets since January 1988. The evidence supports the D-CAPM, and particularly the downside beta, which explains almost 55% of the variability in the cross-section of emerging markets returns. It also shows that mean returns in both developed and emerging markets are much more sensitive to differences in downside beta than to equal differences in beta. Furthermore, unlike the CAPM, the D-CAPM generates a higher average required return for emerging markets than for developed markets.

In 2005, Galagedera and Brooks, while studying the relationship between monthly returns and three downside risk measures proposed by Estrada (2002), Hogan and Warren (1974) and Bawa and Lindenber (1977), for 27 emerging markets (10 Asian, 7 Latin American and 10 African, Middle-Eastern and European) for the January 1987 – December 2004 time period, have found that downside co-skewness⁽²⁾ is crucial in understanding how to

evaluate the financial assets. In general, when beta or any of the three downside beta are included in the CAPM, their associated risk premium is always positive. On the other hand, when downside co-skewness is included with the downside beta, the associated risk premium is negative. However, one should keep in mind that the risk premium is influenced not only by risk factors common to all emerging markets, but a combination of global and local factors.

Rotstein et al. (2005) have analysed the most representative 30 stock listed on the Buenos Aires Stock Exchange for the period of 1st January 1995 to 30 June 2005 and the results were consistent with those obtained by Estrada. However, these results depend on the period under review. During 1995-1998 and 1995-2001 the distribution of returns is characterised by a negative asymmetry, where it appears that the estimation of returns using the D-CAPM leads to results significantly superior statistically compared to CAPM.

Lee et al. (2006) have examined the relationship between size and risk (systematic and unsystematic risk) in a downside risk framework for 30 stock listed on Kuala Lumpur Stock Exchange (Malaysia) for the 1992-2003 time period which covers the boom (1993) and recession (1997) phases of the most recent property shares cycle in Malaysia. First, they found that size is negatively correlated only with the unsystematic downside risk. This supports the assertions of CAPM in which investors only can diversify their unsystematic risk through size investment strategy but would not gain any systematic downside risk reduction via this strategy. Second, the evidence supports that the risk is over-estimated considerably by using variance and, consequently, downside risk is suggested to be used as a risk measure particularly for emerging markets.

Another result in favor of downside risk was obtained by Alles and Murray in 2008 on five emerging markets from Asia: India, Sri Lanka, Malaysia, Thailand and South Korea. After all firms in each market were ranked by total market capitalization, the top 100 are selected from each of those markets considering that they form a reliable market for the emerging market category. Using the downside risk framework proposed by Bawa and Lindenberg (1979) and daily prices adjusted by the dividends paid during June 1st 2003 – May 31st 2006, the authors found a significant relationship between downside beta and returns. This result is similar to that previously reported for U.S. companies (Ang, Chen and Xing, 2006), and for U.K. companies (Pedersen and Hwang, 2007). The same test was applied after the stocks were grouped into five portfolios in descending order of annual estimated beta. Results confirm that, in all individual years and over the full study period, downside risk is rewarded in the cross-section of individual company returns, but the extra contribution offered by negative beta is however less than might be expected. An implication is that there are aspects of non-systematic risk that are priced in these markets, and that are not captured by negative beta.

Cheremushkin (2009) considers that the D-CAPM framework suggested by Hogan and Warren (1974), Bawa and Lindenberg (1977) and „improved” by Estrada (2002-2003) is inconsistent with the diversification purposes and with the portfolio theory. The argument will be the next: though the semi-variance measures are quite useful and correct, the formula for calculating the cosemivariance is a wrong statistics that cannot represent real dependencies between the two assets. This measure ignores the ability of upside returns of one asset to hedge the downside returns of another asset in a portfolio. As a consequence, the downside beta is a nonsense measure and, therefore, D-CAPM should be abandoned.

3. Data and methodology

The research was conducted on a sample of 35 companies listed on the Bucharest Stock Exchange (BSE) for which the closing prices are gathered over the period from January 2002 to December 2008. The 35 companies are the most representative for the BSE in terms of liquidity and market capitalisation. The sample did not include the Financial Investment Companies, since they hold in their portfolio shares in other companies listed on BSE. As a *proxy* measure of market portfolio we use BET-Composite Index. Starting at closing prices and index's quotation we calculated the daily logarithmical returns. The lack of data did not

make possible the inclusion of dividends when calculating the stocks and market index returns, this having the effect of a slight displacement of beta coefficients towards zero. The interest rate on Treasury certificates was used as risk-free rate. Its daily average, over the period under study, is 0.000505, corresponding to an annualized value of 12.625%.

We studied the relationship between returns and beta, respectively downside beta on individual stocks over the whole period 2002-2008 and distinctively over the 2002-2006 subperiod of sustained growth of the market and over the 2007-2008 subperiod of decline, due to financial crisis. For each stock, for all three periods, average returns (\bar{R}_i) were determined and beta ($\hat{\beta}_i$) and downside beta ($\hat{\beta}_i^D$) parameters were estimated. In each of these periods we estimated and tested the significance of parameters of the following econometric models:

$$\bar{R}_i = a_0 + a_1 \hat{\beta}_i + \varepsilon_i$$

$$\bar{R}_i = a_0 + a_1 \hat{\beta}_i^D + \varepsilon_i,$$

where $i = \overline{1,35}$. The CAPM is valid ex-post if the null hypothesis is accepted:

$$H_0 : \begin{cases} a_0 = R_F \\ a_1 = \bar{R}_M - R_F \end{cases},$$

where R_F is the rate of return on a risk-free asset for the tested period.

Testing this hypothesis, with double restriction, will be accomplished through the Wald test. Also the relationship's intensity between the average return and beta, respectively downside beta will be studied through the coefficient of determination. If the residuals of the models are heteroskedastic the correction proposed by White (1980) will be used, and if they are also correlated, the correction proposed by Newey and West (1987).

It is important to note that the CAPM model cannot be virtually tested because it is built in terms of expectations and not in terms of achievements and because it is impossible to identify the „true” market portfolio M. Actually, through this empirical approach we study ex-post to what extent the returns on the Romanian market are better explained by downside beta than by traditional beta.

4. Empirical results

Before we show the test results, we consider that a descriptive analysis of the values of beta and downside beta coefficients over the whole period and also over the two contains subperiods of market growth, respectively market decline is important. The Appendix are the average returns and the values of these coefficients for each company.

The distribution of beta and downside beta coefficients

Table 1

		Coefficient's interval of variation			
		[0 - 0.5)	[0.5 - 1)	[1 - 1.5)	[1.5 - 2)
<i>Period 2002 - 2008</i>					
Number of cases	β	11	21	3	-
	β^D	3	19	13	-
<i>Period 2002 - 2006</i>					
Number of cases	β	15	18	1	1
	β^D	4	21	9	1
<i>Period 2007 - 2008</i>					
Number of cases	β	11	9	15	-
	β^D	7	10	18	-

In Table 1 we see that over the period 2002-2008 only three companies have a beta coefficient greater than 1 while, in the case of downside beta coefficients, their number increases to 13. The average beta is 0.67 while the average downside beta is 0.91, which is more closer to 1. Actually, the market beta coefficient is by definition equal to 1. Given that the sample consists on the most representative stocks on the Romanian market, theoretically, if it were to calculate the beta coefficient as a weighted average it should be as close to 1. In the first subperiod, 2002-2006, the average values are 0.55, respectively 0.87, and in the second subperiod 0.78, respectively 0.94. The analysis of these values, but also the data from Table 1, shows that in all cases the downside beta coefficients are greater than beta coefficients, their values increasing during the financial crisis, respectively during the manifestation of market risk.

**Empirical results regarding the relationship between average returns and beta,
respectively downside beta coefficients**

Table 2

The model	Estimated coefficients	R ²	Theoretical values	Wald Test ^(a)
<i>Period 2002 - 2008</i>				
$\bar{R}_i = a_0 + a_1\hat{\beta}_i + \varepsilon_i$	$\hat{a}_0 = 0.000789^*$ $\hat{a}_1 = -0.000169$	0.005618	$a_0 = R_F = 0.000505$	0.489
$\bar{R}_i = a_0 + a_1\hat{\beta}_i^D + \varepsilon_i$	$\hat{a}_0 = 0.001056^*$ $\hat{a}_1 = -0.000422$	0.032365	$a_1 = \bar{R}_M - R_F = 0.000294$	0.155
<i>Period 2002 - 2006</i>				
$\bar{R}_i = a_0 + a_1\hat{\beta}_i + \varepsilon_i$	$\hat{a}_0 = 0.001397^*$ $\hat{a}_1 = 0.000443$	0.030986	$a_0 = R_F = 0.000509$	0.0038
$\bar{R}_i = a_0 + a_1\hat{\beta}_i^D + \varepsilon_i$	$\hat{a}_0 = 0.001502^*$ $\hat{a}_1 = 0.000858$	0.03155	$a_1 = \bar{R}_M - R_F = 0.00139$	0.0481
<i>Period 2006 - 2008</i>				
$\bar{R}_i = a_0 + a_1\hat{\beta}_i + \varepsilon_i$	$\hat{a}_0 = 0.000112$ $\hat{a}_1 = -0.002339^*$	0.291210	$a_0 = R_F = 0.000495$	0.528
$\bar{R}_i = a_0 + a_1\hat{\beta}_i^D + \varepsilon_i$	$\hat{a}_0 = 0.000661$ $\hat{a}_1 = -0.002541^*$	0.346285	$a_1 = \bar{R}_M - R_F = -0.002495$	0.857

(a): probability of acceptance of null hypothesis; *significantly at a 5% level.

In Table 2 we find the empirical results of the regression of average returns against the beta coefficients over the whole period 2002-2008 and over the 2002-2006 and 2007-2008 subperiods. It notes that over the whole period there is no statistically significant relationship, regardless of how the market risk is measured. The returns variation is explained by beta coefficients in percentage of 0.5% and by downside beta in percentage of 3%. The same statistically insignificant relationship was found in the first subperiod, 2002-2006, of the market growth, when the two measures of market risk explain only 3% of the variation in returns.

In the second subperiod, 2007-2008, of manifestation of market risk, the relationship is statistically significant. In this case, the returns variation on the Romanian capital market is explained by beta coefficient in percentage of 29% and by downside beta in percentage of 35%.

These results are sustained also by the punctual estimations of the two models parameters. Thus, over the whole period and the first subperiod, the corresponding parameters of risk premium do not significantly differ from zero, while the theoretical market risk premium was positive. The low probabilities of acceptance of the null hypothesis of the Wald Test confirm this result.

In the second subperiod the punctual estimations of the two models are getting closer to the theoretical values and this is especially when the downside beta is used as a measure for the market risk. The probability of acceptance of the null hypothesis of the Wald Test is 0.528 when the market risk is measured by the classic beta and 0.857 in case of downside beta.

The weak relationship between returns and the two measures of market risk, found on the Romanian capital market, has several explanations. First, the tests carried out on individual stocks and not on constructed portfolios have a low degree of efficiency due to a degrading effect of residual variation and estimation errors of beta parameters. Grouping stocks into portfolios, both causes are diminished because the residual risk will tend towards zero and the beta's displacements will be compensated to some extent. Such an approach is difficult to put into practice on the Romanian market, due to the small number of securities which are listed. Second, the estimation of beta coefficients raises serious econometrical problems, such as: the choice of index as a *proxy* measure for the market's portfolio return; the asynchronism of rate of return and low liquidity, which induce an artificial displacement of them toward zero; the frequency of calculating the returns (daily, weekly or monthly) which leads to „*intervalling-effect bias*”⁽³⁾. Third, there may be some other variables, besides the market risk, which affects the returns on financial assets, such as size or book-to-market and they should be considered when it comes to explain the variation of returns.

5. Conclusion

The aim of this study is to see whether downside beta is a more appropriate measure of market risk than the classic beta on the Romanian capital market. For this purpose, an empirical study was conducted on a representative sample of 35 companies listed on the Bucharest Stock Exchange (BSE). The relationship between the assets returns and the market risk measured through beta, respectively downside beta coefficient was tested over the whole period 2002-2008 and over the 2002-2006 and 2007-2008 subperiods.

Comparing the two measures of market risk, in all cases, we can observe that downside beta coefficients are greater than the beta coefficients, their values increasing during the financial crisis, of the manifestation of market risk. The relationship between return and market risk, regardless of how the market risk is measured, is not statistically significant, except the period of crisis. In this subperiod there is a strong probability of validation of the D-CAPM model.

The results of this study argue in favor of further research of the relationship between returns and downside beta more detailed, by refining the methodology of the study. Measuring the market risk through downside beta may be an alternative to be taken into account, but in its estimation we will have to consider a number of econometrical aspects.

Notes

⁽¹⁾ Jegadeesh and Titman (1993) showed that those who earn on market remain winners and those who lose remain losers. This anomaly is known as „momentum effect”.

⁽²⁾ A statistical measure that calculates the symmetry of a variable's probability distribution in relation to another variable's probability distribution symmetry. All else being equal, a positive co-skewness means that the first variable's probability distribution is skewed to the right of the second variable's distribution. In finance, co-skewness can be used as a supplement to the covariance calculation of risk estimation. An investor would prefer a positive co-skewness because this represents a higher probability of extreme positive returns in the security over market returns.

⁽³⁾ This intervalling-effect bias was highlighted by Levhari and Levy (1977), Smith (1978) or Hawawini (1983).

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Appendix

Asset	\bar{R}_i	$\hat{\beta}_i$	$\hat{\beta}_i^D$	\bar{R}_i	$\hat{\beta}_i$	$\hat{\beta}_i^D$	\bar{R}_i	$\hat{\beta}_i$	$\hat{\beta}_i^D$
	<i>Period 2002-2008</i>			<i>Period 2002-2006</i>			<i>Period 2007-2008</i>		
SNP	0.00088	1.36683	1.36189	0.00214	1.50331	1.50273	-0.00238	1.24404	1.27929
BRD	0.00080	1.20342	1.21545	0.00177	1.20772	1.18446	-0.00174	1.25746	1.25160
TLV	0.00128	0.63108	0.67379	0.00256	0.82996	0.97409	-0.00139	0.38868	0.44688
ALR	0.00024	0.84658	1.04417	0.00141	0.67712	0.98280	-0.00265	1.00888	1.10908
PCL	0.00160	0.38197	0.58729	0.00170	0.52707	0.78544	0.00133	0.25726	0.46667
ATB	0.00087	0.94521	0.98832	0.00247	0.75322	0.92704	-0.00321	1.10769	1.18513
MPN	0.00089	0.32727	0.55425	0.00131	0.27125	0.46797	-0.00014	0.38212	0.61553
PPL	0.00207	0.19681	0.38717	0.00268	0.08099	0.39828	0.00044	0.28382	0.35566
COS	0.00099	0.48389	0.72636	0.00231	0.16653	0.35289	-0.00256	0.73483	0.99890
SCD	0.00055	0.72270	0.86825	0.00223	0.52124	0.66342	-0.00360	0.89778	1.01911
CMF	0.00198	0.19734	0.38642	0.00200	0.20966	0.52682	0.00190	0.18645	0.28027
OIL	0.00081	0.86216	1.06748	0.00153	0.74176	0.92414	-0.00098	0.99016	1.19865
BIO	0.00108	0.90125	1.13991	0.00268	0.42782	0.76646	-0.00288	1.33957	1.41954
TUFE	0.00019	0.60334	0.94407	0.00114	0.04820	0.44120	-0.00217	1.12140	1.33411
PTR	0.00182	0.92878	1.16618	0.00248	0.72176	1.10170	0.00016	1.13600	1.24629
AZO	0.00058	1.01583	1.25934	0.00069	0.81668	1.14864	0.00022	1.22279	1.37417
IMP	0.00036	0.95087	1.22481	0.00259	0.66151	0.89678	-0.00462	1.20298	1.47632
SOCP	0.00068	0.46174	0.69629	0.00111	0.47692	0.88575	-0.00053	0.44020	0.56779
SNO	0.00086	0.70833	0.93983	0.00171	0.34560	0.73003	-0.00134	1.04075	1.09769
OLT	0.00024	0.90730	1.15301	0.00131	0.81833	1.16681	-0.00231	1.00828	1.16447
COMI	0.00031	0.78140	1.08575	0.00151	0.22303	0.60953	-0.00274	1.29121	1.45046
APC	0.00118	0.59470	0.81845	0.00182	0.53583	0.97992	-0.00045	0.65251	0.69255
TBM	-0.00011	0.71327	0.91835	0.00174	0.38980	0.61305	-0.00475	0.99279	1.12979
ART	0.00114	0.85748	1.20842	0.00278	0.63851	1.18341	-0.00294	1.05448	1.21332
CMP	0.00017	0.96174	1.26376	0.00201	0.77102	1.09493	-0.00446	1.12242	1.40032
ELJ	0.00009	0.34534	0.49747	0.00069	0.44661	0.70059	-0.00140	0.25049	0.35980
STZ	0.00125	0.64135	0.89031	0.00213	0.70886	1.16938	-0.00096	0.57864	0.69589
EPT	0.00017	0.82375	1.24585	0.00100	0.61958	1.16406	-0.00186	1.02946	1.32884
UAM	0.00118	0.43044	0.75663	0.00191	0.36487	0.85201	-0.00061	0.49455	0.68299
ZIM	0.00009	0.27492	0.55873	0.00018	0.23140	0.71178	-0.00012	0.32341	0.45791
PEI	-0.00022	0.46799	0.75906	0.00120	0.38820	0.79760	-0.00379	0.52120	0.72429
MEF	-0.00054	0.31572	0.54604	-0.00039	0.37256	0.71279	-0.00100	0.25931	0.44188
SRT	0.00015	0.54465	0.88082	0.00098	0.54113	0.98752	-0.00185	0.55506	0.81972
ARM	0.00005	0.53762	0.86173	0.00106	0.59214	1.02360	-0.00248	0.47869	0.77467
ECT	-0.00002	0.61229	0.86906	0.00097	0.59983	0.98540	-0.00251	0.61913	0.79584

CORPORATE FINANCING BY BOND ISSUE ON THE ROMANIAN CAPITAL MARKET

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***Abstract.** Providing financing to companies is a challenge for the financial system, which needs to demonstrate its usefulness by allowing these companies to gain access to available financial resources. This paper aims to analyze the process of financing through corporate bonds issue on the Romanian capital market in terms of their content, value and investor payoff on the one hand, but also to identify the Romanian capital market's capacity to provide financial resources during the financial crisis that affected the Romanian economy since the second half of 2008.*

Keywords: corporate bonds; capital market; România, financial crisis.

JEL Code: G1.

REL Code:11B.

1. Introduction

Raising funds by issuing corporate bonds on the capital market in Romania started in late 1996, and the first initiatives in this direction were not successful. This was due to the unfavourable economic climate, very high inflation rates but also the bonds issuers' fear to access the mechanisms of a less known market segment and the small number of investors on the market.

2. Characteristics of corporate bonds issues on the capital market in Romania

The first corporate bond issue on the Romanian capital market was made in 1997 by the Siderca Calarasi steel mill (majority state-owned company). This issue, with a nominal value of ROL 16,400, offered an annual interest rate of 57% and a call premium of 3600 ROL which meant a return of 63.51%. With a maturity of three years, until 2000, in a time when inflation was just beginning to climb down from 154% in 1997 to values of 60% and 45% by the end of this period, with interest on interbank deposits (BUBID) between 26% and 101.5% and rate interest on deposits (BUBOR) reaching values of over 150%, this bond issue was considered a failure, with a subscription level of 87% (305,000 of the total of 350,000 bonds offered), thus not fully subscribed. Funds raised by this corporate bond issue were intended for large-scale investments meant to streamline the steel plant. The 50,000 RON helped complete the investment program, but the company's financial situation has deteriorated to the point that they could not make timely interest payments and upon reaching the bonds' maturity the company owed investors the value of the bonds issued and 80,000 RON in interest.

Analyzing the next time frame we conclude that the failure of the Romanian economy to stabilize at the macro economical level and the failure of the first initiatives to raise funds by issuing bonds has led to a total lack of issuers who would take advantage of this funding opportunity.

Financing projects by issuing corporate bonds resumed in 2000, when the capital market was marked by two events: firstly the resounding success of International Leasing's bond issue and secondly the failed issue by Bacchus Buzau.

Between 2-15 May 2000 International Leasing made a public issue of convertible bonds (1:5). The first public issue of bonds by a private company in Romania, it was successfully completed in November 2000, with all bonds offered subscribed.

INTERNATIONAL LEASING Company SA made a public offer for sale of a total of 88,000 convertible, guaranteed bonds, with a nominal value of 25,000 ROL/bond and an interest rate of 60% per annum, payable quarterly, for a period of 18 months.

Following this public convertible bond issue International Leasing Company became an open company, since at the bonds' maturity their owners could exercise their option to convert bonds into shares of the company with a conversion rate of five shares for each bond held.

The particularity of this offer was a fact that no person or company could not acquire bonds issued by SC International Leasing S.A. if, as a result of such acquisition, such person or entity owns more than 30% of total bonds issued and unredeemed by the issuer.

With a relatively small amount, only 220,000 RON, and a short maturity for this category of financial instruments, International Leasing bonds enjoyed the attention of investors but the request to admit these bonds for trading on the Bucharest Stock Exchange was rejected at the time.

The second public offering of corporate bonds was held in autumn 2000. The value of the bonds issued by Buzau Bachus was USD 1.55 million, much higher than the leasing company, and was completed unsuccessfully due to the low subscription level - around 60%. The bonds issue cancellation led to the return of the funds rose during the offer.

The public offering of corporate bonds by this company has brought a first in the Romanian capital market - the interest rate of these bonds was linked to the government bonds yield, to which it added 20%, a more flexible way to maintain bond yields at market levels. This coupon calculation method should have attracted investors, but the decline in the interest rate of government bonds during the offer resulted in low investor interest for these bonds.

Another possible explanation for the failure of the Bacchus bonds issue is that the economic sector in which the company carried out its activity was less attractive than the leasing market where the first corporate bond issue of that year originated from. Moreover, not issuing convertible bonds made Bachus Buzau less interesting because it didn't offer the opportunity for investors to become owners in the company.

Unfortunately, the corporate bond market has evolved very slowly in the following years. Romanian companies were reluctant to use this method – one widely popular in developed capital markets.

Only in 2002 were other corporate bonds issued: LUCSIL SA and INTERNATIONAL LEASING SA, the later successfully completing its second foray into fundraising on the capital market, this time with a larger offer of 1.5 million RON in November, of non-convertible bonds.

In 2003 three other issuers turned to the Romanian capital market to raise money, but of the three public offerings of corporate bonds only two were completed successfully: that of another leasing company – TBI Leasing and of the real estate developer IMPACT SA, which financed a residential real estate project in Constanta – Boreal.

The third bond offering, PREFAB SA Company, which intended to raise 1.65 million RON, was terminated unsuccessfully. The bonds had a maturity of two years and an interest rate of 6.5% which was to be linked to the USD/RON exchange rate. The manager of this company attributed the failure to the unfavourable moment when the offer was made. On the other hand, financial brokers considered that the lack of investor interest for this offer was due to insufficient information about the issuer and its financial and economic outlook and that institutional investors, the category of investors who subscribe in general most of the public offerings of bonds, preferred placements which were not indexed to a currency.

While the first successfully concluded corporate bond issues belonged mostly to leasing companies, the year 2004 brought a new category of issuers to the Romanian capital

market - banks. Three of the four bonds issues in 2004 were made by banks. These issuers accomplished several firsts: the first nominal value larger than 100 RON (BRD set the nominal value of 2500 RON), the value of an offer for the first time exceeded 10 million RON and even 100 million RON, offer made by Raiffeisen Bank, and have mainstreamed variable coupons, whose value depended on the interbank interest rate and a fixed or adjustable margin.

In our opinion the experience of International Leasing company, which has demonstrated that financing by issuing bonds under conditions closely matching the market, is a viable option for a company in search of funds, but also the quantitative and qualitative leap made by the public offerings of bonds by the three banks have played an important role in driving public offerings of bonds market with positive effects on the number of offers made during 2005-2006.

Although the number of bond issues increased slightly, driving an upward trend, it should be noted that the industries the issuers came from were still not diversified, as they remained primarily banks and leasing companies.

After the successful offering made by IMPACT SA, another company of real estate area tried to raise funds for their real estate projects from the capital market – SC HERASTRAU REAL ESTATE INVESTMENTS SA. Financial intermediaries considered the offer of 250,000 bonds with a nominal value of RON 100, a three years maturity and a dependent variable interest rate on interbank interest rate (EURIBOR6M + 7.5%) as a bold initiative, taking into account that the issuer had no market history, being established in the year they issued the offer, and for that period the company reported losses.

Despite the interest rate offered several percentage points above that of other bond issues and of bank deposits in euro, the offer was closed unsuccessfully. Interinvest Capital Company manager said (Financial Week of January 31, 2006) that the failure was due primarily to the fact that the issuer, then newly established, had failed to convince the investors about the prospects of its projects and the information provided in this regard was not sufficiently detailed.

The year 2005 brought again INTERNATIONAL LEASING company on the Romanian bonds market – for the third time the issuer had convinced investors to finance its activities, the value of the bonds offering being more than 4.8 million RON.

Upward trend of the corporate bonds offerings number continued in 2006 when seven bonds were offers but two of them were concluded without success.

We note that in 2006 the banks were majority among the issuers of corporate bonds with the same success as in the previous years.

The two offers closed unsuccessfully were from NAVOL SA Oltenia and the financial intermediary SSIF BROKER SA. This was the first financial investment services company that took such an initiative.

The bond issue carried out by the shipyard in Oltenia was worth 1.7 million RON, the bonds were convertible into shares in the ratio of two shares per one bond and the offer was directly addressed to the company shareholders.

The BROKER SA bonds offering was represented by 10 million bonds with a nominal value of 2.5 RON, with a total value of 25 million RON. The securities issued by financial intermediary, convertible into shares, with an interest rate of 6% per annum and a maturity of two years, were not successful on the market even though the issuer had announced profits for the previous financial year and was quoted at Bucharest Stock Exchange since 2004. Compared to 70% as would be necessary to declare the offer successfully closed, the investors had subscribed only 3% of it.

The most important event of bonds public offerings market in 2006 was the bonds offering of the International Bank for Reconstruction and Development with a total value of 525 million RON – the first issue of an international body in the capital market in Romania.

Unfortunately the upward trend recorded during 2002-2006 period on corporate bonds market stopped in 2007 when on the Romanian bonds market was launched a single successful bonds offer and that of an international body not of a Romanian company. The issuer was the European Investment Bank, with a total value of 300 million RON and the issue was listed on the Bucharest Stock Exchange in the international debt securities quote.

A company that in the spring of 2007 had shown its intention to issue bonds was TELEMobil holding mobile operator Zapp, who intended to obtain 125 million dollars needed for future investments.

The bond issue was seen as a rapid and efficient method to attract new financial resources to be used for general development of the company and in particular to extend the network and launching new services. Scheduled to be launch in early July 2007, the issuing process was stopped temporary by the decision of Telemobil SA together with ABN Amro, following a global credit market collapse that occurred in the same period, said Zapp officials (Financial newspaper, 06 September 2007) in September 2007.

The year 2008 brought no bonds offer on capital market in Romania, fact motivated in part by the degradation of international financial climate that had tightened financing conditions, but we cannot note the lack of interest for the Romanian issuers for this financing instrument which has proved its worth for decades on the mature capital markets.

Triggering global financial crisis and its first effects in the Romanian economy has discouraged companies to seek financing by issuing bonds despite the experience of the developed capital markets that shown that during the financial crisis the cost of financing is lower on the capital market and the companies can have access to financial resources easier than in the banking system entered in contraction. Unfortunately the Romanian companies have not learned this lesson and the only issuer of corporate bonds on the Romanian market was the European Bank for Reconstruction and Development which borrowed, in February 2009, 130 million RON.

3. Analysis of corporate bonds issues in Romania in the period of 1996-2009

The attractiveness of raising funds from the capital market by issuing bonds was lifted on the capital market in Romania mainly due to financial and economic instability that characterized the Romanian economy, the lack of financial education and the ignorance of the potential issuers and the investors about these financial instruments and the poor development of the Romanian capital market who wasn't been able to provide liquidity and thus attractiveness of these financial instruments.

To do an analysis of financing by issuing corporate bonds we systematized in Annex No. 1 the main features of all corporate bond issues successfully completed on the Romanian capital market so far, which allows some conclusions on the development of bond market.

A first observation to be made is that throughout the period under review the number of public bonds offerings remained very low compared to other capital markets in the region which shows the inability of the Romanian capital market to attract issuers. Also, as noted previously, not all issues of bonds brought to market have been concluded successfully.

Analyzing the evolution of the annual amount of the corporate bond issues as the figures shows in the graph number 1, we note the constant low level of funding obtained by companies that have accessed this way of financing, moreover in the past three years their value continuously lowered and being zero in the year 2008.

The ascendant trend registered after 2002, both in issue values and number, reached its still unmatched peak in 2006, with five issues and a value larger than half of all corporate bond issues in the last thirteen years.

Foreign issuers make up for the largest part of the overall issues' value: BIRD, BEI and BERD total 955 million RON, more than half of the 1599.85 mil. RON rose so far by the companies which obtained financing through bond issues.

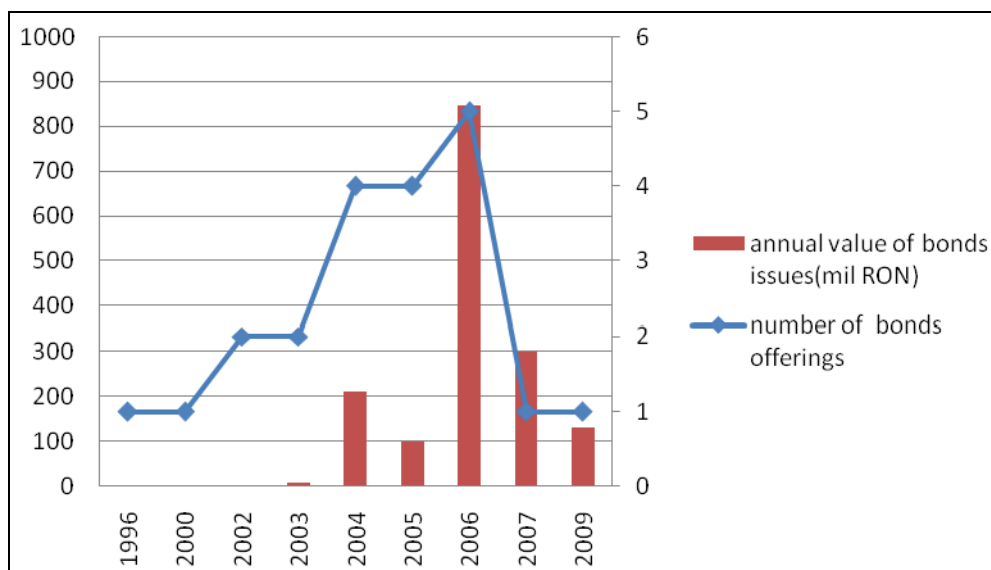


Figure 1. The amount and number of issues of corporate bonds on the capital market in Romania between 1996 and-2007

Regarding the subscription levels, we must observe that not all 20 public bond offerings declared successful were 100% subscribed – six of them were undersubscribed.

Another observation concerns the industries of the companies which have so far issued bonds on the Romanian capital market: most came from banking – 7 Romanian issuers with 391,637 millions RON and 3 foreign issuers with 955 millions RON representing 84, 17% of all funds raised. The second category of issuers who have successfully financed through bonds issue is that of leasing companies – with a much smaller value than issuers from banking: 18,285 millions RON, less than 2% of total issue value. Only one issuer has come so far from real estate development – an industry very well represented in other markets – with a smaller issue value of 5 millions RON. A second attempt at financing from this industry has failed to convince the investors, as we have shown above.

The selling price of bonds issued so far was heterogeneous, ranging from 2 and 2.5 RON to 36,000 RON without decisively influencing the offering's success on the market. Generally, the prices of bonds from banking issuers were higher, larger than 1000 RON, targeted mainly for institutional investors.

We have remarked about the interest rate that of the 20 bonds issues, ten have chosen a fixed rate, and the other ten have opted for a variable rate, linked in most cases to the inter-bank market interest rate. The timeline shows that variable rate issues were favoured after 2003. As we have discussed previously, a chronological comparison of the absolute value of the interest rate cannot be made without taking into consideration the evolution of the inflation rate over the same interval.

4. Conclusions

In our opinion, the particularities and detailed analysis of corporate bond issues show that although investors have repeatedly declared the Romanian capital market to be poor in investing opportunities, and the Bucharest Stock Exchange has made efforts to promote these financing instruments, Romanian issuers have used them only rarely and in small values, and have been absent from the primary public bond offerings sector in the last two years. We consider the Bucharest Stock Exchange's role in this trend has been unfortunately negative, as it has imposed rigid access requirements for listing to this financial instruments category, and refused access to several of the few issuers the investors deemed of interest. Thus, it has contributed to the bonds' low liquidity and a very weak secondary market, with very small

transaction values. An example of this is the refusal of International Leasing's request for listing of its bonds – an issuer well liked by investors, which was only admitted for listing on the BSE at its third bond issue.

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Annex nr.1

Current number	Year	Issuer	Number of bonds	Price (RON)	Subscribed bonds	Value (mil RON)	Settling day	Interest rate (%)	Type of bond
1	1996	Siderca SA	315,000	2	223.650	0,63	3	57	Convertible (4:1)
TOTAL			315,000	-	223.650	0,63	-	-	-
1.	2000	International Leasing SA	88,000	2,5	88.000	0,22	1,5	60	Convertible, guaranteed
TOTAL			88,000	-	88.000	0,22	-	-	-
1.	2002	Sticlă Lucsil SA	74,242	3	74.242	0,2227	1	5	Convertible (1:15), unguaranteed
2.		International Leasing	600,000	2,5	600.000	1,5	2	42	Unconvertible, guaranteed
TOTAL			674,242	-	674.242	1,7227	-	-	-
1.	2003	TBI Leasing	980,000	2,5	980.000	2,45	3	6,5 (in euro)	Unconvertible, guaranteed
2.		Impact SA	49,800	100	49.800	4,98	2	Variable LIBOR6M (pfor\$) + 4	Unconvertible, guaranteed
TOTAL			1,029,800	-	1.029.800	7,43	-	-	-
1.	2004	Raiffeisen Bank	240,000	500	240.000	120	3	$[(BUBID6M + BUBOR6M)/2] + 0,5$	Unconvertible, unguaranteed
2.		BRD	20,000	2.500	20.000	50	3	BUBOR6M	Unconvertible, unguaranteed
3.		Finansbank	35,000	1.000	35.000	35	3	$(BUBID6M + BUBOR6M)/2 + 0,75$	Unconvertible, unguaranteed
4.		BCR Leasing	75,000	100	75.000	7,5	3	6 (la euro)	Unconvertible, guaranteed
TOTAL			370,000	-	370.000	212,5	-	-	-
1.	2005	SC Hexol Lubricants SA	15,000	100	13.013	1,301	2	$(BUBID6M + BUBOR6M)/2 + 2,50$	Unconvertible, guaranteed

Current number	Year	Issuer	Number of bonds	Price (RON) (10.000 USD)	Subscribed bonds	Value (mil RON) (24.100.000 USD)	Settling day	Interest rate (%)	Type of bond
2.		SC Banca Transilvania SA Cluj-Napoca	2,500	36.00	2.410	86,76	5	LIBOR6M + marjă ajustabilă	Convertible, unguaranteed
3.		SC Avicola București SA	3,120,000	2,5	3.120.000	7,8	3	(BUBID6M + BUBOR6M)/2 + 4	Convertible, unguaranteed
4.		S.C. Internațional Leasing SA București	48,000	100	48.000	4,8	4	BUBOR6M+2,25	Unconvertible, guaranteed
TOTAL			3,435,500		3.183.423	100,661	-	-	-
1.	2006	PROCREDIT BANK	70,000	500	80.500	40,25	3	8,5	Unconvertible, unguaranteed
2.		Banca Carpatina SA Sibiu	400,000	100	367.992	36,8	3	(BUBID6M + BUBOR6M)/2 + 1,75	Unconvertible, unguaranteed
3.		IFN FORTUNA LEASING	28,000	100	18.150	1,815	4	BUBOR6M + 3,00	Convertible, unguaranteed
4.		Banca Comercială Română	2,000,000	100	2.428.278	242,827	3	7,25	Unconvertible, unguaranteed
5.		Banca Internațională pentru Reconstrucție și Dezvoltare	525,000	1.000	525.000	525	3	6,5	Unconvertible, unguaranteed
TOTAL			3,023,000	-	3.419.920	846,692	-	-	-
1.	2007	Banca Europeană de Investiții	3,000,000	100	3.000.000	300	7	7	Unconvertible, unguaranteed
TOTAL			3,000,000	-	3.000.000	300	-	-	-
1.	2009	Banca Europeană pentru Reconstrucție și Dezvoltare	13,000	10,000	13,000	130	10	11,25	Unconvertible, unguaranteed
TOTAL			13,000	-	13,000	130	-	-	-
TOTAL GENERAL			11,948,542		12.002.035	1599,8557	-	-	-

ETHICS AND RESPONSIBILITY IN BANKING. OPINIONS FROM THE ROMANIAN MARKET

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***Abstract.** The paper presents the opinions of three banks present on the Romanian market (The Romanian Commercial Bank – BCR, Bancpost and Raiffeisen Bank) on ethical and social responsibility issues, resulted from a focus group organized by the authors. The issues are set in the context of the current financial crisis and its impact on the interaction of the banks with the community.*

Keywords: ethics; banking; responsibility; Romania.

JEL Code: G21, M14.

REL Code: 11C.

1. Introduction

Ethics is an important issue, especially in the context of a world altered by deregulation, technological advance, scandals and crises „starting from trade, banks, insurance to the managers' false expenses” (Dalla Costa,1998) all the more so when trust is the main driver for success, such as in the world of finance. Defined as a study of morality and establishing the criteria for moral evaluation, ethics has been a concern of the financial system since its existence, overlapping with morality, righteousness and economic rationality with a sense of self-interest, represented by the commercial side of banking.

Business ethics may be divided into collective and individual ethics, as it relates to the external environment. Individual ethics, as the building block of collective ethics, is extremely important in a society in which individual interest is often placed before the greater good of the community. Therefore, collective ethics also involves the issue of social responsibility, considered to be a direct link of the activity of the bank in its relation to the community. Nowadays the banks acknowledge the fact that the internal activity (even limited to the financial system) cannot be separated from the external macroeconomic activity of the business world, both national and international. It has been determined that companies that are socially responsible produce higher value for their customers, whether from the contribution to the community, care for the environment or other activities related to a best practice of collective ethics.

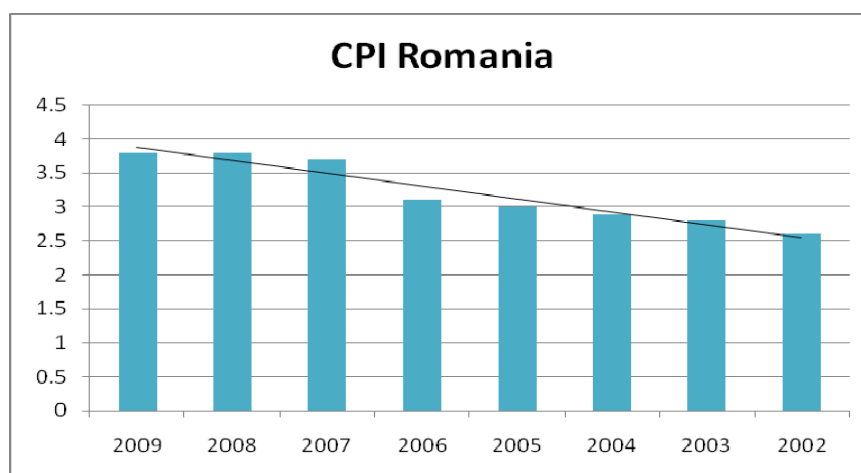
2. Ethics and responsibility in banking

The main issue in business ethics and particularly in banking ethics is trust. ”The bankers' role is one of stewardship based on trust“ (Green, 1989), thus winning the confidence of the investors in a system meant to preserve and increase their capital.

An industry or a company that loses the trust of its customers and of the community is, in the long term, doomed to failure. Unfortunately, the business world focuses on the impairment of ethical principles, instead of constructively creating a business environment that facilitates and rewards an ethical conduct. However, the market has the means to penalize

the companies that do not adhere to an appropriate action, especially the kind that does not observe collective ethics. Starting from 1999, the Dow Jones Sustainability Index (DJSI), related to the companies involved in sustainable practices, provides the suitable instrument for an analysis of the private sector, with the caveat that just listed companies be considered. The DJSI considers three aspects pertaining to the analysis of a company in terms of sustainability: (1) environmental impact; (2) economic impact (including corporate governance); and (3) social impact (including philanthropy and social capital). Thus, potential investors and clients should consider the performance of Socially Responsible Investments, given their socially responsible activity, as well as their strategy to implement sustainable business practices (McKinsey et. al., 2000, Greene, 2003, Finch, 2005), allowing for a reward and/or a penalty.

Due to the need for high trust in money related businesses and to the erosion of trust in past years, triggered by scandals and crises, the financial world is confronted with a trend of implementing ethical codes, either at a local, national or international level. International institutions, such as the International Monetary Fund, the World Bank or the Basel Committee, have created standards and codes meant to increase the trust of the „Main Street” in „Wall Street”. Examples of such codes are: Principles for the Supervision of Banks Foreign Establishment – the Basel Concordat), endorsed by the Basel Committee for the Supervision of Banks in 1983 (updated by Basel II in 2004); the Code of Good Practice on Transparency in Monetary and Financial Policies, endorsed by the International Monetary and Financial Committee in 1999. Apart from these widely accepted standards, each bank has its own code of ethical conduct, which includes the values and beliefs of the bank, to be shared by all employees. Evidently, there is the need for clarity in the communication of key ethical values, as well as the need for proper implementation of the mechanisms meant to ensure that action taken is in accordance to these values. One of the solutions for this issue has been the employment of „ethical officers”, whose job description is to control, train and advise the employees on ethical issue they may encounter in their daily activities. The way in which the staff perceives the emphasis the management places on ethical conduct is of crucial importance for the proper implementation of an „ethical system” in a bank.



Source: Transparency International, 2009.

Figure 1. Romania's corruption perception index as of november 2009

The place held by Romania among the most corrupt countries in Europe seems to affect also the financial world, although many claims have been made that most of the corruption exists in the public administration and services sector, rather than in private companies. However, a corrupt environment increases the need for banks to adhere to a set of values meant to ensure a steady behavior in practice. On the other hand, the rather secure environment for doing business in Romania has resulted in the fact that issues such as money laundering have not been on the front page of ethical problems related to banking. The lack of

connection with controversial figures, an attitude maintained in most of Romania's banks, has helped preserve a good image, mostly after the events of the early 1990's with bankruptcy cases in a series of important banks, as well as Ponzi schemes. Another important issue to be considered is the fact that most banks present on the market are either multinational entities or part of transnational agreements, therefore in need of compliance with several types of regulations and regulators, as well as local culture in their various jurisdictions. A series of ethical issues with which multinational banks abroad have been confronted, such as: financing arms trade, industries damaging the environment, or, in another direction, social issues, such as anti-gay attitudes, have not been encountered on the Romanian market.

3. Ethical dilemmas and social responsibility in the opinion of the Romanian banks

During a focus group on ethics and responsibility, three leading on the Romanian market (*The Romanian Commercial Bank – BCR, Bancpost and Raiffeisen Bank*) have been asked a series of questions such as:

- Do you consider that banks have a social responsibility: how ethical is it to repossess houses?
- How do you comment on the ethics of accepting money from the government in the form of subsidies and bailout and sending it to the “mother ship” in another country?
- How do banks get involved in society? For instance, how do banks support the savings system, what do they undertake to increase confidence in saving?

The following is a brief synthesis of their answers.

As stated by the representatives of the three banks considered in the focus group, social responsibility is extremely important to them, due to the spillover effects. There are generally three areas in which the banks are customarily involved, that is education (especially financial education), entrepreneurship and social issues. One of the banks in the focus group, specifically BCR – The Romanian Commercial Bank, listed a series of on-going projects in these directions: BCR Speranțe (Hopes) (in partnership with good.bee, Radio Romania, Erste Foundation, Save the Children, Romani CRISS), supporting musical education and talents in the musical field; Finanțele Mele (My Finances) (in partnership with Junior Achievement Romania), a programme aimed at improving the financial education of students in both vocational and theoretical high schools through “learning by doing” with the help of volunteers from the bank; a strategic partnership with the “Save the Children” organization, meant to improve the education of vulnerable groups and reintegrate children into schools and communities.

The inclusion of socially responsible products in the products of banks may lead to a development in products and services, innovation in management and also, most importantly, to an improvement of public image. The value of the bank resides in its ability to sustain a wholesome public image, to foster good customer services, evidently, by means of generating trust. Corporate responsibility campaigns help towards reaching these goals, thus supporting the banks' endeavor to create a trustworthy environment for doing business.

All the three representatives of the banks considered in the focus group have agreed on the need of the banks to support an active involvement in the life of the community. One of the issues taken into account with respect to responsibility is for the banks to motivate their customers and train them to improve their savings policy. The representative of Raiffeisen Bank states that the banks must inform their customers on existing savings plans, with alternatives for investment, while supporting a nation-wide strategy for increasing savings. The security offered by a sound investment, including in this respect a pension fund is considered to be also beneficial for the economy. Initiatives for enhancing communication in view of increasing savings (such as flyers) are new on the market and need to be oriented

towards an environment known to the customer, targeted at the young generation, in order to create a certain financial discipline.

The representative of Bancpost stresses the importance of a socially responsible governmental policy aiming at ensuring the existence of a well informed population in terms of investment and savings. There are several benefits to have well-trained population in terms of investments and savings: the increase in financial security, possibility of providing better and more complex products to a well-informed market, more incoming funds for the banks. One of the few areas in which a similar strategy has given results is the use of private pension funds, not a way of saving per se, rather a mechanism of transfer of management of funds. Compared to the rest of the European countries, and even compared to neighboring countries, Romania registers a relatively low success in this respect as well as in the area of mortgages, mostly because of the fact that it has been a fully imported model in a market that is not as disciplined or as informed as the country generating the model. Also, what needs to be considered in this respect is the fact that the offer needs to be better tailored to the demands coming from the market.

As related to the repossession of houses, although the bank representatives agree upon the fact that in general in Romania, this type of event is not encountered in large numbers, there have been cases of car repossession, especially in the past year (2008-2009). In the “unlikely” event of the afore mentioned repossession occurring, or needing to be implemented, the banks agree on the strong possibility of rental to the previous owner, such as to diminish the social impact of the action.

On the issue of subsidies and governmental support, the answers are yet again in unison: such a practice is neither desirable, nor ethical. Yet, the participants feel the need to clarify the fact that, in comparison with the United States, in Romania, banks are not allowed to receive governmental subsidies, the support from the government coming by means of reduction of the mandatory reserve. The case in point is the reduction from 40% to 25% in 2009. Moreover, the agreement on the Romanian market is that the funds made available through this reduction should be kept here and not relocated to other markets. Still, a bank is a profit-driven entity, therefore, in case of further gains to be obtained through relocation of funds and investments in other markets, the consensus is that, unless this triggers grave social effects, the funds shall be sent to the more profitable market.

To conclude, the three banks considered in the focus group agree upon the need of trust in an emerging market, the importance of ethical behavior in gaining and maintaining this trust and the interaction between trust and socially-responsible behavior.

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Annexe

A Code of Conduct in a Bank in a Fragile Environment – example – Bank of Nigeria

Source: *Regulatory Laws - Code of Ethics in Banking and Finance In*

(1) Conflicts of interests

- (a) Engaging in extraneous activities which compete/interfere with or constrain a bank's primary responsibility.
- (b) Colluding with third parties to inflate contracts.

(2) Abuse of trust/office

- (a) Abuse of position and taking advantage of the institution to enrich oneself.
- (b) Inappropriate and unauthorized use of foreign exchange for example, using customers names to procure foreign exchange without their request.
- (c) Exploiting the ignorance of unsuspecting customers through excessive/unwarranted charges or unnecessary commissions to boost income.
- (d) Recommending for employment by a bank a person known to be of bad character or doubtful integrity.
- (e) Conclusion with the banks' customers to divert credit facilities for unauthorized purposes.

(3) Full disclosure

- (a) Lack of appropriate disclosure in dealing with other players and customers in the market place.
- (b) Understanding the volume of deposits in order to evade insurance premium, mandatory cash reserve requirements.
- (c) Imposition of previously undisclosed charges on customer's accounts.
- (d) Failure to submit report on dismissed/terminated staff to Central Bank of Nigeria and allowing proven fraudulent staff to resign.
- (e) Failure to submit report on eligible credit.

(4) Misuse of information

- (a) Misuse, manipulation or non-disclosure of material information on operation supplied to Regulatory Authorities, in order to derive some benefit or avoid liability.
- (b) Running down competitors through deliberate misinformation.
- (c) Misuse of various financial derivatives.
- (d) Deliberate rendition of inaccurate returns to the Regulatory Authorities with intent to mislead.
- (e) Misuse of confidential information gained through banking operations.

(5) Insider abuse

- (a) Meeting re-capitalisation requirement other than by actual injection of fresh/genuine funds.
- (b) Improper granting of loans to Directors, insiders and political interests.
- (c) Insiders' conversion of bank's resources to purposes other than business interest.
- (d) Granting of unsecured credit facilities to Directors.
- (e) Granting of interest waivers on non-performing insider credit without prior approval.

(f) Diversion of Bank earnings through the use of subsidiaries or „secret accounts” to deny the bank of legitimate earnings.

(6) Offer and acceptance of gratification

(a) Offering/accepting gratification to/by the regulator as an inducement to wave the imposition of penalties arising from failure to comply with laws or regulations.

(b) Applying uneven standards/imposing unfair penalties by the regulator with the intention to induce gratification.

(c) Offering/acceptance of gratification to/from customers and potential customers to do business.

(d) Aiding a customer to evade Tariffs and Taxes and to make unwarranted earnings.

(7) Non-conformity with standards and guidelines

(a) Non-conformity with prudential guidelines in the preparation of financial statements, resulting in complete or false information.

(b) Preparation of multiple financial statements in order to mislead the monetary and tax authorities.

(c) Association bankers should not knowingly associate with or do business with people of doubtful character.

(8) Aiding and abetting

(a) Aiding and abetting the failure of a new staff to meet the financial obligations to a previous employer.

(b) Employing new staff without obtaining suitable reference.

DEVELOPING FINANCE WEB-SERVICES CLIENT SOFTWARE

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***Abstract.** This paper presents the information technology used by the IT department of SIF Banat-Crisana for development of a new set of applications based on web-services (WS).*

Paraphrasing the title of a well-known computer programming book „Algorithms + Data structures = Programs”, investing on capital markets requires besides a solid knowledge base comprising investment evaluation and prediction methods, computation of investment risk, methods for permanently monitoring of investing opportunities, etc. also the acquisition and rapid processing of a huge amount of date. In author’s opinion the investors’ access to the primary data of capital markets (financial data, economic results, quotations, indicators, etc) through modern informatics technologies - where WS belongs – has an important role for the active development of these markets.

Keywords: web services; information technology; HTTP; XML.

JEL Code: M15.
REL Code: 14Z.

Introduction

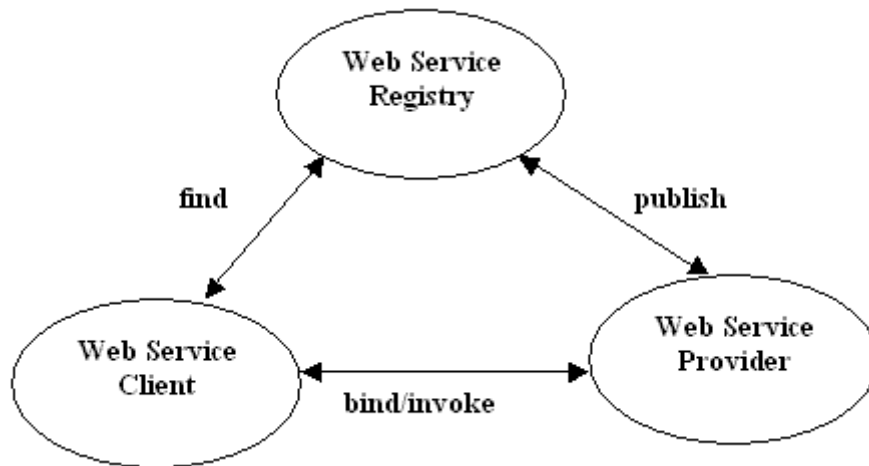
As the word „web” is commonly associated with Internet, WS has not to be confused with „Internet services” as web pages access (through HTTP protocol), file transfers (FTP) or e-mail (SMTP or POP5) but represent a standard distributed communication technology based on loosely-coupled software components which use HTTP as transfer protocol and XML data format.

1. Web-service

WS idea appeared in 1997, but only after 2002 the new technology spreader with increased popularity. Some appreciate that WS will be the next revolution in information access and transfer technology with a significant contribution to the development of service based software applications.

The efficient use of the increasing data processing power of interconnected servers and the increasing access rate to these systems were the premises of new technologies as „cloud-computing” and „service-oriented architecture” (SOA), the key components of future informatics applications.

WS model is based on „publish-find-interrogate” paradigm. A WS server register on Internet its offered services and access methods through a publishing procedure. A client application scans and finds on Internet WS registries (find procedure), then through an interrogate procedure request and receive necessary data in XML format.



1.1. General WS characteristics

As opposed to other distributed-messaging systems (CORBA, DCOM, RPC) WS standard is based on:

- *Interoperability*: Assured by the XML data format message, replacing the proprietary standards used by other messaging standards. Practically using this technology computers access data and services regardless their operating system, web-Internet server or database system.

Firewall traversal: is assured by HTTP (port:80) used by all browsers, other messaging systems require other ports to be open, a fact that can affect the network security.

2. Importance of WS for capital market

Among the possible applications using WS, two main domains have in author's opinion an important impact in the development of software for financial services:

2.1. Primary data access using WS-client applications

Investment analysts, traders, researchers, professional and independent investors, students, etc., all in need of financial information offered by a variety of providers through Internet pages (free of charge or by subscription) have not an easy task in storing and processing the displayed data in tables and graphics format. Practically, they see a collection of reports comprising the data they need, but for a further processing this has to be downloaded and save in Excel or a database. Even some web-pages reading function can be found in some development software tools this technique is not recommended.

Implementing WS on their servers financial institutes and specialized financial data providers can deliver data in a much more desired format for the end-user, this eliminates the local storage and enables a rapid processing.

2.2. WS tools for financial data processing

Today the software developer of an in-house application has to buy libraries or write himself a bunch of specialized routines for a whole set of statistic, efficiency, performance indicators adopted for his field of interest.

Using – like routines – results submitted by specialized WS, the application can be much easier and in shorter time realized

2.3. Bucharest Stock Exchange (BSE) WS

WS on BSE web site offer three categories of information:

- Transaction information;
- Companies and titles information;
- Financial information.

2.4. Toward automation in investment analysis and transaction

Author considers that manually gathering and processing data for transactions on capital market can't work today. The flood of capital market information together with the influence factors and their correlation require the implementation of complex analysis and transaction informatics platforms. Implemented in a modular way with an iterative development these applications will collect online data, update their own databases, find opportunities on markets, simulate scenarios, etc.

3. Informatics applications implemented at SIF Banat-Crişana

3.1. Overview

At the IT department of SIF Banat-Crişana the author had wrote a set of client programs using the information provided by BSE WS in addition to the actual portofolio monitoring Intranet applications, computation of net asset, shares transaction, capital market analysis, a.s.o. The main characteristics are:

- Intranet and desktop applications were written with Visual Studio 2008, including Microsoft NET 3.5 Framework, LINQ for XML technologies.
- The „proxy-server” (most recommended) and the XML file direct access methods were used to access the BSE WS data. Also Java scripts in HTML pages were tested, technique which require security configuraton of browsers.
- Intranet application are in ASPX format for tables and graphics format financial indications display, and EXE build desktop programmes for market monitoring.
- ETL (extract-transform-load) programs were used for local storage on our MS-SQL server, data used for shares market screening software.

3.2. BSE WS applications details

3.2.1. Issuers data storage and display applications

Issuers data offered by BSE WS are grouped in two sections (BSE and BER) and is used for MS-SQL database server update. The state and municipal shares in the BSE section are usefull our analysts. For a single issuer a client program displays data direct from BSE WS.

3.2.2. Financial analysis applications

In order to analyze the financial results or BSE issuers, SIF Banat-Crisana analysts use a reduced balance-sheet model for annual, semestrial and quaterly data, divided on four categories: companies, banks, assurance companies and financial services companies. Data friom BSE WS is locally stored or directly displayed for a single issuer. Local stored data is used for aggregated economic branches analysis or economic performance indicators screenig. Using Microsoft Chart Control for NET Framework a simple graphics programm for five years comparing most important financial data display.

3.2.3. Online market prices monitoring program

A Windows application (EXE format) running in the background of a workstation can monitor the market prices of a portofolio.

3.2.4. RSS selection and display programm

Economic news headlines based on RSS standard format is gathered from diferrent media sources and displayed on SIF Banat-Crisana Intranet.by an inhouse developed RSS reader.

3.3. Remarks

The first generation of in house developed WS client applications using BSE WS was a successful attempt delivering up-to-date information to SIF Banat-Crisana analysts and also a good opportunity for programmers to learn this new technology.

4. Conclusions

An active capital market permanently requires up-to-date and correct information. That's why the development of WS must become a priority for the financial institutions.

On the other side research, statistical, academic institutions and of course software companies can develop capital market WS software tools, which can replace the existing statistical and mathematical software libraries on the informatics applications market.

In information era the „Algoritms+Data=Programms” equation is solved in Internet.

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THE CONNECTION BETWEEN BANK AND INTERBANK INTEREST RATES

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Abstract: *Interbank interest rates are the main determinant of interest rates practiced by banks on deposits and loans of households and non-financial corporations customers. In Romania, the empiric optimum of connection between interest rates of deposits and loans and the interbank interest rates is differing from 1, because of the following main factors: weak money market turnover, Romanian banking system having concentration higher than moderate to a certain extent and low financial intermediation degree, credit, liquidity and interest rate risks, maturity of bank products, fixity or variability of banks interest rates, banks perception on monetary policy and interbank interest rates modification.*

Keywords: interbank interest rate; loans interest rate; deposits interest rate; connection; optimum.

JEL Code: G21.

REL Code: 11C.

1. The concept of connection between bank and interbank interest rates

The central bank monetary policy interest rate changes and/or expectations of agents in the economy with regard to these changes lead changes in money market interest rates, (interest rates on interbank deposits). Further, these changes in interbank rates lead changes in interest rates charged by banks on deposits and loans to non-bank customers.

We call the connection between bank and interbank interest rates an interaction (relationship) of these. The size of the connection between the interbank interest rate changes and the changes of interest rate on deposits and loans to non-bank customers is the ratio of deposits (or loans) interest rate changes and interbank interest rate changes.

The theoretical optimum (or equilibrium level, on long-term) of connection is 1 (at a change of z percentage points in interbank interest rate, interest rates on deposits (or loans) to customers change with z percentage points).

Given that, in addition to interbank interest rate, other factors determine interest rates on deposits and loans to customers, the empiric optimum of connection coefficient is different from 1.

We propose to establish the empiric optimum of connection between bank and interbank interest rates using the following regression equations:

$$\Delta(ir_deposits) = \alpha * \Delta(ROBOR) + \omega \quad (2.1)$$

$$\Delta(ir_loans) = \beta * \Delta(ROBOR) + \mu \quad (2.2)$$

where:

$\Delta(ROBOR)$ = the interbank interest rate modification, in percentage points;

$\Delta(ir_deposits)$ = the percentage points modification of interest rate on deposits placed by non-government customers in banks;

$\Delta(ir_loans)$ = the percentage points modification of interest rate on loans granted by banks to non-government customers;

α = the empiric optimum of coefficient for the connection between the modifications of bank interest rate at customers' deposits and interbank interest rate. As a rule, $\alpha > 0$;

β = the empiric optimum of coefficient for the connection between the modifications of bank interest rate at customers' loans and interbank interest rate. As a rule, $\beta > 0$;

ω = the equation (2.1) residuum which show other causal factors (excluding interbank interest rate) for interest rate on deposits;

μ = the equation (2.2) residuum which show other causal factors (excluding interbank interest rate) for interest rate on loans.

If we use a monthly sample of statistical data, we can compute the required time in months to achieve the total connection between bank and interbank interest rates (where theoretical optimum is equal to 1). We suggest to calculate this as a ratio between 1 and the empiric optimum of connection coefficient.

In our viewpoint, the magnitude of connection between the interest rates practiced by banks to deposits and loans of households and non-financial corporations and the interbank interest rate has the following determinants:

- ▶ the turnover value of interbank money market. A high turnover value of interbank deposits has a positive impact on connection between interest rates on deposits and loans of banks' customers and interbank interest rate. Conversely, a low turnover value of interbank deposits weaken the connection between interest rates above;

- ▶ the constraints of capital movement. If there are limits regarding the movement of capital in financial system, then the interest rates connection decrease. A high freedom of capital imply a speedy transmission of interbank interest rates modification to interest rates practiced by banks at customers' deposits and loans;

- ▶ the banking competition. The banking competition leads banks to take over more quickly (or not delayed too much) the reductions of interbank interest rates to interest rates of clients' loans and the increases of interbank interest rates to interest rates of customers' deposits. The higher banking competition is, the more boosted connection between interest rates on loans and deposits interbank interest rate is. A high degree of banks competition imply (or it is a consequence of) a low margin between interest rate at loans and interest rate at deposits and influence the behaviour of interest rates fixing by banks. However, these effects may be different depending on monetary policy interest rate tendency. In the case of high competition, on assets side, loans interest rates can react less intense to the increase and quicker to the decrease of interbank interest rate, but on liabilities side, deposits interest rates can react more intense to the increase and in a lesser size to the decrease of interbank interest rate;

- ▶ the financial intermediation. The growth of open investments funds' assets and financial innovations (for example: derivative financial instruments) cause a rising (or, at least, slow down) of interest rates practiced by banks to deposits of clients. All the other non-banking financing forms (by means of capital market and non-banking financial companies) can induce increases of connection between interest rates practiced by banks to loans of customers (especially, companies) and interbank interest rates, reductions of the spreads between interest rates of loans granted by banks and interbank interest rates;

- ▶ the private ownership of banking system. This influence directly proportional the magnitude of connection between bank interest rates and interbank interest rates;

- ▶ the operating costs of banks (costs of personnel and banking network managements). A high weight of operating costs in bank 's total costs imply a low connection and, conversely;

- ▶ the weight of non-interest revenues in total bank revenues. A high weight of non-interest revenues in total bank revenues bring a quick reduction of interest rates at loans granted by banks, in response to interbank interest rates decrease, and conversely;

- ▶ the credit risk – reflect the possibility that some banking loans not be reimbursed at the term corresponding. The credit risk can be quantified by the weight of non-performing loans in gross loans. Commonly, the credit risk is directly linked to economic cycle if banks

have a high degree of customers diversification. However, the credit risk must be assessed individually, for each clients, when the degree of clients diversification is low. A high credit risk can induce decrease of connection between interest rates practiced by banks to loans of customers and interbank interest rates and, or, ie - the spreads between interest rates on loans granted by banks and interbank interest rates increase. Furthermore, the spread between loans interest rate and representative interbank interest rate is the credit risk margin; for example, the variable interest rate at a loan = interbank interest rate + credit risk margin. During recession or economic slowdown, domestic sectoral or global, the credit risk margin increase;

▶ the interest rate risk (quantified by interbank interest rates volatility). In the case of interbank interest rates low volatility, the banks take over quicker interbank interest rates modifications to interest rates practiced by the banks at non-bank customers. Instead of it, a high volatility of interbank interest rates induce a low connection between bank and interbank interest rates;

▶ the liquidity risk (the risk that a bank has not sufficient disposable funds to cover the withdrawal of customer deposits and other accounts with positive balances; under these conditions, the bank will cover its financial needs at a higher cost) and additional resource money needs of the banks. An increase in risk and liquidity needs of banks reduces the connection, increasing liquidity premium, which involves them, and the cost of bank resources;

▶ the business cycle, which influences directly proportional to the size of interest rates connection. For example, during economic recession, the risk premium and interest rates on loans granted by banks and customer deposits placed with banks is increased;

▶ maturity of credit contracts (or deposits). Interest rates on loans and deposits with maturities greater than respond more quickly to changes in interbank interest rates than the rates on loans and deposits with maturity less and variable interest rates;

▶ the capitalization of banks (solvency). Well-capitalized banks are less forced to make an adjustment to changes in monetary policy and can not change interest rates on deposits and loans to customers, at least temporarily. In other words, a higher capitalization provides a better opportunity for banks to smooth (calm) the interest rates to customers, amid changes in interbank rates. Bank capitalization (quantified as the ratio between equity and total assets of the bank) can generate a certain heterogeneity in the banks on monetary policy transmission through interest rate;

▶ the perception of the nature of changes in central bank interest rate and interbank rates. Changes in central bank interest rate entail adjustments costs of banks. The adjustment of bank interest rates depends on the assessment of banks that a change in central bank interest rate and interbank is temporary or permanent. If this change is considered temporary or invertible (in part or entirely) soon, then a commercial bank may decide to smooth the interest rates to customers (not to alter or amend them less in comparison with changes in interbank rates);

▶ the minimum reserve ratio affects the size of connection rates lending customers. When the minimum reserve ratio is higher, the interest rates on loans will increase more, in response to the increase in interbank rates, but will decrease less in response to lower interbank rates;

▶ the variability (or the fixity) of interest rates on deposits and loans to customers. Connection size is higher for variable interest rates⁽¹⁾ than for fixed interest rates;

▶ the reassessment with different time frequencies (monthly, quarterly, biannual, annual) of variable interest rates on loans and deposits of customers. This creates delays in taking interbank interest rates change to the interest rates on deposits and loans of customers.

2. Approaches in economic research on the connection between bank and interbank interest rates

In economic research, the connection between bank and interbank interest rates is analyzed by assessing the pass-through interest rates.

Most of the research papers study the relationship between a change of a representative interbank interest rate and the interest rates on deposits and loans of customers.

Some papers⁽²⁾ used for empirical analysis aggregate series of interest rates from some countries, using error correction models (ECM), equations in differences and quantify the dynamic of interest rates pass-through. In these papers, differences between countries and banking products are related to characteristics of the financial system. Other papers (3) use micro data from the individual level of each bank to examine how are setting interest rates by banks based on certain characteristics of financial system.

Both papers using aggregate data from the banking system and those that use micro data from the banks, try to answer to the question how complete is the long-term interest rates and how fast is the short-term adjustment.

Although some studies find a full pass-through long-term, there is not a consensus in the literature on a complete long-term pass-through. Most studies have found inflexibility (stickiness) of bank interest rates on short-term adjustment to interbank interest rates, which in some cases is explained by the uncertainty and banking adjustment costs. So, when the banks are uncertain about future developments in interbank interest rates, the more likely the banks will leave interest rates charged in relation to non-bank customers the same or the banks will modify these interest rates less (Weth, 2002).

In this respect, good communication related to monetary policy decisions and central bank expectations about the evolution of interest rates practiced by banks to loans and deposits should contribute more to increase the speed of adjustment of bank interest rates to interbank interest rates.

Another reason often invoked for the inflexibility interest rates on deposits and loans is competitive banking environment. A weak competition between banks causes banks to slowly adjust the interest rates for deposits and loans to interbank interest rates. However, we believe that this aspect should be analyzed differently on loans and deposits segments.

When banks competition is weak, the banks may increase the spread between the interest rate on loans and deposits interest rate by reducing interest rate on loans at a slower rate than the reduction of the interest rate on deposits.

3. The estimation of empiric optimum for the connection between bank and interbank interest rates in Romania

To estimate the empiric optimum of connection between bank and interbank interest rates in Romania, we used a sample of monthly data from 2004 January till 2009 June. With these data, we estimated by OLS (Ordinary Least Squares) equations as (2.1) and (2.2) above. The statistical data used in our analysis are: IR_MON_POL = National Bank of Romania (NBR) monetary policy interest rate; ROBOR3m = 3 months interbank interest rate ROBOR. This interest rate has the higher correlation coefficient with NBR monetary policy interest rate. Besides, from the comparative graphic analysis and the coefficient of correlation between the main interbank interest rates (1 month ROBOR, 3 months ROBOR, 6 months ROBOR, 9 months ROBOR, and 1 year ROBOR) and NBR monetary policy interest rate, it can observe that the trend of these interest rates has high degree of similarity. Consequently, in econometric estimation, we can use the 3 months ROBOR as a representative interbank interest rate; IR_N_DEPOSITS = the average interest rate for total new time deposits (the whole non-government sector: households + non-financial corporations) in lei; IR_N_H_DEPOSITS = the average interest rate for new time deposits in lei of households; IR_N_C_DEPOSITS = the average interest rate for new time deposits in lei of non-financial corporations; IR_N_C_DEP_OVERNIGHT = the average interest rate for overnight deposits in lei of non-financial corporations; IR_N_LOANS = the average interest rate for total new loans (the whole non-government sector: households + non-financial corporations) in lei; IR_N_H_LOANS = the average interest rate for new loans in lei of households; IR_N_C_LOANS = the average interest rate for new loans in lei of non-financial

corporations; IR_N_C_LOANS_VARIABLE1Y = the average interest rate for non-financial corporations new loans in lei with variable interest rate and initial rate fixation up to 1 year; IR_N_C_LOANS_OVERDRAFT = the average interest rate for overdraft loans in lei of non-financial corporations. Figure 1 show, graphic presentation of these data.

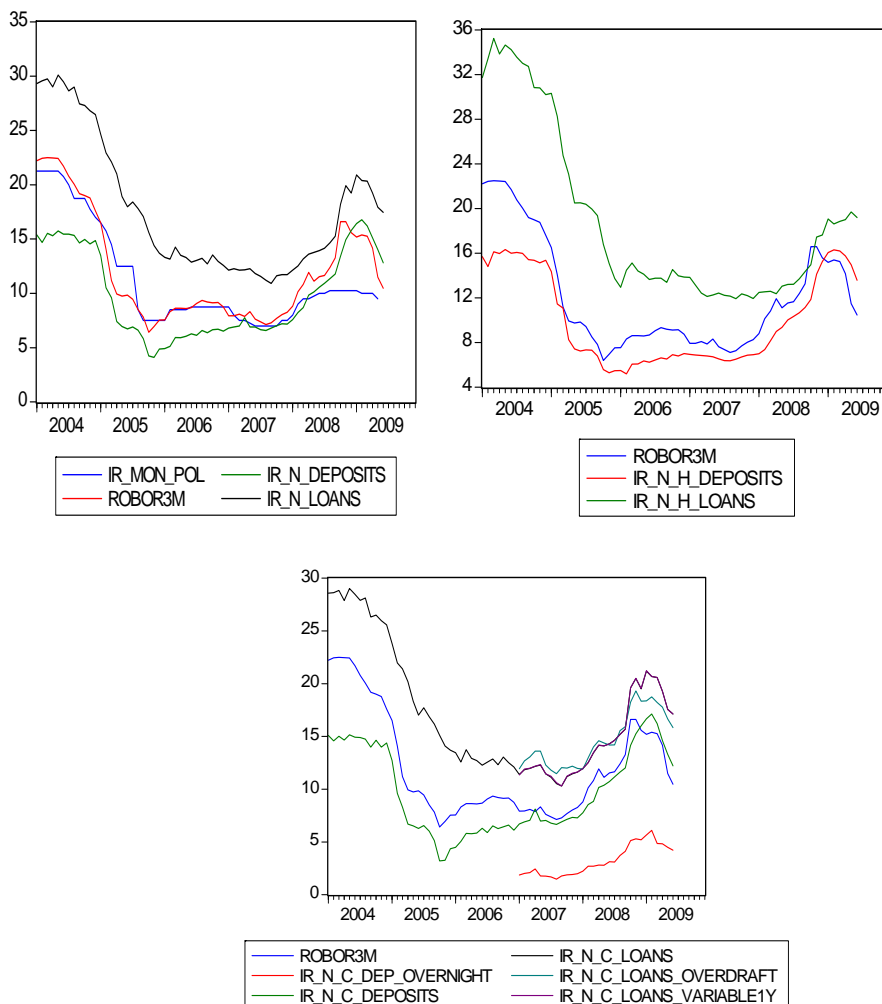


Figure 1. Interbank and bank interest rates in Romania

We presented the econometric results of our analysis in Table 1.

The empiric optimum of connection between interest rates practiced by banks to deposits and loans of non-government clients in Romania* and interbank interest rates

Table 1

Monthly data sample: 2004 January – 2009 June				
Representative interbank interest rate: 3 months ROBOR				
Banks average interest rate for a banking product	Empiric optimum of connection coefficient	Required time, in months, to achieve total connection	Adjusted R^2 of the regression equation	Durbin-Watson statistics of the regression equation
IR_N_DEPOSITS	0.56	1.79	0.45	1.95
IR_N_H_DEPOSITS	0.42	2.38	0.26	1.83
IR_N_C_DEPOSITS	0.65	1.54	0.50	2.09

Monthly data sample: 2004 January – 2009 June				
Representative interbank interest rate: 3 months ROBOR				
Banks average interest rate for a banking product	Empiric optimum of connection coefficient	Required time, in months, to achieve total connection	Adjusted R^2 of the regression equation	Durbin-Watson statistics of the regression equation
IR_N_C_DEP_OVERNIGHT	0.22	4.55	0.26	2.35
IR_N_LOANS	0.61	1.64	0.39	1.99
IR_N_H_LOANS	0.45	2.22	0.13	1.50
IR_N_C_LOANS	0.70	1.43	0.45	2.28
IR_N_C_LOANS_VARIABLE1Y	0.85	1.18	0.67	2.29
IR_N_C_LOANS_OVERDRAFT	0.64	1.56	0.64	1.91

* for average interest rates of some non-financial corporations banking products (overnight deposits, new loans with variable interest rate and initial rate fixation up to 1 year and overdraft loans), the monthly data sample is from 2007 January till 2009 June because these data are available from January 1, 2007 – when Norms no. 14 concerning banks interest rates statistics began to be enforced.

Using monthly data from 2007 January to 2009 June, we estimated regression equations for interest rates of households' overnight deposits, new loans for houses and consumer purposes, overdraft loans, new loans with variable interest rates and initial rate fixation up to 1 year. Unfortunately, the results of these estimations did not pass the econometric tests (insignificant t-statistics and/or low adjusted R^2 and/or residual autocorrelation). The short length of data sample and effective rigidity of above interest rates behavior as a response to interbank interest rates modifications may be the causes of poor econometric results.

From the Table 1, it result the following relevant aspects:

- the transmission of interbank interest rate modification to new loans interest rate is higher to a certain extent than to new time deposits (the required time to achieve total connection is 1.64 months as compared to 1.79 months);

- in the case of average interest rates on new time deposits, the transmission of interbank interest rate modification to new time deposits interest rate is relatively different from the two clients categories point of view. Thus, after an average monthly modification (increase/decrease) of interbank interest rate by 1 percentage point, the interest rate on non-financial corporations new time deposits change on average (rise/decrease) by 0.65 percentage points, while the interest rate on households new time deposits change on average (rise/increase) by 0.42 percentage points;

- the transmission of interbank interest rate modification to new loans interest rate is also relatively different from the two clients categories point of view: after an average monthly modification (increase/decrease) of interbank interest rate by 1 percentage point, the interest rate of non-financial corporations new loans change on average (rise/decrease) by 0.70 percentage points, while the interest rate of households new loans change on average (rise/increase) by 0.45 percentage points. Thus, the interest rate of non-financial corporations new loans has 1.43 months the required time to achieve total connection with interbank interest rate, as compared to 2.22 months in the case of the interest rate of households new loans;

- the interest rate of non-financial corporations new loans with variable interest rate and initial rate fixation up to 1 year has the fastest response at interbank interest rate modification of all banking products presented in Table 1. Thus, this interest rate change by 0.85 percentage points when interbank interest rate change by 1 percentage point per month.

Moreover, the required time that interest rate of non-financial corporations new loans with variable interest rate and initial rate fixation up to 1 year achieve total adjustment to interbank interest rate modification is 1.18 months;

- more rigid than interest rate on non-financial corporations new loans are the interest rates related to overnight deposits and overdraft loans of non-financial corporations; in the case of these interest rates, when interbank interest rate increase/decrease by 1 percentage point, the interest rate of non-financial corporations overnight deposits increase/decrease by 0.22 percentage points whereas that of non-financial overdraft loans increase/decrease by 0.64 percentage points.

We give the following explanations for the results presented in the table 1 above:

- in Romania, the transmission of interbank interest rate modification to interest rates practiced by banks for new time deposits and loans in lei has delay (the empiric optimum < theoretical optimum) because of the following factors: low turnover value of interbank money market, high volatility ROBOR interest rates during some time periods, financial intermediation preponderant based on banking system (in conditions which the other forms of financial intermediation – for example: capital market, non-banking financial company – have less developed), Romanian banking system having concentration degree higher than moderate to a certain extent, existence of some time periods when the banks have big needs of resources, existence in Romania of some banks having capitalizations small than the Romanian banking system average, banks transfer of credit risk to customers loans interest rates by credit margin, banks perception regarding the fact that the modifications of monetary policy interest rate and/or interbank interest rates may be temporaries (for example: the cycles when the trend – increase or decrease – of monetary policy interest rate is maintained for less than 1 year), revaluation with different time frequencies (monthly, quarterly, half-yearly, yearly) of variable interest rates practiced by banks at loans and deposits based on interbank interest rates, propensity of banks (as profit oriented entities) to gain including by positive spreads between loans average interest rate and deposits average interest rate, banks offer to clients of banking products (deposits and loans) with fixed interest rate and/or long term, existence of some uncertainties regarding future development of interbank interest rates, exchange rate and overall economy;

- the adjustment speeds (connection coefficients) of the interest rates practiced by banks for new loans and new time deposits of non-financial corporations as a response at interbank interest rate modification are higher than interest rates of households' new loans and new time deposits because of the following factors: higher value of non-financial corporations' loans and deposits and advanced capacity of negociation with banks for non-financial corporations as compared to households, less sophisticated profile of population compared with non-financial corporations regarding the use of financing and investment alternative sources (other sources than banking financing), almost all new loans of non-financial corporations are granted with variable interest rate and fixed interest rate on a period up to 1 year (4), higher initial duration (maturity) of households' new loans as compared with that of non-financial corporations' new loans, banks promotional offers of savings and loans products preponderant to households, preference of households for time deposits with fixed interest rates in expense of those with variable interest rates.

In conclusion, on the background of factors presented above, commonly, the connection between the modification of representative interbank interest rate and the modifications of interest rates practiced by banks at loans and deposits of customers is not unitary (or, ie: the modifications of interest rate practiced by banks at loans and deposits are stickies, inflexibles as a response to changes in interbank interest rate). There is a delayed take-over of interbank interest rate modification by interest rates of customers' loans and deposits.

Notes

- ⁽¹⁾ Indexed interest rates in accordance with interbank interest rate.
- ⁽²⁾ For example: Cottarelli and Kourelis (1994), Mojon (2001) and De Bondt (2002).
- ⁽³⁾ Such as: Weth (2002), Lago-Gonzales and Salas-Fumás (2005) and De Graeve *et al.* (2007).
- ⁽⁴⁾ Recent data (the second quarter, 2009) showed that new loans with variable interest rate and initial rate fixation up to 1 year are 99.72% and, respectively, 64.80% from the total bank loans to non-financial corporations and households.

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INSOLVENCY AND RESTRUCTURING

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***Abstract.** During a crisis period, many businesses become insolvent. Insolvency implies closing down a company through bankruptcy or reorganizing that company. In our present economical situation, closing down a business is totally disadvantageous. Because of the low demand on the market the firm's assets will be sold at a low price. Reorganizing implies approving of a plan, which offers a series of advantages to the creditors: the rescheduling of debts, the suspending of all judiciary actions, re-planning of activities, renegotiation of ongoing contracts, re-dimensioning of costs. After the period of maximum three years the company has a chance to become viable.*

Keywords: vulnerability; insolvency; restructuring; bankruptcy; reorganizing plan.

JEL Codes: K22, K41.

REL Code: 5D.

1. Definitions. Legal frame

Insolvency = state of disequilibria of the debtor's patrimony, characterized by the insufficient funds to cover debts.

Imminent insolvency = state of disequilibria of the debtor's patrimony, characterized by the impossibility to pay the debts on the required terms.

Manifest insolvency = state of disequilibria of the debtor's patrimony, characterized by the impossibility to pay at least one debt, due in over 30 days.

Syndic judge = judge of a specialized section of the Court, invested with the power to open insolvency proceedings, by exerting law provided proficiencies.

Judicial liquidator = person or firm, practicing in insolvency, designated by the syndic judge to lead the debtor's activity and to exert the attributions mentioned by the insolvency simplified or general proceedings.

Judicial administrator = person or firm practicing in insolvency, designated by the syndic judge to exert attributions foreseen for the observation period and for the duration of the re-organization procedure.

Special administrator = the representative designated by the general assembly of associates/shareholders to administrate the goods of the debtor (firm), when this one is permitted to administer his own activity and to represent their interests or when his right of administration has been revoked.

Debtor = person or firm, belonging to one of the categories foreseen by the law, who's patrimony is in insolvency.

The debtor's goods = the totality of goods and patrimonial rights, including those he got during the procedure, that can make the object of forced execution.

Creditor = person or firm, owner of a debt right on the debtors goods, who asked to be registered to the credal goods by a special demand.

Debt = right of the creditor over a certain amount of money the debtor owes him, as well as the document confirming this fact.

General assembly of creditors = all the creditors whose rights are registered in the preliminary or final table, after solving all contestations.

Judicial re-organizing = procedure which applies to the debtor (firm), in view of paying of his debts, according to the debt payment schedule.

Insolvency general procedure = procedure by which a debtor enters, after the observation period, successively or separately, in the judicial re-organizing procedure and/or in the bankruptcy procedure.

Bankruptcy procedure = the equal and collective form of the insolvency procedure, which applies to the debtor in view of liquidation of his goods to cover the passive and has as final result the removal from the Register of Commerce⁽¹⁾.

2. Starting the insolvency procedure

2.1 At the creditor's request

Any creditor who has the right to ask for the starting of the procedure as foreseen by the present law against a debtor who is assumed to be in insolvency can present an initial request, which has to contain: the amount he is entitled to and the grounds on which this right is based; the existence of a real warranty, constituted by the debtor or set forth by law; the existence of some insurance measures over the debtor's goods; the statement concerning an eventual intent to participate in the re-organizing of the debtor and the actual way of doing that; the annexed documents that justify the rights and the documents proving the warranty has been instituted.

The minimal amount for which the request of the creditor can be taken into account is of 30,000 lei and, for the employees, of at least 6 average incomes per national economy.

2.2. At the debtor's request

In a period of time of maximum 30 days since the state of insolvency has occurred, the insolvent debtor has to make a request to the Court in order to be subjected to the proficiencies of the present law. The debtor will annex the following documents: the company's financial balances; the list of the company's assets; the list of creditors and the debts towards them; the statement containing the intent of liquidation or re-organization and the ways this can be done.

3. The foreseeing of insolvency

3.1. The analysis of imminent insolvency

Forecast of imminent insolvency: the cash flows and the risks involving their realization are estimated and the managerial measures to obtain liquidities are established and their degree of realization estimated. In order to estimate and prevent insolvency in the actual crisis situation, in which partners (in both directions of the production chain) encounter financial and production difficulties, an analysis of the company is necessary, on these next directions:

Economical situation analysis

Alarm elements concerning the decay of the economical situation can be: the reduction of the company's activity; difficulties in finding supplies, both in the quantity and quality required; difficulties in selling products or services; the spending is bigger than the income, and the gross result of exploitation EBE is negative, the company registering a negative VAT.

Financial situation analysis

Alarm elements concerning the decay of the financial situation can be: the company cannot cover debts with its liquid assets; the short term liabilities are superior to the short term assets and the impossibility of making in term payments.

The analysis of internal factors that contribute to the increase of the company's vulnerability: strategic orientation(wrong strategy, errors in applying the strategy, too much diversification), the management quality: wrong training, methodical deficiencies in applying the management plan; inappropriate internal control; human resources use; financial resources use; research and development; commercial and production activities.

The external factors leading to an increased vulnerability of the company are: the business climate; the supply market and the selling market.

3.2. The analysis of the manifest insolvency. Forecast of manifest insolvency

Insolvency is presumed to be manifest when the debtor, 30 days after the term he had paid his debts, did not pay the debts he owed to one or more creditors who have asked for the payment of liquid, cert debts.

The elements confirming that the debtor is in a state of manifest or obvious insolvency are: the debtor encounters a liquidity crisis and disposes of no liquid assets to cover debts, the debtor does not have available credits; the debtor cannot obtain the re-scheduling of some credits or advantageous payment terms.

4. The opening of insolvency by re-organization and the continuation of the activity

Proposing the re-organizing plan can be done by: the debtor with the approval of the General Assembly of Shareholders, the judicial administrator and one or many creditors who own at least 20 per cent of the total debts included in the final debt table.⁽²⁾

The minimal content of the re-organizing plan

The re-organizing plan will contain: the correcting perspectives, relative to the possibilities and specific of the debtor's activity, with the financial means available and the market demand concerning the debtor's offer, measures of public order, including the ones concerning selection, designation and replacement of administrators and managers, a debt payment schedule; the debts which are not to be disfavored, according to the law, the treatment of the disfavored debts, diverting or not responsibility of certain groups of economical interest, which compensations are to be offered to all the debtors, by comparison with the estimated value they could obtain in case of bankruptcy.

Possible measures to apply the re-organization plan are: the debtor keeps, totally or partially, the right to manage his activity, including the right to dispose of the goods, its activity being supervised by the judicial administrator designated according to the law, obtaining financial resources to sustain the realization of the plan and identifying their possible provenience, fusion of the debtor, according to the law, liquidation of all or some of its (free of charge) assets, separately or on a whole or distributing those to the creditors, in order to cover debts, modifying or extinguishing real warranties with the mandatory supply of an equivalent warranty or protection in benefit of the warranted creditor, extending the payment term and modifying the interest rate, the penalty or any other clause of the contract or of the other documents that provide such obligations, modifying the constitutive document of the debtor, according to the law and the debtor can issue securities, according to the Law no. 31/1990.

The opportunities of the re-organizing plan are: the activity of the company can continue, the debts are re-scheduled, suspension of judiciary and extra-judiciary actions to execute the debtor's assets in order to cover debts, continuing on going contracts, ensuring the financing of working capital, continuing the payment and proceed operations, renegotiating on going contracts, continuing the contracts with the utilities suppliers, by re-scheduling the debts towards them and without cutting off utilities, the use of the commercial credit line, the possibility of the creditors to select the judicial administrator, establishing payment schedules and obtaining financial resources by selling some assets not needed in exploitation.

Risks of the re-organizing plan are: the rejection of the insolvency request by re-organization or of the re-organizing plan by the syndic judge, opposition in court from some creditors concerning the opening of the insolvency and re-organizing procedures, contestations in court coming from the debtor against the insolvency request presented by some of the creditors and the refusal to designate the judicial administrator the creditors requested

5. The re-organizing activity

During the re-organization, the debtor will be managed by the special administrator, under the supervising of the judicial administrator. The shareholders, the associates and the members with limited responsibility have no right to interfere in the management of the activity or in the administration of the debtor's goods, except the cases thus presented by the law with the appropriate limitations and by the re-organizing plan.

The debtor will have to operate, with no delay, the structural changes contained by the plan.

Should the debtor not comply to the plan or the activity lead to the loss of all its goods, the judicial administrator, the creditors' committee, as well as the special administrator could ask at any time the syndic judge's approval to declare bankruptcy.

The debtor, through its special administrator or, respectively, the judicial administrator, will have to present, once every three months, reports to the creditors' committee concerning the financial situation of his goods. Reports will be approved by the creditors' committee, registered to Court and transmitted to all creditors.

The judicial administrator will also present the situation concerning all expenses needed to ensure the activity, in view of their recovery, situation which is to be approved by the creditors' committee. The procedure of re-organizing through continuing the activity based on a plan will be closed by the court's decision, following the fulfilling of all payment obligations assumed by the plan.

The diagnosis analysis – a necessary condition for each re-organizing

The diagnose analysis contains: the operational diagnosis and financial diagnosis:

The operational diagnosis: the technical and production diagnosis (the size of the technical and material base; technological performances; the capacity of production and quality level of products; the investment activity and environmental protection), the commercial diagnosis (the sales analysis; the clients analysis; the market and competition analysis and the suppliers' analysis) and the management, organization and human resources diagnosis (the structure of the company's management and modifications to its operation chart, the personnel structure, re-dimensioning and relocating its annual labor productivity)

Financial diagnosis: performance analysis- profit and loss account, foreseeing financial results and cash flows, liquidity financial indicators and activity and profitability indicators.

6. Conclusions

During a crisis period, many companies which have had a normal activity face the risk of not disposing of enough liquidities and thus being forced to declare insolvency, bankruptcy and of course stopping every activity and liquidating all goods.

So it is preferable that for a company in a state of imminent insolvency, the debtor and the creditors or either of them should request for the opening of the procedure of insolvency through re-organization and the continuation of the activity.

The company can thus take advantage of the benefits presented so far, continues its activity and has the chance of saving itself from bankruptcy and being able to pay the debts towards its creditors.

Notes

⁽¹⁾ Law no. 85/2006.

⁽²⁾ Law no. 31/1991.

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GLOBAL REAL ESTATE SECTOR. ASPECTS REGARDING INVESTORS AWARENESS

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***Abstract.** The largest market is represented by the USA, with 42 per cent capitalization, followed by Europe and Asia. From the five forces of Porter, two – entrance barriers and competition - are considered to be strong, the rest being perceived as moderate. Factors that differentiate real estate from other sectors are: high competition, high dependency on macro-economical factors, more shares and bonds issued than in other companies, high degree of financial leverage, consistent cash flow. The shares of real estate companies are defensive and have an efficient distribution of dividends.*

Keywords: REIT's; vacancy rate; mortgage rate; risk free rate.

JEL Code: G11.

REL Code: 10Z.

1. Introduction

The real estate sector has been the driving force that led to the global economical growth until 2007 and it is also the most affected sector by the economical crisis. Real estate investments can be direct or indirect. Direct investments imply real, tangible assets that are not liquid, not correlated to financial assets and ensure a good protection during inflation-affected periods.

Indirect investments imply instruments as common shares, bonds and REIT'S issued shares, which can or cannot be listed. The unlisted ones offer a much better diversification of the portfolio, but are not liquid and almost exclusively meant to institutional investors. These instruments refer to shares issued by REOCs in the USA, property companies in the UK or REITs.

2. Description of the sector

In the last decade, many real estate companies worldwide have passed to REITs status, which implies adhering to some operational restrictions, financial limitations and obligations concerning the shareholders. These demands have been implemented in order to ensure the stability of the company and to protect shareholders. Thus, generally 75% of the capital can be invested in real estate and a minimum of 80 % of the profit must be distributed to shareholders.

From the GPR General Index point of view, the USA has the most important market – 42%, followed by Europe with 31% and Asia – 27%.

According to the source of incomes, real estate companies are classified in:

- Equity real estate,
- Mortgage real estate,
- Hybrid.

Generally, the players in that sector have different strategies, adapted to the region or country they are operating in. So, the American companies usually focus on a single type of properties, but seek global covering, while European companies stick to the local market or at best regional, but invest in many types of properties. Asian companies target mostly the gain

from selling properties than from renting them, that's why these businesses are more volatile than the ones from the other continents.

During 2009, 11 REIT'S have issued bonds in a total value of \$ 3.4 billion and common shares in a total value of \$ 9.6 billion, having as purpose the cutting down of and the raise of liquidities. Europe REIT's shares have begun to be subject to transactions at a price close to the one of NAV, in the UK transactions being made with a 20% discount.⁽¹⁾

3. The five forces of Michael Porter

3.1. Entrance barriers

Companies that operate in this sector are engaged in development and management of real estate properties, constituting key elements for construction companies. In order to enter in on going projects as well as in long-term management projects, players on that market need an easy access to financing. Financial pressure is very high to newcomers and usually a period of time is needed before the properties begin to generate incomes. Competition in this sector is deepened by numerous factors, of which uncertainty of the economical environment and the uncertainty of the financial situations are the main ones. A place apart has the REIT'S, which above all these have also legal obligations as follows: 75% of the profit must come from rentals, 90% of the profit must be distributed to shareholders.

3.2. Suppliers

Building owners, land owners, architecture companies and the ones dealing with constructions and renovation are the most important suppliers for the players in the real estate sector. Their goods and services are really important to the Real Estate Operators, and that's why their power of negotiation is very great. Still, some companies integrated, vertically, at least a few of these functions, so the pressure of the suppliers has decreased at some degree.

Another type of suppliers consists of the employees with significant abilities and qualifications. The capacity of the players to attract and retain employees is vital to the success of the business. Still, the force of negotiation of the employees is perceived as being moderate.

3.3. Clients

Real Estate Operators have a big range of potential clients, which makes their power less important. Still, big clients, with a very strong financial situation, can put pressure on negotiations. At the same time, financial loss of the big clients may have negative effects on the players' incomes. Name recognition plays a quite important role in attracting clients, but price and location are decisive. Real estate companies differentiate each other through the type and location of properties they offer. The negotiation force of clients is perceived as being moderate.

3.4. Substitution products

When it comes to acquisition and management of properties there are no substitution products. But if we consider the share as an investment object, from the investors' point of view common shares and bonds of real estate companies can be substitution products for REIT's issued shares and vice versa. The capital one needs to buy and manage a property is considerably larger than the capital invested to form a portfolio, and it implies responsibility of the management and maintenance of the property.

3.5. Competitors

The global real estate sector is very fragmented, small companies competing with international big players. Although it continues to expand, global leader Mitsui Fudosan holds only 2.1% of the sector's capitalization and 5.7% of the assets. Competition is mainly determined by the number of competitors, the geographical diversification, the type of

properties in the portfolio, the fixed costs and the uncertainty of the economical environment. Competition is perceived as being strong.²

4. Key indicators for the real estate sector are:

- Vacancy rate
- Mortgage rate
- Prime rate
- Level of rent
- Return (monthly, yearly, at five years, the annual average being calculated for five years back).

Type of assets (EUR)	Sep. 2009 capital gains (%)	Return of invested capital (%)	capital gains at 5 years (%)	Average annual gains (%)
Global Real estate	3.7	25.9	5.9	1.2
Global Equities	3.1	24.3	11.8	2.3
Global Bonds	0.6	1.1	24.6	4.5
Europe Real estate	1.3	31.2	-1.7	-0.3
N America Real estate	5.3	15.4	-6.8	-1.4
Asia Real estate	3.3	34.8	29.2	5.3

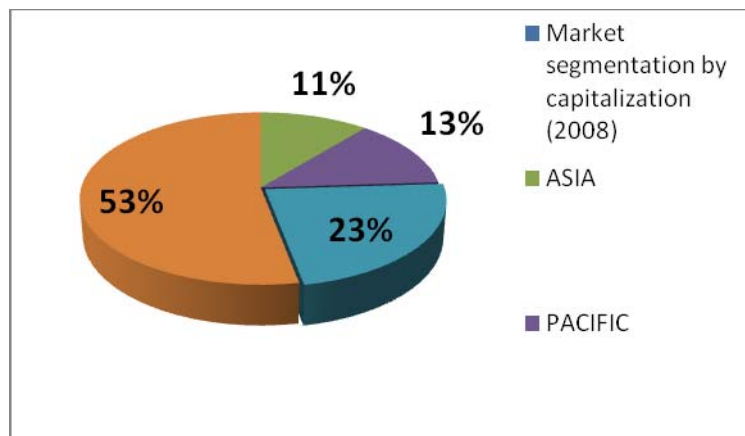
- Return vs. cost of debt and risk free rate

	USA	Canada	UK	Belgium	Netherlands	Germany	Japan
Dividend 's return	5.27	7.1	3.57	5.76	5.42	4.84	5.77
5 years maturity bonds' rate	3.34	3.45	5.23	4.89	4.77	4.59	1.5
10 years maturity bonds' rate	3.99	3.74	5.23	4.9	4.8	4.58	1.61
Cash rate	2	2.99	5.25	4.27	4.27	4.27	0.57
3 years governmental bonds interest rate	1.87	3.3	5.91	4.22	4.95	4.95	0.59

- Other significant indicators geographically

Indicator	North America	Europe	Pacific	Asia
Debts/ total assets	66.59%	36.89%	39.47%	40.98%
Premium/discount of market price compared to the value of net asset unit	45.87%	-21.64%	-32.08%	-2.99%
Dividend's return	5.4%	4.46%	5.72%	5.75%
β	1.02	0.69	0.92	0.82

Division of the market from capitalization and REIT-s structure point of view is presented below. The biggest market is that of the USA, followed by the European one. In 2008, the first 5 countries, where capitalization is concerned, have been the USA – \$ 294.6 billion, Australia – \$ 78 billion, France – \$ 72.8 billion, the UK – \$ 41 billion and Japan – \$ 38 billion.



The average REIT capitalization is: the UK -US\$ 2.3 bn, the USA -US\$ 1.9 bn, the Netherlands -US\$ 1.7 bn, France -US\$ 1.5 bn and Hong Kong – US\$ 1.26 bn.

	North America	Europe	Pacific	ASIA
Mortgage	5%			
Industrial	8%	5%	14%	7%
Residential	13%	2%		6%
Offices	14%	15%	18%	43%
Specialized	24%	1%		4%
Retail	27%	45%	54%	29%
Miscellaneous	9%	28%	11%	10%
Other		4%	3%	
Management& development				1%

5. Characteristics/Differentiation factors

The shares of real estate companies are shares that rely largely on the banks' credit politics, on the tax level and on a series of other macro-economical and sector indicators.

Real estate companies' assets are the type that brings relatively constant, predictable incomes with two components – capital gains and operational incomes – that provides coverage in case of inflation. They also don't have maturity, transactions with 100 years old buildings are continuously made, but transaction costs are high.

Inefficient market is not a weak point because it allows the information holder to obtain the best prices, this being also reflected in the market price of the shares.

Division of the market is expressed through the type of asset (office, residential, industrial etc or mortgage, rental, selling assets or hybrid) as well as through the geographical areas it covers.

The real estate companies' shares are defensive ones, and they generate dividends (see REIT's that must divide a minimal share of the profit to the shareholders), but also provide medium and long term profit from the appreciation of the quotations.

REIT'S regulations differ slightly from a country to another. REIT's have to allocate dividends from a percentage of 80-90% of the profit and need to keep a certain structure of the assets and of the income sources. These restrictions limit the REIT's in acquisition of certain assets and in maintaining those throughout a period of time that would lead to the change of the structure. The distribution of such a big portion of the profit into dividends can also create cash-flow problems.

Differentiation factors by comparison with other sectors:

- High competition,

- High dependency on the macro-economical factors,
- Shares and bonds issued much more than in other companies,
- High financial leverage rate,
- Consistent cash flow,
- Defensive shares,
- Dividends distribution.

The most important global competitors REITs are:

1. *Mitsui Fudosan* (Japan): leasing, selling houses, office buildings, lands, constructions and materials, brokerage, consultancy, management and other. It operates mainly in Japan.

2. *Mitsubishi Estate Company, Limited* (Japan): office buildings, residential buildings, urban development and management, architecture and design, hotels, real estate operational services. It operates mainly in Japan.

3. *CB Richard Ellis Group* (USA): office buildings, retail, industrial, residential and commercial buildings. It operates worldwide, having over 300 offices.

4. *Land Securities Group* (UK): holds and manages commercial properties, offers consultancy to public and private operators, constructions, maintenance, security, insurances, and marketing. It operates mainly in the UK.

5. *Westfield Group* (Australia): development, design, constructions, asset management, property management, leasing, and marketing. It operates in the USA, Australia, New Zealand and the UK.⁽³⁾

6. SWOT analysis

Real estate market is not going to boost in less than four years, even if transactions are going to increase, return is going to keep shrinking, rental rates are going to keep on decreasing, the assets owners starting to re-evaluate their expectations. The liquidity owners are already very careful in identifying opportunities and „cheap deals”, especially in Asia. In all regions IPO s are preparing for the increase of liquidities.

A re-arranging on a geographical level will take place, European companies considering Europe and especially Germany as a safe port for bad weather and will try to decrease exposure on transcontinental markets. Assets are to be sought for in big cities, stable when prices and long term-generated incomes are concerned.

Regarding Asia, it is estimated that, out of US\$ 6.2 trillion resulted from oil exports of the Persian Gulf countries in the next 14 years, at least US\$ 3.5 trillion will be directed outside borders, and a good share of it in the real estate. Even if until 2007 petrodollars and sovereign funds have entered mostly the USA and Europe, starting with 2010, Asia will also be included in their investment preferences with India, Malaysia and especially China.

Strengths

- High dividend rate
- Predictable, consistent cash flow
- Safe income in economical growth conditions.

Opportunities

- Possibility to diversify assets
- Possibility to diversify geographical extend
- Vertical integration
- Local and national specific real estate programmes.

Weaknesses

- High debt rate
- High financing necessities.

Risks

- Acerb competition
- The crisis of banking industry
- The worsening of general economic environment.

7. Conclusions/Recommendations

The characteristics of the real estate sector lead to the following conclusions:

- Except the banking sector, the real estate sector is the one that had the biggest drop since the beginning of the crisis in 2007, the main sector indicators losing up to an average 75% until March 2009, when they have reached the minimum.
- In November 2009, S&P 500 Real Estate Group Index has reached the value of the same month of 2008, recuperating 50% of the loss from the beginning of the crisis and gaining 109% compared to the minimum registered in March 2009.
- High volatility qualifies real estate shares as risky investments right now, but on long term they could bring a good remuneration of the invested capital.

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THE IMPACT OF THE INTERNATIONAL FINANCIAL CRISIS ON THE ROMANIAN CAPITAL MARKET

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***Abstract.** The financial crisis during 2007 and 2008 was the cumulative negative effect of several economic, financial and institutional interconnected factors. Due to the globalization of the financial services market, the interrelation between the world economies and financial systems lead to a chain dissemination of the crisis effects. The fall of the developed markets had a strong effect on the emerging ones, which were confronted with an unprecedented lack of cash. Against this background of international financial crisis, the Romanian capital market was characterized by high volatility, low liquidity and significantly decreasing stock indexes.*

Keywords: international financial crisis; globalization of the financial services market; foreign investments; liquidity.

JEL Codes: F21, F36, G01, G15, G24.

REL Codes: 10F, 11B, 11C, 20E.

I. Main factors generating the international financial crisis

The financial crisis was mainly possible due to the unsustainable evolutions in terms of lending that involved excessive liquidity, low interest rates, fluctuating asset prices and inappropriate risk management. Adding to the mentioned factors, which generated considerable global macroeconomic imbalances, was the unprecedented development of financial innovation by means of financial instruments whose systemic characteristics, risks and effects were not sufficiently known and assessed by the financial institutions involved and the competent authorities respectively.

The years that preceded the financial crisis brought important legislative changes, while the United States and the European Commission as well formulated new principles meant to ensure a prudential business environment that would also foster both competition growth and the establishment of the necessary infrastructure to allow markets to provide integrated financial services.

The establishment of the single European financial market began as early as 1993, starting with the issuing of the directive on financial investment services. However, shortly after the directive came into force, the need for its revision arose, due to the technical development of the regulated markets, the appearance of alternative trading systems, the expansion of the investment companies activities, as well as – last, but not least – the traditional approach by the national authorities to the organizing, functioning and supervision of market participants.

The joint efforts by decision makers in implementing the measures stipulated in the European Financial Services Action Plan (FSAP) took shape in 2004, when the Markets in Financial Instruments Directive (MiFID) was approved.

A series of Community acts followed, regarding transparency, market abuse, capital adequacy, take-over bids and undertakings for collective investments in transferable securities.

Therefore, the existing regulation and supervision framework was unable to prevent the crisis, which was especially due to the following:

- inadequate risk management due to weaknesses in risk assessment by financial institutions using inappropriate statistical methods;

- inappropriate lending risk assessment by rating agencies, due to outdated assessment methodologies and major interest conflicts;
- lack of regulation and supervision on the derivative lending instruments and structured products market;
- insufficient assessment of the macro-prudential risk;
- ineffective crisis management by inappropriate enforcement of prudential regulations, delays in taking action by certain international institutions and lack of coordination among such institutions.

Consequently, by means of securitizing operations, the cash flows related to individual loans added up, while through the financial instruments generated in this way, the related lending risk was transferred upon the international financial markets. As a result of such transfer, the lending risk related to high-risk mortgage loans in the USA (subprime lending) was taken over by institutional investors.

Due to the globalization of the financial services market, the interrelation between the world economies and financial systems lead to a chain dissemination of the crisis effects, thus negatively affecting other markets as well, such as goods and services markets, rapidly reaching the economy.

The hypothesis according to which financial institutions eliminate their lending risk by means of securitizing operations has turned out not having any grounds, when considering the phenomenon at global level. The attempt of eliminating risks has done nothing but forcing the transfer of such risks onto the international financial markets, generating an international financial crisis.

Although the use of products such as derivative lending instruments and structured products have more obviously affected institutional investors, they have also influenced retail investments, due to certain aspects which have not been paid enough attention, such as:

- retail investors have difficulties in understanding how such instruments work, while the available information is both excessive and written in a sophisticated language as well as not facilitating the possibility of comparing products;
- their continuous innovation;
- the legal provisions in the European Union member states regarding such products are not uniform and have serious deficiencies;
- a certain asymmetry of information is proven to exist between the issuer of such products, distributors and retail investors, while the latter have a low level of financial understanding. Moreover, combining such products leads to increased asymmetry and added complexity, which generates diminished transparency and increased costs;
- convergence within trading channels;
- incomplete or unclear publicity which may affect the appropriate choosing of products.

Although such complex instruments can rarely be found on emerging markets, due to the financial flows globalization – which resulted in investing the reserves of emerging markets in countries with developed capital markets, the weaknesses of the international financial system indirectly generated negative effects on the emerging markets as well, including the one in Romania.

II. International financial crisis effects on capital markets

The financial crisis that started in the USA has expanded over the financial markets in Europe and Asia, due to their significant interconnection. As a result of people losing their trust in the financial system, the interbank liquidity has severely decreased; many institutions have therefore become dependant on credit lines from central banks. Liquidity decrease and credit cost increase have generated a significant decline in lending to individuals and economic agents. Consumption diminished and a number of large companies reduced their production, while others went bankrupt, thus generating unemployment.

In the summer of 2007, Bear Stearns investment bank announced the bankruptcy of two speculative funds, becoming the first large bank affected by the subprime crisis, while the German bank IKB admitted to being in difficulty. The two events were followed by the announcement made by the bank BNP Paribas regarding the freezing of three investment funds exposed on the subprime market. During this period, ECB injected Euro 94.8 billion in the European financial system, while FED injected USD 24 billion in the American system; at the same time, the main stock exchange markets significantly decreased, anticipating the risk of crisis expansion. Moreover, the Bank of Japan, the Bank of Switzerland and the Bank of Canada announced their interventions on the market.⁽¹⁾

The situation became worse in 2008, when important private financial institutions came close to bankruptcy (Lehman Brothers). JP Morgan Chase announced its acquisition of Bear Stearns for USD 236 million, supported by FED, while the US Treasury announced the taking over of Freddie Mac and Fannie Mae. Only a week later, FED was taking over the management of Goldman Sachs and Morgan Stanley. One of the main banks in the USA, Bank of America, was taking over Merrill Lynch, for USD 50 billion.⁽²⁾

The severity of the crisis, which was regarded by financial analysts as the most difficult since 1929, has led to exceptional governmental measures. The American Insurance Group (AIG), the largest insurance company in the world, was supported by the American state through public funds, due to the systemic risk its bankruptcy would have implied. It was the same in Europe, where governments applied programmes to support financial institutions in difficulty, and where things went so far as to some important players on the financial market being nationalized – it was the case of banks such as the Royal Bank of Scotland (RBS) or the Northern Rock, the fifth institution in Great Britain, in which the British state became a majority shareholder. Thus, central banks focused their efforts on reviving the credit market.

The significant fall of the financial markets has first affected the capital markets segment. While all national markets have been affected by these events, some stock exchange markets have decided to suspend transactions because of the fall in the market. Quotations for most of the listed securities dropped, while the shock affected the stocks of banks and other financial institutions the most. Central banks opted for an injection of capital in order to counteract the effects in the banking segment; however, the capital market kept falling, while it was also highly unstable.

The stock exchange market anticipates the expectations regarding the economy. Negative expectations, supported by unfavourable statistical data, lead to a change in investors' behaviour, generating an important fall of the quotations on international financial markets in 2008, and causing significant falls of the main stock indexes: FTSE/ATHEX 20 – 66.1% (Athens Exchange), S&P/MIB – 49.5% (Borsa Italiana), BET Index – 70.5% (Bucharest Stock Exchange), BUX Index – 53.3% (Budapest Stock Exchange), FTSE/CySE20 – 77.0% (Cyprus Stock Exchange), DAX Performance Index – 40.4% (Deutsche Borse), EURONEXT 100 – 45.2% (NYSE Euronext), AEX – 52.3% (Euronext Amsterdam), BEL 20 – 53.8 (Euronext Brussels), PSI 20 – 51.3% (Euronext Lisbon), CAC 40 – 42.7% (Euronext Paris), ISEQ 20 Index – 66.6% (Irish Stock Exchange), FTSE 100 – 31.3% (London Stock Exchange), OMX Nordic 40 – 50.5% (OMX Nordic Exchange), OMX Copenhagen 20 – 46.6% (OMX Nordic Exchange Copenhagen), OMX Helsinki 25 – 49.6% (OMX Nordic Exchange Helsinki), OMX Iceland 15 – 94.4% (OMX Nordic Exchange Iceland), OMX Stockholm 30 – 38.8% (OMX Nordic Exchange Stockholm), OBX – 52.8% (Oslo Borse), PX – 52.7% (Prague Stock Exchange), SMI – 34.8% (SIX Swiss Exchange), IBEX 35 – 39.4% (Spanish Exchange BME), WIG 20 Index – 48.2% (Warsaw Stock Exchange) and ATX – 61.2 (Wiener Borse). It is noticeable that stock indexes on the main European markets have also dropped significantly, which emphasizes once again the global nature of the crisis. As expected, OMX Iceland had a dramatic fall of 94.4% as compared to 2007, while FTSE 100 had the slightest fall, of only 31.3%. As regards the stock exchange

markets in the area, the falls in the representative indexes of the Czech Republic and Poland did not exceed 40%.⁽³⁾

The loss of confidence in the accuracy of the assessments by rating agencies has caused increased asymmetry of information, which has implicitly generated increased uncertainty in terms of the future evolution of financial instruments prices.

More and more clues as to a stabilization of the world economy appeared lately, confirming the expectations according to which the significant decrease in the economy is over, especially on the large emerging markets. After the decrease in the fourth quarter of 2008 and the first quarter of 2009, the world economic growth became positive in the second quarter of 2009.⁽⁴⁾ This was mainly supported by the expansion of the fiscal and monetary policy actions taken, as well as by the increase of the extent of consumers' trust in the corporative sector.

III. The effects of the international financial crisis on the Romanian capital market

The Romanian capital market was characterized by high variations in both stock indexes and liquidity in 2007, which were generated by external factors – such as the increase in the international markets in the first part of the year and the increase of the tensions in the high-risk mortgage loans market in the USA – as well as by the significant change in the investors' perception regarding the stability of the internal macroeconomic indicators after the external crisis started. The global risks re-evaluation generated a change in the behaviour of non-resident investors on emerging markets – an evolution which also influenced the internal capital market.

Non-resident investors reduced the capital flows to the internal capital market starting with August 2007 (except for December), due to their increased risk aversion as compared to the first part of the year. The substantial inflows in December were also due to the IPO by Transgaz for which an extremely high level of subscriptions was recorded.

As regards the Romanian market, August was the first month in 2007 when non-resident investors became mainly stock sellers. The process continued over the following period, while at the end of January 2008 the amount of net sales by non-resident investors added up to RON 561 million. However, the negative evolution of stock indexes during the first three months since the beginning of the crisis was caused by a low amount of net sales by non-residents (RON 87 million), which leads to the hypothesis of a simultaneous presence of a pure contamination in this correction phase.⁽⁵⁾

Three periods of ample corrections to stock indexes were noticed on the Romanian market from the moment the crisis started on the international markets: July-August 2007, October-November 2007 and January-February 2008. The correlations between BET index and international indexes show an increase in the influence of the developed capital markets evolution and a better synchronization with the emerging markets in the area during certain correction periods.

The external impact was at its highest at the moment the crisis started on the international financial markets (July-August 2007), when investors' risk aversion suddenly accelerated, as well as during the first two months of 2008, when investors' fears regarding the US economy entering recession and the risk of its global spreading increased the outflow of capital from shares markets and its reorienting towards government bonds, precious metals and crude materials markets. The internal capital market contraction from October and November 2007 was mainly caused by internal macroeconomic factors; a difference in the national market as compared to the external markets was noticeable in terms of daily evolutions. The difficult international context facilitated the decline of the national capital market during that period; however, the internal causes had the highest impact.

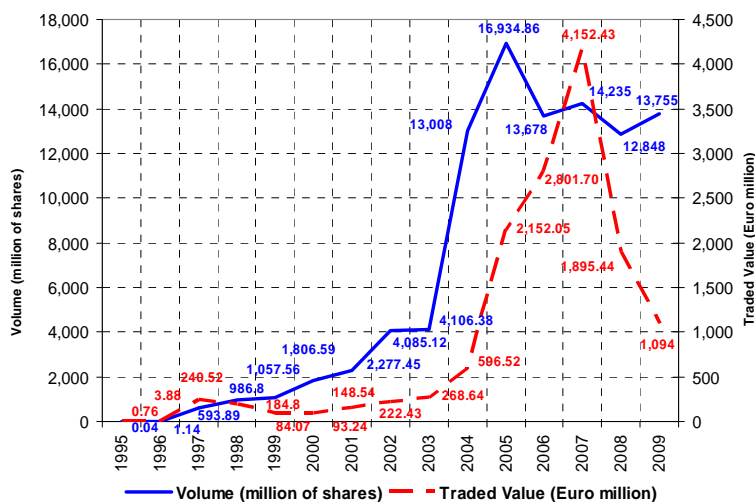
In 2008, the most visible effects at national level were the slight worsening of the investors' risk perception and the substantial decrease in the financial institutions and markets

liquidity. As local financial institutions were not exposed to the dangerous financial instruments that represented the basis for the international financial crisis, the turbulences on international markets indirectly affected local investors and markets, through the economy and financial markets liquidity.

As the international financial crisis unfolded, the Romanian capital market had an evolution which was similar to that of other markets in Europe, America and Asia, while its characteristics were low liquidity and significant market indexes decreasing. This evolution was intensified by the fact that the external financial institutions closed their positions in terms of local financial instruments in a short period of time, as well as by investors' reluctance towards maintaining or increasing their securities transactions. Under such circumstances, the total market capitalization decreased by 47%, to RON 57.8 billion.

The evolutions on Bucharest Stock Exchange and Sibiu Monetary-Financial and Commodities Exchange were influenced by the international markets evolution, both in terms of investors' perception of the capital market and in what regards the foreign institutional investors' activity. Just like the markets in the area, BSE suspended market transactions twice in October, because the maximum threshold of market indexes negative variation had been reached.

Following a steadily increasing evolution during 2005-2007, BSE recorded significant decreases in the second half of 2008. The market value of the traded securities dropped by 50% as compared to that in 2007, from RON 14,597.01 million (Euro 4,385.90 million) to RON 7,182.33 million (Euro 1,957.78 million).



Data source: BSE (the 2009 data also include November)

Figure 1. Evolution of share transactions on BSE during 1995 - 2009

However, at the end of 2008, the market capitalization of Euro 11,629.76 million was 4 times as high as compared to 2003. During the 250 trading sessions in 2008, a number of 1,341,297 transactions were concluded of 12,848 million shares with a value of RON 6,950.40 million (Euro 1,895.44 million) and 552 transactions of 1,214,353 bonds with a total value of RON 231.93 million (Euro 62.34 million).

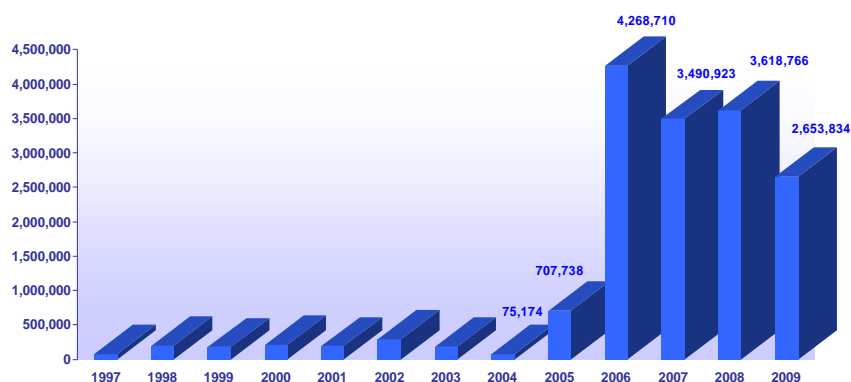
If prior to 2001 Bucharest Stock Exchange was regarded as a shares market, the latest years brought the establishment and development of the bonds market – especially municipal bonds – and a diversification of the instruments by transactions of preference rights, allocation rights and futures contracts.

In 2007, the RASDAQ market managed by BSE recorded increases that were quite significant. The merger between BSE and RASDAQ electronic market, completed in 2008, definitely brought more visibility to the securities traded on this market, while the transactions

on this market reached RON 4,254.1 million (Euro 1,287.7 million). The most interesting companies were identified and grouped per categories of excellence, as a first step towards their promotion on the regulated market; the number of listed issuers was gradually reduced by taking them off the market, based on the shareholders' decision according to the extent of the issuers' meeting of the listing requirements, so that the number of traded companies steadily decreased from 5,516 issuers in 1999 to 1,753 in 2008.

In 2008, against a background of reduced quotations and lower number of issuers allowed to trade, the value of the transactions dropped by 63.3%, reaching RON 1,562 million (Euro 426.5 million).

As regards Sibiu Monetary-Financial and Commodities Exchange, starting with the year of establishing the futures market until the end of 2003, it is noticeable that the trading volume was relatively steady, not exceeding 300,000 contracts a year. Therefore, 2006 became the best year in the history of the exchange, with a total of 4,268,710 traded contracts and a value of RON 9,744.28 million (approximately Euro 2,770 million). The extremely high growth rate made it possible for a record daily volume of 71,000 contracts in November.



Data source: SIBEX (the 2009 data also include November)

Figure 2. Evolution of SIBEX trading volume during 1995-2009

In 2007, the interest that the derivative financial instruments market in Sibiu raised generated medium and high trading volumes, depending on the time of year. While in the first half of the year the volumes were obviously higher than the ones in 2006, during the second half of the year the liquidity diminished, which led to a trading volume of 3,490,923 contracts, that is 81.78% out of the volume in 2006.

Although the volume of 3,618,766 contracts traded in 2008 was higher than the one in 2007, the number of positions opened decreased, especially during the first part of the year – similar to the trend that had begun during the previous year, while investors concentrated on speculative transactions to the detriment of arbitrage and risk coverage operations.

The 35% decrease in the trading value in 2008 and the first part of 2009 was mainly caused by the decreased quotations of the derivative financial instruments based on shares, which progressed in a manner similar to the quotations on BSE.

SIBEX derivative financial instruments market has steadily developed; thus, starting with 16 futures contracts allowed to trading in 2004 and just as many option contracts based on futures contracts, there were 36 futures contracts based on shares, stock index, exchange rates and gold traded on the futures market and 30 option contracts based on futures contracts at the end of 2008.

Despite the difficult financial context, the evolution during the period 2007-2008 was consistent with the already established trend, while it involved both an increase in the futures market liquidity and the strengthening of the position SIBEX held in the region. The positive evolution of the financial and operational indicators must be appreciated, particularly as it

occurred against a background of steady worsening of the national exchange environment situation, especially during the second half of 2008, while the effects of the international financial crisis aggravated. Sibiu Exchange has thus demonstrated the capacity of upholding the market players' constant interest in its products, regardless of the overall situation on the capital market. Due to Sibiu Exchange, the Romanian capital market has entered the top of the derivative instruments markets in Europe, holding the eighth place in terms of the shares derivative instruments, after Eurex Frankfurt, Euronext LIFFE, Spanish Exchange BME, OMX Nordic Exchange, Borsa Italiana, Oslo Bors and Athex Derivatives Exchange.⁽⁶⁾

The evolution of the open funds market indicators in 2008 is consistent with the corrections on the regulated markets as a result of the international financial crisis. However, the increase in the number of investors and the decrease in the assets with a lower rate than the stock indexes correction indicate that the sector continued to be of interest to investors, while they redirected to riskier investments (especially fixed income instruments). Nevertheless, ever since the international financial crisis started, the investment funds industry decreased in terms of the value of asset portfolios owned by investors. The open investment funds held net assets of RON 941 million at the end of 2008. The decrease in the asset portfolios value was caused by the decrease in the value of the listed shares and by the volume of repurchase by investors as a result of the net asset value depreciation.⁽⁷⁾

The activities of the financial investment services companies significantly decreased over the last year, because of the reduced liquidities on the regulated markets where they provide their clients with financial services and because of the reduced number of investors' active accounts. National intermediaries reduced their activity by closing an important number of their secondary offices and by reducing their staff, as well as by narrowing the scope of their activities, in order to be able to comply with the prudential capital requirements.

Although Romania's accession to the European Union was an opportunity for investment companies to provide investment services and activities on the territories of other member states based on the „single passport”, only three companies had notified such an intention to the authorities by the end of 2008.

IV. Measures taken to counteract the effects of the international financial crisis

Given the crisis situation, exceptional measures needed to be taken, both internationally and nationally. In the USA and some European countries, governments and central banks reacted by enhancing liquidity, providing governmental collaterals to loans, recapitalization of financial institutions, guarantees to the most recent issues by ensured banks, preventing the collapse of interconnected large companies, buying bank shares, coordinated interest rates reductions.

The European Union has supported the necessity of developing measures for stabilizing, supervising and strengthening the financial sector transparency. The European Union Council has also requested that quick decisions be made regarding rating agencies, financial supervision and accounting standards.

Therefore, a number of measures were taken to strengthen cooperation and coordination among capital market authorities in the member states, as well as measures for capital markets recovery from the financial crisis impact: temporary suspending short selling, monitoring the impact of recent market events on investment funds, protecting investors, monitoring the implementation of accounting standards and monitoring the operation of post-trading infrastructure in order to ensure the finalization of transactions over the period of financial instability.

The measures taken also referred to the changing of the legal framework at European level. The first action taken by the European Commission starting with October 2008 was assigning a working team made up of eight high European officials – managed by Jacques de Larosière, from France – whose purpose was to make recommendations for strengthening the

supervision arrangements within all financial sectors, aiming at establishing a European supervision system that would be more efficient, integrated and sustainable.

Considering the turbulences on the international financial markets, which also affected the Romanian capital market, starting with September 2008 the supervision authority has taken measures aimed at stimulating the market, such as: suspending the 0.08% rate applied to the transactions value, for a period of six months, and decreasing it to 0.04%, suspending the application of the rate in case of government bonds transactions, suspending the application of the rate in case of both public selling offers by the state and public selling offers for admission to listing on a regulated market. Furthermore, in view of increasing the supervision of intermediaries, undertakings for collective investments and market operators, such entities were required to submit more detailed reports, more frequently.

In view of supporting the capital market, the Romanian National Securities Commission and the Ministry of Economy and Finance have taken temporary stock transactions rate relief measures, while such measures can also be found among the anti-crisis measures taken by several other member states of the European Union. Among the measures taken were the following: suspending the profit tax on profits made by foreign legal entities and suspending the profit tax on individuals' earnings from capital market transactions, as well as deducting individuals' losses from net earnings of the same type during the following fiscal year. Additionally, the incomes obtained by Romanian legal entities from securities transactions were considered to be tax exempt incomes, while the expenses related to such transactions were considered non-deductible expenses.

The National Committee for Financial Stability (NCFS) was established in July 2007, following the signature of an Agreement between the Ministry of Economy and Finance, the Romanian National Bank, the Romanian National Securities Commission, the Insurance Supervisory Commission and the Private Pension System Supervisory Commission, in view of cooperating in the area of financial stability and financial crisis management; starting with September 2008, NCFS members have initiated and adopted joint measures regarding the financial stability of the Romanian financial-banking system.

V. Conclusions

As the ongoing financial crisis keeps deepening, it becomes clear that we are dealing with a structural crisis which is closely connected to the lack of coherent evolutions in the entire system. While it started after the crisis of capital markets in 1987, the recession in the United States in 1991, the crisis in Asia in 1997 and the critical fall of stock quotations in the Internet sector in 2001, this crisis – which is much more serious than the ones in the previous years – is definitely known as the most severe since the 1930s.

At European level, the financial crisis has generated an intense process of reorganization of central institutions and restructuring of financial markets, while new principles emerged which are meant to ensure a prudential business environment that would also foster competition growth in the integrated financial services segment.

The correlation of the Romanian capital market with the European markets has been relatively low, except for the international financial turbulences during September and October 2008. The increasingly low perceived risks associated to the world financial system have lead to the diminishing of the correlations, indicating a low extent of integration of the national capital market into the European markets.

Notes

- (1) www.crisis-financial.com
(2) www.federalreserve.gov
(3) Exchanges web-sites.
(4) European Central Bank, Monthly Bulletin, September 2009, pp. 9-10.
(5) National Bank of Romania, Financial Stability Report, 2008, pp. 56-57.
(6) www.fese.be, www.sibex.ro
(7) Romanian National Securities Commission, Annual Report, 2008, pp. 103.

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INTERDEPENDENCE OF CAPITAL MARKETS IN TERMS OF ECONOMIC STABILITY AND IN CONDITIONS OF FINANCIAL CRISIS - ECONOMETRIC STUDY OF THE EFFECT OF CONTAGION

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***Abstract.** The present study aims to build a relationship that can quantify the dependence between different capital markets and to compare the results obtained before and after the onset already famous financial crisis we are going through. Also, we plan to identify on the basis of generally valid empirical behavior of these dependencies, to justify its trend and seek justification for any exceptions occurring. The paper seeks to be a starting point for further reflections on the connection and transmission channels of information between capital markets in different geographical areas.*

Keywords: financial crisis; stock market dependence; GARCH; correlation; contagion effect.

JEL Code: G01.

REL Code: 10B.

1. Introduction

The extent of recent financial crisis and the consequences of contagion effect have drawn attention of worldwide economists. The latest research focuses on understanding the causes and consequences of financial crises (Forbes, 2002, Kodres, 2002, Bekaert, 2003, Kaminski, 2004, Barberis, 2005, Boyer, 2006).

The last decade has been marked by numerous financial crises: the Asian stock market crises in 1997, the Russian default in 1998, the Internet Bubble in late 1999 and collapse in 2000 and the Brazilian stock market crash in 1997-1998 and 2002. But the most serious one is the US housing sector that began in June 2007 and affected the entire globe. The effects of the global financial crisis began to be observed since the mid-2007. Worldwide stock markets have started a downward trend, large financial institutions have collapsed and most powerful nation governments adopted packages of measures to save their own financial system.

According to Boyer (2006), the crisis is spreading from one country to another leading to the phenomenon of „contagion”. One common feature is how an initially country – specific event seemed to transmit rapidly to markets around the globe. We watched with concern as this crisis, which captured the attention of all mankind, exceeded the sectors initial affected. Alan Greenspan recently called it a „once-in-a-century credit tsunami”⁽¹⁾, born from the collapse of US real estate sector. Instability has contaminated area after area, first banking and financial markets, then the whole economy. The crisis has moved across borders and threaten emerging markets and developing countries, destroying recent progress.

The study focuses on eleven capital markets, the US and 9 European national markets: the Netherlands, Austria, Romania, France, Britain, Italy, Germany, Spain, Switzerland and we also considered an index for the European capital market. The aim is to review the global financial crisis which started in June 2007, studying the behavior (correlation) of capital markets when at least one is affected by the financial crisis.

Using a function with multiple parameters we considered the „size-time” transmission of pulse occurrence of crisis. A feature of this crisis is the difficulty with that the associated parameter, the dependency parameter, can be analyzed in time. By a regression applied to data series that are representing the market efficiency variable and decline variable, associated parameter is obtained, but how it varies, the size of variance, if the range is constant or it changes with logical increase or reduction in the value and so on, are difficult aspects to quantify and substantiated.

Regression functions offers significant advantages in time series analysis because they have a high degree of flexibility. We have also proposed the use of univariate models for specifying the return dynamics using GARCH.

This work contributes to the existing literature as:

- We have extended the previous work by proposing a model where the dependent variable depends on past achievements, so it creates a link with the previous moments of the market, before the crisis trigger;
- As far as we know no other study examines the effect of contagion within the European Region.

The paper is structured as follows: Section two presents the research in this area, section three presents the data used and methodology. Empirical results are presented in section four. Last section presents conclusions.

2. Literature Review

Most financial decisions are based on the risk/return trade – off. Hence, a central issue in asset allocation and risk management is whether financial markets become more interdependent during financial crises. This issue has acquired great importance among academics and practitioners in the last decade where five major crises were obtained, „crowned” by the current crisis and by the accelerating phenomenon of contagion, shown by the markets that have entered into relations with one of which broke crisis.

Common to all these events was the fact that the turmoil originated in one market extended to a wide range of markets and countries in a way that was hard to explain on the basis of changes in fundamentals. Generally, contagion refers to the spread of financial disturbances from one country to others. The study of financial contagion, defined in Forbes and Rigobon (2002) as „a significant increase in cross-market linkages after a shock to one country (or group of countries)”⁽²⁾, was conducted mostly around the notion of „correlation breakdown”: a statistically significant increase in correlation during the crash period. Bertero and Mayer (1989) and King and Wadhvani (1990), find evidence of an increase in the correlation of stock returns at the time of the 1987 crash. Also, Calvo and Reinhart (1996) report correlation shifts during the Mexican crisis, while Baig and Goldfajn (1999) find significant increases in correlation for several East Asian markets and currencies during the East Asian crisis.

The studies of contagion based on structural shifts in correlation were challenged by Boyer, Gibson and Loretan (1999), who pointed to biases in tests of changes in correlation that do not take into account conditional heteroskedasticity. Boyer et al. (1999) argued that the estimated correlation coefficient between the realized extreme values of two random variables will likely suggest structural change, even if the true data generation process has constant correlation.

Forbes and Rigobon (2002) generalized the approach of Boyer et al. (1999) and applied it to the study of three major crises (the 1987 crash, the Mexican devaluation, and the East Asian crisis). They were unable to find evidence of correlation breakdown in any of these crises after adjusting for heteroskedasticity and concluded that the phenomenon that has been labelled as “contagion” is nonexistent.

Lognin and Solnik (2001) found that correlation generally increases in periods of high-volatility of the U.S. market. Recent contributions by Kroner and Ng (1998), Engle and Sheppard (2001) and Engle (2002) have developed GARCH models with time-varying

covariances or correlations, which clearly illustrates the interdependence of markets while increasing volatility augmentation.

Bae (2003) pointed out that: “The concerns (about contagion) are generally founded on the presumption that there is something different about extremely bad events that leads to irrational outcomes, excess volatility, and even panics. In the context of stock returns, this means that if panic grips investors as stock returns fall and leads them to ignore economic fundamentals, one would expect large negative returns to be contagious in a way that small negative returns are not.”

3. Data and Methodology

3.1. Data

We studied 11 capital markets, the U.S., 9 European markets: Netherlands, Austria, Romania, France, Britain, Italy, Germany, Spain, Switzerland and we also considered an index for the European capital market. For this we considered the next indices: S & P 500 (U.S.), FTSE 100 (UK), GDAXI (Germany), FCHI (France), ^ SSMI (Switzerland), AEX (Netherlands), FTSE MIB (Italy), IBEX 35 (Spain), ATX (Austria), FTEU3 (EU) and BET (Romania – Figure 1).



Source: www.onlinebroker.ro

Figure 1

Data were collected on: www.bvb.ro, Financial Yahoo and www.bloomberg.de and were converted into euro at Forex exchange rate. Daily yields were considered, being eliminated holidays. The period take into account is 04.01.2005-30.09.2009. We split the data into two such periods: before the crisis (January 4, 2005 to May 31, 2007) and the crisis period (June 4, 2007 to September 30, 2009).

Then, we compare the difference in returns, volatilities and correlations, between stable and crisis period.

3.2. Methodology

The analysis of the linear graph of variables is noted that the indices are not stationary series. I log this series. Stationarity was verified by the ADF and PP tests. Cast series show that all have a leptokurtotic distribution, having a high probability of being affected by extreme events, as can be seen in Table 1:

Table 1

Country	Mean	Std. Deviation	Skewness	Kurtosis
Netherlands	-0.000113	0.016530	0.007138	12.167560
Austria	5.96e-05	0.020259	-0.366069	9.064799
France	-1.61e-05	0.016157	0.292855	11.400720
Great Britain	-0.000184	0.015819	0.106851	9.737237
Germany	0.000254	0.015814	0.334496	11.651560
Italy	-0.000256	0.015958	0.097069	10.981280
Spain	0.000231	0.015617	-0.038420	10.500070
Switzerland	0.000105	0.013739	0.225170	9.161414
Romania	-0.000109	0.023308	-0.563908	6.856801
USA	-0.000195	0.015923	0.100112	10.454790
UE	-0.000214	0.015706	0.257225	10.843750

Source: authors calculations.

Further, we made a function to represent the dependence of the yields of two indices, both depending on historical information and volatility.

First we estimated the distributions of each state separately, as follows:

Be X_t and Y_t , two random variables that represent two returns for period t and their cumulative distribution functions $F_t(x_t \setminus \phi_{t-1})$ and $G_t(y_t \setminus \phi_{t-1})$, where ϕ_{t-1} represents previous yields so that $\{x_{t-1}, y_{t-1}, i > 0\}$. In the first stage parameters are estimated using OLS.

As a second step we calculated, using ARCH/GARCH, rate volatility for analyzed indices. Finally we have estimated the dependence parameter. Patton (2006a) proposes that dependence between markets is explained by the previous dependence and the historical average difference of cumulative probabilities for the markets. Follow Patton (2006a), we suppose that p_t depends on the previous dependence p_{t-1} to capture persistence, and historical absolute differences, $|u_{t-1} - v_{t-1}|$, $i > 0$, to capture variation in the dependence process. We estimate the following dependence process:

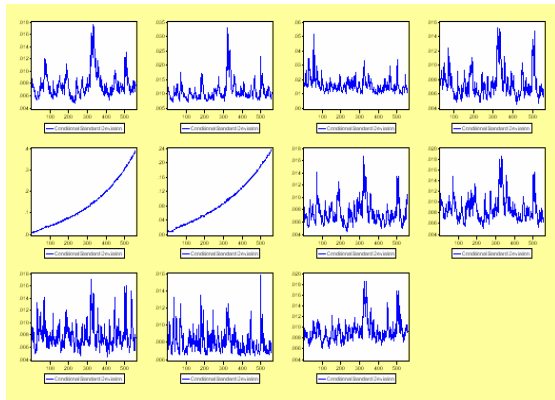
$$[(1 - \beta_1 L)(1 - \beta_2 L)]\rho_t = \varepsilon + \gamma |x_{t-1} - y_{t-1}|, i > 0,$$

where L is the lag operator, β_1 and β_2 are conditional correlation parameters with cumulative probabilities, γ are large negative returns and ω is the white noise innovation term.

The intuition for the use of $|u_{t-1} - v_{t-1}|$ is the smaller (larger) the difference between the realized cumulative probabilities, the higher (lower) is the dependence. So, equation describes an AR (2) model when extra assumptions are made, namely that a linear function of the previous absolute difference, $|u_{t-1} - v_{t-1}|$, provides a white noise innovation term.

4. Empirical results

For most indices, volatility coefficient is positive, meaning that an increase in volatility will lead to lower profitability. Less for UK, France and Austria. The coefficient of asymmetry of the volatility equation is statistically significant and showed that if in the previous period the course increased, volatility will decrease. In Figures 2 and 3 we present the historical series of conditional volatility for the agreed period (1) and the crisis (2).



Source: authors calculations.

Figure 2

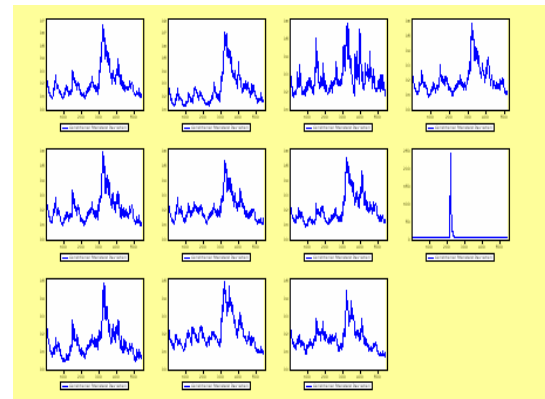


Figure 3

In Table 2 we show results of the estimation model of addiction:

Table 2

Country	cu	β_1	γ
USA	Netherlands	0.502576 (0.080827)	-3.153763 (473.8061)
	Great Britain	0.589849 (0.564279)	-0.158977 (401.9081)
	Romania	0.656057 (0.597737)	-31.26148 (408.7343)
	France	0.679540 (0.569673)	5.035717 (414.3952)
	Austria	0.655593 (0.035617)	-30.61710 (4699.5865)
	Germany	0.548916 (0.405046)	-19.11052 (465.5836)
	Italy	0.007834 (0.595538)	-41.56990 (387.6198)
	Spain	0.586005 (0.439419)	3.324219 (425.4998)
	Switzerland	0.655027 (0.595029)	-6.542061 (370.2451)
	EU	0.586687 (0.594688)	-3.964862 (403.8920)

Source: authors calculations.

Incidentally we passed the terms of the agreed period.

If $\beta_1 > 0.5$ then the corresponding calendar time relationship indicates the existence of high dependency.

$\gamma < 0$ and it is also highly significant, indicating that the latest absolute difference of returns is consistently a relevant measure when modeling market dependence.

5. Conclusions

Findings reinforce the veracity of Lognin and Solnik studies, moreover, extrapolated their conclusion from the US market to different European markets. If they were limited to state that the interdependence of U.S. capital markets is manifested more strongly in terms of

financial chaos, the study presented above makes us say that the same phenomenon, contrary to logical appearances, manifests itself in Europe.

Table 2 is based on data from the current crisis that we all endure today, a much higher crash crisis than Lognin and Solnik studied. We can see that the scale of the crash does not change investor behavior and does not make him less sympathy at risk. If many would be tempted to assert that Lognin and Solnik claim to conclude by US investor profile, more impulsive, less cautious, how is it that investors of different nationalities, some with a reputation for self-control of the exhibit is behave the same?

So, regardless of typical players, the homogeneity or heterogeneity of their nationality, the interdependence between capital markets increases in case of crash, the losses being much higher and faster than the proceeds from the diametrically opposite situation, the financial boom. Contagion fully manifest in times of financial crisis, its adverse effects propagate just like seismic waves, becoming stronger, more resonant, depending on the extent of the situation.

Romania is no exception to the previous dependency rule. The coefficient of dependence recording higher values after the onset of the financial crisis in the United States. Nonexistent direct relationships with US stock market does not mean any shortage of expressions of negative effects, but eventually deferred effects. Growth factor dependence in a lesser extent, there is the advantage of possession of a special skill in juggling the risks taken, but is due to possession of a capital market without a long history, no Romanian capital employed in relation to other markets and had a relationship than with other EU Member States or other markets, proximate economic community, which now acts as a sieve, reducing and delaying the crisis events.

The conclusion obtained leads us to further study of the interdependence of gender factors influence classification review of cost of capital, perhaps even entry into computer models of a factor such as the degree of interdependence with other capital market, the share of total losses relationships with market capitalization or market share in total trading with trigger crisis market.

Notes

¹ A tsunami as you can see once a time in a hundred years

² A substantial increase of the link between financial markets after the shock occurred in a country (or group of countries).

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BRANDS OF THE SIFS

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***Abstract.** A concern for branding of the five Romanian financial investment companies is still in an early stage both for the companies themselves and the portfolio companies and constrained by limitations, this being another reason why the market is still treating homogeneously the five SIFs. Successors of the five Private Property Funds, the naming of the SIFs was imposed, it is the acronym of their descriptor: financial investment company, plus the name of the historical province in which the headquarters are located; their logos were designed without a prior brand audit.*

Keywords: SIF; Brand; Brand corporate branding; corporate identity.

JEL Code: M31.
REL Code: 14G.

Foreword

The brand is a product, an organization, a service with personality. The brand is a promise. A successful brand is a promise fulfilled.

The tangible manifestation of the personality of a corporation is the „corporate brand”, the term refers both to the whole corporation and its products and services. It is an explicit and mutual commitment between the company and its interlocutors, proved permanently and on a long term (Balmer, Gray). Financially, the brand can be measured more easily than the synonymous terms used such as „identity”, „image” or „reputation”. Thus, from the corporate identity that was created and designed, the public perceives the „corporate image”. (Ollins, 2009)

Corporate brand: the corporation becomes a brand

Competing products and services cannot be differentiated only by rational factors (price, quality and service). The choice for one or more of the offers of the investment funds industry/financial investment companies is made taking into account emotional factors: the chosen brand is the more sympathetic, admired more than the competition, in a quasi-identical proposition. To express cohesion, coherence, consistency and clarity, the corporate behaviour in this industry shall ensure that the reputation, the most valuable resource is to be protected and sustained. It brings intangible brand value to exceed the value of tangible assets of a corporation, the brand becoming the most precious asset of an organization, the channel through which the organization is „presented” to the internal public and to the various external audiences – shareholders, customers, stakeholders, authorities, analysts, partners, media etc.

A concern for branding in the five financial investment companies is still in its early stage and is constrained by the limitations, both the companies themselves and the companies in their portfolio, which is another reason for the market treating homogeneously the five SIFs.

SIFs have a portfolio of hundreds of companies – from minority stakes to significant majority stakes – their value is measured by net asset value. With very few exceptions (West Bank, further acquired by San Paolo IMI), they have not created brands, nor they have underwritten any and there are no obvious group synergies of the companies in their portfolio (a beginning in this regard can be found in the tourism companies held by SIF3). Furthermore, in the assessment/valuation of companies for both exits and for possible

investment opportunities, we have not identified a concern for determining the value of brands as intangible assets. Managed properly, a brand equity would make a higher profit margin. Brand equity is considered by David Aaker to be „a set of assets and liabilities related to brand names and symbols, which adds something to the value it provides. The assets and liabilities can be grouped into five categories: brand loyalty, name recognition, perceived quality, brand associations, other assets owned by the brand (patents, trademarks, and relationships within distribution channels). (Aaher, 2009)

Corporate identity of SIFs: testing the differences

The name of a brand must communicate something real and specific about a company, product or service, a good name instating uniqueness, clearly distinguishing from the competition, being rich in suggestions and creating associations. Criteria such as price, quality, service or performance differentiate to a certain extent, but they can all be imitated, replicated, offset, while a brand name can be a unique distinction.

SIFs were deprived of this essential step in building a brand. Successros of the Private Property Fund, the naming of the SIFs was imposed, it is the acronym of their descriptor: financial investment company, plus the name of the historical province in which their headquarters are located: Banat-Crișana, Moldova, Transilvania, Muntenia, Oltenia respectively. Some authors consider naming as „the most important marketing decision, the best name is linked to the benefits of a product or a sales proposal.” „When name and need are combined, the positioning process is applied whenever one hears, reads or speaks about the name of the brand.” (Trout, Rivkin, 2009)

The logo - the organization's official graphic representation – has the first role to ensure recognition of the organization by a diverse public. After creating the logo – defining a lasting symbol which enables the organisation to be recognised both internally and externally, also adaptable to the temporary and spatially developments of the organization – the logo, both totemic and relational element – develops by proper management into visual identity systems giving identity and recognition to the organizations (Heibrunn, 2002, pp. 11-13). Benoît Heilbrunn considers the logo an iconic symbol, the result of a long historical affiliation, rooted in various means of significance and representation, among which more visible were the anthropological, legal, artistic signs. The logo is a symbolic figure, perceived as offering an equivalent by means of a minimum of features, and having a unifying function. Few of these rules are applied by the five SIFs. As for the execution of the visual identity and logos, SIF Banat-Crisana only vindicates from the historic region of its denomination, to a certain extent the lion relates to the name of national currency as well.



Figure 1. The logos of the five financial investment companies

Without analyzing the logos for their expression and content (designed in-house without a prior brand audit), the simple observation of the use of logos in communication is enough for the recognition of some obvious differences: from the concern for the visual identity management (coherence and consistency in the forms of communication) to neglecting these symbols (one of the SIF's website is lacking the logo).

After Wally Ollins' classification, corporate identity is manifested mainly in four visible areas: products and services, environment, communication and behaviour (Ollins, 2004).

Analyzing the five SIFs in terms of Wally Ollins classification of the four vectors of a brand's tangibility, we see that SIFs offer the same products: shares, which have similar price movements and dividend yields. The environments are their head offices and branches, whose number is constantly decreasing, with whom the „customers" interact to a limited extent. This is because operations related to the shareholder status – transactions – are made at the Bucharest Stock Exchange by financial investment services companies and the shareholders register is kept by Central Depository. This could lead to the situation that a SIF „customer"/shareholder would not interact with it directly, but only through intermediaries, thus the role of communication and behaviour are so crucial in defining and managing the corporate identity of the SIFs.

A special note was for a period SIF5, which was the sponsor of the football team *Universitatea Craiova*, expanding such its exposure in an environment where it otherwise would have been minimal (TV coverage, sports newspaper, stadiums).

Nowadays there are so many alternatives for information, so no message can easily reach a significant audience only through the media. Studies have shown that since the last mid-century, many communication campaigns had no effect or, at best, had weak effects. Even if it is directly exposed, the public is not always directly influenced by the media. Most advertising campaigns do not remain in the minds of the people by something distinct, and for the financial industry it is even more difficult to find points of differentiation, given that the points of parity should be confidence, profits, benefits, safety, credibility, reputation. Senses are linked to memory and are in direct relationship with emotions. Sensorial memory associations produced by a brand intensify the impulse to purchase the products of the respective brand. Martin Lindstrom wrote about a necessary exercise of a brand disassembly, showing that there is the chance that, in the absence of logo and name, the mark to loses its significance. This “philosophy of disassembly of the brand” considers all possible contact points with the consumers, in order to build and maintain the image of the brand. (Lindstrom, 2009)

Every contact with the clients must be considered significant, thus the need for the multiplication of the contacts and interfaces with them: the website, the reports published in the press, the annual reports, the correspondence with the shareholders, the forms for exercising the vote in the general assemblies, the telephone calls and so forth, because the „brand is the sum of all experiences a customer has with the product and the company, it is thus an accumulation of functional and emotional benefits, attributes, experiences, images and symbols”. (Zyman, Brott, 2009)

To be convincing, the brand must come in contact with the public, to persuade him, to seduce him. But the receiver needs to want to expose to the brand message. Many brands – communication campaigns – fail because the audience does not expose, or does it in a manner that it is sufficient to be persuaded. In general, the audiences prefer to expose themselves to information that is already in tune with their beliefs and avoid those that are contrary to them. Thus, there is no wrong perception of a brand, but a perception contrary to the purposes of the issuers. Perception is an act of building from a sensory stimulus, in a sense each design reflecting the personality of the individual who perceives (Kapferer, 2002). Capturing attention is not enough for the brand message to be convincing, attention does not mean information processing, attention only facilitates this process (Kapferer, 2002, p. 63), the

memory is a transformation of information. Exposure is by definition selective. We prefer to expose to messages already in tune with the beliefs already formed. Messages from the already preferred brands are being sought. When a message reaches a person it is very likely that he/she is already persuaded by the legitimacy of the message, so persuasive communications reach in general audiences/individuals already convinced, not the ones that must be convinced. The public prefers to be subject to messages conform to its beliefs rather than information that contradicts them (Kopferer, 2002, p. 88). The sociologist Paul Lazarsfeld thinks that the audience seeks information for strengthening their beliefs, thus favouring the messages corresponding to their views through a defensive strategy of exposure to information.

For most SIF shareholders, given how they came to acquire the shares, their involvement in the „product” – shareholder certificate or residual shares – is minimal. For products with minimal involvement, consumers make a minimum effort to process advertising information, relying less on the content of the advertising message, the systematic repetition of the ad/information is more important. For this reason, how reality is showed by mass media – news, forums on the Internet – and the manner the SIFs reputation is perceived by stakeholders and further transmitted among their audience becomes more important. Unsophisticated shareholders will not seek to know in detail the reality of the work and performance of the SIFs, and forming opinions based on these „mediated reality”. The media does not influence public beliefs in matters of strong involvement, but may set the agenda - *things* that the public thinks about. „The public opinion on these topics will be influenced primarily by the opinion of the people chosen as opinion leaders” (Kapferer, 2002, p. 101). So there occurs a process of influence in two stages: a transfer of information from the media to opinion leaders and a transfer of influence from opinion leaders to the public.

For SIFs given their shareholders structure, the value of a group of „customers” is not related to its size and the percentage held, but its influence. **Seth Godin** points out that “those who immediately adopted the idea largely affect the rest curve, so it is important to convince them than to convince anyone else” (Godin, 2009).

Corporate identity management is thus the way in which these organizations – the SIFs – can project a clear image of their identity and goals – the mission and vision they assumed. The perception of SIFs as powerful corporations, creators/owners/endorsers of successful brands is what will determine the „founding shareholders” to remain loyal to the SIFs and to increase its stake, to more than the certificate received in the mass privatization program. And for the sophisticated shareholders it will provide certainty that the business model of SIFs is a viable and successful.

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REGIONAL BEHAVIOR OF BANKS BEFORE AND ONE YEAR AFTER THE ONSET OF THE CRISIS

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***Abstract.** The period of continuous economic growth that has characterized Romania in the 2000s, linked to the easing of monetary policy begun in 2005, determined the commercial banks to adopt extensive strategies. This paper aims to demonstrate that those strategies were based less on economic reasons, and more on the banks' optimistic calculations. Analyzing their territorial activity – from the extension of the branches to the volume of loans granted and deposits made by each county separately, before and one year after the onset of the crisis – low correlation is observed between the economic realities and banking strategies.*

Keywords: commercial banks; development regions; savings; credit; bad loans.

JEL Codes: G21.

REL Code: 11C.

1. Introduction

The influence of the difficult period that Romania has been passing through since 2008 is easily visible in the aggregated indicators, which reflect the status of the overall deterioration of the local economy. Romania is, however, a country with strong regional differences, therefore a change in the economic environment will have different effects in the various areas of development. The statement gains even more support in terms of indicators related to banking market, as the credit institutions tend to address the Romanian market as a whole, by implementing the same strategy throughout the country. The effects of the crisis, however, are different from one end of the country to the other so that recent economic developments have had a different impact depending on the regional specifics. If we add a global approach to banking, then the widening gap between the development zones is not a surprise.

2. The Romanian banking model

This work is based on the detailed analysis of statistics on development banking indicators at the county and development regions level. Literature is very poor in such analysis, with a predominant global approach to the Romanian banking market. We shall analyze in detail the system-wide banking indicators, correlations between them and, especially, the links between them and other indicators of the real economy. This analysis focuses at the regional development in bank activity during September 2008-September 2009.

2.1. Presentation of the Romanian banking system

In most states of the world there are two players on the banking market, polarized into two categories: the regulatory authority, represented in most cases by the central bank, and the commercial banks, which make credit-debit transactions to individuals, companies or public authorities, residents or not. The central bank has the function of issuing money, being the center of monetary policy, lending to the national economy, rate center, bank of the banks or

bank of the State; a commercial bank interacts directly with the end customer through the three possible types of operations: active, passive and operations carried off the balance sheet. Regarding these operations one must take note of the variety of types from each operation from bank to bank, creating some differentiation for services somewhat similar: to attract deposits and loans. If most central banks are state-owned banks (Costică, Lăzărescu, 2004), and commercial banks are essentially private equity and the statement that all types of banking transactions involving flows of funds represent risks is true, it becomes obvious why usually there is a need to avoid the involvement of the central bank in day-to-day banking operations in a liberal economy.

In Romania, the central bank is the National Bank of Romania, that has all the roles mentioned above, while beside it there are 42 commercial banks. Most commercial banks in Romania are subsidiaries of foreign banks, out of which, those from Austria, Greece and France are best represented (Busuioc, Mihali, 2009, pp. 20-21). The Romanian banking system currently operates two banks with mainly public capital, represented by the CEC Bank and EximBank and other three Romanian owned banks, while the remaining institutions are held by foreign investors or both by domestic and foreign investors. Commercial banks have entered Romania through the already established two main ways: purchase of existing banks, as the case of Erste Bank, which bought from the Romanian state BCR in 2006, or implementation through greenfields, the most famous case being that of Portuguese bank Millennium, which entered the market by launching 40 branches.

2.2. Characteristics of the Romanian banking model

The loosening monetary policy and rapid economic growth since 2005, which were reflected in higher living standards, caused a massive increase in banking activity, visible mainly on the activity. Within only three years (September 2005 - September 2008) the loans volume increased from 55 billion to 194.17 billion lei⁽¹⁾. The explosion of credit was determined by a development of the whole country, but the indisputable progress made by Romania in recent years, reflected in notable development in the whole economy, was unable to reduce the major discrepancies between different areas. Even dividing Romania into eight development regions, it is difficult to measure the differential development, due to a given intra-county heterogeneity⁽²⁾. Expansion strategies of banks have only marginally taken account of those significant differences between the various parts of the country, and credit rose at an accelerated pace, but at a different scale, depending on the potential of the area.

Another issue is that of the exuberance in the expansion as a result of optimistic projections of banks rather than economic realities. An argument to that effect, which will be discussed in a further chapter, is that there were some worrying signals about the evolution of regional banking indicators even before the onset of the crisis, but which have not been considered by banks.

Another test case of this paper is that banks' adaptation to the new context of economic recession is done more slowly, compared with behavioral changes as a result of favorable conditions existing in previous years. Commercial banks prefer to absorb some losses, betting on a return to conditions existing before the crisis, instead of resizing, for example, the human or the territorial network. At the end of 2008, there were 6541 branches in Romania and 71,219 bank employees (of which only 20,515 in the central offices only), and at the end of June 2009 there were 6,500 branches and 69,218 bank employees (including 20,233 in the central offices only).

2.3. Determinants of the Romanian banking model

There is a number of features of lending after 2005, the result of cumulative actions of the National Bank and commercial banks. First, easing monetary policy, started between 2004 and 2005 made possible the extension of bank credit. If by that time monetary intervention policy of the central bank was on upward trend, leveling off at around 20%, then the intervention rate decreases steadily and the rate is no longer expressed in two numbers by 2005. Overlapping this phenomenon of lowering of interest with an increase in investment in

Romania, resulted in a massive foreign investment in the country coming mainly from the parent banks. Thus during the period, the Romanian banking market has seen the highest growth rate of bank lending in the region of 53.5%⁽³⁾.

The Romanian banking sector is characterized by the banking penetration structure, i.e. the exacerbation of credit and slow savings trends. There are two interdependent drivers towards this situation. On one hand, the consumer, who was deprived of certain necessity goods, has a behavior focused on spending for long supply goods (such as appliances or cars) considered normal for a developed country. For most companies, the increase of contracted funds was due to increased capital requirements as a result of investment needed by a growing market, increasing competition and new requirements arising from the accession to the EU. Indebtedness has reduced the amounts available for savings. Moreover, only since 2006 yields deposits became positively real, as a result of reducing inflation to one digit. Starting with 2008, in order to stimulate savings, the authorities decided to eliminate the income tax applicable to interest and the economic crisis stimulated the population and companies to save more. Therefore, the deposits in banks advanced by 39% on annual basis.

3. The radiography of Romanian banking system

3.1. Territorial network of banks

The geographic distribution network of commercial banks is marked by strong differences in the region, generating the question of whether the volume of deposits is low / high in some areas due to reduced bank presence or banks have distributed the facilities according to the potential of the area. Given the correlation between the degree of economic development of a county and bank density, we incline to the second possibility, but we can not ignore the fact that there are areas where the average monthly salary is situated above the national average, while the number of people to a bank unit placed those areas on the last positions.

The Bucharest-Ilfov area was well served, with 2074 people at a bank (September 2008), nearly five times lower than in the case of the most „unbanked” county. The economic downturn determined a drastic reduction in the growth of embanking degree or the number of branches, so that by the end of September 2009, on average, in Bucharest, 2046 people were served by one branch, a slight decrease vs. September 2008. The situation is also similar in other counties (Figure 1 and Figure 2). The most embanked counties are Cluj, Timis and Brasov, while located on opposite pole, Dambovita, Vaslui and Teleorman counties, where the net average wage is close to the national minimum, the banking instruments are far from a typical consumer behavior. The indicator number of inhabitants per branch was around 6800 in those less embanked areas in September 2008, compared with less than 6700 in September 2009.

Evolution demonstrates that the hypothesis set above is true, namely that banks adaptation to new conditions brought by the economic downturn is achieved more slowly than their response to favorable conditions. Thus, the above figures show that, a year after the outbreak of economic turmoil, banks have not resized the regional networks in line with new economic conditions.

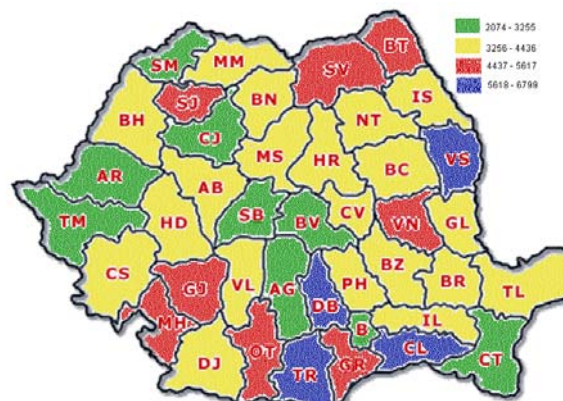


Figure 1. Banking network (inhabitants allocated to one bank unit, September 2008)

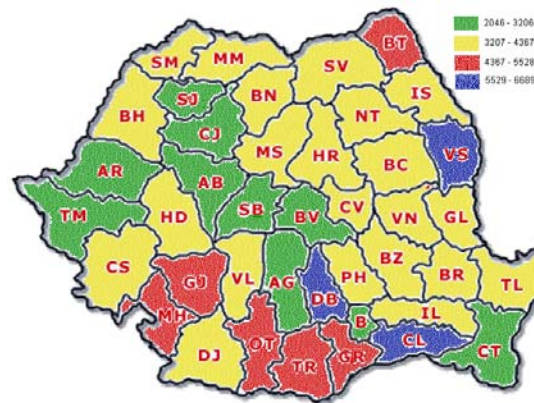


Figure 2. Banking network (inhabitants allocated to one bank unit, September 2009)

3.2. Lending to the counties of Romania

Following the geographical distribution of the territorial network (the two maps), we see a high correlation with bank penetration among the country's counties. Thus, if we consider only the absolute value of private debt, Bucharest-Ilfov region is the most indebted county, with loans to banks of 67.9 billion lei in September 2008, reaching nearly 73 billion lei in September 2009. Bucharest and Ilfov concentrate 35% of total national funding, position enhanced by increasing the share to 37% in September 2008, and suggesting therefore a lower impact of economic recession on the area. North-West is the following region, with a volume of 24.6 and 25.6 billion lei in 2008 and 2009, covering 2.7 million people. This already suggests a slight increase in volume and more funding in the first year of recession, whereas in the South West, which focuses the lowest share of total funding (7%), the volume reduced in the period under review (from 13.19 billion lei in September 2008 to 13.03 billion lei in September 2009).

A mention must be made at this point – the volume of funding to the counties should be treated differently, depending on destination. Such growth in the last year in some counties may be the result solely of corporate component and balance of loans to households decreasing during this period. For a clearer picture, we use loans for populations reporting to the total population, namely indicator medium credit/capita.

The region with the highest value of this indicator is Bucharest-Ilfov (13,303 lei in September 2008 and 14,453 in the month of September 2009). The situation for the year 2008 is explained by the very low unemployment rate at that time (1.2% in Ilfov and 1.8% in Bucharest) and by salary level, the highest in the country (about 1515 lei). In September 2009 the situation was significantly different (unemployment rate of 1.8% and 1.9% in Ilfov and Bucharest), but it did not reflect the volume of loans. One explanation for the large sums that accrue to a population is that the share of loans with real estate destination, increased in 2008-2009 from 27% to 30%.

On average, an inhabitant of the North-West had, in September 2009, a debt of 4539 lei, more than in the West, where the same indicator is 4014 lei. For residents of North West, whose salaries are the lowest in the country, the high average loan raises questions. But a radiograph in the region, which has an economy based mainly on agriculture (46% of the population has agriculture as main occupation) shows there is a polarization of credit in Cluj county, whose inhabitants get a salary 30% higher than the average. Another explanation of the large amount of the loan lies in the destination environment funding – excluding the Capital, the North West has the highest proportion of housing loans in all eight regions of development (12.4%) and fewer loans, but of a higher value.

The more „sober” people are those of Muntenia – they have the less large average loan, of only 2802 lei (September 2008) and the amount decreased to 2751 lei in September

2009, completing the overall picture, of important differences between areas of the country, exacerbated by economic recession.

Interregional differences surpass the intraregional ones – just a few counties concentrate a significant population and an effervescent economic activity, reflected in the average loan. The last year events have not changed the situation, residents of the same counties being found in the top of most indebted Romanian. Except Bucharest and Ilfov areas, Cluj residents have the highest average loan, of 6652 lei (value up from last year), explained by the higher wages (1,427 lei, slightly up than last year) and the relatively high share (compared to the average country), by 26.8%, of loans for housing. Constanta also detaches from the rest of the country, with a loan value per capita of 6239 lei (value also higher than in 2008), explained by the same factors above – wage significantly above the national average (1350 Lei) and a major proportion of housing loans (a quarter of the total).

The least indebted counties are Giurgiu, Teleorman and Dimbovita, with an average loan less than last year (1700 to 1800 lei lei), which is only partially explained by the wages, under the country average, but not near to the lower limit (about 1100 lei). The low level of lending seems to be mainly the result of consumerist attitudes of the inhabitants of these counties, over 88% of total public funding being represented by consumer loans. Moreover, throughout the entire region (Muntenia), the percentage of housing loans is low. A low level of credit per capita does not necessarily reflect the prudent behaviour of the inhabitants, but the inability to access credit of higher values, by their nature as consumer destination.

3.3. Savings in the counties of Romania

The increasing liquidity needs of banks were reflected in higher interest rates for deposits, that reached an attractive level to stimulate savings. Therefore, within a year, the total volume of deposits increased with 39%. The deponents still prefer the liquidity, fueled by the fact that banks offer attractive levels not only for deposits but also for savings accounts. Some resources were drained to these accounts, causing a major discrepancy between the deposit per capita and liquidity in accounts per capita.

If a resident of Bucharest-Ilfov area saved in September eight and a half salaries, by the end of the third quarter of 2009 he saved the one salary more. Bucharest leads also in terms of deposit value per capita (including availability), with an average of 17,164 lei. If we exclude balances in the accounts, then the figure drops to 11,556 lei, the equivalent of only 6.3 net monthly salaries. Cluj inhabitants are preceding Bucharest on deposit per capita, with a value of 6094 lei, and third, after Brasov, if taking into account the net average wage criteria. Thus, the 5374 lei saved by an inhabitant of Brasov is equivalent to 4.4 net salaries, compared with 4.3 net wages saved in Cluj.

The lowest values of deposits per inhabitant are found in Giurgiu (1379 lei), Botosani (1540 lei) and Teleorman (1606 lei). Moreover, when reporting to the wage levels, only Giurgiu maintains the position of last year, the average value of a deposit being equivalent of a little more than a salary, reinforcing the idea of low financial literacy in this area. Within one year of increase of the interest rates of deposits, the savings behavior of the inhabitants of these areas changed only marginally (in September last year the inhabitants of Giurgiu saved the equivalent of a salary). Not taking into account the liquidities in accounts, in Giurgiu an average deposit is only 88% of the net average wage of the county. In September, Gorj inhabitants saved 1.4 average net wages, but preferred high liquidity, so that the value of a deposit is less than a monthly salary (93%). The fact that the wage is high in this area (1409 lei in August) and the amount of the deposit per capita is only 1979 lei (while the national average is 4475 lei), may also suggest a relatively low financial education. The high value of the average loan (of 3032 lei) shows lower saving possibilities.

3.4. Evolution of bad loans

The fact that the banks' strategies can be questioned is sustainable by analyzing the evolutions of non performing loans in the past two years, an indicator that measures the health of the loans. The repeated increases in interests on loans, reflected in a substantial increase of

the monthly rate, determined serious problems even since 2008. As early as 2008, officials warned about the bad loans, more in terms of trend as volumes. Thus, if in September 2007 in all regions of the country the non paid loans were less than one percent of total funding, in the same period of 2009, only Bucharest-Ilfov and the South-East could reinforce this performance. Within another year, until September 2009, non paid loans had reached 3% of total loans. The North-West region had the largest volume of non paid loans, in 2009, the most indebted county after Bucharest-Ilfov. The most responsible region from this view is, like in the previous years, South-East, with a share of the arrears of 2.92%.

The counties with the highest non paid loans volume are Bistrita-Nasaud, Suceava and Salaj, first of which has arrears of more than 8.5%, a ranking surprising given the specific indebt behavior of the inhabitants of these areas. The situation is particularly interesting because, until recently, those counties were not present in the list of major debtors, showing a worsening local economic environment.

Bucharest-Ilfov remains the ideal business for a commercial bank, although the amount of outstanding loans is growing. In comparison with the number of loans, the figure is 2.71% and the increase compared to last year, of 1.7 bp, indicates a worrying trend. The best clients are those in Satu Mare, Gorj and Tulcea, where about 2% of the credited amounts are overdue.

4. Conclusions

The strategies in the territory of the banks were not necessarily economic motivated, the onset of recession being visible, in terms of banking, in all regions of the country, but with a different intensity. Thus, despite the economic changes intended to adversely affect the banks in certain areas (such as increases in unemployment or wage reductions), the reaction of credit institutions is slow and disproportionate. In the first stage, is remarkable how slow is the adaptation to new market conditions, suggested by the insignificant resizing of territorial network. Secondly, there can not be found a correlation between regional development of banking during the recession and the evolution of real economy indicators such as net wages or unemployment.

Another issue highlighted by this paper is that of the existing signals even before the onset of the crisis on health damage of the banking system, namely the development of bad loans. Funding continuously increased, at a robust pace, in early 2008, along with the increase of arrears, indirectly contributing to their exacerbation, which, moreover, can be found in the evolution of arrears during the current year.

The differentiation of regional strategies of banks according to criteria that, apparently, are only marginally determined by economic considerations and the fact that commercial banks have ignored in the first stage a disturbing trend (the percentage of overdue loans) may put pressure on the financial stability.

Notes

⁽¹⁾ National Bank of Romania, Monthly Bulletin, November 2008.

⁽²⁾ Regions of durable development were created in 1998, in order to diminish the economical differences between counties and to prepare joining the EU. Data were taken from the classification of regions according to the monthly bulletin of Eurostat from the 16th of February 2009.

⁽⁴⁾ Report of Raiffeisen Zentralbank Osterreich AG, from the 13th of July 2005.

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THE CREDIT RISK OF THE ROMANIAN BANKING SYSTEM IN THE CONTEXT OF THE GLOBAL FINANCIAL CRISIS

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Abstract. *The paper approaches the problem of credit risk in the Romanian banking system, given the need for its proper management in the context of credit expansion on a global scale. The link between the current financial crisis and credit risk can be considered in two-ways: production of credit risk is a cause for triggering the current crisis; the expression and expansion of economic and financial crisis has caused the credit risk to manifest itself internationally. This affects the profitability of commercial banks in the system, especially those with less equity capital, that are more vulnerable to such turbulence.*

Keywords: credit risk; non-performing loans; provisions; financial crisis; Romania.

JEL Codes: E42, E51, G21.

REL Codes: 10I, 11C.

1. Introduction

The international policy response to mitigate the negative effects of the economic and global financial crisis has stabilized the global markets and reduced the risk of deepening the global crisis in the emerging markets. In Central and Eastern Europe, refinancing and the default risks in the corporate sector remain high, the countries that heavily depend on external financing (including Romania) being the most vulnerable. With the worsening economic environment, the level of non-performing loans is growing.

The quality of loans granted to companies has depreciated more quickly than that of loans granted to households, reflecting the worsening in the business environment, all non-government credit quality continuing to deteriorate in the next period. According to the central bank estimates, the share of non-performing loans is expected to exceed two times the present value. While the current level of provisions is generally sufficient to cover the losses, the additional provisions required will limit the banks' capital positions and their ability to conclude new credit agreements.

With the development of financial markets, credit risk has continued to grow, being recognized the need for its proper management. In recent years, credit risk is present throughout the world, which illustrates the level of credit explosion on a global scale.

2. Definition of credit risk

Credit risk is rather a new concept, being treated to its current dimensions by different authors (Servigny, Renault, 2004, Caouette, Narayanan, Nimmo, Altman, 2008, Abrahams, Zhang, 2009).

The *credit risk* (also called *risk of insolvency of the debtor* or *default risk*) expresses the probability of effectively not collecting, in due time, the cash-flow expected (principal and the interest) determined by credit. It represents the possibility that borrowers may not honor their obligations at maturity. For the borrower, the appearance of the credit risk expresses the degradation of his financial situation (Dedu, 2003, pp. 95).

The credit risk is correlated with the *risk of reinvestment*. One bank registers losses not only because the loan and the interest weren't repaid in their volume and at deadline, but also because the amounts that should have been received were not reinvested in good time.

The credit risk is an inherent problem of the lending activity. It means that the payments could be delayed or not performed at all in the last resort, which will automatically cause problems that will affect cash flows and bank liquidity. Credit risk can be considered as the main cause that leads to bankruptcy of banks.

Because of the potential harmful effect of the credit risk, it is important to conduct a comprehensive assessment of the banks ability to manage, supervise and track its progress and to recover the loans, the interests and guarantees. Such evaluation should also determine, the adequacy of the financial information received from the borrower that was used by the bank as a basis for granting credit.

If the risk exposure is significant credit risk can cause serious problems to the bank and also to the banking system. To minimize exposure to risk, complaining with banking regulations, each bank's strategy must include both bank risk management procedures, in general, and those for lending, in particular.

3. The manifestation of the credit risk in the current financial crisis

The credit risk can be approached from two perspectives:

- the term credit risk;
- the credit risk directly caused by the inability of repayment of the customers, individuals and companies.

The term credit risk refers to the appearance of losses in the activity of the banks, due to the credits reimbursement, due to an unfavorable economic climate. An example of a backdrop is the current economic and financial crisis, which is seen both as being generated by the credit risk, as a first step, and as generating the credit risk, in the event of its stages.

The link between the current financial crisis and the credit risk can be approached in two-ways:

- ✓ producing the credit risk is a cause for triggering the current crisis;
- ✓ the expression and the expansion of the economical and financial crisis has caused the credit risk to manifest itself internationally.

This link, in short, without taking into account all the variables, can be explained as follows:

➤ high indebtedness resulted in the inability of the borrowers to repay their loans, resulting in severe liquidity problems of some banks and their failure; this is the moment when *producing the credit risk has triggered financial crisis*.

➤ these problems of some major banks, with branches and subsidiaries extended worldwide, have determined the spread of the crisis globally, the main effect being to decrease the liquidity of the banks and to reduce the confidence that banks had in crediting the economy (companies and individuals).

➤ thus, some companies have had liquidity problems due to slow access to credits, so they were forced to reduce or even to close the business.

➤ this element resulted in increasing the number of unemployed people, who were unable to repay their loans, so *the credit risk has occurred as a result of an adverse economic circumstance*.

The credit risk caused by the inability of repayment of the clients, with reference mainly to business customers, may be caused by several factors that allow sharing this type of credit risk in several components:

- the credit risk determined by individual financial problems of the client - this type of credit risk is reduced through an economic and financial analysis of the client, that establishes a knowledge of the work done, and also a permanent monitoring of the activity developed, for an early detection of potential problems that it faces; the manifestation of this risk may be

determined by the lack of quality information which the creditor has of the debtor or of the debtor's bad faith (Petria, 2003: pp. 91).

- the credit risk determined by the client's sector of activity - this type of credit risk can occur as a result of peculiarities of the industry that can generate the client's financial problems.

- the credit risk determined by the type of client requesting credits – the credit risk has different manifestations depending on the type of borrower clients, so, in agriculture, in recent years, especially for contracting finance, family associations or authorized persons were established, that are assimilated to the legal persons but that are much more financially labile and enjoy a lower capitalization than the companies.

The credit risk has different manifestations for different customers, or that work in different economical sectors, which is why the best method for credit risk management is knowing the customer, knowing the specifics of its work and adjusting the offer of credit products to the particularities of each category of clients. In addition, the analysis of the risk and its mitigation opportunities must be made both *before granting the loan*, through a qualitative analysis of the creditworthiness and of the loan repayment capacity and also *post-grant*, through a continuous and close monitoring of the debtor, to refer in time the various events that may cause the default risk.

As can be seen from the Figure 1, the share of the non-performing loans to the total loans granted by the credit institutions in the US, Japan, Germany, France and Great Britain in 2005-2008 has placed within 0-4%.

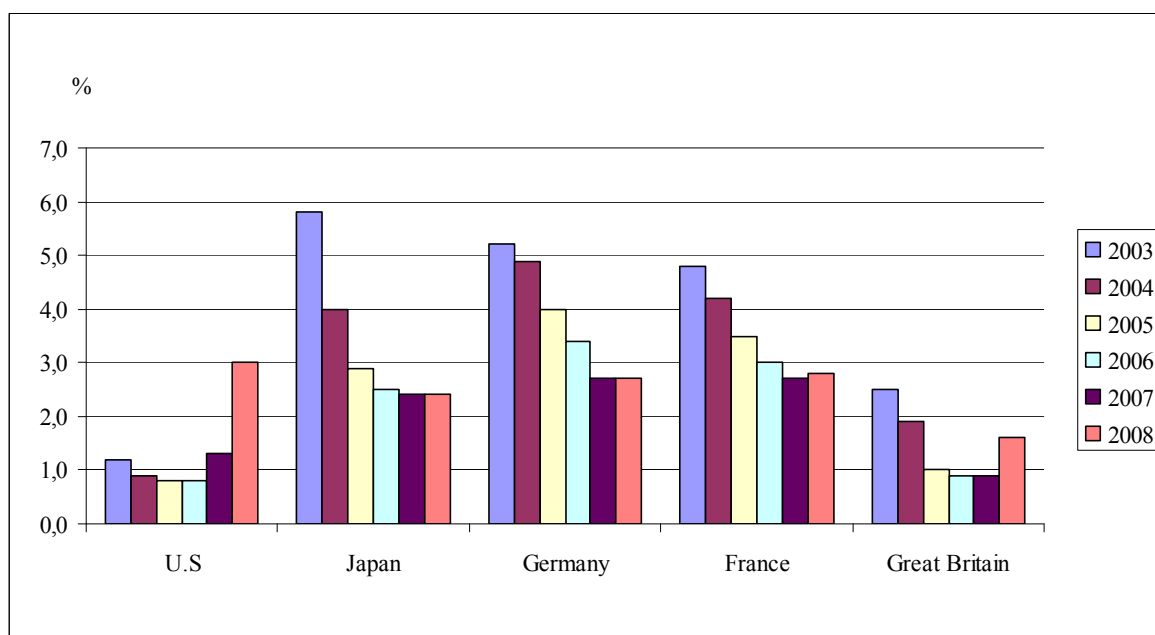


Figure 1. The rate of non-performing loans in the developed economies (% non-performing loans/total loans)

During 2003-2008, the share of the non-performing loans to the total loans granted by the credit institutions from Central and Eastern Europe was in general between 0 and 5%, excepting Poland (21.2% in 2003, reaching 4.4% in 2008) and Romania (8.3% in 2003 and 13.8% in 2008) (Figure 2).

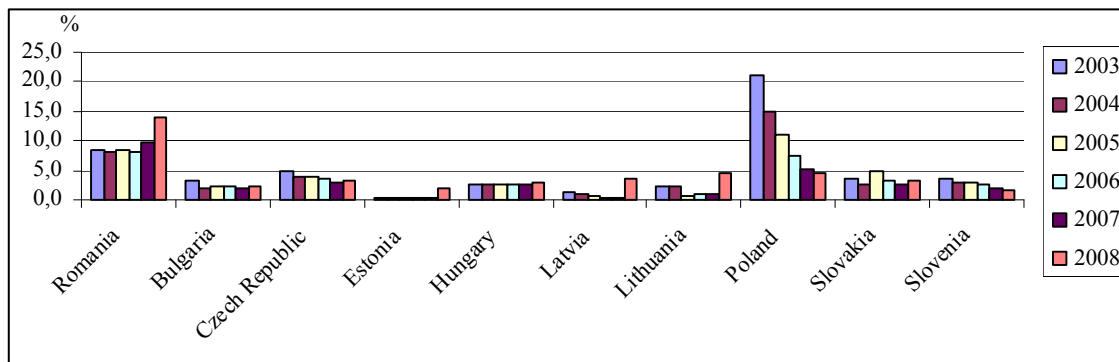


Figure 2. The rate of non-performing loans in the emerging economies from Central and Eastern Europe (% , non-performing loans/total loans)

The lending activity continues to contract in most countries of the world, to unknown levels. In the US, the credit granted to the private sector has decreased in the last two quarters of 2009, accounting very small increases in the euro area (with 1.9%) and significant reductions in the UK (with 7.9%) in the last quarter of this year (IMF, 2009).

The period 2008-2009 has marked in Romania tempering the growth of the non-governmental credit (26% in 2008 compared with 50% in 2007). According to National Bank of Romania dates, the overdue and doubtful loans in the share capital increased from 1.4% in December 2004 to 3.2% in December 2008 and to 10.5% in September 2009. This is reflected by the increased value of loans classified as lower performance categories namely: substandard, doubtful and loss (Figure 3).

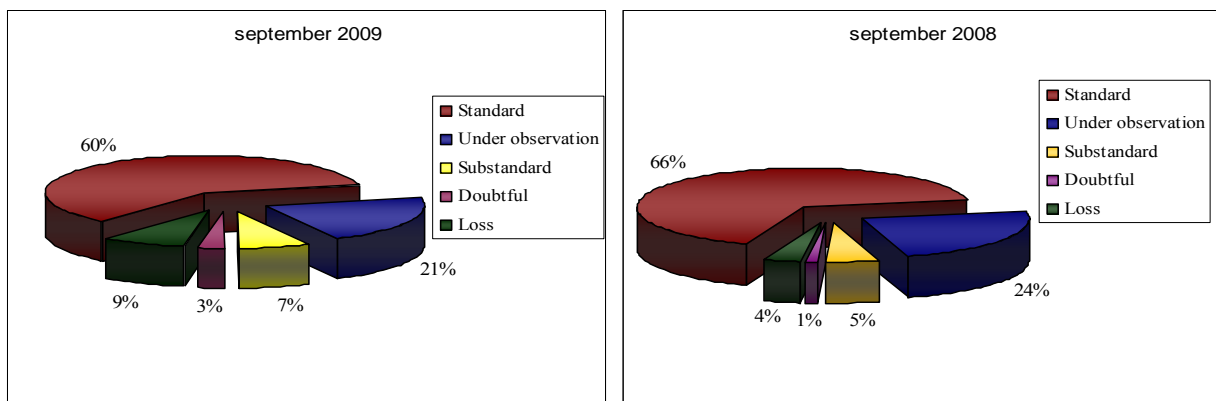
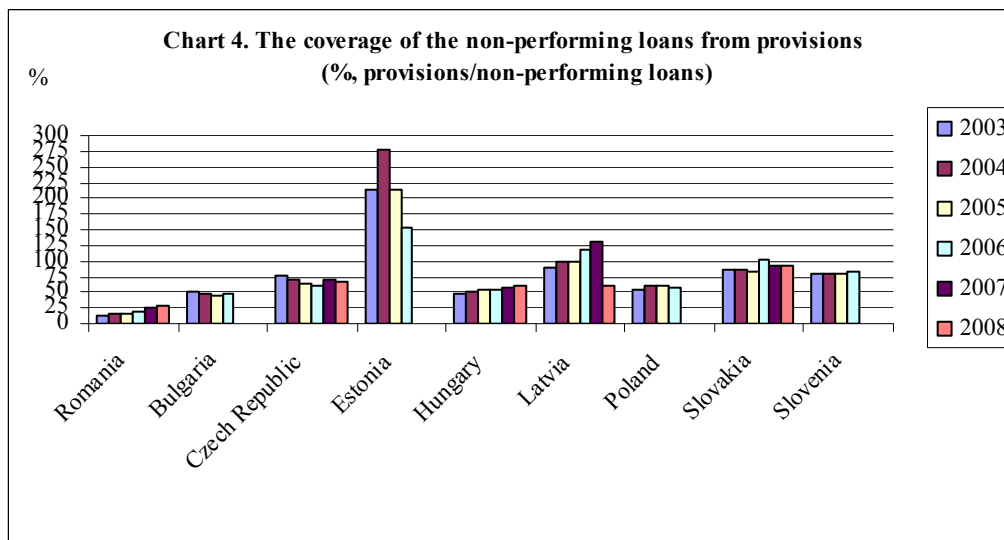


Figure 3. The classification of loans granted to bank and non-bank customers and also of the inter-bank placements and related interests, including the off balance sheet items

The coverage of provisions to bad loans from the balance sheets of the credit institutions in Romania is lower than that one reported by the other Member States of the European Union, despite the upward trend of recent years (Figure 4).



4. Regulation of credit risk in Romania

Regarding the credit risk regulations set by the NBR, they contain rules that handle the risk management, which can be classified into two categories:

- regulations that address to the quality of the credit portfolio therefore to decreasing the credit risk since the granting of credit;
- regulations designed to cover risks, throughout the life period of the loan.

The National Bank of Romania requires monthly reports on the manner of their engagement to the limits regarding the credit risk managing, and as an additional prudential measure, only the bank Administrative Board may approve loans of the clients who register *large exposures* or which are *part of groups of special connected clients* (if the value of exposure equals or exceeds 10% of the credit institution's own funds).

Also, the NBR asks the banks to have adequate internal control mechanisms, including rigorous administrative and accounting procedures that enable monitoring and appropriate managing of the credit risk in each entity.

Protection against credit risk materializes in three key directions (Galiceanu, Stanciu, Cristea, 1997, pp. 375):

1. risk prevention (covering the credit and the interest through the efficiency of the credit company);
2. limiting the credit risk by setting up risk provisions;
3. covering the credit and the interest thereon in case of inefficiency in the activity of the company, respectively if the case of occurring the risk through the required guaranties.

The foundation of a sound credit risk management is the ability of the policies regarding the management of the credit risk to identify the existing and potential risks inherent in any lending activities, and to limit or reduce them.

According to NBR Regulation no. 18/17 September 2009 on the management of credit institutions, the internal process for assessing capital adequacy to the risks and outsourcing their activities, credit institutions from Romania must have *policies and processes to establish an appropriate environment and adequately controlled for credit risk*.

Credit risk management policies in the Romanian banking system, in relation with the goals made and with the used tools, can be divided into:

- sound policies for assuming credit risk;
- policies for approving new exposures;
- effective policies for credit management, which include ongoing analysis of capacity and availability of the clients to repay debts on maturity, monitoring of the

documentation, contractual terms and guarantees, and a system of assets classification regulated by NBR;

- policies created to *identify problem assets*, which are impaired or show signs of a possible depreciation;
- policies designed to *limit or reduce credit risk* through which the regulatory authority imposes a maximum limit of exposure to a client or to a group of connected clients, between 10% and 25% of the bank's own funds;
- *provisions policies for possible losses caused by non-return loans* - to determine their appropriate level we take into account all the factors which affect the repayment of loans, and also the quality of the policies and credit procedures, the previous losses that affected the bank's profitability, the dynamic of the granted credits, the procedures of collecting and recovering the problem loans, the volatility of macroeconomic variables and the economical trends. In practice, the provisioning policies can be discretionary or mandatory, depending on the characteristics of each banking system and in accounting terms, they are considered by most economists as a category of expenditure.

In Romania, the method of calculating the credit risk provisions was more strictly regulated by March 2009 (Regulation of the NBR no. 5/2002, modified by the Regulation no. 7/2002 and by the Rules for implementing Regulation no. 12/2002) and in a more permissive way thereafter (Regulation of the NBR no. 3/19 March 2009 regarding the classification of the loans and investments, and the setting up, the adjustment and the use of specific risk provisions). These rules establish how to determine the provisions, how to use and regulate them.

Determining the necessary credit risk provisions required following steps:

a. determining the base

- by deducting from the bank's exposure to the debtor the amount of the collateral accepted to be considered, according to the latest regulations, if a loan is classified as „standard”, „under observation”, „substandard”, „doubtful” and „loss”, where no legal proceedings have been initiated, the value of the warranties can be deducted from the amount of the exposure according to some deducting percentages provided by the NBR for some types of securities (according to Appendix no. 2 of NBR Regulation no. 3/19 March 2009), plus other real warranties to which the commercial banks set their own deduction coefficients, but which must meet certain maximal limits;

- any other real guarantee, excepting the general and collateral securities pledged on future goods, may be considered to reduce the lender's exposure to the debtor, to an amount that cannot exceed its fair value. To this end, the borrowers may consider only those real warranties for which it can be determined the fair value based on its methodology, provided in its rules. In order to bring the fair value, the lender establishes coefficients for each category (according to Article 10, paragraph 1 of NBR Regulation no. 3/19 March 2009).

- the guarantees are the main credit exposures classified in the category „loss” for which the debt service exceeds 90 days and/or where legal proceedings were initiated against the transaction or to the debtor, it shall be adjusted by applying coefficients determined by the lender, for each case. The value of these factors can not be greater than 0.25, also the guarantees exposures representing current interests/outstanding, attached to the credits/placements in the same situation, are not taken into account, the coefficient that applies to the sums related to those guarantees having zero value.

This last item is practically the innovational element brought by the regulations regarding the provisions from March 2009, namely that the value of the provisions can be reduced; by that date, the value of the provisions was equal to the exposure, regardless of whether or not there were any warranties, if the loans had a higher debt service of 90 days or if the enforcement proceeding was initiated. Given the fact that some of the credits are in this situation the possibility of deducting the collateral to the extent of maximum 25%, allows

reducing costs for provisions and also gives discretion of decision to senior management of banks regarding the deduction of the guarantees in these cases.

b. applying the coefficient of provisions over the weighting base thus obtained

Given the calculation method of the provisions, the guarantees are the main tools used to *improve the credit quality* and to reduce the provision costs that banks in Romania are obliged by law to hold. Thus, the banks show a keen interest in obtaining quality guarantees (meaning liquid securities that can be easily capitalized), for the recovery of outstanding debts, and to reduce the expenditure with the provisions on loans that record payment delays.

We believe that *this amending of regulation regarding provisions is a circumstantial one, given by the current economical and financial crisis*, crisis that favored the production of the credit risk in an aggressive way. The causes that determined the credit risk in this period were related to the collapse of certain economical sectors of particular importance for the whole economy (construction, automobile industry, transport), and had effects on the related sectors. This led on one hand, to the impossibility of the companies to repay their loans, and on the other hand, to an increased unemployment, which determined a growth of the population with non-performing loans. Thus, through the new regulation, NBR sought a reduction of costs with provisions that affected the profitability of the commercial banks (particularly the smaller banks, with Romanian capital), although this reduction does not mean an improvement in the liquidity of the banks, but only an improvement in profits “on paper”, that they record. This regulation is implemented in the frame of increasing intense manifestation of the credit risk at the level of the banking system.

5. Conclusions

The current situation on the manifestation of the credit risk affects the profitability of the commercial banks from the system, especially in terms of banks with smaller equity capital that are more vulnerable to these turbulences.

The National Bank of Romania is trying to achieve a better risk management in this framework, through some regulatory changes, with immediate effects, on the profitability of banks (in the case of the new regulations on provisioning), but also with medium and long term effects, on the proper management of the credit risk in a crisis context. Therefore we notice the concern of the NBR for finding solutions to prevent the emergence and manifestation of the term credit risk.

We believe, however, that a better management of the credit risk assumes, among other things, the establishment of the National Bank of Romania of some more precise regulations regarding the coefficients of deduction of the collateral from the calculation base of provisions, differentiated by each class of guarantees. For example, currently, the National Bank of Romania has set the coefficient of deducting the express, irrevocable and unconditional guarantees of the central government of the Romanian State or the National Bank of Romania as being 100%, but the rate of deduction of the property guarantee is left to the choose of the banks, without requiring at least an upper limit, that meaning it can theoretically reach up to 100%.

According to NBR data, the loans secured by mortgages have become dominant, and the risks associated with this type of guarantee increase with the negative developments in the housing market. The credits granted by banks to the firms were guaranteed in the month of March 2009, in the rate of 75% with real estate, while only 47% of the loans granted to individuals have a mortgage as collateral. Loans granted by banks have represented, on average 70% of the price of the mortgaged property, which means that if the value of the buildings is reduced by over 30%, the loan is not fully covered by the guarantee. In such circumstances it is necessary the guarantees revaluation, which means additional costs for the banks and their customers.

So, the commercial banks, especially those with less financial power, interested in profit, use such maximal values of the coefficients used in deriving some guarantees with

average liquidity, with ought realizing the role that the provisions would have to have, which is to undertake a gradual recovery of the credit losses by the non-return of the credits. These commercial banks using this practice are most exposed to losses arising from the credit risk, and we believe that this exposure must be closely monitored and regulated.

The central banks of emerging countries from Europe must focus on restoring the health of the banking system and on optimal management of the process of debt recovery, in order to prevent worsening the credit conditions and to limit the risk of contagion in the vulnerable countries.

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CAPITAL MARKETS AND INVESTMENT STRATEGIES

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***Abstract.** Different capital markets require different approaches. Considering the investors psychology and financial resources, we describe in this paper various investment strategies, that can be applied on both Romanian and foreign capital markets.*

Keywords: capital markets; investment strategies; portfolio management; ratios; technical analysis.

JEL Code: G11.

REL Code: 11B.

1. Introduction

Different capital markets require different strategical approaches. This statement is obvious, in the absence of a certain success remedy for any market evolution. Furthermore, the approach is related to the investor's psychology, its financial resources and even the global economic context (as, unfortunately, was strongly demonstrated during the recent global financial crisis).

This paper is developed upon the recent evolution (during 2009) of the international capital markets, with special focus on Romania. Its contribution consists in reviewing and testing the practical applicability of various investment tactics and strategies, that can lead to profit for investors.

2. Capital markets features

Each capital market has its own inherent features, that distinguishes it from others, even in the global context of „correlation”. Average daily fluctuations, trend strength, support levels or the prompt response to various technical indicators are some of the parameters influencing the investment strategies.

The modern portfolio theory implicitly acknowledges this statement, but limits „market description” to the following indicators: reward, risk, correlation. Technical analysis suggests a variety of models, indicators and oscillators, but recommends users to decide on the most relevant parameters for each financial instrument. Finally, fundamental economic and financial analysis dissects every aspect of the issuer/market, suggesting individual forecasts.

Figure 1 describes a comparative study of certain stock exchanges. We used a logarithmic chart, so that equal vertical distances correspond to equal percentage changes in price.

The first conclusions are easily found:

- Developed markets have „calmer”, less steep evolutions;
- The potential risk/reward is significantly higher on emergent markets;
- In recent years, we notice an undoubtedly correlation between markets;
- Although not shown explicitly on the chart, developed markets anticipate economic evolution (in %) with $\frac{1}{2} \div 1$ year.

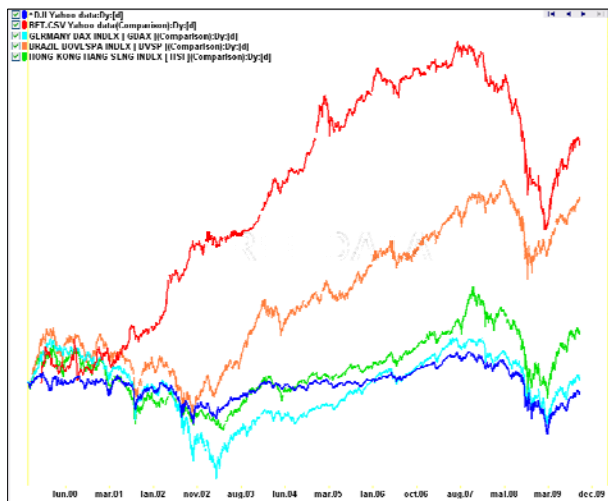


Figure 1. Stock exchanges comparison

These features will determine the application or the avoidance of strategies to be discussed below.

For example, with moderate daily fluctuations, smooth and clear trendlines, western capital markets are suitable for consistent, repeatable and/or high risk reward strategies.

Investors using fast, flexible, usually short term strategies will benefit from the steep increases and declines found on emergent markets.

3. „Hit and run” strategy

This strategy has as starting point the premise that any contract is closed when the market had a certian change, whether it was a favorable or adverse change compared to investors expectations. The open positions can be colsed using „take profit” and „stop loss” orders, existing in all markets.

Below we present the DOW JONES chart for the current year. We notice that a ± 500 points change is easily managed and allows enough trades to be relevant. Therefore, the strategy consists in closing any position, wether it is long or short, when the market has increased or declined more than 500 points from the price the position has been opened. First, suppose we act randomly, opening a short or long position. After the market changed ± 500 points, we close the position and open randomly another one. According to probability theory, after a sufficient number of tests, we have a null gain: we were wrong and right for a relative equal number of contracts (50% of each). We can improve our strategy by considering one or more technical analysis indicators (slow stochastic, in our example – Figure 2).

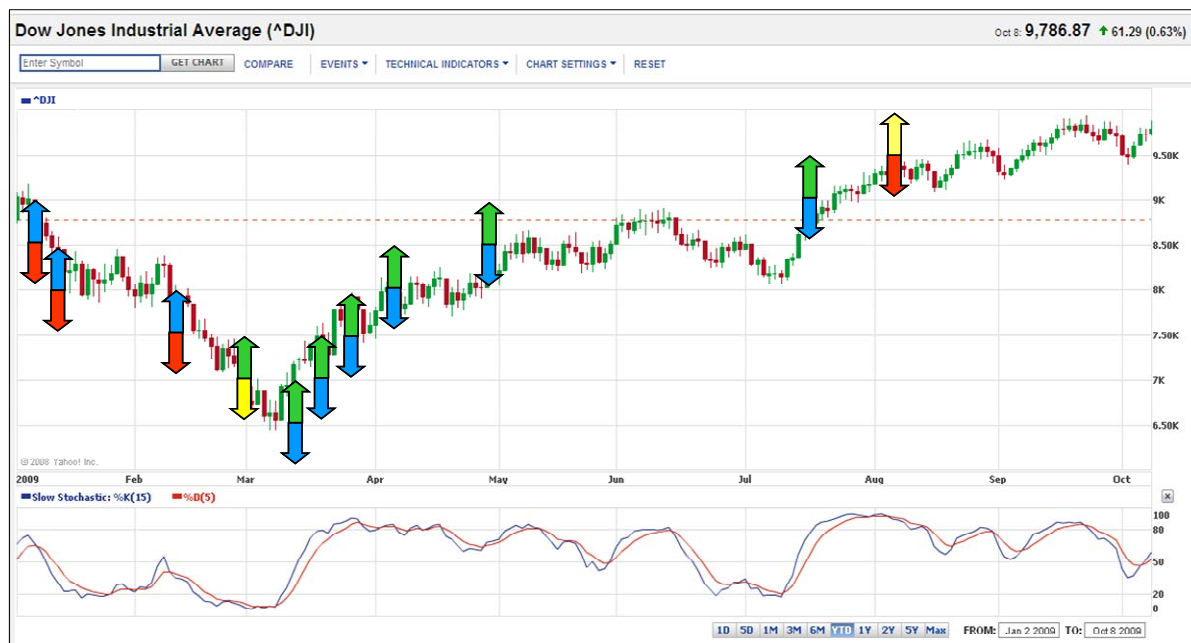


Figure 2. Take profit or stop loss at ± 500 points

For each contract, we check the indicator for buy or sell signals. We cannot win each time we enter a position, but the ratio between winning and losing trades (the success probability) is significantly improved. In our example, we anticipated correctly the first 3 (three) short trades, then we loss for 1 (one) long position, we won for the following 5 (five) long trades and we have currently 1 (one) short (10.X.2009), probably wrong. We obtained 8 (eight) winning results and 2 (two) losing results – a very good output! Obviously, for the strategy to be suitable, the financial instrument analyzed must have a relatively smooth, long term trend, and the change range must be chose according to the psychology and financial potential of the investor.

4. „Follow the trend”

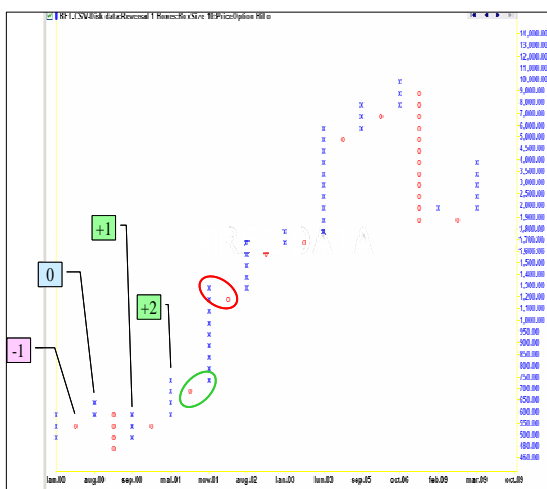


Figure 3. Follow the trend

This is the first recommendation you receive from a technical analyst: trend is your friend. The next chart (Figure 3.) is a „point & figure” chart, showing only price changes, the time line being irrelevant. It consists of rising price columns of X’s and falling price columns of O’s. Additional points are added to the chart once the price changes by more than a predefined amount: continuing on the same column if the trend continues, or in a new column placed to the right of the previous column if the price changes direction. Applied to BET index, the chart expresses the strategy principle: for each column added, we exit the existing position and open a new opposite one. A long for the columns of X’s and a short for the columns of O’s. Thus, we

maintain anytime a position similar to the market trend.

Profitability is derived immediately: if we have only one symbol on a column, we lose an amount equal to the predefined range. If the column’s length is of 2 symbols, the gain is null. For more than 2 symbols per column, the gain is equal to the number of symbols, less 2, multiplied by the predefined range.

At first sight, it is a simple and efficient approach, but this is a strategy suitable only for the markets featuring strong, sharp trends. If for BET index we obtained a substantial gain, in the case of DAX index our gain was much smaller, and for DOW index we lost.

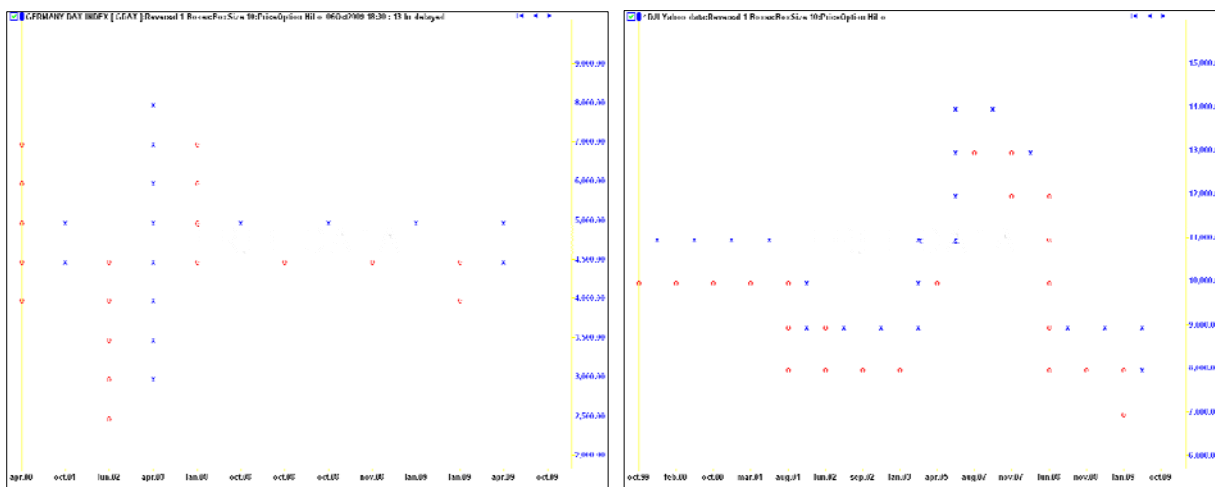


Figure 4. P&F strategy is not suited for markets with too „smooth” fluctuations

5. „Buy low, sell high”

Applied by traders around the world and of all time, this strategy benefits from an important advantage on the capital market: it is of no importance what operation is done first! By using short selling on the derivative financial instruments markets, investors can chose the proper moment in time to start the operations.

The most often used approach is the hedging. Again, this strategy is not suitable for developed markets, where the investor can gain only a diminished yield. On emergent markets, characterized by an almost inherent optimism, it protects investors from major losses.

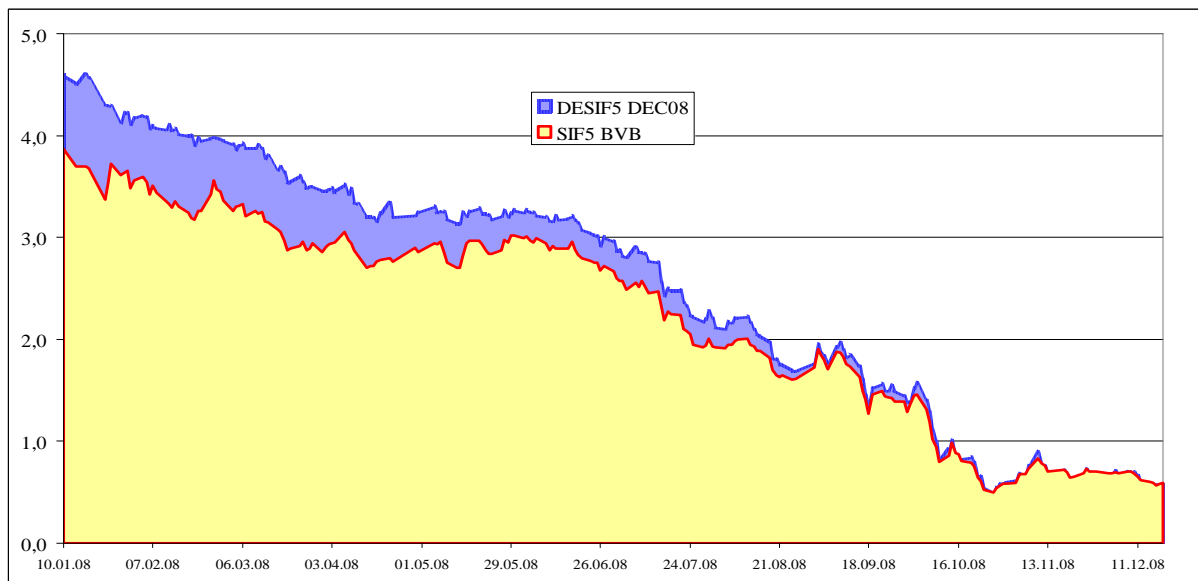


Figure 5. Hedging: protect the investment

Assuming that the owner of 1,000 SIF5 shares sells one contract DESIF5 DEC09 at the beginning of 2008, he can protect its investment at 4.50 lei x 1,000 contracts = 4,500 lei. Outstanding! Of course, some can counter-argue that this strategy deprives us of much of the potential gains on a strong uptrend market. Possibly, but the gain is secured for any change in the market! Sometimes this strategy is not suitable. However, it represents an alternative, especially when futures markets are extremely optimistic.

6. Buy & hold

Global economy progresses. Sometimes stagnation, contraction or opposite movements occur, but overall progress is obvious (Figure 6).

Therefore, on long term, the strategy is viable.

The strategy is also supported, especially in developed markets and for traditional companies, by dividend policy. Figure 7 describes the strategy efficiency, even for defensive companies such as Coca-Cola.

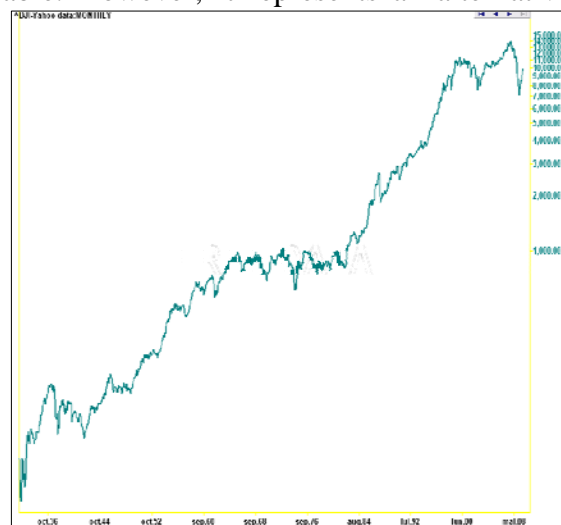


Figure 6. Secular market uptrend

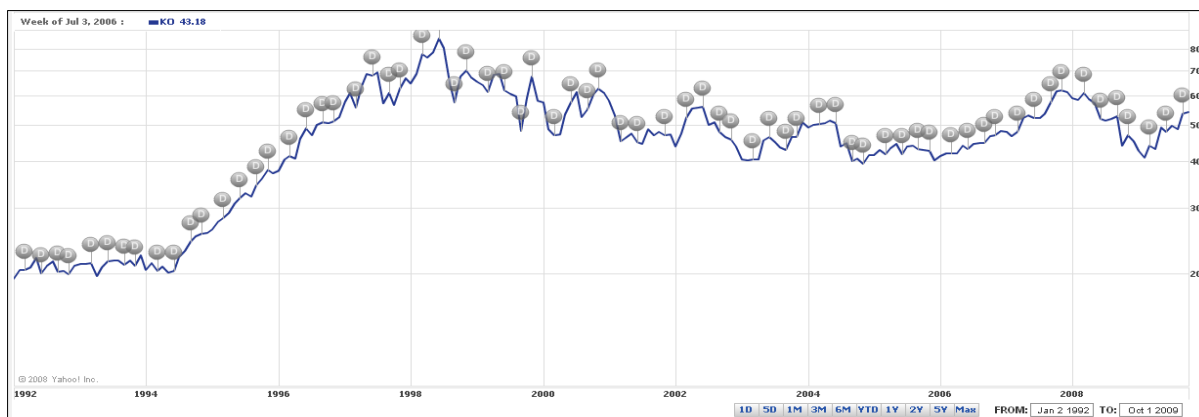


Figure 7. Buy & hold benefits

It may seem surprising, but this strategy provides good results also on the Romanian capital market, an emergent market. Suppose we decide to buy 1,000 SIF1 shares at the beginning of 2000. The amount invested is 40 lei, according to the data provided by BSE for January 5th, 2000. In order not to complicate the calculation using a variable rate, we assume that the money comes from a loan, extended each year, with an interest rate equal to the average banking rate. The results are presented in Table 1.

Dividends exceeding financing cost

Table 1

Ratio	UM	2000	2001	2002	2003	2004	2005	2006	2007	2008	TOTAL
Interest for loans	%/year	53.21%	45.74%	36.65%	26.19%	25.81%	21.04%	14.83%	13.32%	15.07%	
Interest for 40 lei (equivalent for 1,000 shares)	lei	-21.28	-18.30	-14.66	-10.48	-10.32	-8.42	-5.93	-5.33	-6.03	-100.74
Gross dividends payed (for 1,000 owned shares)	lei	24.00	33.00	40.00	48.00	50.00	50.00	60.00	70.00	30.00	405.00
Profit/loss	lei	2.72	14.70	25.34	37.52	39.68	41.58	54.07	64.67	23.97	304.26
Maximum portfolio value	lei	64.00	150.00	390.00	435.00	880.00	2,480.00	3,320.00	4,440.00	3,540.00	
Minimum portfolio value	lei	28.90	41.40	91.00	235.00	445.00	845.00	1,670.00	2,660.00	411.00	

Fundamental economic and financial analysis is the only approach capable to fundament the investment decision for a certain financial instrument.

7. Roulette betting on colour

This is a strategy known by gamblers, but it is not applied frequently because of the lack of adrenaline. A 50% decline in BET-FI may seem exaggerated, so we decide to invest 1 leu at the 40,000 level. After another decline of 50%, at 20,000 points, we double our investment, 2 lei. At 10,000 points, we invest 2², 4 lei. The market recovers to the level of 20,000, and we gain 8 lei, 1 leu over the invested amount. We applied the equation:

$$\sum 2^i = 2^{n+1} - 1 \quad (1)$$

The strategy has no relation to that of „averaging the price” (increasing the long position even if the market is downtrending, so decreasing the average), which we consider wrong because it represents an increasing investment on a losing position.

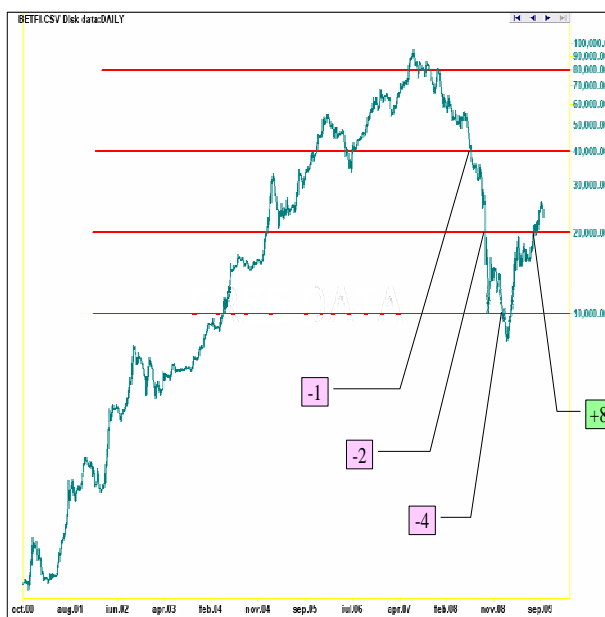


Figure 8. Double the investment strategy

8. Alpha theory

This is a strategy based on RAROC, RORAC and RARORAC (Risk Adjusted Return On Risk Adjusted Capital) equations. Basically, the formulas contain the gain/loss ratio weighted with the degree of risk associated and the capital invested, potentially adjusted with the maximum loss due to volatility.

$$RAROC = \frac{\text{expected profit} \times \text{success rate} - \text{accepted loss} \times \text{failure risk}}{\text{invested capital}} \quad (2)$$

We intend to determine the degree of risk not on statistic grounds, but analyzing technical indicators. We notice in the chart described in Figure 9 the following issues:

- BET index can reach 6,500 points (the optimistic alternative) or could decline to around 2,000 points (the pessimistic alternative), considering the current value of 4,229.49 points (for October 5th, 2009). For the time being, the market is uptrending.
- Bollinger bands indicator provides 4 (four) correct results (noted b, c, e, f) and 2 (two) failures (a, d). In other words, the indicator suggests a 67% probability for the market to increase.
- MACD indicator (the positive histogram signals an uptrend) provides one failure from 5 (five) tests (see B), indicating a 80% probability of increase.
- 80% to increase.

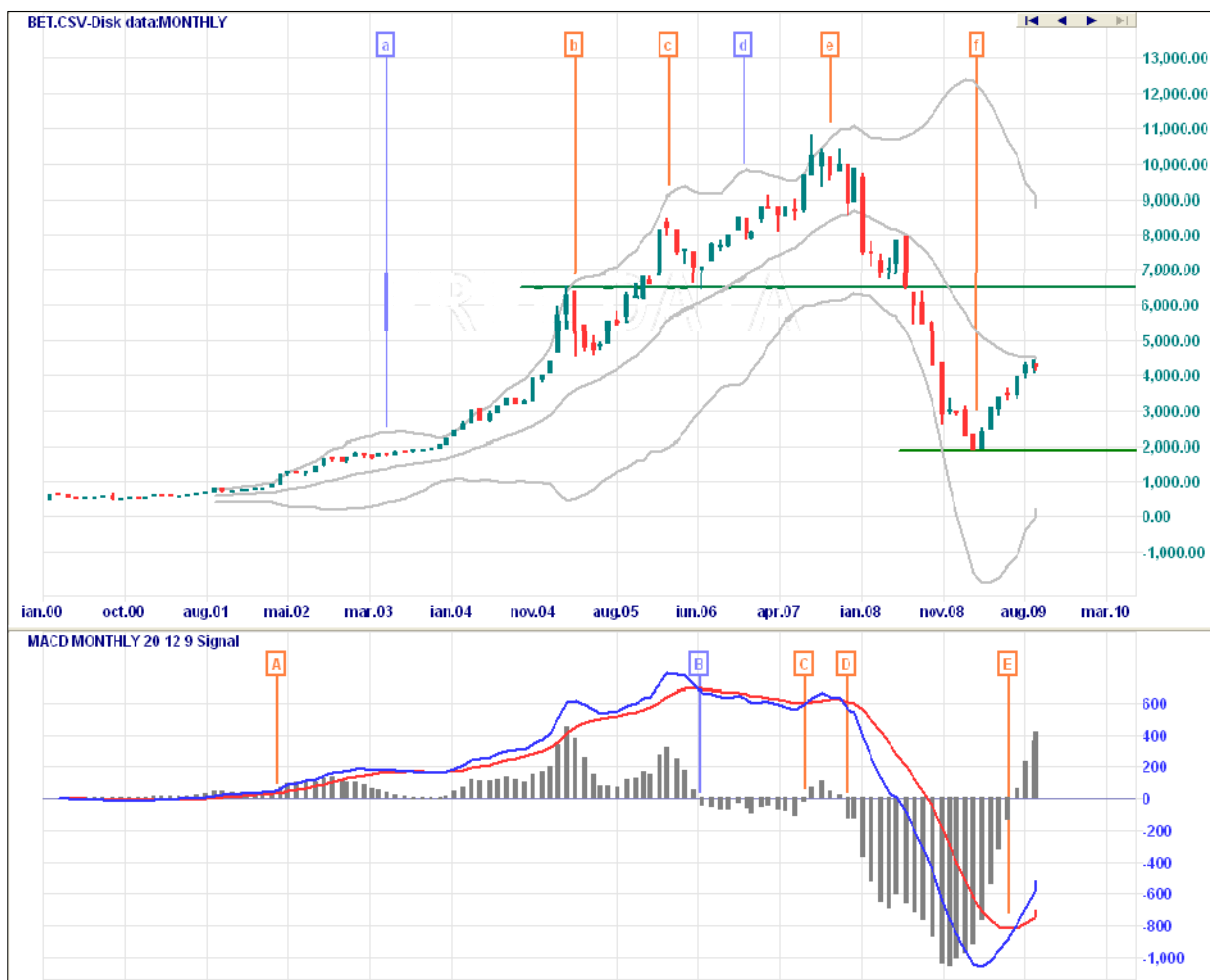


Figure 9. Probability distribution based on technical analysis

Therefore, we have 73% chance to earn 2,270 points and 27% chance to lose 2,230 points. The investment is of 4.230 points. The result, 25% probable gain, encourages the investment.

Aside from the relative uncertainty in determining the rates of probability, this approach helps us to avoid entries on late trends – the probability may be high, but the potential gain is reduced, and the prospect of profit is probably low.

9. Psychology

Finally, we consider the fact that investors are human beings, whose actions are determined by their own psychology. They are optimistic (and constantly identify positive signals or strong recoveries) or pessimistic (and are constantly considering the profits from downtrends to follow from strong uptrends).

There are two recommendations for the investors acting emotionally on the markets:

- Investing on Forex. Optimism and pessimism have no sense on neutral markets.
- Turning the chart upside down. If the investor identifies only positive signals on the analyzed chart, we recommend its „turning upside down”. Thus, uptrends and downtrends change positions, and if the signals are still clear, then they are correct.



Figure 10. Forex market

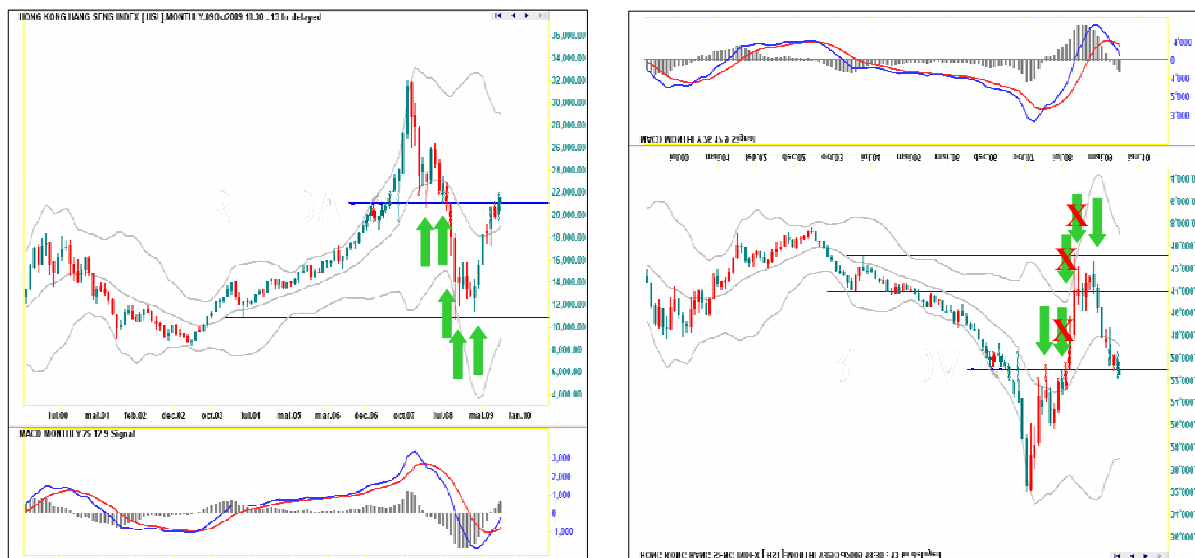


Figure 11. The optimistic and pessimistic approach

10. Consolidating the winning position

Let’s assume that we made a „right” investment and the trend is upward. We are positioned at 1 and curve a points to an upward trend, encouraging a buy trade (Figura 12 - SIF 5). At 2 we have a confirmation of a secondary upward trend by the curve b, even stronger than the primary trend. In conclusion, we will increase our position, but only by a fraction of the original investment.

At $\textcircled{3}$, the price goes below the secondary trendline b, so that the investor will sell its last position, gaining profit. As the trendline a is penetrated at $\textcircled{4}$, we sell the rest, still gaining.



Figure 12. Entry/exit strategies

We notice that, even both investments were succesful, our potential gain decreased. Obviously, we can mix strategies in order to increase the potential for appropriate entry/exit moves. Again, this approach is best used on clearly defined trend markets on short term.

11. Conclusions

The strategies described above are just a few of the possible strategies to be applied on both the Romanian and foreign capital markets. In general, we can apply them in any circumstances; practically, we must consider a couple of market/ticker parameters:

- Volatility and proper free-float;
- Reference technical indicator;
- The most appropriate strategy for the investor;
- Trend length, duration, trendline „breaking” conditions;

Investors must also consider the management of their own resources. It is obvious that a 50% decline of a long position is compensated only by a 100% increase from the new value. Also, sometimes more than one strategy may be applied for the same financial instrument; their reward must be correlated to the risk.

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CRITICAL ANALYSIS OF HOUSING MORTGAGE LOANS FINANCING UNDER „FIRST HOME” PROGRAM, AS PART OF NATIONAL HOUSING POLICIES

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***Abstract.** The development of National Housing Policies had difficult journey and places Romania among the countries of Central and Eastern Europe with the least effective policies in this field. The outcome, in the spring of 2009, of „First Home” program represented wholeness of National Housing policies. This article is a critical analysis of this program, a SWOT analysis and outlines proposals to streamline programs of this kind.*

Keywords: mortgage loan; Real Estate market; National Housing Policies.

JEL Codes: G21, R28.

REL Codes: 11C, 19G.

1. Introduction. National Housing Policies in Romania after 1990

National Housing Policies are economic and social policies for any country. Governments pay particular attention to such policies and spend huge amounts of money of national budgets to ensure and improve housing conditions for the population. This is true even for most advanced countries. In communist regimes, the state had a crucial role in building and providing housing. After the economic transformation began in 1990, governments in transition countries have relinquished these duties. They now seek to formulate policies in accordance with the principles of building a market economy, essentially similar to the practice of developed countries.

Nevertheless, policies of the transition economies differ, varying in accordance with their historical, geographical, social and economic features.

First, to offset the decline of public new housing supply, the governments of these countries began to promote new buildings developed by private entities. Thus, various incentives have been applied for this purpose, including subsidies and preferential tax treatments. In addition, some countries, like the Czech Republic, began to pay attention to the existing housing stock by creating incentives for renovation and improvement of houses.

Secondly, the authorities began to focus their responsibility in this area by helping low-income people and young families under adopted social policy. In this context, some countries, such as Poland, began to build public housing for subsidized rental.

Thirdly, governments in transition countries made serious efforts to build a system of market-oriented housing finance, enabling purchase of houses through market transactions. With the abandon of government's responsibility to provide public housing, they shall provide free trading of properties. In addition to encouraging the building, governments have to create creditworthy demand through appropriate financial arrangements. The lack of a coherent system of real estate financing is the main cause of lack of liquidity of real estate markets in transition economies.

An important objective of creating a coherent real estate financing mechanism is relieving the burden of state budgets expenditure that governments would have as the only responsible for providing public housing. However, significant budgetary allocations were needed to support the creation of housing finance system. In this perspective, strategies aimed at providing a framework for housing provision to be made on a commercial basis and provide the necessary support of the less favored to adequate housing conditions.

After the Revolution of December 1989, in Romania and in other countries in the region, there have been profound changes. The first measure taken was the sale of residential housing area to tenants for low price. The decision was taken mainly to ease the state and local budgets with the burden of maintenance and repair of housing, especially those in apartment blocks. Given the age and poor condition of these homes, the burden of the budget was extremely high.

Romania has never conceived in the period after 1990 a comprehensive set of integrated National Housing Policies.

In the Law nr.152/1998 was established National Housing Agency (NHA), which began to function effectively in 1999, the same year when the first mortgage loan law was adopted. NHA was established with the aim of developing national housing construction and mortgage loans, as the main form of financing the acquisition, renovation and construction of housing. Initially, the NHA has started with funds of about 5 million USD, insufficient for any coherent initiative in the field of housing. National Housing Agency has received major competitive advantage over private developers, receiving for free public owned land from local authorities and viability public works of infrastructure, these benefits resulting in a climate of unfair competition against other players on market. NHA can be compared with the position of the National Savings Bank on banking market, which made unfair competition to other banks in Romania, the only bank to have guaranteed the deposits of the public by the state. As a result of small funds, NHA projects favored corruption, given the low prices they practiced for housing compared to competitors and reduced the number of housing units that it has delivered. Thus, instead of delivering the housing to young people, in many cases the beneficiaries were politicians and businessmen.

Following the latest amendments to the law establishing the NHA, it has the following tasks:

- achieving financial arrangements;
- attracting and managing financial resources for construction, purchase, rehabilitation, strengthening and expansion of housing, including those operated under a lease;
- promotion and development on youth housing construction for rental, building social and necessity housing, the construction of other residential property owned by state or local councils, and assistance on existing buildings in implementing the measures set by government programs;
- acquisition of land for construction of housing and, where appropriate, monitoring programs for carrying out of their viability;
- initiation and/or development, under market conditions, of housing programs with private mortgage loans;
- carrying out specific studies on the real estate market (supply and demand for housing, building land, costs, etc.).

In 2002, the Romanian government issued an emergency ordinance (Ordinance nr.174/2002), which established deployment of heat insulation. This program provides the thermal rehabilitation of blocks of flats (condominiums and related facilities) built in 1950-1990 by standard projects, located in densely populated areas and connected to centralized heating systems owned by local councils.

Special measures for the thermal rehabilitation of these estates included:

1. insulation of external walls, terraces, floor over basement, roof or roof structures repair or replacement, windows and exterior doors replacement, repair, strengthening and painting of exterior walls and other structural and non-structural elements constituting the exterior of building;
2. interventions in pipes and fittings with loss of basement/heating owned by owners' association or individual owners.

Because of bureaucratic obstacles and lack of coordination of central and local state institutions, this program has been lowly successful.

The Romanian state has tried to encourage construction of new homes by several types of measures:

- subsidize a share of the costs of building primarily for young people aged up to 35 years, not owning a house, but who have acquired land, or buy a house using a mortgage loan; initially, the share was up to 20% for homes costing not exceeding € 100,000, then, due the budgetary restrictions, the subsidy was capped at € 10,000;
- provision of land free of charge by the local authorities to young people up to age 35 years to build a house on the land.

Both programs were unsuccessful because of too many conditions to be fulfilled, and the lack of land at local authorities.

Romanian state has subsidy programs to cover utilities costs for more economically disadvantaged categories. They were taken measures to protect tenants from homes recovered by former owners abusively dispossessed by the communist regime and measures to strengthen the buildings reported by experts with earthquake risk.

2. „First Home” Program

2.1. The general framework of Romanian real estate market

The financial crisis that hit USA in July 2007, also known as subprime crisis, as many economists named it, had as the main source mortgages securitization with high levels of leverage, reaching values of 50-70, and falling prices in the US housing market. The economic crisis that followed the financial crisis led to negative developments in North American and European real estate markets, as regards transactions and prices.

On Romanian property market, the beginning of crisis can be placed in the spring of 2008, earlier than the general economic crisis broke, in September 2008. The reason is mainly the large participation of foreign capital on the Romanian real estate market. Between March 2008 and November 2009, price dropped in residential buildings with about 50% and in first 9 months of 2009 the number of property transactions was 43% lower than the same period of 2008.

These market developments have had serious consequences for real estate developments, construction industry and mortgage loans market.

Mortgage loan bank financing experienced quasi-stagnation during 2009. The funding needs of Romanian state, in order to cover growing budget deficit, made the authorities to turn to the domestic banking market. Available liquidity to credit non-governmental sector became smaller. Due to economic crisis, defaulted loans increased their share three times in the first 9 months of 2009 compared to same period of 2008. Commercial banks faced asset impairment related risk in granting mortgage loans.

2.2. The occurrence and characteristics of „First Home” Program

In general terms above, the Romanian Government decided to launch the program on „First Home”, to facilitate access of Romanians to cheap financing by guaranteeing mortgage loans by the state. The program was launched on May 20, 2009, with the following characteristics:

- Can be eligible for the program people buying first home and have never received a mortgage loan;
- State guarantees 80% of the mortgage loan on houses not exceeding € 60,000;
- State guarantee is provided through National Credit Guarantee Fund for Small and Medium Enterprises (FNGCIMM), which would be changing the statutes;
- Ceiling amount guaranteed was set at € 1 billion;
- Program was intended for existing houses;
- Houses acquired through the program could not be sold earlier than five years after the date of acquisition;

- Any acquired house to be mortgaged in favor of the Romanian state and the executor set for cases of default was the National Taxation Administration Agency.

The program was clearly inspired by similar programs implemented in countries with developed economies under the concept of first time buyer, programs designed for buyers purchasing a first home. These programs assume that first home purchase is the most difficult, given the age of applicants, lack of credit history, their position on the lower rungs of the occupational hierarchy and lack of sufficient funds for down payment required to obtain a mortgage loan.

Also, the „First Home” Program was conceived as part of National Housing Policies, chapter in which Romania has not excelled since 1990.

Initially, the program was not conceived as a way to boost the construction sector, given that it was intended only to existing buildings.

The bill governing the program, Emergency Ordinance 60/2009, published on June 4, 2009, changes the prospects for the program:

- Implement the anti-crisis measures initiated by the Romanian Government to support priority economic sectors;
- Unlock lending process and boost construction activity affecting economic growth and job creation;
- Facilitating access by individuals to purchase residential property for the current context of financial and economic crisis.

However, there was no possibility of purchasing unfinished homes, which is not in any way led to boost construction activity.

Subsequently, the program has undergone significant changes:

- Despite the concept of first time buyer, which was the basis of the program, the access to the program has become possible for all those who did not own a home on the effective date of the bill;
- The ban on sale of property acquired through the program for 5 years was lifted, but maintained the requirement of approval of the Ministry of Public Finance;
- The program was expanded to unfinished buildings or off plan, the funding to be made by the developer, the applicant receives a promise of loan guarantee from the FNGCMM and a promise of credit from the lending bank, and thereafter the amount credited to be released on finishing of the building.

The auction for commercial banks allow pets in the program first imposed the following conditions:

- Down payment 5% of the property price;
- The maximum interest rate on loans denominated in lei: ROBOR at 3 months plus 2.5 percentage points;
- The maximum interest rate on loans denominated in euros: Euribor at 3 months plus 4 percentage points;
- Commission for credit granting: 0;
- Anticipated reimbursement commission: 0.

20 commercial banks showed interest in this program. They oversubscribed the amount of € 1 billion with 47%, bids being corrected with pro rata.

During the program, FNGCMM has taken some measures against some commercial banks, which did not grant any loan or just several loans, by lowering the ceiling of each bank by the redistribution of about € 200 million.

Romanian state is to guarantee by allocating € 100 million, starting from the assumption that the rate of default loans cannot exceed 10%.

A last-minute amendment stipulates that persons who are owners of an inherited property can participate in the program.

2.3. SWOT Analysis of „First Home” Program

S – Strengths	W – Weaknesses
<ul style="list-style-type: none"> - low down payment - low interest rates, anchored in independent indices - increasing accessibility and increasing number of buyers - increasing customer confidence in property transactions - increasing number of real estate transactions - zero anticipated reimbursement commission - zero commission for loan granting or included in maximum interest rate 	<ul style="list-style-type: none"> - insufficient loan ceiling for big towns - low down payment and State guarantee favor default loans - encouraging the purchase of old buildings against new buildings - uncertainty on the period required for approval, which can lead to the loss of down payment or unwillingness of owners - gave the feeling of wide availability - influence in the market, by creating imbalances between the prices of old and new buildings - encouraging the apartments with small number of rooms against those with big number of rooms
O – Opportunities	T – Threats
<ul style="list-style-type: none"> - high need of housing - preference for home ownership instead of rental 	<ul style="list-style-type: none"> - political instability - economic instability - exchange rate instability - increasing unemployment - possible increase of Euribor

Strengths:

- low down payment favored youth access to purchase a house through mortgage loan financing;
- commercial banks eligibility was conditioned by limiting the interest rates, anchored in money market indices: ROBOR at 3 months for loans in lei and Euribor at 3 months for loans in euro, the accepted margins over these values being: 2.5 percentage points for lei and 4 percentage points for euro, which allow clients to track progress of interest rates;
- the program allowed increased accessibility by low interest rates and low down payment, at least 5%;
- given the real estate market conditions characterized by small number of transactions, this program has been able to restore market confidence;
- increasing the number of real estate transactions is beneficial for a market in crisis;
- zero commission for anticipated reimbursement allows the refinancing of mortgage loans if market conditions change;
- zero commission for loan granting or included in maximum interest rate is an advantage compared to existing mortgage products on the market.

Weaknesses:

- cap of € 57,000 loans disadvantaged housing market in large cities, given the higher prices in these areas;
- low down payment and State guarantee favor default loans, decreasing the responsibility of borrowers;
- encouraging the purchase of old buildings against new buildings, given the same cap, impairing the achievement of one of the three objectives of the program: the implementation of anti-crisis measures initiated by the Romanian Government to support priority economic sectors;
- internal bureaucracy of commercial banks and of FNGCIMM led to extended periods between the application and the time of loan grant, sometimes over 60 days, leading to loss of the down payment paid by potential buyers and a reluctance of property owners to sell the property to applicants in the „First Home” Program;

- the program gave the feeling of wide availability, potential beneficiaries of the program ignoring the fact that they must be within the specific rules of lending of commercial banks under the general rules given by NBR;

- the program influenced the market, enhancing certain segments of transactions, which created temporary distortions;

- credit ceiling imposed by the program resulted in favor of trading apartments with small number of rooms (1 or 2) instead of the big number of rooms (3 or 4).

Opportunities:

- high need demand for housing, thought to be about 1 million housing units;

- traditional preference of Romanian for home ownership instead of rental.

Threats:

- political instability, manifested as strongly during 2009;

- economic instability, as a direct effect of global economic crisis;

- exchange rate instability due to degradation of key macroeconomic indicators;

- increasing unemployment, as a direct effect of economic crisis, which may lead to considerable increase in the rate of default loans;

- possible increases of Euribor, which before the program was around 1.25%, but one year before it was about 5%.

3. Conclusions and proposals

Occurred during a pre-election period, the Program „First Home” through its successive amendments gave the feeling of a populist and electoral action. Although it started from the concept of first time buyer, the program has become successively being diverted from its original purpose.

Program development through FNGCIMM, non-bank financial institution, specialized in guaranteeing loans for small and medium companies, induced failures in carrying out the process of guaranteeing mortgage loans through this program.

Romania needs coherent National Housing Policies, economically grounded. Lack of performance in this area places Romania in an inferior position in the ranking of countries in Central and Eastern Europe in terms of National Housing Policies.

The elements that could make such a successful program could include:

- program availability only to those who are first time buyers of a home;

- granting a tax credit for people admitted to the program instead of State's guarantee, able to cover the down payment;

- insurance of risk given by low down payment;

- adjusting the ceiling of lending to market conditions.

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THE IMPORTANCE OF SYSTEMIC RISK MANAGEMENT AND MACRO-PRUDENTIAL SUPERVISION IN AVOIDING THE FUTURE OCCURRENCE OF A FINANCIAL CRISIS SIMILAR TO THE PRESENT ONE

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Abstract: *Some of the main reasons that led to the emergence of the ongoing financial crisis stem from insufficient risk management, the de-regulation of financial institutions, the lack of macro-prudential supervision and the implementation of the free/perfect markets model. This article analyzes and discusses both the importance of systemic risk management and macro-prudential supervision and their effect upon the ongoing financial crisis, as well as the recent measures undertaken in this respect at the level of the European Union, USA and G20.*

Keywords: systemic risk; macro-prudential supervision; financial crisis; supervision bodies; financial system.

JEL Codes: G01, G15.

REL Code: 11B.

Introduction

If one were to analyze the ongoing regulations, rules and supervision systems in the context of today's financial crisis, it would reach the following conclusion: self-regulation is insufficient at the level of financial markets and institutions with systemic importance (which may influence the stability of the financial system) (Tumpel-Gugerell, 2009). At the same time, given the current integration level of financial markets, the orientation of prudential supervision almost exclusively towards the individual level of financial institutions is inefficient, whereas complex assessments of aggregated risks at systemic level are insufficient and lack an institutionalized framework with clear-cut responsibilities (EU Commission, 2009).

Furthermore, in the context of the ongoing crisis, where large financial-banking groups could only overcome their difficulties due to the support of the state, correlated with the strong impact the effects of the crisis have had upon all other economic entities (both corporate and individual entities), it's quite obvious that the maintenance of financial stability should be high on the public interest agenda.

Consequently, public authorities must by all means undertake the proper measures for the regulating, supervising and monitoring of financial markets and institutions which may influence the stability of the financial system at global level.

We also feel that the risks which may affect the stability of the financial system also stem from the high concentration degree on a small number of financial institutions, as well as from the interdependencies created among them and other components of the financial system.

Relevant examples in this respect point back to the impact that the Lehman Brothers' bankruptcy and the near-bankruptcy of AIG and Bear Stearns have had upon the international financial market (Tumpel-Gugerell, 2009).

Thus, the „too big to fall” idea in the financial area has proven incorrect or in dire need of revision. On the contrary, we feel that arguments may be drawn up so that banking asset concentrations are avoided.

1. The financial de-regulation process, correlated with the application of the free market model/perfect markets theory

The ongoing crisis is also rooted in the financial de-regulation process that started in the '80s, which was correlated with the implementation of the free-market model that dominated the economic/financial system of capitalist countries (Soros, 2009).

Therefore, we feel that the real estate bubble (especially the USA one) was equally caused by lax crediting standards, permissive assessments of collaterals, as well as the wide availability of loans (due to high liquidities). We should also mention that the onset of this bubble was the beginning of the 80's (when the financial de-regulation process began as well), whereas the sub-prime crisis acted solely as a detonator nearly 30 years later.

Thus, president Ronald Reagan supported in the beginning of the 80's the idea that the government was not the solution but the problem, opposing the development of the nation, his solution being the granting of extended liberties to the capitalist system – this was one of the first elements which supported the de-regulation process in the USA, subsequently expanding to other capitalist countries (Aversa, 2009).

A brief re-regulation process was unfolded at the end of the 80s and the beginning of the 90s, due to the bankruptcy of many American banks.

The de-regulation process was continued during the Clinton administration – barriers between banks, insurance and investment companies (implemented in the '30s) were eliminated, but the latter did not observe the same rules applicable to banks; the effect of this measure was the drawing up of giant “one-stop shopping” financial supermarkets. At the same time, in the context of the new monitored climate and looser money policies, a large variety of complex financial instruments emerged and developed exponentially, subsequently being turned into asset packages and sold to investors (several of them based on average or low-quality mortgage loans). Meanwhile, the main regulatory changes that emerged were the strengthening of rules against corporate frauds and accounting practice rules, caused by the famous bankruptcies of Enron and Worldcom.

In this respect, we feel that regulatory bodies have their responsibility in the emergence of the financial crisis, for accepting the diminishment of requirements for the supervision of the financial system.

The main reason behind de-regulation was the idea that markets are able to self-regulate; it is believed that the self-regulatory ability exists as long as there is trust and as soon as this trust is breached by systematic interventions, markets become hyper-sensitive and instable, while the potential emergence of a crisis is accentuated.

In this context, we feel we must remind the fact that Alan Greenspan, FED president between 1987 and 2006 has declared: “I made a mistake assuming that companies from the financial sector are able to self-regulate. I was wrong thinking that it was the interest of organizations, especially banks, to protect its own shareholders”.

In this context, we feel it's obvious that the guardian state or state interventionism theory supported by the great economist John Maynard Keynes applies. This theory pleads in favor of interventionist governmental policies – governments must use fiscal and money policies to control economy. The idea emerged in the '30s, rather turbulent times from an economic point of view, when capitalism was severely trialed by the Great Recession.

Consequently, the state has regularly become a guardian at difficult times (the emergence of a crisis), its role becoming unwanted as soon as the crisis ended.

In this context we should also point out that several years ago, the general belief was that the main feature of a successful society was the market economy of capitalist markets. In the past 20 years, capitalism has gradually expanded around the globe, including former communist countries, resulting in the prosperity of these states (Hassett, 2009).

At this moment, we have reached a turning point where most of the population, economic agents and authorities are reconsidering their vision on capitalism.

It's very important to mention that this is not the only time in history when this has happened. The idea that the capitalist system based on a free market is the best organizational principle for any society is an old one, going back to 1776, when well-known economist Adam Smith wrote a paper entitled *Wealth of Nations*. The fact that capitalism has its flaws/

shortcomings is also an old idea – critics and alternatives being put forth since then by several economists (like Keynes and Marx).

Notwithstanding its deficiencies, capitalism has survived and thrived because its results have far exceeded the results of alternative systems (see communism, basically the opposite of capitalism – full state control upon economy).

Our opinion is that a combination between the sustained application of capitalist principles, correlated with a better macro-prudential supervision of those financial system areas which may entail the occurrence of systemic risks (with not only local or national impact, but also global impact) or the onset of a crisis, is one of the main solutions.

Thus, given the ongoing crisis, it is believed that the strengthening of financial regulations may prevent/ control its causes (Aversa, 2009).

Such measures have the purpose of preventing the greediness and undertaking of high risks by some financial institutions, which led to the emergence of the ongoing crisis, and at the same time seek to establish a balance in terms of avoiding excessive regulations, as state control does not always have positive results.

2. The importance of systemic risk management and macro-prudential supervision

Unlike micro-prudential supervision (namely the individual supervision of financial institutions), macro-prudential supervision derives from systemic risk, defined as the risk afferent to an important part of the financial system (Smaghi, 2009).

The purpose of macro-prudential supervision is two-folded: the first fold is the analysis and the supervision of risks, whereas the second fold is the controlling of the risks identified, which requires specific instruments. Thus, there are minimum three elements which should draw up the fundament of the supervision and analysis dimension of systemic risk:

- This analysis must consider all components of the financial system, as well as the way in which they interact (including all financial intermediaries and all markets). In this respect, we should mention that some of these components, such as hedge funds, private equity companies and over-the-counter (OTC) financial markets, are not currently monitored individually. At the same time, the ongoing crisis in which these entities played an important part revealed that it is absolutely necessary be a part of the micro and macro-prudential supervision process.

- The assessment of systemic risks should consider the interdependencies established between the financial system and the economy. Thus, one should mention that in the past, economic crises would generally cause systemic banking crises, while the ongoing crisis reveals the major impact that it has had upon the economy. In this respect, for the future, it is quite obvious that macro-prudential supervision must consider the interaction between the financial and the economic sector.

- The third element which must be considered is the fact that financial markets are not static, constantly evolving due to financial innovation and the international integration process, therefore macro-prudential supervision must integrate specific measures covering these areas.

The main result of macro-prudential supervision and analysis activities is the assessment of aggregated risk (systemic risk) at financial system level and its potential implications upon the economy. This includes the elaboration of scenarios with extreme shocks, the result of which leads to the ultimate assessment of the strength of the financial system and of the economy. Another absolutely necessary element is the one referring to assessments of how imminent a crisis is at one moment and what the risks which may lead to the emergence of this crisis are.

The necessary elements for the performing of these analyses are detailed information on: the evolution of financial markets, macroeconomic indicators, financial intermediaries (including those which are not part of the supervision perimeter of the authorities), payments

and discounting systems, corporate and individual clients, as well as the relations between the main economic and financial sectors.

One should pay special attention to the collecting of detailed information from financial institutions on the exposure derived from on-balance and off-balance products, separated on assets and liabilities, geographical areas, sectors of activity, currencies and counterparties, as well as information on the models and methods used for the management of the risks entailed by the activities unfolded.

The information obtained must be used for the assessment of exposure to risks at financial system level and for the drawing up of the necessary measures for the avoiding of crises. This may be performed with the help of financial stability indicator models, early warning systems, stress test models, etc.

After the identification of exposures to systemic risks, the next step is their management. One option would be communicating them to financial institutions, so that the latter are warned and have the chance to properly adjust their internal policies.

Another option would be the intensification of the supervision of financial institutions in order to avoid the undertaking of high risks. A third option would be the changing/elaboration of new prudential regulations with the same purpose, namely the avoidance of the undertaking of high risks.

The necessary measures elaborated for the decreasing of the pro-cyclicality of the financial system must be part of the macro-prudential policy. Some of these measures are the adjusting of capital requirements to the economic cycle (they should be less strict during unfavorable times and more strict during economically thriving times), the implementation of dynamic provisioning rules (reserves must be accumulated during favorable times and released during unfavorable times) etc.

3. The main measures undertaken for the management of systemic risk and macro-prudential supervision following the emergence of the ongoing financial crisis

The experience of the ongoing financial crisis reflects both the low efficiency of the supervision activity of some financial institutions (in terms of micro-prudential supervision) and of the supervision activity performed at the level of the entire financial system (macro-prudential supervision) (European Committee, 2009).

Thus, for example, at the level of the European Union, in compliance with the ongoing model, the supervision of financial institutions is performed at national level, but this covers to a low extent the European financial system and the interdependencies between the financial markets of EU countries on the one hand and the other international markets on the other hand.

The status is somewhat similar in what concerns the supervision of the financial system of the USA and of other financial markets, as well as at global financial system level.

The current crisis has also revealed a series of issues concerning the cooperation between national supervision bodies responsible for various activities/segments of the financial system.

In addition to the above-mentioned information, we want to analyze the main measures undertaken at global level for the improving of systemic risk management and the strengthening of macro-prudential supervision, as well as the underlying reasons.

Thus, during the summit held in Brussels in June 2009, EU state and government officials have stipulated the necessity of strengthened means for the supervision of the banking system, as well as the drawing up of pan-European supervision bodies able to prevent the future occurrence of an economic crisis.

Three pan-European supervision bodies will be drawn up in 2010 with the purpose of ensuring the implementation of new prudential regulations, as well as a Systemic Risk

European Council, with the purpose of supervising the risks which might affect financial stability at community level.

3.1. The measures undertaken for the management of systemic risk and macro-prudential supervision at European Union level

The EU financial markets have become more and more integrated in the past years, being dominated by Pan-European financial groups, the risk management functions of which are widely based on standards drawn up by mother-banks (European Committee, 2009).

The ongoing crisis has revealed that the orienting of the supervision activity almost exclusively at the individual level of financial institutions is not beneficial and that complex assessments of aggregated risks at systemic level are insufficient.

Furthermore, from the point of view of aggregated supervision, there is a strong discrepancy between the ongoing integration level of European financial markets and supervision bodies, the responsibilities of which are exclusively applicable at national level.

The crisis has also revealed the fact that financial instability affects a wide range of entities, such as:

- Financial institutions, including shareholders and employees;
- The users of financial services and products;
- Public authorities, including supervision bodies, central banks, other state authorities.

The European Committee has analyzed its options with respect to micro-prudential supervision from two points of view, namely from the point of view of the supervision system and from the point of view of institutional structures (European Committee, 2009).

From the point of view of the supervision system, the options analyzed were the following:

1. the maintenance of the ongoing supervision system;
2. national supervision bodies should be fully responsible for both the supervision of financial institutions with local capital and for institutions controlled by offshore institutions;
3. the expanding of the supervision abilities of state authorities of the country where the mother bank of all institutions in one group is located, regardless of the latter's locations;
4. the drawing up of a European System of Financial Supervisors –ESFS;
5. the drawing up of a sole supervision body at European level, which will supervise the activity of all financial groups unfolding their activities in several EU states, while national supervision bodies will only have responsibilities related to financial institutions with local capital.

After analyzing the impact of options for micro-prudential supervision, options 1, 2 and 3 were eliminated due to their low efficiency. In the next step, options 4 and 5 were comparatively assessed.

Thus, from the efficiency point of view, it's less likely that at the moment a sole supervision entity at EU level could have profound knowledge on individual banking groups, so as to ensure the protection of deponents and investors from various countries, as well as the stability of the financial system. In this respect, the drawing up of a European System of Financial Supervisors is more efficient, as national supervisors, who have quick access to the local information available can also undertake current supervision activities. Another element in favor of the de-centralized system is the fact that at the moment there is no financing framework at European level able to help a financial institution with difficulties.

The ESFS will be made up of national supervision bodies and its objective will be micro-prudential supervision at the level of individual financial institutions. The system will combine the local supervision performed by national supervision bodies with the centralization of some responsibilities at European level (European Committee, 2009). In parallel, several prudential regulations should be correlated at EU level, so that a single set of rules/standards is used in important domains.

The ESFS will be made up of three new European supervision bodies, which will collaborate with national supervision bodies in order to develop common supervision standards.

The European Committee has also analyzed the ongoing debates from several countries referring to the most efficient organization of the supervision of financial institutions, coming up with the following options:

1. a single supervision authority for all components of the financial sector (banking activities, insurances and capital markets);
2. two supervision bodies with distinct tasks: one authority to perform prudential supervision and another one to monitor the current activities of financial institutions; one committee with decision-making power might cover the activity of the two entities, as well as common decisions;
3. sector approach - three supervision bodies: one for banks, one for insurances and pension funds and one for real estate assets;
4. an institutional approach, which in addition to the three bodies mentioned above presupposes the drawing up of a fourth authority, in charge with the supervision of financial conglomerates.

The European Committee prefers the last option, as there aren't enough arguments to support the higher efficiency of the other two potential systems. At the same time, cooperation between these sector supervision bodies is absolutely imperative.

From the point of view of macro-prudential supervision, the following options were analyzed:

1. The maintenance of the ongoing framework, which presupposes the drawing up of this activity via distinct institutions, but which does not ensure a proper mechanism for the supervision and implementation of all recommendations and warnings on systemic risk.
2. Attributing this responsibility to the Economic and Financial Committee-EFC or to the European System of Central Banks -ESCB/ European Central Bank -ECB.
3. Drawing up a distinct entity, namely the European Systemic Risk Council –ESRC; this entity will function independently from the European Central Bank, but its board will be run by the BCE president.

The solution of attributing this responsibility to the Economic and Financial Committee was deemed to be inefficient, due to the political nature of this committee, while the ESCB/ ECB option has its deficiencies from the point of view of the potential conflict of interests between currency stability and financial stability, the excessive concentration of power in the management of financial systems at European level, the reputation risk entailed by macro-prudential supervision etc.

To sum up, from the point of view of macro-prudential supervision, the best option would be the drawing up of the European Systemic Risk Council –ESRC.

Thus, the new European Systemic Risk Council will undertake macro-prudential supervision and the management of systemic risk, its objective being the supervision and assessment of all potential threats against financial stability entailed by macro-economic evolution on the one hand and by the evolution of the financial system on the other hand. The council will perform assessments/state warnings on increased exposures to risk at economic/financial system level, as well as issue recommendations on the proper measures to be undertaken to counteract the effects of these risks.

The Central Banks of member-states will play a primordial part in macro-prudential supervision; currently, the main responsibilities of central banks refer to the maintenance of currency and financial stability.

In this respect, the necessary macro-prudential supervision analyses will partly use the economic and currency analyses performed by central banks.

In order to be efficient, the European Systemic Risk Council will include the governors of the 27 central banks of the 27 member-states, as well as the president of the European Central Bank. The participation of the national authorities responsible with micro-prudential supervision is absolutely necessary as well. At the same time, the current supervision activity of financial institutions shall remain at local level. If several banks require financial support, as was the case during the ongoing crisis, member-states will undertake such action.

3.2. The measures undertaken by USA for the management of systemic risk and macro-prudential supervision at European Union level

On June 17th 2009, the Treasury of the United States of America has put forth a proposition regarding the reforming of the regulations and supervision of the financial system (Clifford Chance, 2009). Thus, from an institutional point of view, the Treasury stipulated four important measures:

- Federal Reserve will become the regulation authority in the domain of systemic risk and the supervisor of important (too-big-to-fall) institutions; at the same time, a new Financial Services Oversight Council will be drawn up:

Federal Reserve will decide which financial institutions have systemic importance (called Tier 1 FHCs), based on criteria such as size, leverage, inter-dependency with other entities, etc.; for these, Federal Reserve will draw up higher prudential requirements, such as higher capital requirements, as compared to all other institutions.

- The drawing up of a new federal agency, namely the National Bank Supervisor, specialized in the supervision and prudential regulating of banks; this will be created by the merge between two existing agencies, namely the Office of Thrift Supervision (OTS) and the Office of Currency Control (OCC).

- A new Consumer Financial Protection Agency-CFPA will be drawn up, with the purpose of supervision the crediting practices of financial institutions, in order to avoid crediting practices which lack transparency/aggressive practices. This new federal agency will have increased supervision competencies upon the activity of providers of services and products for individuals, being the sole agency with attributions in the domain of drawing up consumer protection rules.

- The drawing up of an Insurance Supervision Bureau (within the USA Treasury), responsible with the supervision of the insurance industry and the identification of all issues which might contribute to the emergence of a crisis, as well as with the informing of Fed on insurance companies of systemic importance.

The Financial Services Supervision Council will be responsible with the management of systemic risk. At the same time, Federal Reserve will decide which financial institutions are important from the perspective of systemic risk and its prerogatives will include requesting reports, performing inspections, drawing up additional prudential requirements, as well as activity restrictions and other similar measures.

Because such measures usually fall under the competence of the micro-prudential supervision authorities, we feel this action slightly contradicts the very notion of macro-prudential supervision. Nevertheless, as the measures undertaken by Federal Reserve shall be complementary to those undertaken by micro-prudential supervision authorities, but generally more restrictive and based on a macro-prudential approach, we believe they will contribute to the strengthening of the stability of the financial system.

As a whole, additional capital requirements and more prudent risk standards are being taken at the level of all banks and banking holdings.

Another important change stems from the application of consolidated rules at the level of financial holdings, in order to include non-banking subordinated branches as well in the supervision scope.

Thus, financial institutions with systemic importance will be analyzed together with private investment funds, hedge funds, private equity funds and venture capital funds, as well as with foreign financial institutions unfolding their activities in the USA. We believe this measure is very important, as it avoids the transferring of risks from monitored entities to entities not included in the prudential supervision perimeter, which may lead to the accumulation of systemic risks unknown to the authority in charge.

Initiatives on the re-assessment of the ongoing supervision standards and capital requirements will be implemented as well, including changes to the computation methods of capital requirements in order to decrease pro-cyclicality; simpler leverage assessment methods will be considered, used complementary to the capital assessment method based on the weighing of assets against risks, as well as new risk provision rules.

What's very important considering the reasons for the emergence of the ongoing crisis is the fact that measures will be implemented so that a proper correlation is achieved between financial compensation schemes for financial institution leaders and the long-term value drawn up for shareholders with the maintenance of the security and the solidity of the respective entity.

Conclusions

We consider these initiatives of adjustment of the ongoing supervision system proper, considering the fact that the poor efficiency of the ongoing macro-prudential supervision has had major negative effects at global level.

Had this system been implemented prior to the emergence of the crisis, the problems caused by the aggressive expansion of loans, the increase in the prices of financial and real estate assets, correlated with the under-assessment of the financial institutions' exposure to risks, would not have happened.

We should also mention that the G20 Group has similarly decided in April 2009 during the London Summit to implement new measures able to ensure financial stability at global level, based on the newly-drawn up Financial Stability Board-FSB, which will closely collaborate with the International Monetary Fund in order to issue signals/ warnings on macro-prudential risks at global level (Financial Stability Board, 2009).

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Section VI

Finance and economic stability

INVESTIGATING ROMANIAN FISCAL ADJUSTMENTS*

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***Abstract.** Fiscal sustainability assessment depends on the active measures undertaken to limit the budget deficit. The aim of this paper is to analyze the composition of fiscal adjustments based on reaction function on Romania's case. The main findings reveals that the future active measures undertaken by Romanian government in order to prevent large fiscal imbalances and to assure condition for assessing fiscal sustainability on long run should rely upon expenditures and reduction of income and consumption taxation. Also, the reaction of fiscal balance to shocks on expenditures and taxation is delayed by three periods.*

Keywords: fiscal sustainability; fiscal adjustment; structural deficit; primary balance; reaction function.

JEL Codes: E62, H20, H50, H62.

REL Codes: 8K, 13C.

1. Introduction

Fiscal sustainability assessment depends on the active measures undertaken to limit the budget deficit such as fiscal consolidation or public expenditure contraction independently on economic cycles. Most of the OECD countries had confronted, in past, with important budget imbalances caused, mainly, by the welfare state which conduct to many debates regarding the mechanisms of budget deficit reduction, its efficiency and incidence on economy.

In actual economic context, Economic and Monetary Union member states apply policies concentrated on fiscal imbalances and public debt boundaries according to the target imposed by nominal convergence criteria. As a result, fiscal adjustments have an important role. Many studies (Alesina, Perotti, 1995; Alesina, Perotti, 1996a, 1996b; Perotti, 1996; Alesina, Ardagna, 1998; Alesina, Perotti, Tavares, Obstfeld, Eichengreen, 1998; Gupta, Clements, Baldacci, Mulas-Granados, 2002; Purfield, 2003) investigate the fiscal adjustment in different countries in order to identify the most efficient active measures and their incidence on economic growth.

The aim of this paper is to analyze the fiscal adjustment composition based on reaction function in order to identify how Romanian budget deficit reacts to taxation and expenditures shocks. This paper is structured as follows. The next section consists in theoretical aspects on fiscal adjustment. Section 3 refers to the composition of fiscal adjustment and the findings from the main stream of literature. Section 4 is devoted to some aspects on Romanian public finance after 1990 as reflected by profiles of general government revenue and expenditure,

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and, also, presents the methodology and database used to analyze the Romanian fiscal adjustment composition estimating a fiscal reaction function based on quarterly data for 1998Q1-2008Q3. In the last section will be formulated the concluding remarks of this study.

2. Theoretical background for fiscal adjustments

In a conceptual framework, an episode of *fiscal adjustment* is that year when cyclically adjusted primary balance improves by at least by 2 percentage points of GDP or the interval between two consecutive years when the improvement of adjusted primary balance is about 1.5 percentage points of GDP in every year (Alesina, Ardagna, 1998).

Fiscal adjustment episodes for the budget deficit limitation are associated with restrictive policies. Therefore, it is pursuit the efficiencies of fiscal adjustment by the viewpoint of the effects on budget deficit restraint, on one hand, and, on the other hand, of the expansionary character of these during adjustment period and after that.

Fiscal adjustments are efficient if: (i) in next three years after the fiscal adjustment episode, cyclically adjusted primary deficit is, by average, at least 2 percentage points of GDP below budget deficit during adjustment process or (ii) in next three years after fiscal adjustment episode, public debt is at least 5 percentage points of GDP below the public indebtedness during the episode of fiscal (Alesina, Ardagna, 1998).

Fiscal adjustment periods are expansionary if average growth rate of GDP during the fiscal adjustment and the next two years is larger than the average value for the same indicator during all the fiscal adjustment episodes (Alesina, Ardagna, 1998).

According to Alesina and Perotti (1996b), when it comes to fiscal adjustments issue, it must be taken into consideration at least the following: (i) the size of fiscal adjustment; (ii) the structure of fiscal adjustment starting with the possibility to chose between government spending cuts or/and fiscal expansion; (iii) adjustment efficiency considering its contribution to maintain a relative small budget deficits.

3. Literature review for fiscal adjustments

The main stream of literature on fiscal adjustment issue (Alesina, Perotti, 1995; Alesina, Perotti, 1996a, 1996b; Alesina, Ardagna, 1998; Alesina, Perotti, Tavares, Obstfeld, Eichengreen, 1998) showed that, in the case of OECD countries, the most efficient and consistent fiscal adjustment measures base on government spending cuts, especially for compensation employees and social transfers. The measures based on increasing taxation are not efficient enough and do not assure fiscal sustainability on long run. Similar results were, also, revealed for emerging economies (Purfield, 2003; Gupta, Clements, Baldacci, Mulas-Granados, 2002).

However, fiscal adjustments based on expenditure cuts have involved many critics. In that sense, Persson (1996) has expressed his doubts on restrictive budget policies within OECD countries and considered such measures as being efficient only those countries which apply strict and, even, conservative budget rules. Unlike the view expressed by Persson, Alesina, Perotti, Tavares, Obstfeld and Eichengreen (1998) have shown that these episodes of fiscal adjustment did not lead to loss in terms of political capital for the governments which undertook such restrictive measures, but could conduct to an increase of its credibility and peoples' confidence. Also, the authors have shown that coalition governments will not put into practice measures to strengthen the fiscal position, or to limit fiscal imbalance, unlike single-party governments. Moreover, they have shown that measures based on tightening the access criteria for benefits of social programs, and on reduction of the amount of these benefits conduct to lasting effects in terms of reducing public deficits, compared with measures involving public investments cuts.

There are, also, studies which investigated the composition of fiscal adjustments from the taxation point of view. For instance, Botman and Kumar (2007), using IMF Global Fiscal Model for European Union member states, demonstrated that in order to assess fiscal

sustainability on long run in the context of aging pressures, governments should not undertake measures based on increasing income taxation. Also, Blavoukos and Pagoulatos (2008), investigating fiscal adjustments for Italy, Spain, Greece, and Portugal found that fiscal consolidation based only on short term taxation measures ensures a temporary budgetary relief and not a long term fiscal sustainability.

However, we should not ignore the fact that the success of fiscal adjustment measures depend on its initial conditions, economic activity fluctuations at national or international level, level of initial public debt or fiscal position (von Hagen, Strauch, 2001) or other determinants that could have some impact on the efficiency of fiscal adjustment episode. In that sense, Castells, Esteller and Vilalta (2004), investigating fiscal adjustments for municipalities of province of Barcelona, during 1993-1999, found adjustment process is influenced not only by fiscal variables, but, also, by political determinants. The authors identified municipalities with a “weak governments” (coalition and minority governments), where fiscal adjustments are delayed, and “strong governments”, where the adjustments are instant.

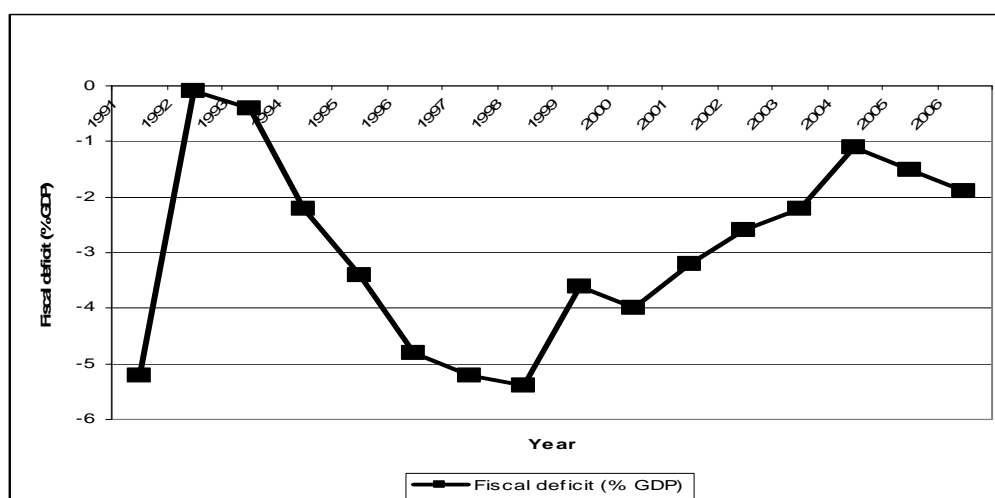
Another point of view, different from the previous mentioned, is expressed by Easterly (1999) which states that fiscal adjustments undertaken in the European Union member states (11 countries) are illusory, and conduct to deficit or public debt reduction but leaves unchanged the net public assets. The author brings to attention a very important aspect related to the use of the most appropriate measurement of fiscal balance. Most of the studies analyze fiscal adjustment episodes based on conventional deficit, while Easterly believes that the most relevant measure of imbalances in public sector is represented by the net assets, which is very difficult to estimate. Therefore, most of the authors prefer to use conventional deficits in their studies.

4. Composition of fiscal adjustments based on reaction function: Romania's case

Romanian public finance policy is driven by the objectives set by governments for fiscal, budgetary and public debt policies, and aim to assure long term sustainability. Therefore, the size of government spending must be established by taking into consideration the level of government revenues in order to maintain fiscal deficit at a cautious level.

In the actual economic context, fiscal adjustments will be necessary in order to ensure nominal fiscal criteria imposed by Maastricht Treaty and to achieve long term sustainable economy both in fiscal and external positions, legislative procedures, national currency exchange rate or inflation rate.

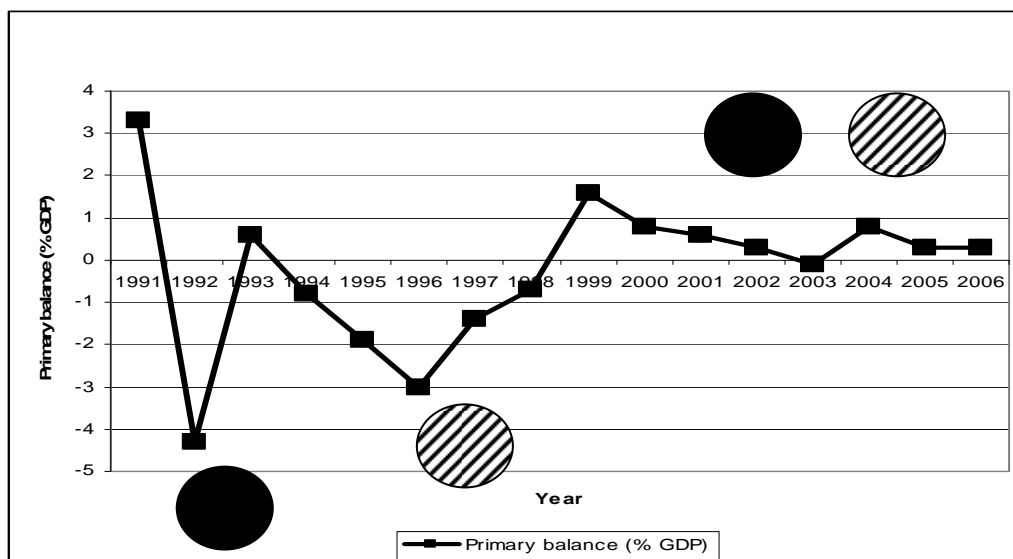
Taking into consideration the evolution of fiscal balance during 1991-2006, it will be noticed that Romania experienced large fiscal deficits (see Figure 1):



Source: data available from IMF.

Figure 1. Romanian fiscal deficit during 1991-2006

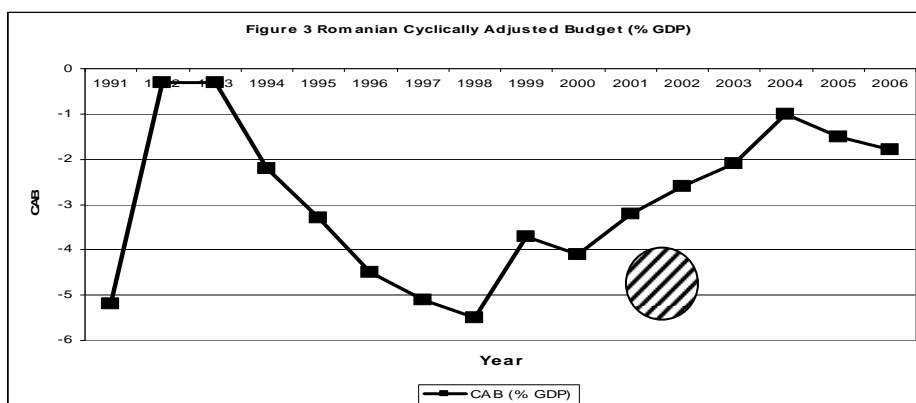
Consequently, fiscal adjustments measures should have been necessary in order to reduce the size of deficit and to assure the conditions for promoting sustainable fiscal policy on long term. Two episodes of fiscal adjustments could be identified, based on the evolution of fiscal balance, for the years 1992 and 2001 (we pointed out the beginning of fiscal adjustments). In that sense, primary balance could be used as a simple indicator in order to reveal the existence of a fiscal adjustment episode or not (see Figure 2).



Source: data available from IMF.

Figure 2. Romanian primary balance (% GDP)

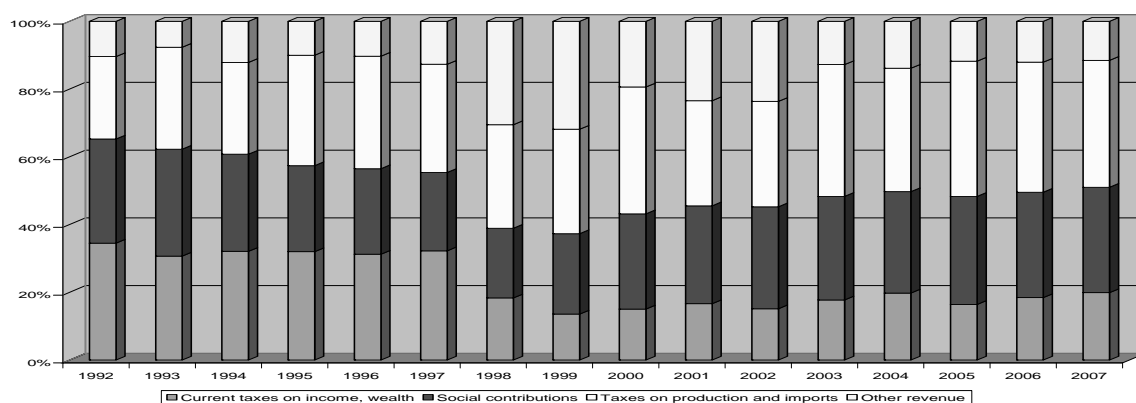
The presumed fiscal adjustments episodes based on the data for fiscal balance were not in fact adjustments in the sense mentioned by theory, only were adopted measures in order to reduce the size of the deficit. If the data are not misleading, there were two episodes for the years 1996 and 2004. But to be sure, we used data available for cyclically adjusted balance (CAB) in order to identify the fiscal impulse (see in that sense, Chouraqui, Hagemann, Sartor, 1990, Alesina, Perotti, 1995) and to reveal the discretionary character of Romanian fiscal policy (Figure 3):



Source: Stoian's estimations for CAB (2008).

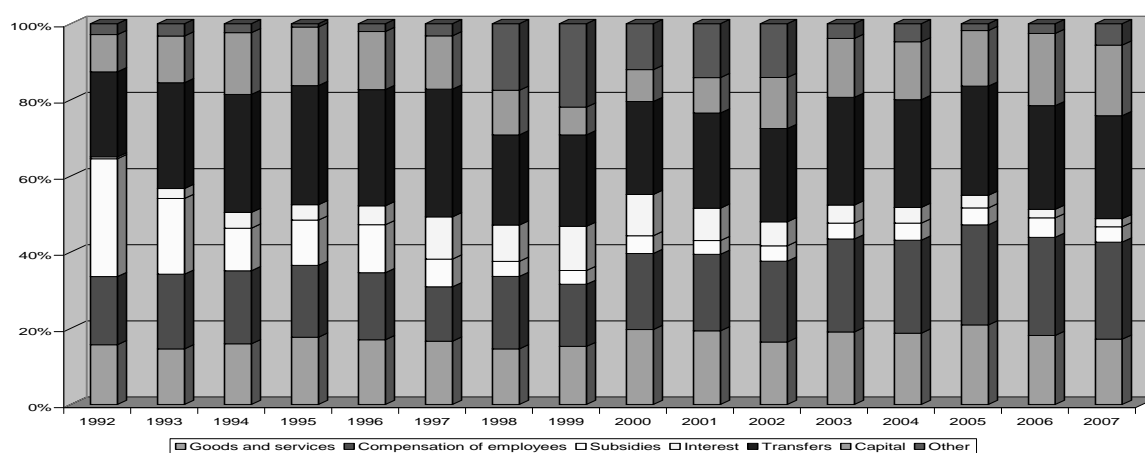
Figure 3. Romanian Cyclically Adjusted Budget (% GDP)

According to the data above, only for the year 2001 we could bring into discussion the issue of one fiscal adjustment episode, but if we look in depth to the profile of total government revenues and spending, we could not identify the composition of that particular adjustment moment (Figure 4 and Figure 5):



Source: data available from IMF and EUROSTAT.

Figure 4. Profile of total general government revenue in Romania, during 1992-2007 (%)



Source: data available from IMF and EUROSTAT.

Figure 5. Profile of total general government expenditure in Romania, during 1992-2007 (%)

Our opinion on this issue is that Romanian government did not proceed to fiscal adjustments based on a particular category of expenditures or revenues, but to adjustments that looked for the reduction of the total amount of government spending and revenues. Consequently, in the next few years will be necessary to improve the fiscal position based on much more efficient adjustments. Moreover, taking into consideration the financing of government needs based on government loans, the size of public debt service, or the aging pressures, Romanian government have to conduct important fiscal adjustment in order to absorb shocks on economic growth.

Therefore, it is useful to identify how fiscal balance reacts to different composition of fiscal adjustments in order to establish the timing and the magnitude of certain fiscal adjustment on long term sustainability. Also, Romanian fiscal policy has to take into the account the budgetary constraint in correlation with the economic constraint to avoid imposing an excessive burden on future generations and to apply a fiscal policy focused on long term public finance sustainability.

The aim of this paper is to analyze the composition of fiscal adjustment in Romania's case base on reaction function, considering the difficulty in identifying the composition of adjustment based on the dynamic of data for government spending and expenditures. The reaction function can be estimated by regressing fiscal balance on budget components (taxes and expenditures) while controlling for other determinants of fiscal stance (see equation below):

$$b_t = \alpha + \beta \times BC_t + \delta \times Z_t + \varepsilon_t$$

Where:

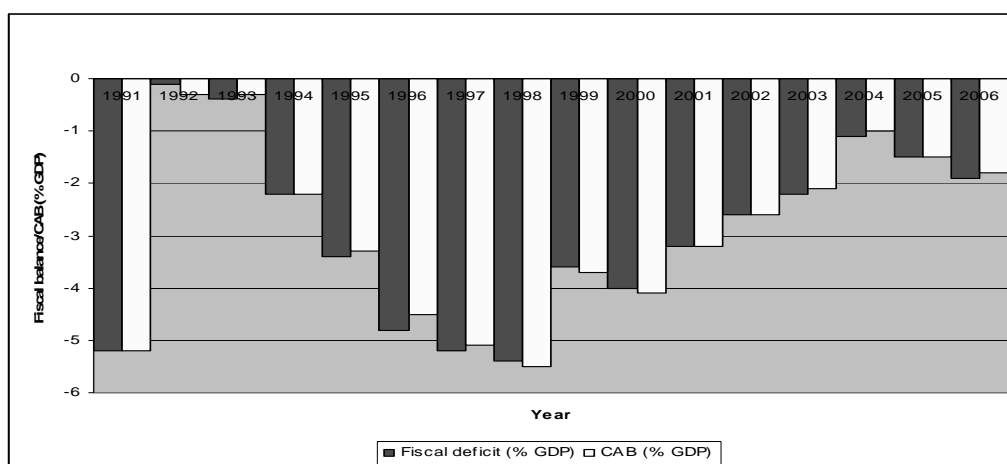
b_t = fiscal balance (surplus/deficit) as ratio to GDP at moment t ;

BC_t = budget components (taxes or expenditures) as ratio to GDP at moment t ;

Z_t = set for control variables at moment t ;

Fiscal reaction function rely upon Barro's work (1979) on tax smoothing model which implies that the determinants (Z_t) of fiscal stance could be business cycles and temporary government spending ($GVAR$), but also, there are taken into account several others explanatory variables.

Also, we choose to use fiscal balance as endogenous variable, taking into consideration that according to Stoian's estimation (2008) the gap between fiscal balance and CAB is not so large (Figure 6). This means that budget components are not influenced by economic fluctuations and automatic stabilizers do not react to changes of business cycle.



Source: data for fiscal balance are available from IMF; data for CAB based on Stoian's estimations (2008).

Figure 6. Fiscal balance vs. CAB (% GDP)

In order to estimate the reaction function, we used quarterly data spanned on 1998Q1-2008Q3 as ratio to GDP available from EUROSTAT. The results are presented in the table below only for the statistical significant regressions:

Reaction function estimation							
Explanatory variables	C	$w(-3)$	$t(-3)$	$VAT(-3)$	$i(-3)$	d	$dummy$
Dependent variable							
b R-sq:0.51 F-stat:12.62 (0.00)	7.25 [2.71] (0.01)	-0.47 [-2.05] (0.04)				-0.25 [-5.98] (0.00)	-10.79 [-5.98] (0.00)
b R-sq:0.47 F-stat:14.83 (0.00)	5.32 [2.25] (0.02)		-0.71 [-3.32] (0.00)				-9.43 [-13.97] (0.00)
b R-sq:0.45 F-stat:10.10 (0.00)	6.54 [2.72] 0.00			-0.45 [-1.97] (0.05)		-0.25 [-2.89] (0.00)	-12.10 [-8.18] (0.00)
b R-sq:0.57 F-stat:25.32 (0.00)	5.37 [2.85] (0.00)				-1.09 [-4.45] (0.00)		-9.63 [-13.60] (0.00)

b : fiscal balance; w : compensation to employees; t : social transfers; VAT : Value Added Tax; i : current taxes on income and wealth; d : public debt; $dummy$: dummy variable for 2006:Q4
[]: t-stat: (): prob

The estimation reveal that fiscal balance reacts to shocks on compensation to employees, social transfers, value added tax and current taxes on income and wealth. In order to reduce fiscal deficit, Romanian government should cut wages and social transfers, should reduce income and consumption taxation. Also, the results show a delay of three periods from the moment when the adjustment measure is implemented and till the moment when fiscal balance reacts to that particular tool. The most powerful adjustment is to increase income revenues which lead to a reduction of fiscal deficit by 1.09 percentage point.

5. Concluding remarks

Fiscal sustainability assessment depends on the active measures undertaken to limit the budget deficit such as fiscal consolidation or public expenditure contraction independently on economic cycles. Most of the OECD countries had confronted, in past, with important budget imbalances caused, mainly, by the welfare state which conduct to many debates regarding the mechanisms of budget deficit reduction, its efficiency and incidence on economy.

The aim of this paper is to analyze the fiscal adjustment composition based on reaction function in order to identify how Romanian budget deficit reacts to taxation and expenditures shocks. Taking into consideration the financing of government needs based on government loans, the size of public debt service, or the aging pressures, Romanian government have to conduct important fiscal adjustment in order to absorb shocks on economic growth and to assure fiscal sustainability on long term.

In Romania's case, it is very difficult to identify fiscal adjustments episodes and their composition. Therefore, we investigated this issue using a reaction function. The findings reveal that the composition has to rely upon cuts in compensation to employees and social transfers and increasing income and consumption tax revenues. Fiscal balance does not react instantly to shocks on expenditures and on taxation, and, consequently, fiscal adjustments measures have to be undertaken at least 3 quarters earlier in order to achieve their impact on schedule.

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THE CHINESE MODEL OF LOCAL PUBLIC FINANCES

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***Abstract.** The Chinese public finances are of interest to any public economy because, through their complexity, they can offer us a set of good practices. The five levels of organization of the administration (out of which four are the correspondents for the local levels) impose an integrated financial mechanism that takes into account the types of income that can be cashed for every budget separately and the spending categories that can be paid from the those budgets. The existing system is being perfected, with the dysfunctions being identified, especially those related to the lack of correlation of the incomes with the spending and the deficits' covering.*

Keywords: local public finances; budgetary incomes; budgetary spending; local public deficit; China.

JEL Code: H61.

REL Code: 13F.

1. Introduction

The role and the place of the local public finances is more and more individualized in the field of public finances. The analysis of this segment is relevant for ensuring a complete image of the public incomes and spending.

The Chinese model is becoming more and more relevant because this economy is making its mark on the world economy. The complex administrative system and the large geographical area ensure a validation (or, on the contrary, a negative resolution) regarding the implementation of the financial mechanisms. A special emphasis is put on the analysis of the financial relations between the levels of the public administration (especially transfers from the central budgets to the local ones), correlated with the volume and typology of the attributions established for each level of the administration. This paper is financed by NURC on project no. 1780/2008.

2. Chinese local public finances

The reform of the Chinese public finances started in 1978 and culminated with the measures taken in 1994, the finalization being scheduled for the year 2020. Through this reform, an administrative system made up of five different levels was set up. The central level is complemented by four sub-national levels that make up the local and provincial component (composed out of prefectures, counties and cities). In our research, we generically named all the sub-national levels as being local levels. Among the four components, there are relations of subordination, the first levels being more powerful and privileged in comparison to those that are subordinated to them.

The inequities in the management of the local public funds appear in two ways: (a) a disproportionate ratio between the resources of the central administration and those of the local one and (b) accentuated differentiations between different local communities that have

the same rank. The weak regulation of the way of distributing the incomes for the local components significantly affects the communities' finances. The lack of a clear separation of responsibilities can lead to redundant situations. The statistical data show major differences between the communities' budgets: the richest county spends, per capita, 48 times more than the poorest county (Lou, Wang, 2008).

The financial plans of the local communities are developed in conditions of equilibrium, but the budgetary execution can emphasize a series of „hidden” expenses that weren't initially included that, however, become due: executing warranties, subsidizing some companies that have state-owned capital, paying some sums that exceed the estimations for the participants in the public system for social securities etc.

The human resources that take part in carrying out the administration's specific objectives are especially concentrated at local level. According to a statistics of the Ministry of Finance from 2006, 94% of the civil servants were paid from the local budgets. The percentage is big, especially if we compare it with other states of the world: France (39%), Great Britain (68%) or Japan (71%).

3. The incomes of the local budgets in China

The incomes of the local budgets have registered a radical modification as a consequence of the 1994 fiscal reform. The main purpose of the reform was to create a unitary taxing system for the entire territory, through the individualization of the taxes collected at each level of the administration. The unification of the fiscal system has led to an increase of the share of incomes in GDP, as well as to a consolidation of the financial resources attracted at the central level.

The evolution of the budgetary incomes has been descending until 1996, followed by a slight increasing trend. If in 1980, public incomes accounted for approximately one third of the GDP, these have reached a maximum of 15%, then, in 10 years they have increased to 20% of GDP (Lou, Shuilin, 2008). The levels of the budgetary incomes and the fiscal policy have also directly influenced the incomes of the local communities, the impact being determined by two major factors: the share of the total incomes in the GDP and the share of the local incomes in the total resources that were attracted to the public budgets.

The incomes of the central administration have increased in the detriment of the local ones. A 10-years analysis (presented in table no.1) reflects a structural modification of the way of distributing the incomes to the levels of the public administration.

The share of budgetary incomes for each level of the Chinese public administration

Table 1

Level of administration	1993	1999	2003
Central	22	51	55
Provinces	13	10	12
Prefectures	34	17	16
Counties and cities	32	21	17
TOTAL	100	100	100

Source: Lou and Wang (2008), *Public Finance in China Reform and Growth for a Harmonious Society*, p. 41.

The incomes collected at local level represent approximately 30% of the total public incomes, a value that is superior to those encountered in other developed or developing countries. In the last decades this percentage has varied significantly from over 40%, registered in the first part of the 80s, to the current value that is situated at around 30%.

Analyzing this result more deeply, we can notice that we are not dealing with a value that is unjustifiably big, given the conditions in which there are four different levels of administration that run 73%-75% of the public spending.

4. The spending from the Chinese local budgets

The spending from the local budgets is not correlated to the financial resources. The tendency is to delegate responsibilities to inferior levels of administration, without nominating the financing sources necessary to accomplish the new tasks.

The fields that benefit from local financing are varied and vast. In comparison to other states, the Chinese local authorities manage a varied range of sectors of activity. According to a centralization made by Wong, the situation is the following:

The way of financing various fields of activity in China

Table 2

Country	China	USA	Germany
Defence	F	F, S	F
External Affairs	F	F	F, S
Exploiting natural resources	F, S, L	F, S	C
Unemployment insurances	L	F, S	C
Industry and agriculture	F, S, L	S	C
Education	L	S, F	C, S
Health	L	S (F)	C, F, S
Social care	L		C
Police	L	F, S	C, S
Transports	F, S, L	F, S	C

Legend: F – Federal/National, S – Provincial, L – local, C – Competitor.

Source: selection from Wong Christine, Budget Reform in China, p. 51 (2007).

A 2004 statistics shows the way in which the public spending is divided between the central and the local level in China, mostly following the categories from the functional classification of spending. The fields that have benefited from a local financial support of at least 90% are: education, health, agriculture, social care, pensions, urban development (Lou, Wang, 2008).

The structure of the public spending according to financing sources, in China in 2004

Table 3

Spending Category	Financing from the central budget (% of total spending)	Financing from local budgets (% of total spending)
Education	6	94
Health	3	97
Agriculture	8	92
Social care	1	99
Social security	13	87
Pensions	9	91
Public administration	17	83
Science and innovation	22	78
Interest payments	100	0
National defense	99	1
Capital spending	39	61
Urban development and housing	0	100
Other spending	14	86

Source: Lou and Wang (2008), *Public Finance in China Reform and Growth for a Harmonious Society*, p. 65.

In the 90s, there was a process of transferring the state-held shares of different companies. The local authorities from the inferior levels have become shareholders in most of the companies that had problems, having to keep financing their losses. The superior levels of the administration kept the shares of the companies that didn't have financial problems.

5. The local budget deficit in China

The disequilibria between the local incomes and the local spending have worsened, showing a tendency of increasing yearly (Table 4), especially after 1994, when they gave up using sums and quotas that were broken down. The new financing mechanism requires the individual collection of taxes at each level of the administration. The large taxes remained at the central budget, while the taxes that were left at the local level sum up (starting with 2002) less than 45% from the total fiscal incomes.

Incomes, spendings and local deficit in China (bill. RMB)

Table 4

Year	Incomes	Spending
1990	194.5	207.9
1991	221.1	229.6
1992	250.4	257.2
1993	339.1	333.0
1994	231.2	403.8
1995	298.6	482.8
1996	374.7	578.6
1997	442.4	670.1
1998	498.4	767.2
1999	559.4	903.5
2000	640.5	1043.6
2001	780.3	1313.4
2002	851.5	1528.1
2003	985.0	1723.0
2004	1189.3	2059.3

Source: China's National Bureau of Statistics.

The public finance law doesn't allow the local public authorities to contract loans, the authorities being forced to manage the fund in equilibrium conditions. Despite this, at local level, important sums were contracted using mechanisms that avoided the classic financial mechanism. The investments (especially those in the road system) were realized through companies with state-owned capital. The objectives were financed from incomes obtained by selling lands and through loans from the banks with state-owned capital.

6. Conclusion

The Chinese public financial system is complex, due to its dimension (the important volume of attracted and distributed sums, the country's large geographical area). The pyramid-shaped organizational system composed of five levels generates a multitude of relations between the administration levels. The distribution of budgetary incomes for each level is inequitable, especially if we also take into account the responsibilities of each administration.

The 1994 fiscal and budgetary reform was meant to modify the public financial system, having the year 2020 set as the deadline of this process, when an optimal mechanism

will be finalized. By analyzing the current stage of implementation of the reform we notice that there are still many steps to be taken in order to obtain a stable mechanism. The dynamics of the economic life imposes a continuous adaptation of the financial mechanisms to the new conditions.

The positive aspects of the Chinese public financial system that can be emphasized are related to the individual organization of the finances for each level of the administration and the management of the transfers between these levels. The central-local ratio is biased towards the second component, which denotes a desire for decentralization.

As in the case of any initiative, there are some weak points. In our analysis we have identified the following weak points: the inequity of the distribution of transfers in the same level of administration, the lack of correlation of the local incomes with the local spending, the hidden budget deficits.

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CENTRAL BANK AND FINANCIAL STABILITY: A CASE OF BOSNIA AND HERZEGOVINA

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***Abstract.** Having on mind specific features of financial systems in Bosnia and Herzegovina it's important to analyse characteristics each segment of financial system, specially banking sector, and identify which elements can have impact on stability and safety of financial sector. Only stabile financial system can ensure real economy stability. Financial stability and managing it in condition of financial crises have major significance for maintain stabile national economy and minimise negative effects financial crises for economy.*

Authors in this paper will analyse structure of B&H financial system, to identify internal and external risk for stability financial sector, role of CBBH in managing financial stability, and analyse possible solutions in field of monetary policy and supervision for that purpose.

Keywords: financial system; stability; currency board; monetary policy; supervision.

JEL Codes: G21, E5.

REL Code: 8J.

1. Introduction

Banks in undeveloped financial systems, like as the financial system in Bosnia and Herzegovina (BH), have an important role in financial intermediation between creditors and debtors, implementation of monetary policy and improvement and growth of financial market. Financial system of Bosnia and Herzegovina is “bank dominated” system. Level of financial market development is one of the key presumptions of economic growth, but in changing environment for small, undeveloped financial system open to foreign capital can have negative effect on national economy. Especially problems in banks can have impact on all other segment in financial system (managing financial stability) and indirectly on real economy. Financial stability is defined as ability of financial system to absorb shocks with significant negative impact on financial system current and future operating and upon economy. Managing financial stability in financial system of BH is hard. There are two reasons that confirm this statement: currency board and role of central bank in that monetary regime and territorial organisation of BH. Table 1 shows banking and non-banking financial institutions assets in total assets financial sector Bosnia and Herzegovina.

Financial institutions asset in Bosnia and Herzegovina (in %)*Table 1*

	2004	2005	2006	2007
Banks	75.0	81.0	79.6	79.9
Insurance company	4.9	4.7	3.7	3.3
Privatisation investment fund	18.0	12.0	8.5	7.2
Micro credit organisation	1.7	4.9	2.6	3.9
Total assets of financial sector	100.0	100.0	100.0	100.0

Source: Central Bank Bosnia and Herzegovina, Annual Report 2007, Sarajevo.

In 2007, 83 percent of total capital in banking sector was foreign-owned. All ten banks in Republika Srpska in B&H (RS) are privately-owned. In entity Federation Bosnia and Herzegovina (F BiH) 78% of banks was in private ownership (Table 3). Banks in foreign capital ownership had share in total assets of banking sectors 93%. More than 50% foreign capital in B&H comes from Austrian banks.

Basic indicators of banking sector Bosnia and Herzegovina (in %)*Table 2*

Indicators	2003	2004	2005	2006	2007	2008
Banking intermediation	48.2	58.7	69.3	76.8	93.8	82.9
Foreign capital in total capital	66.4	69.6	67.0	73.0	83.0	87
ROAA	0.7	0.7	0.7	0.9	0.9	0.5
ROAE	6.4	5.8	6.4	8.5	8.9	4.8
CR3	40.1	56.6	46.3	43.5	40.8	46.4
CR5	51.2	61.7	59.3	59.3	56.7	60.8
HHI	655	808	919	926	890	

Source: Banking Agency Federation of Bosnia and Herzegovina, 2007: 11; Banking Agency Republika Srpska, 2007: 3.

If we know that intermediation of complete financial sector in 2007 was 117% of GDP, then is obviously how banking sector dominate in financial system of Bosnia and Herzegovina. According to data from Table 2 we can conclude how banking sector in B&H record:

- increasing foreign capital in ownership structure of banks
- high profitability measured with ROAA and ROAE
- reasonable concentration of assets (concentration ratio – share three and five the biggest banks in banking sector assets), while in loans sector increasing to boarder of high concentrate market.

Total banking sector asset in Bosnia and Herzegovina amounted 10 billion euros at the end 2008 what present increasing for 7.7% in comparison with previous year (CBBH, 2008, p. 67). In the structure of banks assets dominate credits and in structure of liabilities deposits. Such a structure shows that banks in Bosnia and Herzegovina are still „credit-deposit” financial institutions, without developed investment function. Total loans amounted 7.45 billions euro at the end of 2008, while total deposits reached 6.2 billions euro. In the structure of deposits dominate short-term deposit (61% of total deposits). However, they developed some new activities (e.g. leasing, custody, bankassurance).

Non-banking sector is relatively undeveloped. In Bosnia and Herzegovina in few recent years we record development other sub-sector of financial system. In first place we talk

about financial markets, investment funds, and leasing, insurance and micro-credit organizations.

In 2007 there were 27 insurance companies that are 2 insurers more than in 2007. The leasing market experienced significant growth in the last few years. On BH territory operate in 2008, 8 leasing companies. In 2008 they negotiate and realized total value of leasing about 380 millions euro, it's 10% decreasing comprised with previous year. On credit market a significant role has microcredit organizations. Microcredit organizations supply with microcredit legal entities which can't satisfy criteria for getting bank's credit. On the end of 2007 in BH there were 26 licensed microcredit organizations. Assets in these institutions were 500 millions euro, and increasing from 28% in previous years. The major part of outstanding loans was retail credits.

Two capital markets in Bosnia and Herzegovina Sarajevo Stock Exchanges (SASE) in Federation Bosnia and Herzegovina and Banja Luka Stock Exchanges (BLSE) in Republika Srpska began to operate in 2002. Over the three last years both capital markets experienced significant increase in number of trading companies, turnover, market capitalisation, and main markets indexes. At end of 2008 market capitalization on Sarajevo Stock Exchange (SASE) and Banja Luka Stock Exchange (BLSE) decreased for 69%. In 2007 come to transformation privatization investment funds in investment funds and opening possibilities for creating common equity funds. Future of investment fund is determinate with process of pension fund reform. In 2008 in B&H operate 35 brokers' houses, three less than in 2007. Begin 2008 two entities capital markets subscribe agreement about regional cooperation with capital markets in other countries of ex-Yugoslavia.

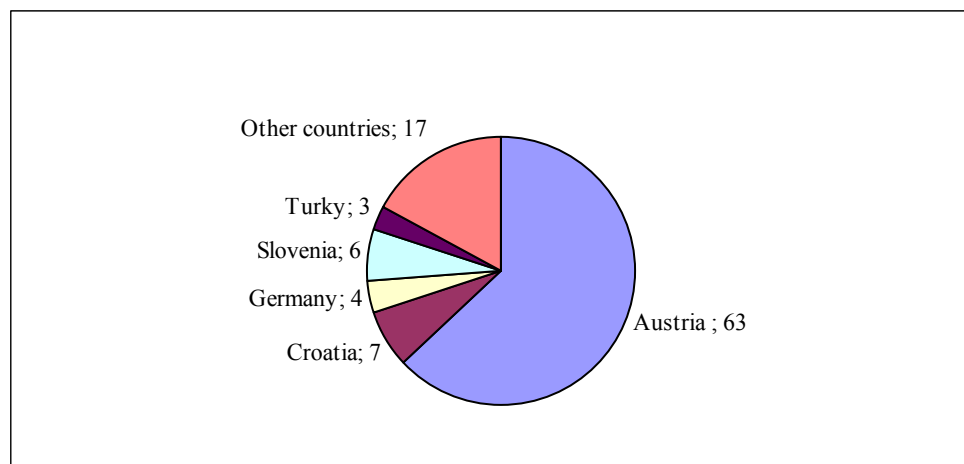
According with data above presented it's obvious that financial stability in BH is determinate by stability and safety in banking sector. This situation is common to all transition countries request identification and managing problems in banking sector. That is way to ensure financial stability for all financial system.

2. Internal and external risk in financial system

Bosnia and Herzegovina has a complex social order. Dayton Peace Agreement from 1995 has organized this country in two entities and in one district. In Bosnia and Herzegovina regulation and supervision of financial system has been divided between entities, implemented by the Banking Agencies, Offices for insurer's supervision and Ministry of Finance, the one in the Federation BiH and the other in the Republika Srpska. They conduct financial regulation and supervision in the name of the entities and they are independent in the conduct of financial supervision. Practically Bosnia and Herzegovina has got a dual and a separate system of regulation and supervision on entities level. It is possible that in this situation two separate and independent agencies can bring different roles for the regulation and procedures for supervision. Impossibility to provide the unique regulation for banks on whole territory of the state is first internal risk in financial system. On the other side major part of financial intermediaries (majority of large banks are doing business over the entire territory of country through networks of branches work) on complete state territory doesn't supervise unique supervisor because supervision has been divided between entities agency that present second internal risk. High degree of foreign capital in banking and non-banking sector in financial system of Bosnia and Herzegovina make extremely high vulnerability and it is necessary for BH to continue the adoption of the international standards in the supervision domain that is third internal risk.

Domination of foreign capital (major from west European countries) in the banking system raised the question of supervision of domestic banks in international banking group

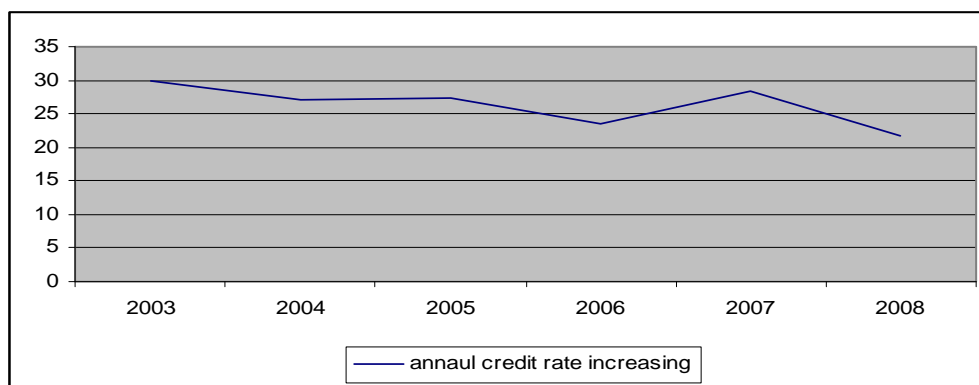
(Figure 1). Right and obligation for supervision has country in which bank is established «home country». In this situation authorities of BH must develop cooperation and exchanges of information, staff and provide common on site examination and adjusting to standards in bank regulation and supervision in European Union.



Sources: CBBH, Annual report 2008, Sarajevo, 2009, p. 89.

Figure 1. Foreign capital in BH banking sector

Credit activities are increasing in last few years, with high share of credit to household in total structure of loans is four internal risks (Figure 2). Having in mind currency board limitation in using instruments for monetary policy as a solution for credit expansion, it is necessary to use combination of required reserve and prudential regulation that is five internal risks.



Sources: CBBH, Annual report 2008, Sarajevo, 2009, p. 82.

Figure 2. Growth credit portfolio in BH banking sector

Credit expansion and high expose in retail banking, dominance of European capital in banking system, development of non-banking financial institutions, increasing trades on capital markets request improvement supervision framework financial sector transition countries. How these countries can response on currant situation and changes in financial sector? Improve legal and institutional framework? Adopt new organisation structure in supervision?

Risk environment for banks in BH has next internal characteristic:

- dual regulation and supervision
- domination of foreign capital - financial conglomeration and home-host supervision
- increasing credit activities

and external risk for BH banking sector:

- macroeconomic stability
- currency board system – no existing function of „lender of last resort”
- risk contagion.

Activities of financial sector depend from economic activities. Financial institutions have a significantly impact by changing in macroeconomic environment. Between major macroeconomic indicators we can chose: growth rate of gross domestic products, balance of payment, inflation, interest rates, foreign exchange rate, credit expansion, increasing/decreasing financial assets price, effect of contingent (Evens, Leone, Gill, Hilbers, 2000, p. 10-12). Table 3 present macroeconomic indicator for BH in period 2000-2008.

Macroeconomic indicators for BH, 2000-2008

Table 3

Indicators	2000	2001	2002	2003	2004	2005	2006	2007	2008
GDP rate (%)	4,5	4,5	5,5	3,0	6,3	3,9	6,7	6,0	5,5
GDP per capita (USA \$)	1.337	1.397	1.614	2.184	2.607	2.800	3.181	3.802	4.886
Inflation (%)	4,8	3,1	0,4	0,6	0,4	3,7	7,4	1,5	7,4
Budget deficit(%GDP)	-6,5	-3,3	-0,2	0,8	-1,1	-0,09	2,9	1,3	
Deficit balance of payment (%GDP)	-7,8	-14,1	-19,1	-19,4	-16,0	-18,0	-8,4	-13,1	-14,1

Source: Central bank of Bosnia and Herzegovina, Annual report, 2008, Sarajevo, pp.162.

Through macroeconomic analyses we can determinate problems, risks or benefits and possibilities for financial sector operating. Decreasing rate of growth GDP can means decreasing credit standing bank's clients or increasing credit risks in bank's balance sheet. Same effect had failure problems in individual industrial sector. Domestic risk for financial stability also is identified in BH fiscal position, significant rise of budgetary beneficiaries and a current account deficit financing. In BH as result of financial crises we identified problems in metal industry, industry of lather and etc. Increasing deficit in balance of payment indicate foreign capital inflows and indirectly credit booms. Financial stability in country can be determinated by structure and maturity of direct foreign investments. With inflation in country we have volatility of financial assets prices, credit standings borrowers and volatility of collateral value. These entire events can result with problems in financial institutions liquidity and solvent position.

The BH banking sector is mostly capitaly relate to banks from Austria and Italy, which increases risk of transmission of shock from abroad. The debit to the mother-banks' deposit make two thirds of the banks' total foriegn debit which again indicates the high exposure of the banking sector to change of banks' business policy primarily from Austria.

3. Role of central bank in managing financial stability in Bosnia and Herzegovina

Parliament of Bosnia and Herzegovina 1997 established Central Bank of Bosnia and Herzegovina (CBBH). The main goals and tasks of the Central Bank are defined by the Law and in accordance with the General Peace Agreement in Bosnia and Herzegovina. CBBH maintains monetary stability by issuing domestic currency according to the Currency Board Arrangement with full coverage in freely convertible foreign exchange funds under fixed exchange rate 1 KM: 0.51129 euro. CBBH have must achieve the stability of domestic currency. The basic tasks of CBBH are (Low, 1997):

- formulate, adopt, and control the monetary policy of Bosnia and Herzegovina
- hold and manage the official foreign exchange reserves of the central bank in a safe and profitable way

- support and maintains appropriate payment and settlement systems
- co-ordinate the activities of the BH Entity Banking Agencies which are in charge of bank licensing and supervision.

With aim to formulate and implement monetary policy CBBH don't have possibility to manage with monetary policy instruments in relation to other central banks. Reason for that position of CBBH is pure (orthodox) currency board system. A currency board is a monetary institution that issues notes and coins fully backed by a foreign "reserve" currency and fully convertible into the reserve currency at a fixed rate and on demand. The reserve currency is a convertible foreign currency or a commodity chosen for its expected stability. The country that issues the reserve currency is called the reserve country. Table 4 lists differences between currency board and a typical central bank.

Differences between typical currency board and central bank

Table 4

Typical currency board	Typical central bank
Fixed exchange rate with reserve currency	Pegged or floating exchange rate
Foreign reserves of 100 per cent	Variable foreign reserves
Full convertibility	Limited convertibility
Rule-bound monetary policy	Discretionary monetary policy
Not a lender of last resort	Lender of last resort
Does not regulate commercial banks	Often regulates commercial banks

Source: adopted from Hanke, S., Schuler, K., Currency Board for Developing Countries – A Handbook, Institute for Contemporary Studies, San Francisco, USA, 1994, Access from <http://www.users.erols.com/kurrency/icegrev.html>

CBBH has limited possibility to use monetary policy instruments. CBBH can't provide function of „lender of last resort”. Only reserve requirement is instrument of CBBH available for managing bank's liquidity and restrict its credit activities. Through reserve requirement rate manipulation and changing requirement base in process of calculate reserve requirements CBBH manage with financial stability in banking sector of BH. Increasing in reserve requirements can be use in useful in one-off sterilisation of excess or otherwise inject liquidity. In table 5 we show changing in reserve requirement rate in BH in period 2000-2005.

Manipulation of reserve requirement rate in BH 2000-2005

Table 5

Month, year of change	Reserve requirement rate – % change Reserve requirement base
1. January 2000.	5
1. January 2001.	5
1. January 2002.	10↑
1. June 2003.	5↓ expanding base on deposits in foreign currency
1. September 2004.	7,5↑
1. December 2004.	10↑
30. November 2005.	15↑
28. November 2006.	18↑
18. October 2008.	14↓
1. January 2009.	differential reserve requirement 14 - for deposits with maturity to 1 year 10 - for deposit with maturity from 1 year

Credit activities are increasing in last few years, with high share of credit to household in total structure of loans. From Table 5 we can see activities of CBBH in period 2004-2008 in purpose to restrict credit expansion in BH through increasing reserve requirements rate. Having in mind currency board limitation in using instruments for monetary policy as a solution for credit expansion, it is necessary to use combination of required reserve and prudential regulation:

- expression of concern in official letters to commercial bank
- informal contact with bank management
- thin cooperation with other supervisors
- to grow sharp roles about providing «bad» loans
- prescribe or decreasing loan to household to total loan ratio
- prescribe implicit credit limits (condition for hypothecs, loans in foreign currency etc.)

Also, with financial crises developing CBBH started decreasing reserve requirement rate and on that way make easy to commercial bank to deal with increasing need in liquidity. Last change of reserve rate is result of attempt to ensure through banks cheaper money to real economy.

In this situation and with undeveloped money market, banks must ensure adequate liquidity and involve best practise in managing liquidity risk. CBBH must supervise situation with significant reduction of foreign exchange reserves which can negatively impact bank solvency. Developed capital markets can protect the economy from some global financial shocks by providing them stable and secure sources of liquidity. Specially, central bank, in cooperation with the Ministry of Finance and public agencies, has important role in developing the domestic money market (Treasury bill market) and domestic debit market – government securities market (Živko, Slijepčević, 2006, p. 137). CBBH with Banking Agency on entity level must continuously supervise expose domestic banking system to condition on home banking markets “contingent risk” and calculate stress test.

Conclusion

Banking industry in recent years in Bosnia and Herzegovina has experienced change. Financial system is banks dominate system with weak non-banking sector. Banking sector is mostly foreign-owned pass through phase of liberalisation, deregulation, and involving of the new technology in its operating. Being the most important monetary institution within national economy, central bank has obligation to create and implement national monetary policy using different tools, instruments and measures.

Functions and operation of central bank are primary determined with existing monetary regime in these countries. But CBBH has different role in banking system than other central banks in South-eastern European region. CBBH operates in system of currency board and has limits in yours discretion monetary policy. Reserve requirement is only instrument in monetary policy in BH. Reserve requirements present channel for managing liquidity of commercial banks and financial stability.

Paper content data about financial system structure, major indicator for banking and non-banking sector, list of internal and external risk in banks operating environment with macroeconomic environment at the end historical review of manipulation reserve requirement rate. Managing financial stability in BH is limited. National authorities must work on improvement existing monetary regime or creating additional channels for helping banking sector. Also for problem in regulation and supervision must find solution. Commercial banks in such environment must careful supervise their liquidity position and kept excess liquidity on own or central bank accounts.

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VOLATILITY DYNAMICS OF EURO–DOLLAR FOREIGN EXCHANGE MARKET

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***Abstract.** This article assesses whether the continuous time random walk (CTRW) model is useful in explaining and predicting fluctuations in the financial market dynamics. In service of this objective, we formalize the CTRW model for a financial market, and estimate some salient exponents of the model using the tick-by-tick data of the Euro–Dollar foreign exchange rate. From some empirical results, we conclude that the CTRW model can be meaningfully applied to the description of an abnormal time evolution of high-frequency financial data. It also provides a framework of predictions of market dynamics.*

Keywords: continuous time random walk model; euro–dollar foreign exchange rate; high-frequency data; power law; complex system.

JEL Codes: C51; G10; G15.

1. Introduction

Whether or not the movement of a financial asset price follows the random walk hypothesis (RWH) has a host of implications. If the RWH is significantly rejected, then prices may be predictable from past information, searching the methods for forecasting the future price may be worthwhile, and the majority of the traditional financial models must be adjusted because the RWH is generally assumed in those models.

Many empirical studies have been conducted which have attempted to test the RWH (Chang, Ting, 2000; Lo, MacKinlay, 1988; Poterba, Summers, 1988), but the overbalance of these studies have utilized low-frequency data (e.g., daily, weekly or monthly data) to test the hypothesis. However, there may be some structural breaks in this low-frequency data, as researchers generally employ a very long period series when using low-frequency data. Additionally, failure to consider these structural breaking points may significantly reduce the power of the test, and may produce misleading evidence in support of the RWH (Perron, 1989).

In an effort to minimize the chance that the data is exposed to the structural breaks problem, the high-frequency intraday data is extensively utilized in analyses of financial markets. As has been previously pointed out by Scalas, Gorenflo, and Mainardi (2000), not only prices (and returns) but also the waiting-time between two transactions varies randomly in financial markets when high-frequency data is utilized. Thus, it is possible to apply a continuous time random walk (CTRW) model to the analysis of the dynamics of high-frequency financial data.

The CTRW model, which was introduced by Montroll and Weiss (1965), Scher and Lax (1973a, b), and Scher and Montroll (1975), is essentially described both by the jumps probability depending on the length between steps and by the distribution of the waiting-times (Shlesinger, Klafter, Wong, 1982). The CTRW model has even been applied to various fields of study in the natural and applied sciences. Recently, the CTRW model has also been applied to analyzing the financial markets (Raberto, Scalas, Mainardi, 2002, Scalas, 2006, Masoliver et al., 2006).

The principal objective of this paper is to attempt to determine whether the CTRW model can be utilized as a generalized version of the random walk model. We applied the CTRW model to the high-frequency data of Euro–US Dollar foreign exchange (EURO–USD FX) rate, as the foreign exchange markets in the real world are extensively believed to behave like unstable and irrational asset markets, and these characteristics are different from those implied by the RWH and the Gaussian distribution.

The remainder of this paper is organized as follows. Section 2 presents the CTRW model. Section 3 describes the high-frequency data of the EURO–USD FX rate, and presents some empirical analyses of the distributional properties of jumps and waiting-times, returns, and long-time volatility. Section 4 contains our concluding remarks.

2. The CTRW model for a financial market

Now we consider the formalization of the CTRW model, which can be applied to financial market data. Let $R(t)$ be the return of a financial asset at time t , as defined by $R(t) = \ln[P(t+t_0)/P(t_0)]$, where $P(t)$ is the price of the asset and t_0 is the initial time. If we assume that $R(t)$ is a stationary series, $R(t)$ is independent of t_0 . In this case, we can set $t_0 = 0$ without loss of generality, and then $R(0) = 0$. In this study, we will employ the zero-mean return $X(t)$ defined by $X(t) = R(t) - \langle R(t) \rangle$, where $\langle R(t) \rangle$ is the average of the return series.

$X(t)$ jumps at random times t_i ($i = 1, 2, 3, \dots$) with the waiting-time (the pausing time or the time interval between two consecutive transactions) $T_i = t_i - t_{i-1}$, but $X(t)$ stays unchanged during the waiting-times. We assume that after the waiting-time the zero-mean return $X(t)$ undergoes a random change equal to $\Delta X_i = X(t_i) - X(t_{i-1})$, with a probability density (PD), $j(x)$, defined by $j(x)dx = \text{Prob} \{x < \Delta X \leq x + dx\}$.

We also assume that the waiting-times are independent, identically distributed (*i.i.d.*) random variables, whose PD, $\psi(t)$, is defined by $\psi(t)dt = \text{Prob} \{t < T \leq t + dt\}$.

As we mentioned previously, in the high-frequency data of a financial market, not only the returns but also the waiting-time can be regarded as a random variable. In that case, the time series $\{X(t_i)\}$ can be characterized by the joint PD of jumps and of waiting-times. This joint PD, $\varphi(x, t)$, is defined as follows: $\varphi(x, t)dxdt = \text{Prob} \{x < \Delta X \leq x + dx; t < T \leq t + dt\}$.

The joint density thus satisfies the normalization condition, $\iint \varphi(x, t) dxdt = 1$.

Additionally, two marginal densities are related to the joint PD, as follows:

$$\psi(t) = \int_{-\infty}^{+\infty} \varphi(x, t) dx, \quad j(x) = \int_0^{\infty} \varphi(x, t) dt.$$

Our primary goal is to obtain the probability density function (PDF) of $X(t)$, namely the PDF of finding a random walker at position X at time t . If we denote this PDF as $P(x, t)$, it can be defined as follows: $P(x, t)dx = \text{Prob} \{x < X(t) \leq x + dx\}$.

It is well known that $P(x,t)$ satisfies the following equation (Montroll, Weiss, 1965, Weiss, 1994);

$$P(x,t) = P_0(x,t) + \int_0^t \int_{-\infty}^{+\infty} \varphi(x',t') P(x-x', t-t') dx' dt'. \quad (1)$$

In the above equation, the initial condition, $P_0(x,t)$, is equal to $P_0(x,t) = \Psi(t)\delta(x)$, where $\delta(x)$ is the Dirac delta function; $\delta(x) = 0$ for $x \neq 0$ and $\int_{-\infty}^{\infty} \delta(x) = 1$. Also, $\Psi(t)$, the survival probability, is the probability that the random walker is staying for time t after arriving at an arbitrary position (or that the diffusing quantity X does not change value during the time interval of duration t after a jump, or that no transaction has occurred prior to time t). The survival probability can be expressed in terms of waiting-time PD, as follows:

$$\Psi(t) = \int_t^{\infty} \psi(t') dt' = 1 - \int_0^t \psi(t') dt', \quad \psi(t) = -\frac{d}{dt} \Psi(t).$$

It is possible to solve Eq. (1) by means of a joint Fourier-Laplace transform,

$$\hat{P}(w,s) = \int_0^{+\infty} \int_{-\infty}^{+\infty} e^{-st+iwx} P(x,t) dt dx.$$

Montroll and Weiss (1965) have shown that the solution is

$$\hat{P}(w,s) = \frac{1 - \hat{\psi}(s)}{s} \frac{1}{1 - \hat{\varphi}(w,s)}, \quad (2)$$

where $\hat{\psi}(s)$ is the Laplace transforms of the functions $\psi(t)$ and $\hat{\varphi}(w,s)$ is the joint Fourier-Laplace transforms of $\varphi(x,t)$. Eq. (2) is a convenient starting point in any CTRW framework.

If we assume that the waiting-time and the jump are independent random variables, the joint density function can be either factorized or decoupled (Scalas, Gorenflo, Mainardi, 2000), written specifically as the product of a spatial component and a temporal component;

$$\varphi(x,t) = j(x)\psi(t). \quad (3)$$

In this case, the Montroll and Weiss equation of Eq. (2) can be written as follows;

$$\hat{P}(w,s) = \frac{1 - \hat{\psi}(s)}{s} \frac{1}{1 - \hat{j}(w)\hat{\psi}(s)}.$$

If we apply the convolution theorems to Eq. (1), we can get

$$\hat{P}(w,s) = \frac{\hat{P}_0(w,s)}{1 - \hat{\varphi}(w,s)}, \quad (4)$$

where $\hat{P}_0(w,s)$ is the joint Fourier-Laplace transformation of function $P_0(x,t)$. This equation implies that $P_0(x,t)$ depends only on $\varphi(x,t)$, and thus the $P(x,t)$ is determined exclusively by the form of $\varphi(x,t)$.

In summary, if we can acquire the information of the PDF of jump, $j(x)$, and waiting-time, $\psi(t)$, from the high-frequency data of a financial market, we can acquire knowledge regarding the form of the joint density $\varphi(x,t)$ from Eq. (3). Additionally, if we know about the PDF of $\varphi(x,t)$, we can obtain the information of the return evolution, $P(x,t)$, from Eq. (4).

Now, we consider the asymptotic expression of the return PDF as $t \rightarrow \infty$. The approximate expression is independent of the model for $\varphi(x,t)$ selected as long as the mean waiting-time $\langle T \rangle$ exists (Masoliver et al., 2006). If the jump PD and the waiting-time PD are, respectively, given by the power law distribution in the long-time limit as follows:

$$j(x) \sim x^{-\beta} \quad \text{and} \quad \psi(t) \sim t^{-\alpha-1}, \quad (5)$$

then the return PDF becomes

$$P(x,t) \sim |x|^{-\gamma} \quad (6)$$

as $|x| \rightarrow \infty$. Then, the volatility (the second moment of the return process, i.e., the variance) of $X(t)$ in this study, becomes

$$\langle X^2(t) \rangle = \int_{-\infty}^{+\infty} x^2 P(x,t) dx \sim t^\kappa \quad (7)$$

as $t \rightarrow \infty$ (Masoliver et al., 2006). This equation indicates that the PD of asymptotic volatility is independent of the specific form of $\varphi(x,t)$.

It is well known that the CTRW theory holds that the asymptotic volatility is proportional to time with the exponent $\kappa = 1$ for normal diffusion (Brownian motion), $\kappa < 1$ for sub-diffusion, and $\kappa > 1$ for super-diffusion (Metzler, Klafter, 2000). We can track and seek the distributional situation of the random walker from the first and second moments, although it is quite difficult to numerically calculate the PDF.

Descriptive statistics and normality test

Table 1

	returns	jumps	waiting-times
Sample size	392,092	392,091	392,092
Mean	$-3.47 \times E-7$	$8.07 \times E-10$	1.2848
Standard deviation	0.00022	0.00036	9.4580
Skewness	-1.1453	-0.1379	69.938
Excess kurtosis	98.239	44.018	6,667.2
Jarque-Bera test	$1.58 \times E+8^*$	$3.17 \times E+7^*$	$7.27 \times E-11^*$

Notes: * indicates that the null hypothesis of normality is rejected at the 1% significance level.

3. Empirical analysis

For the empirical study, we apply the CTRW model to the 1 minute data of the EURO–USD FX rate from January 1, 2005 to December 31, 2005. We also apply this model to the different time-scale (i.e., 10 minutes, 1 hour, and 1 day) data which can be calculated by time aggregation of 1 minute data. The EURO–USD FX market is probably one of the deepest and most competitive FX market, and thus can provide a favorable testing ground for the efficient market hypothesis (Fama, 1970) and the RWH.

3.1. Normality of returns, jumps and waiting-times

In this sub-section, we investigate certain intriguing characteristics of our sample data.⁽¹⁾ In particular, we explore the normality of returns, jumps, and waiting-times in the high-frequency transaction data of the EURO–USD FX market. Prior to examining the characteristics of the data, we can see its distributional properties with the descriptive statistics summarized in Table 1.

As it is shown in Table 1, both the waiting-times and jumps series present a similar picture of distributional properties. The mean values of waiting-times and jumps are indistinguishable from one and zero, respectively, but the corresponding standard deviations are relatively high. From the descriptive statistics, we may presume that the waiting-times and jumps series are not distributed normally. For example, the values of the skewness and excess kurtosis differ significantly from zero, thereby indicating that the distributions of both series are skewed with fat-tails. Additionally, the values of the Jarque-Bera test statistic, as reported in Table 1, reject the null hypothesis of normality at a significance level of 1%.

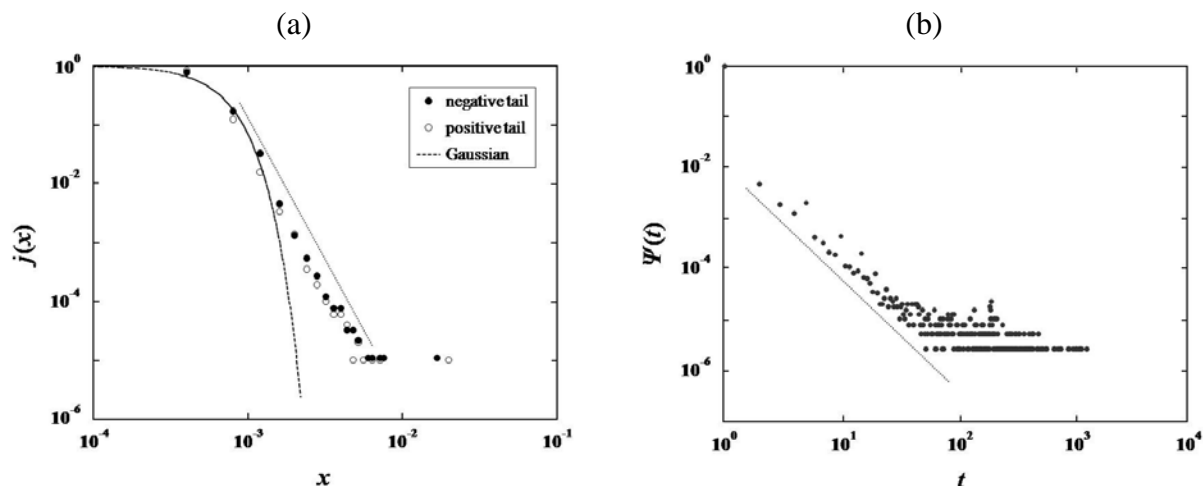


Figure 1. The log-log plot of (a) jump distribution and (b) waiting-time distribution

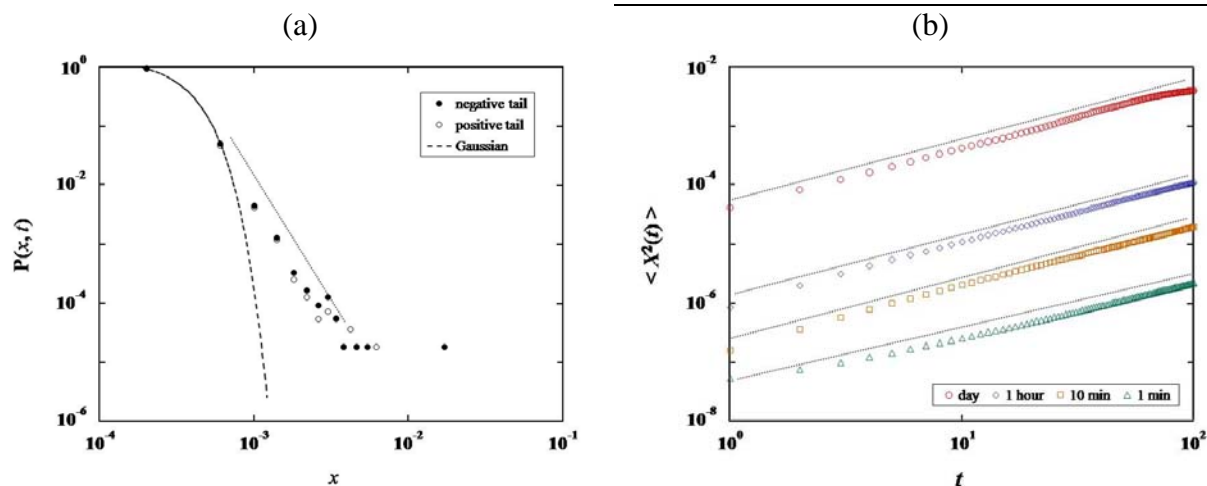


Figure 2. The log-log plot of (a) return distribution and (b) time evolution of the return volatility

3.2. Distributional characteristics of jumps and waiting-times

In this sub-section, we assess the characteristics of the jump and waiting-time distribution of the EURO–USD FX transaction, and verify the prediction holding in our high-frequency data of 1 minute time-scale. In Figure 1(a), we can see the jump distribution follows a power law distribution, with an exponent of $\beta = 4.9029$. Figure 1(b) presents the waiting-time distribution of the EURO–USD FX transaction and demonstrates that the waiting-time distribution also follows a power law distribution, with an exponent of $\alpha = 2.2965$.

Thus, we can predict, as shown earlier in Eq. (5)~(6), that in the long-time limit the PDF of returns will follow a power law distribution, because the PDF of the jumps and waiting-times follow a power law distribution. In Figure 2(a), we can verify the consistency of this reasoning, i.e. we can find that the PDF of returns follows a power law distribution with an exponent of $\gamma = 2.0498$. Our empirical results imply that the CTRW model can be used to explain an anomalous time evolution of returns in the EURO–USD FX market.

Estimation of exponent and test for RWH

Table 2

	exponent (κ)	Standard error of exponent estimates	t-statistic ($H_0: \kappa = 1$)
1 minute	0.9586	0.0017	-24.44*
10 minute	1.0114	0.0031	3.71*
1 hour	1.0325	0.0025	13.04*
1 day	1.0400	0.0043	9.38*

Notes: * indicates that the null hypothesis is rejected at the 1% significance level.

3.3. Prediction of volatility

Figure 2(b) illustrates the time evolution of the return volatility of the EURO–USD FX rate by four kinds of time-scales. In this figure, we can see the second moment of return process (i.e., the volatility or return variance) is proportional to t^κ in all four time-scales. This empirical result that the asymptotic volatility follows a power law distribution is consistent with the theoretical prediction of Eq. (7) in our CTRW model.

But the values of exponent (κ) are not the same among the time-scales. Table 2 summarizes the values of exponent (i.e., the slopes of dotted lines in Figure 2(b)) by four kinds of time-scales and test statistics for the null hypothesis of standard RWH. In this table, in case of 1 minute data, we can find that $\kappa = 0.9586$. This value is significantly different from one, implying that the time evolution of the return volatility of the 1 minute EURO–USD FX rate is sub-diffusion. And in case of large time-scales, the values of exponent are significantly above one, implying super-diffusion. But, in case of day time-scale, we can see the plot graph is not straight and slightly bent to downward in the long-time, namely the exponent (κ) of Eq. (7) is not constant. This means that the CTRW model may not be applied to low-frequency data like day time-scale.

Overall, we can conclude that the standard RWH cannot be supported in the EURO–USD FX rate fluctuation and that the CTRW model can be meaningfully applied to the explanation and prediction of the high-frequency dynamics of the EURO–USD FX market volatility.

4. Conclusions

In a standard random walk model of finance theory, only the returns (or prices) are considered to vary randomly. For this reason, the random walk model cannot sufficiently explain the fluctuation of financial market returns and correctly forecast the volatility. However, in the CTRW model, not only the returns but also the waiting-times between two transactions are assumed to be random variables, and this is exactly the case when considering the tick-by-tick data of a financial market. In this context, the CTRW model can be considered to be a generalized version of a standard random walk model.

In this paper, we attempted to determine whether the CTRW model can be applied to the high-frequency dynamics of a financial market. In service of this objective, we formalized the CTRW model for financial markets, and estimated some important exponents of the model using the four kinds of time-scale data of the Euro–US Dollar foreign exchange rate.

From the empirical results, we demonstrated that the PDF of jumps, waiting-times, and returns follow a power law distribution, and that the volatility also follows a power law distribution and evidences sub-diffusive or super-diffusive behavior in the long-time limit. Therefore, we conclude that the CTRW model can be meaningfully and successfully applied to the description of an abnormal time evolution of high-frequency financial data. It also provides the framework of predictions for the market dynamics. Namely, on the basis of the CTRW model, one may theoretically analyze the dynamic behavior of the PDF of returns and

the asymptotic volatility. One can also numerically forecast the long-time volatility using the tick-by-tick market data. Overall, the CTRW model can be considered a useful and complementary tool which can be used to address some complex issues of FX markets.

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Notes

We report and analyze only the case of 1 minute time-scale data to save the space. The results of the other time-scales (i.e., 10 minutes, 1 hour, and 1 day) data are very similar to those of the 1 minute time-scale data.

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FORECASTING LONG-MEMORY VOLATILITY OF THE AUSTRALIAN FUTURES MARKET

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***Abstract.** Accurate forecasting of volatility is of considerable interest in financial volatility research, particularly in regard to portfolio allocation, option pricing, and risk management. This article investigates and compares the ability to conduct one-day-ahead volatility forecasts in the Australian index futures market by three volatility models: GARCH, IGARCH and FIGARCH. The FIGARCH model better captured the long-memory property than did the GARCH and IGARCH models. Additionally, the FIGARCH model provided superior performance in one-day-ahead volatility forecasts. As discussed in this paper, the FIGARCH model should prove useful in forecasting the long-memory property in the Australian index futures market.*

Keywords: diebold-mariano test; forecasting ability; long memory; lo's modified R/S analysis; SPI futures.

JEL Codes: C32; C52; G11; G17.

1. Introduction

Over the past two decades, financial researchers and practitioners interested in risk measurement have sought to improve forecasting ability by volatility models. Many studies addressing stylized facts of volatility or volatility forecasting have focused on underlying stock markets via the use of popular generalized autoregressive conditional heteroskedasticity (GARCH) models (Poon, Granger, 2003, for an excellent survey).

In contrast, volatility forecasting is a relatively new topic in index futures markets (Martens, 2002, Noh, Kim, 2006, Vipul, 2007). Index futures contracts have undoubtedly been one of the most successful instruments in the recent financial market environment. The most crucial role of index futures contracts involves their function as a mechanism by which risks and volatility in the underlying stock market can be managed. Investors and financial market participants can hedge against adverse short-term price movements via arbitrage trading, through the linked trading of stocks in both the spot and futures markets. Nevertheless, they may still experience some long-term market risks and thus require a more accurate method of forecasting volatility in index futures markets.

Recently, financial economists have paid much attention to persistence or long memory in the volatility of futures contracts (Dark, 2004, Tang, Shieh, 2006). „Long memory” means that shocks to conditional variance die at a hyperbolic rate, which is slower

than the exponential rate of decay associated with shocks in the „short-memory” (Baillie, 1996). Such a long-memory feature is a crucial component for market risk management, investment portfolios, and the pricing of derivative securities, as its presence reflects the predictability of future volatility. Furthermore, long-memory fractionally integrated GARCH (FIGARCH) models tend to provide more accurate out-of-sample forecasts than do the stationary GARCH and non-stationary IGARCH models (Lux, Kaizoji, 2007, Vilasuso, 2002).

This study investigated the abilities of three models to forecast the volatility of the SPI futures traded on the Sydney Futures Exchange (SFE). Taking the long-memory property that characterizes futures markets into consideration, we employed the GARCH, IGARCH and FIGARCH models and evaluated the performance of their one-day-ahead forecasts using a wide array of forecasting error statistics. The analysis results provide insights into persistence and reveal a good model for forecasting the volatility of futures markets.

The remainder of this paper is organized as follows. Section 2 discusses the FIGARCH model framework and presents the forecasting error statistics. Section 3 provides the statistical characteristics of the sample data and the estimation results. The final section, Section 4, presents our concluding remarks.

2. Model framework

2.1. FIGARCH model

In accordance with the work of Engle (1982), we considered the time series y_t and the associated prediction error $\varepsilon_t = y_t - E_{t-1}[y_t]$, in which $E_{t-1}[\cdot]$ is the expectation of the conditional mean on the information set at time $t-1$. The standard GARCH model of Bollerslev (1986) is as follows:

$$\varepsilon_t = z_t \sigma_t, \quad z_t \sim N(0,1), \quad (1)$$

$$\sigma_t^2 = \omega + \alpha(L)\varepsilon_t^2 + \beta(L)\sigma_t^2, \quad (2)$$

where $\omega > 0$, L denotes the lag or difference operator, $\alpha(L) \equiv \alpha_1 L + \alpha_2 L^2 + \dots + \alpha_q L^q$, and $\beta(L) \equiv \beta_1 L + \beta_2 L^2 + \dots + \beta_p L^p$. Assuming that $\alpha_i, \beta_i \geq 0$ for all i , the GARCH(p, q) model in Equation (2) can be rewritten in the form of an autoregressive moving average model (ARMA)($\max\{p, q\}, q$) model as follows:

$$\phi(L)\varepsilon_t^2 = \omega + [1 - \beta(L)]v_t, \quad (3)$$

where $v_t \equiv \varepsilon_t^2 - \sigma_t^2$ and $\phi(L) = [1 - \alpha(L) - \beta(L)]$. The $\{v_t\}$ process, which is interpreted as innovations for the conditional variance, has a zero mean and is serially uncorrelated. Assuming that all the roots of $\phi(L)$ and $[1 - \beta(L)]$ lie outside of the unit circle, the covariance stationary GARCH model is a short-memory model because a volatility shock decays at a rapid geometric rate. On the other hand, when the autoregressive polynomial $[1 - \alpha(L) - \beta(L)]$ has a unit root, then the GARCH(p, q) process has a unit root in conditional variance. The corresponding IGARCH model of Engle and Bollerslev (1986) is given as follows:

$$\phi(L)(1-L)\varepsilon_t^2 = \omega + [1 - \beta(L)]v_t. \quad (4)$$

However, the IGARCH model does not allow for modelling the long-memory property in the volatility process, because volatility shocks in the IGARCH model never die out. That is, the IGARCH model is characterized by infinite memory. To overcome this problem, the FIGARCH model of Baillie, Bollerslev and Mikkelsen (1996) replaces the difference operator in Equation (4) with the fractional difference operator. The FIGARCH(p, d, q) model is then given as

$$\phi(L)(1-L)^d \varepsilon_t^2 = \omega + [1 - \beta(L)]v_t, \quad (5)$$

where $0 \leq d \leq 1$ is the fractional difference parameter. The FIGARCH model provides greater flexibility for modelling of the conditional variance, as it accommodates the covariance stationary GARCH model when $d = 0$ and the IGARCH model when $d = 1$ in special cases. For the FIGARCH model in Equation (5), the persistence of shocks to the conditional variance or the degree of long memory is measured by the fractional difference parameter, d .

2.2. Evaluation of forecasting accuracy

In accordance with the relevant literature (Brailsford and Faff, 1996; Brooks and Persaud, 2003; Degiannakis, 2004), daily *ex post* volatility (variance) was measured by the squared returns as follows:

$$\sigma_t^2 = r_t^2. \tag{6}$$

At time period t , one-day-ahead forecasts were calculated using the above three models estimated with one year of daily trading data, for a total of 250 observations. The estimation period was then rolled forward via the addition of one new day and the dropping of the most distant day. In this fashion, the sample size utilized in the estimation of the models remained fixed (2,452 observations for the SPI futures) and the forecasts did not overlap.

To measure forecasting accuracy, we calculated the root mean squared errors (*RMSE*), heteroskedasticity-adjusted RMSE (*HRMSE*), and logarithmic loss errors (*LL*) of the volatility forecasts, as follows:

$$RMSE = \frac{1}{250} \sum_{i=1}^{250} [(\sigma_{f,t}^2 - \sigma_{a,t}^2)^2]^{1/2}, \quad HRMSE = \frac{1}{250} \sum_{i=1}^{250} \left[\left(1 - \frac{\sigma_{f,t}^2}{\sigma_{a,t}^2} \right)^2 \right]^{1/2},$$

$$LL = \frac{1}{250} \sum_{i=1}^{250} \left[\ln \left(\frac{\sigma_{f,t}^2}{\sigma_{a,t}^2} \right) \right], \tag{7}$$

in which T is the number of forecasting data points and $\sigma_{f,t}^2$ denotes the volatility forecast for day t , whereas $\sigma_{a,t}^2$ signifies actual volatility on day t . Smaller forecasting error statistics reflect the superior forecasting ability of a given model.

Although the above statistics for forecasting errors are useful for comparison of the estimated models, they do not provide statistical tests of the difference between two models. Rather than comparing the forecasting error statistics of different forecasting models, it is important to determine whether any reductions in forecasting errors are statistically significant.

For this reason, Diebold and Mariano (1995) developed a test of forecasting accuracy for two sets of forecasts. Having generated n , h -steps-ahead forecasts from different forecasting models, the forecaster has two sets of forecasting errors, $e_{1,t}$ and $e_{2,t}$, in which $t = 1, 2, \dots, n$. Using $g(\cdot)$ as a function of the forecasting errors, the hypothesis of equal forecasting accuracy can be represented as $E[d_t] = 0$, in which $d_t = g(e_{1,t}) - g(e_{2,t})$ and E is the expectation operator. The mean of the difference between the forecasting errors $\bar{d} = n^{-1} \sum_{t=1}^n d_t$ has an approximate asymptotic variance as follows:

$$V(\bar{d}) \approx n^{-1} \left[\gamma_0 + 2 \sum_{k=1}^{h-1} \gamma_k \right], \tag{8}$$

where γ_k is the k^{th} autocovariance of d_t , which can be estimated as

$$\hat{\gamma}_k = n^{-1} \sum_{t=k+1}^n (d_t - \bar{d})(d_{t-k} - \bar{d}). \tag{9}$$

The Diebold-Mariano test statistic for testing the null hypothesis of equal forecasting accuracy is as follows:

$$DM = \left[V \left(\hat{d} \right) \right]^{-1/2} \bar{d}, \quad (10)$$

in which DM has an asymptotic standard normal distribution under the null hypothesis. In this study, the DM test was calculated from a loss differential on the basis of the $RMSE$, $HRMSE$ and LL of the different forecasting models.

3. Empirical results

3.1. Data

The sample data in this study consisted of daily stock index closing prices in the SPI futures market. The SPI futures contract is a major speculative and hedging instrument written on the All Ordinaries Index, which in turn represents the top approximately 300 market capitalized stocks traded on the Australian Stock Exchange. We used daily SPI futures contract data from 2 January 1996 to 5 September 2006, obtained from the Datastream database. The sample prices were converted into daily logarithmic percentage return series for futures prices.

Unit root tests for return series

Table 1

	$H_0 : I(1)$		$H_0 : I(0)$	
	$Z(t_\mu)$	$Z(t_\tau)$	$\hat{\eta}_\mu$	$\hat{\eta}_\tau$
SPI futures	-57.32(18)***	-57.31(18)***	0.100(20)	0.063(20)

Notes: (1) $z(t_\mu)$ and $z(t_\tau)$ are the Phillips-Perron adjusted t-statistics of the lagged dependent variable in a regression with intercept only, and with intercept and time trend included, respectively. Mackinnon's 1% critical values for $z(t_\mu)$ and $z(t_\tau)$ are -3.44 and 3.96, respectively. (2) $\hat{\eta}_\mu$ and $\hat{\eta}_\tau$ are the KPSS test statistics based on residuals from regression with an intercept only, and with intercept and time trend, respectively. The critical values for $\hat{\eta}_\mu$ and $\hat{\eta}_\tau$ are respectively 0.739 and 0.216 at the 1% significance level. Numbers in parentheses represent the lag of periods of the tests. *** indicates rejection at the 1% significance level.

Prior to testing for the existence of the long-memory property in volatility, the SPI futures return series was subjected to two unit root tests, the PP (Phillips-Peron) and KPSS (Kwiatkowski, Phillips, Schmidt, and Shin) tests, in order to determine whether stationarity or integration should be considered for analyzing the return series. These tests differ with regard to the null hypothesis. The null hypothesis of the PP test asserts that a time series contains a unit root, $I(1)$ process, while the KPSS test has the null hypothesis of stationarity, $I(0)$ process.

Table 1 presents empirical results of the unit root tests for sample returns. For the PP test, the large negative values support the rejection of the null hypothesis of a unit root at a significance level of 1%, whereas the statistics of the KPSS test show that SPI futures return series are insufficient to reject the null hypothesis of stationarity. These results imply that the return series of SPI futures are stationary processes and are appropriate for subsequent tests in this study.

Results of Lo's modified R/S analysis

Table 2

	Returns	Actual volatility (squared returns)
SPI futures	1.107 [0.700]	2.000 [0.025]**
Notes: P-values are given in brackets. ** indicates rejection of the null hypothesis at the 5% significance level.		

The results of Lo's R/S test statistic (Lo, 1991) for daily returns and squared returns are provided in Table 2. With regard to the returns, the value of the modified R/S statistic supports the null hypothesis of short memory, thereby implying little evidence of long memory on the level of returns. However, the volatility shows strong evidence of long memory, thereby indicating that its autocorrelation function decays at a hyperbolic rate rather than an exponential rate over the longer lags.

Estimation results of the models

Table 3

	FIGARCH	IGARCH	GARCH
μ	0.049 (0.016)***	0.051 (0.017)***	0.050 (0.016)***
ω	0.190 (0.057)***	0.007 (0.005)	0.017 (0.011)*
ϕ_1	0.511 (0.214)**	-	-
α_1	-	0.077 (0.028)***	0.075 (0.026)***
β_1	0.389 (0.233)*	1-0.077	0.906 (0.034)***
d	0.221 (0.036)***	-	-
$\ln(L)$	-3068.90	-3095.38	-3090.17
SIC	2.519092	2.534329	2.533262
$Q_s(24)$	13.87 [0.906]	36.57 [0.026]	32.70 [0.066]
$ARCH(5)$	0.969 [0.435]	4.410 [0.000]	4.136 [0.000]
LR test	-	52.96 [0.000]	42.54 [0.000]
Notes: Standard errors are in parentheses below corresponding parameter estimates. $\ln(L)$ is the value of the maximized Gaussian log likelihood and $ARCH(5)$ represents the t-statistics of the ARCH test statistic with lags of 5. In the LR test statistics, $LR = 2 \cdot [ML_u - ML_r]$, where ML_u and ML_r denote the maximum log-likelihood values of the unrestricted FIGARCH model and restricted GARCH and IGARCH models, respectively. The numbers in brackets are p-values. *, **, and *** indicate rejection at the 10%, 5%, and 1% significance levels, respectively.			

3.2. Long memory of futures volatility

In this section, we estimate the GARCH class models described by Equations (1) ~ (5) in order to capture the long-memory property in the volatility of the SPI futures returns. This section also compares the performance of the GARCH(1,1), IGARCH(1,1) and FIGARCH(1,1) models with regard to the capture of the long-memory property in volatility.

Table 3 reports the estimation results of these models and also provides a set of diagnostic tests. (1) The Box-Pierce Q_s statistic tests the *i.i.d.* series of squared standardized residuals. If the conditional variance equations are specified correctly, then the Q_s statistic should support the null hypothesis of the *i.i.d.* series. (2) The lowest value of the Schwarz-Bayesian information criterion (SIC) indicates the best model amongst the GARCH, IGARCH and FIGARCH models. (3) The LM ARCH statistic described by Engle (1982) is utilized to test for the presence of remaining ARCH effects in the residuals. The $ARCH(5)$ statistic tests the joint significance of lagged squared residuals up to the fifth order. (4) The likelihood ratio

statistic (LR) tests for the linear constraints $d = 0$ (GARCH model) and $d = 1$ (IGARCH model).

As shown in the estimation results of the GARCH(1,1) model presented in Table 3, the estimated value of the persistence coefficient ($\alpha_1 + \beta_1$) is quite close to unity, a fact favouring the IGARCH(1,1) specification. As the IGARCH(1,1) model nests the GARCH(1,1) model, the estimates of the IGARCH(1,1) model are quite similar to those of the GARCH(1,1) model. Consequently, there are minimal differences between the GARCH(1,1) model and the IGARCH(1,1) model in the volatility of the SPI futures series.

According to the lowest values of both the information criteria and the insignificance of $Q_s(24)$, $ARCH(5)$ shown at the bottom of Table 3, the FIGARCH(1,1) model appears to be superior to the GARCH(1,1) and IGARCH(1,1) models in the description of volatility persistence for the SPI futures returns. For example, the estimate of the parameter d (0.221) rejects the null hypotheses of the GARCH model ($d = 0$) and the IGARCH model ($d = 1$), and the values of LR test statistic also reject the null hypothesis. Thus, the FIGARCH(1,1) model most accurately represents the long-memory property in the conditional variance.

Consequently, this finding implies that the volatility of SPI futures market is highly persistent, and also that volatility models including GARCH and IGARCH provide misleading results in the estimation and forecasting of SPI futures returns volatility. Furthermore, the presence of long memory directly conflicts with the validity of the weak form efficiency of the SPI futures market.

In-sample error statistics

Table 4

Series	Models	RMSE	DM	HRMSE	DM	LL	DM
SPI futures	FIGARCH	0.911	-	34.15	-	1.218	-
	IGARCH	0.971	-7.46**	37.21	-4.81**	1.287	-15.09**
	GARCH	0.931	-3.09**	35.44	-2.96**	1.244	-7.11**

Notes: The values in bold refer to the lowest values for the $RMSE$, $HRMSE$, and LL error statistics. The DM test statistic is used to evaluate the null hypothesis that the forecasting accuracy of the FIGARCH model is the same as that of either the GARCH or IGARCH model. ** indicates that the null hypothesis of the DM test is rejected at the 5% significance level.

3.3. In-sample error statistics

The in-sample error statistics for the SPI futures contracts are summarized in Table 4. These statistics are employed as model selection criteria. Because the FIGARCH model had the lowest values of all error statistics, we determined that it provides the most accurate forecasts for in-sample analysis. In addition, the results of the DM test verify that the FIGARCH model outperforms other models (GARCH and IGARCH models) at assessing the long-memory property for the in-sample period.

3.4. Forecasting the volatility of SPI futures returns

In the preceding sections, although the FIGARCH model appears to fit the futures return data well, a crucial question remains: does this model do as good a job as the other models in volatility predictions? Thus this section evaluates one-day-ahead volatility forecasts and compares their accuracy.

One-day-ahead volatility forecasts

Table 5

Series	Models	RMSE	DM	HRMSE	DM	LL	DM
SPI futures	FIGARCH	0.816	-	280.60	-	1.275	-
	IGARCH	0.877	-4.10**	350.63	-2.24**	1.471	-17.02**
	GARCH	0.849	-3.04**	335.63	-2.21**	1.410	-13.99**

Notes: The values in bold refer to the lowest for the *RMSE*, *HRMSE*, and *LL* error statistics. The *DM* test statistic is used to evaluate the null hypothesis that the forecasting accuracy of the FIGARCH model is the same as that of either the GARCH or IGARCH model. ** indicates that the null hypothesis of the *DM* test is rejected at the 5% significance level.

Table 5 summarizes the results of the one-day-ahead volatility forecast error statistics. The calculated values of the three error statistics support the notion that the FIGARCH model, which allows for long memory in the conditional variance, is superior to the GARCH and IGARCH models. In addition, the values of the *DM* test statistics are negative and significantly reject the null hypothesis, thereby implying that the FIGARCH model outperforms the other forecasting models. As a result, the long-memory FIGARCH model generates more accurate one-day-ahead volatility forecasts than the other short-memory models can produce.

4. Conclusions

In this study, we attempted to delineate a model with good ability to forecast and identify stylized features of volatility, with a focus on volatility persistence or long memory in the Australian futures market. In this context, we assessed the long-memory property in the volatility of futures contracts using three conditional volatility models, namely the GARCH, IGARCH and FIGARCH models. Our empirical results indicated that the FIGARCH model was better equipped to capture the long-memory property than were the GARCH and IGARCH models. More importantly, the FIGARCH model provided superior performance in one-day-ahead volatility forecasts. Thus we conclude that the FIGARCH model should prove useful to financial economists, policy makers and financial analysts who are interested in modelling and forecasting the dynamics of Australian futures volatility.

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VALUE-AT-RISK ANALYSIS OF KOSPI 200 SECTOR INDICES

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***Abstract.** We investigated the performance of value-at-risk (VaR) models of KOSPI 200 sector indices using FIGARCH and FIAPARCH models under normal and skewed Student-t innovation distributions. The FIAPARCH model well captured the long-memory and asymmetry properties of the volatility. In addition, the skewed Student-t models outperformed the normal models in measuring the fat tails and asymmetry of the densities.*

Keywords: asymmetry; forecasting accuracy; long memory; skewed student-t distribution.

JEL Codes: C32; C52; G11; G17.

1. Introduction

In the financial world, value-at-risk (VaR) has recently become a crucial issue in measuring asset portfolio risk and assessing forecasting accuracy. VaR simply describes the loss that can occur over a given period, at a given confidence level, due to exposure to market risk. That is, VaR is defined as a quantile of a probability distribution used to quantify market risks and set capital reserves for market risks (Duffie, Pan, 1997). Financial asset returns are known to suffer from excess skewness and kurtosis, implying that the normal distribution assumption is inappropriate for explaining the skewed and fat-tailed characteristics of the return distribution (Fang, Lai, 1997, Harvey, Siddique, 2000, Theodossiou, 1998). Another growing issue in financial economics is that volatility of financial asset returns often exhibits stylized factors, i.e., long memory and asymmetry (Baillie, Bollerslev, Mikkelsen, 1996, Tse, 1998).

To incorporate both the long-memory and asymmetry properties in VaR, Wu and Shieh (2007) compared the VaR performance of GARCH and fractionally integrated GARCH (FIGARCH) models with normal, Student-t, and skewed Student-t innovation distributions. Their evidence suggested that the FIGARCH model with a skewed Student-t innovation distribution outperformed the GARCH model with different innovation distributions for US Treasury bond returns. Degiannakis (2004) found that the fractionally integrated asymmetric power ARCH (FIAPARCH) model with the skewed Student-t distribution provided more accurate VaR predictions than other variants of GARCH-class models for three European stock markets.

This study considers the relevance of the skewed Student-t distribution in estimating volatility stylized factors for daily returns data of five Korea Composite Stock Price Index 200 (KOSPI 200) sector indices using two long-memory volatility models: FIGARCH and

FIAPARCH. To further enhance the robustness of the estimation results, we compared the performance of various VaR models with normal and skewed Student-t distribution innovations.

The remainder of this paper is organized as follows. Section 2 describes the theoretical properties of long-memory VaR models under different distribution innovations. Section 3 provides empirical results. The concluding section summarizes the findings.

2. Methodology

2.1. FIAPARCH model

The FIAPARCH model also extends the FIGARCH model of Baillie, Bollerslev, and Mikkelsen (1996) with the APARCH model of Ding, Granger, and Engle (1993) to capture asymmetry in the conditional variance. A FIAPARCH(p, d, q) model is specified as follows:

$$\begin{aligned} y_t &= \mu + \varepsilon_t, \quad \varepsilon_t = z_t \sigma_t, \quad z_t \sim N(0,1), \\ \sigma_t^\delta &= \omega + \left[1 - (1 - \beta(L))^{-1} (1 - \phi(L))(1 - L)^d \right] (|\varepsilon_t| - \gamma \varepsilon_t)^\delta, \end{aligned} \quad (1)$$

where $\delta > 0$, and $-1 < \gamma < 1$. The FIAPARCH model can capture the long memory property in the conditional variances with $0 < d < 1$. If $\gamma > 0$, negative shocks give rise to higher volatility than do positive shocks, and vice versa. Thus, the FIAPARCH model is superior to the FIGARCH model since the former model can capture asymmetric long-memory features in the conditional variance (Tse, 1998).

2.2. Model densities

Under the assumption that the innovations follow a normal distribution, i.e., $z_t \sim N(0,1)$, the log-likelihood function for Gaussian or normal distribution (L_{Norm}) can be expressed as

$$L_{Norm} = -\frac{1}{2} \sum_{t=1}^T [\ln(2\pi) + \ln(\sigma_t^2) + z_t^2], \quad (2)$$

where T is the number of observations. To incorporate any excess skewness and kurtosis, we considered the skewed Student-t distribution proposed by Lambert and Laurent (2001). If $z_t \sim SKST(0,1,k,\nu)$, the log-likelihood distribution of the skewed Student-t distribution (L_{skst}) is as follows:

$$\begin{aligned} L_{skst} &= T \left\{ \ln \Gamma\left(\frac{\nu+1}{2}\right) - \ln \Gamma\left(\frac{\nu}{2}\right) - \frac{1}{2} \ln[\pi(\nu-2)] + \ln \left(\frac{2}{k + \frac{1}{k}} \right) + \ln(s) \right\} \\ &- \frac{1}{2} \sum_{t=1}^T \left[\ln(\sigma_t^2) + (1+\nu) \ln \left[1 + \frac{(sz_t + m)^2}{\nu-2} k^{-2I_t} \right] \right], \end{aligned} \quad (3)$$

where $\Gamma(\cdot)$ is the gamma function; $I_t = 1$ if $z_t \geq -m/s$ or $I_t = -1$ if $z_t < -m/s$; and k is an asymmetry parameter. The constants $m = m(k, \nu)$ and $s = \sqrt{s^2(k, \nu)}$ are the mean and standard deviation of the skewed Student-t distribution, given as follows:

$$m(k, \nu) = \frac{\Gamma\left(\frac{\nu-1}{2}\right) \sqrt{\nu-2}}{\sqrt{\pi} \Gamma\left(\frac{\nu}{2}\right)} \left(k - \frac{1}{k} \right), \quad s^2(k, \nu) = \left(k^2 + \frac{1}{k^2} - 1 \right) - m^2. \quad (4)$$

where $2 < \nu \leq \infty$, and the additional parameter ν stands for the number of degrees of freedom that measure the degree to which the density is fat tailed. The value of asymmetric k can represent the degree of asymmetry of the residual distribution. For example, if $k > 1$ ($k < 1$), the density is right (left) skewed.

2.3. VaR models and tests

1) VaR models

In the present financial climate, portfolios can change dramatically from one day to the next, and traders and portfolio managers are concerned with not only long-trading positions but also short-trading positions. This means that the performance of each VaR model should be compared on the basis of both long- (the left tail of distribution) and short-trading (the right tail of distribution) positions. The VaR of the α quantile for long- and short-trading positions are computed as follows:

Under the assumption of normal distribution,

$$VaR_{long} = \mu_t - z_\alpha \sigma_t \text{ and } VaR_{short} = \mu_t + z_\alpha \sigma_t, \quad (5)$$

where z_α is the left or right quantile at α % for the normal distribution in equation (2).

Under the assumption of the skewed Student-t distribution,

$$VaR_{long} = \mu_t - skst_{\alpha,v,k} \sigma_t \text{ and } VaR_{short} = \mu_t + skst_{\alpha,v,k} \sigma_t, \quad (6)$$

where $st_{\alpha,v,k}$ is the left or right quantile at α % for the skewed Student-t distribution in equation (3). If $k < 1$, the VaR for long-trading positions will be larger than the VaR for short-trading positions for the same conditional variance. When $k > 1$, the opposite is true.

2) Tests for accuracy of VaR estimates

We calculated the pre-specified VaR of the 5% and 1% quantiles, respectively, and then evaluated their performance by calculating the failure rate for both left and right tails of the distribution of the return series $\{y_t\}$. Following Giot and Laurent (2003), testing the accuracy of the model is equivalent to testing the hypothesis $H_0: f = \alpha$ versus $H_1: f \neq \alpha$, where f is the failure rate, i.e., if the VaR model is correctly specified, the failure rate should be equal to the pre-specified significance level α . This test is also called the Kupiec *LR* test which tests the hypothesis using the likelihood ratio test (Kupiec, 1995). The *LR* statistic is defined as follows:

$$LR = -2 \ln[(1 - \alpha)^{T-x} \alpha^x] + 2 \ln[(1 - \hat{f})^{T-x} (\hat{f})^x] \sim \chi^2(1), \quad (7)$$

where \hat{f} is the estimated failure rate. Under the null hypothesis, the Kupiec *LR* statistic has a chi-square distribution with 1 degree of freedom.

3. Empirical analysis

3.1. Preliminary analysis of data

The data sets used in this study consisted of five KOSPI 200 sector index series for the manufacturing industry, electricity and communication, construction, service, and finance.⁽¹⁾ The data sets consist of the daily closing prices of the KOSPI 200 for the period from January 4, 1999, to December 30, 2008 (2,466 observations). The price series were converted into the logarithmic percentage return series for all sample indices.

Table 1 shows the descriptive statistics and the results of the unit root test for all of the sample returns. Based on the Jarque-Bera (J-B) statistics in Panel A of Table 1, we can conclude that all of the return series tend to follow a leptokurtic distribution, which has a higher peak and fatter tail than a normal distribution. The calculated values of the Ljung-Box *Q* statistic, $Q_s(n)$, for the squared return series are extremely high, indicating the rejection of the null hypothesis of no serial correlation.

Additionally, Panel B of Table 1 provides the results of three types of unit root test: the augmented Dickey-Fuller (ADF), Phillips-Peron (PP), and Kwiatkowski, Phillips, Schmidt, and Shin (KPSS). From the results of these tests, we can determine that all return series are a stationary process.

Descriptive statistics and unit root tests

Table 1

	Manufacturing Industry	Electricity & Communication	Construction	Service	Finance
Panel A: Descriptive statistics					
Mean	0.111	0.089	-0.073	-0.060	-0.114
S.D.	4.624	4.684	6.642	5.322	5.939
J-B	709.58***	564.77***	2632.1***	558.26***	484.59***
$Q_s(12)$	262.89***	277.33***	77.39***	183.05***	243.79***
$Q_s(24)$	336.12***	391.44***	124.83***	287.74***	384.20***
Panel B: Unit root tests					
ADF	-34.07***	-34.63***	-31.91***	-31.75***	-34.05***
PP	-34.01***	-34.51***	-31.91***	-31.77***	-33.97***
KPSS	0.088	0.058	0.195	0.132	0.094
<p>Notes: The Jarque and Bera (J-B) is a test statistic for the null hypothesis of normality in the sample return distribution. The Ljung-Box test statistic, $Q_s(n)$, checks for the serial correlation of the squared return residuals for up to the n^{th} order. Mackinnon's 1% critical value is -3.435 for the ADF and PP tests. The critical value for the KPSS test is 0.739 at the 1% significance level. *** indicates a rejection of the null hypothesis at the 1% significance level.</p>					

3.2. Long memory and asymmetry in volatility

In this subsection, we estimated FIAPARCH model under normal and skewed Student-t innovation distributions in the returns of five KOSPI sector indices. Table 2 compares the estimation results of the FIAPARCH(1, d ,1) model under the different innovations, respectively.

As shown in Table 2, all FIAPARCH(1, d ,1) models with different innovation distributions captured long-memory volatility for all five KOSPI 200 sector returns due to the significance of long-memory parameter (d) estimates (0.292~0.378). For the skewed Student-t distribution, the values of the tail parameter (ν), 6.873~9.263, are statistically significant at a 1% significance level, implying that the density of standardized residuals has fat tails. In addition, the values of the asymmetric parameter (k) are significantly different from zero for the manufacturing industry, electricity, and service, indicating that the densities are asymmetric, while the densities of construction and finance are symmetric due to the insignificance of the parameter (k).

Once accounting for the FIAPARCH(1, d ,1) model in Table 2, the values of the power term (δ) are close to 2, implying that a squared error term fits in the conditional variance specification. Except for the electricity and communication returns, a skewed Student-t FIAPARCH model provided better representation of volatility asymmetry due to the positive significance of the asymmetric coefficient (γ). That is, unexpected negative returns result in more volatility than do unexpected positive returns of the same magnitude (Black, 1976, Engle, Ng, 1993). However, there is no asymmetry volatility in the case of electricity and communication returns.

As a result, due to the insignificance of the $Q_2(20)$ and $ARCH(10)$ statistics, the FIAPARCH model was found to be well specified for capturing the long memory and

asymmetry in the time-varying conditional variance. In addition, the skewed Student-t innovation models outperformed the normal innovation models in measuring the fat tails and asymmetry of the densities.

3.3. Empirical results for VaR analysis

In this section, we assess model performance with the normal and skewed Student-t innovation distributions by computing out-of-sample VaR forecasts. At a significance level α at the 5% and 1%, the VaR performances of FIAPARCH model were assessed by computing the failure rate. Table 3 reports the results of out-of-sample VaR analysis at the 95% and 99% confidence levels, respectively.

At the 95% confidence level, the normal distribution VaR models provided better volatility forecasting results than the skewed Student-t distribution VaR models, due to smaller values of Kupiec LR . However, the accuracy of the skewed Student-t VaR predictions is statistically superior to that of the normal ones at the 99% confidence level. Thus, the out-of-sample performance with a normal distribution is adequate for VaR estimation with a confidence level of 95%, while assumption of a skewed Student-t innovation is preferable at the 99% confidence levels.

4. Conclusions

This paper analyzes the performance of VaR models in five daily KOSPI 200 sector indices using the FIAPARCH model under normal and skewed Student-t innovation distributions. The results show that the FIAPARCH model well captured the long-memory and asymmetry properties in the conditional variance of KOSPI 200 sector returns, except for the electricity and communication case. In addition, the skewed Student-t models outperformed the normal models in measuring the fat tails and asymmetry in the densities.

Results of out-of-sample VaR analysis demonstrated that the normal models provided better VaR performance than the skewed Student-t models at the 95% confidence level. However, for a higher 99% confidence level, the skewed Student-t FIAPARCH VaR model for both long and short positions predicted critical loss more accurately than did the models with the normal innovation.

Acknowledgment

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Estimation results from the FIAPARCH(1, d , 1) models

Table 2

Series	Manufacturing Industry		Electricity & Communication		Construction		Service		Finance	
	FIAPARCH N	FIAPARCH sKSt	FIAPARCH N	FIAPARCH sKSt	FIAPARCH N	FIAPARCH sKSt	FIAPARCH N	FIAPARCH sKSt	FIAPARCH N	FIAPARCH sKSt
μ	0.081 (0.032)**	0.079 (0.033)**	0.038 (0.030)	0.039 (0.030)	0.087 (0.050)*	0.060 (0.051)	0.056 (0.037)	0.046 (0.037)	0.034 (0.039)	0.031 (0.039)
ω	0.023 (0.066)	0.052 (0.071)	0.072 (0.101)	0.005 (0.062)	0.536 (0.187)***	0.642 (0.201)***	0.141 (0.141)	0.228 (0.128)*	0.063 (0.092)	0.128 (0.096)
ϕ	0.183 (0.069)***	0.110 (0.065)*	0.129 (0.204)	0.226 (0.105)***	0.059 (0.115)	0.046 (0.108)	0.031 (0.232)	0.038 (0.143)	0.246 (0.071)***	0.196 (0.078)**

Series	Manufacturing Industry		Electricity & Communication		Construction		Service		Finance	
	FIAPARCH N	FIAPARCH skSt	FIAPARCH N	FIAPARCH skSt	FIAPARCH N	FIAPARCH skSt	FIAPARCH N	FIAPARCH skSt	FIAPARCH N	FIAPARCH skSt
d	0.359 (0.078)***	0.336 (0.074)***	0.325 (0.096)***	0.334 (0.085)***	0.350 (0.077)***	0.378 (0.076)***	0.292 (0.112)***	0.335 (0.075)***	0.374 (0.085)***	0.350 (0.077)***
β	0.504 (0.109)***	0.425 (0.133)***	0.409 (0.262)	0.522 (0.152)***	0.344 (0.171)***	0.343 (0.163)**	0.262 (0.321)	0.296 (0.148)*	0.536 (0.112)***	0.475 (0.117)***
δ	2.066 (0.182)***	2.011 (0.175)***	2.219 (0.198)***	2.291 (0.162)***	1.822 (0.306)***	1.669 (0.289)***	2.105 (0.255)***	2.000 (0.060)***	2.009 (0.175)***	1.956 (0.165)***
γ	0.235 (0.083)***	0.294 (0.088)***	0.001 (0.099)	-0.060 (0.083)	0.260 (0.095)***	0.296 (0.092)***	0.207 (0.065)***	0.192 (0.061)***	0.322 (0.087)***	0.349 (0.097)***
Tail ν	-	7.947 (1.268)***	-	9.263 (1.712)***	-	6.873 (0.891)***	-	7.640 (1.191)***	-	8.215 (1.307)***
Asymmetric k	-	-0.089 (0.026)***	-	0.076 (0.029)***	-	-0.014 (0.025)	-	-0.083 (0.025)***	-	0.007 (0.026)
$\ln(L)$	-5047.9	-5005.5	-4915.2	-4882.5	-6026.6	-5984.4	-5344.0	-5297.5	-5591.5	-5559.7
AIC	4.10142	4.06860	3.99374	3.96881	4.89544	4.86280	4.34161	4.30543	4.54240	4.51823
$Q_2(20)$	10.65	11.07	13.40	13.85	8.637	9.378	9.104	9.616	18.35	17.81
$ARCH(1)$	0.616	0.671	1.116	1.130	0.290	0.299	0.415	0.429	0.595	0.600

Notes: Standard errors are in parentheses below the corresponding parameter estimates. $\ln(L)$ is the value of the maximized Gaussian log-likelihood, and AIC is the Akaike information criterion. $ARCH(10)$ represents the value of the F-statistic of the ARCH test statistic with lag 10. The ARCH test is based on the standardized residuals. *, **, and *** indicate rejection of the null hypothesis at the 10%, 5%, and 1% significance levels, respectively. See Table 1.

Out-of-sample VaR analysis: 95% and 99% confidence levels

Table 3

Confidence levels	95%						99%					
	Short position			Long position			Short position			Long position		
VaR model	Failure rate	Kupiec LR	P-value	Failure rate	Kupiec LR	P-value	Failure rate	Kupiec LR	P-value	Failure rate	Kupiec LR	P-value
Manufacturing Industry												
FIAPARCH N	0.056	0.365	0.545	0.082	9.110**	0.002	0.014	0.718	0.396	0.036	20.45**	0.000
FIAPARCH skSt	0.056	0.365	0.545	0.078	7.102**	0.007	0.010	0.000	1.000	0.012	0.189	0.663
Electricity & Communication												
FIAPARCH N	0.074	5.316**	0.021	0.054	0.164	0.685	0.020	3.913**	0.047	0.022	5.419**	0.019
FIAPARCH skSt	0.072	4.511**	0.033	0.056	0.365	0.545	0.014	0.718	0.396	0.016	1.538	0.214
Construction												
FIAPARCH N	0.042	0.710	0.399	0.068	3.080	0.079	0.014	0.718	0.396	0.020	3.913**	0.047
FIAPARCH skSt	0.044	0.394	0.530	0.074	5.316*	0.021	0.008	0.216	0.641	0.012	0.189	0.663
Service												
FIAPARCH N	0.042	0.710	0.399	0.074	5.316*	0.021	0.010	0.000	1.000	0.028	10.99**	0.000
FIAPARCH skSt	0.048	0.042	0.836	0.0680	3.080	0.079	0.008	0.216	0.641	0.018	2.612	0.106
Finance												
FIAPARCH N	0.048	0.042	0.836	0.076	6.181*	0.012	0.018	2.612	0.106	0.030	13.16**	0.000
FIAPARCH skSt	0.044	0.394	0.530	0.078	7.102**	0.007	0.014	0.718	0.396	0.024	7.110**	0.007

Note: * and ** indicate a rejection of the null hypothesis at the 5% and 1% significance levels, respectively.

Note

⁽¹⁾The KOSPI 200 is a capitalization-weighted index that consists of 200 blue-chip stocks listed on the Korean Exchange (KRX). All sample index data were obtained from the KRX database.

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DEVELOPMENT OF THE GEORGIAN BANKING SYSTEM IN THE LAST 20 YEARS (1989-2009)

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Abstract. *The paper includes the investigation of the development of the Georgian banking system during the last twenty years. The study also describes the links between stability in transition economies and efficiency in banking system. The development of the financial sector has increased the interest for international financial institutions. I have selected four of the best performing Banks of the country. I have also constructed a number of banks performances' indicators, which are composed of variables capturing banks' profitability. The conclusions confirm that Georgian banking system is becoming more effective as long as the political environment in the country remains stable.*

Keywords: banks' profitability; Georgian banking; transition economies; financial institution.

1. Introduction

As is known, Russia and Georgia have economic and political differences, which make a very negative impact on the Georgian economy. Looking back at the last two decades, 1989 was the year when a conflict between Georgia and Russia started. Although Georgia achieved a relative economic independence in 1991, it remained in the zone of the Russian ruble used as a political and economic leverage by the Russian government. The independence and reforms created many challenges and had a catastrophic affect on the Georgian economy. Understandingly, these negative factors influenced the banking sector and made it necessary to build a radically new system. The banks multiplied uncontrolled, with their operations limited to deposit taking and lending facility. The main reason of this was banking and other types of credit institutions, which could not perform simple functions and posed a threat to the economic stability of the country. In 1991, the National Bank of Georgia, the main objective of which is to ensure the financial system of the country and to control/supervise commercial banks and the other financial institutions in cooperation with the Financial Supervision Agency (FSA), was created. Now, in the context of the transitional economy and in terms of developing market orientation of the finances, the acute problem of turning into market economy is to increase the financial role of the banks for the purpose of stabilization of the Georgian economy. Taking Georgia out of the transitional economy crises involves: 1. stabilization of the national economy; 2. creation of conditions for turning into market economy. According to Fama (1985), banks play an important part in the operation of an economy. Determinants of their profitability are crucial to the stability of the country. Economic system and financial relation, its important constituent part, is the mechanism connecting natural and labor resources in manufacturing. There can be no financial stabilization without activating manufacturing. The development of the entrepreneurship was hindered by the taxes such as: VAT(Value Added Tax), since entrepreneurship tax is a kind of VAT. The Rose Revolution has changed both the economic and the political systems in Georgia. The new government reduced the taxes, which has been beneficial to the development of the economy.

The government formulated the new rules and policies to support small businesses and has generally been conducive to the business and industry. Therefore, the situation was very

unfavorable, with merely a couple of companies doing business, hardly anybody able to start even small-scale entrepreneurship and the government making no commitments to promote market development.

Nowadays, a successful business in banking system requires the enlargement of the financial management. What is management? According to Sinkey (2006), management of the banking business is an important aspect of the bank management, with the risk management, involving identification, measuring, monitoring and controlling risks, being the core of the financial management of a bank. Asset liability is the main function of banking, which defines how to use the balance sheet as a tool applied to the performance of commercial banks. Balance sheet is a part of financial statements indicating the earning power and the cost of bank. In addition, it implies planning, decision-making, organizing, controlling and leading. All banks, whether large or small, doing business only in one country (domestic) or internationally, use financial and information resources to fulfill their plans and meet the goals.

In this section, we have briefly described the architecture of the Georgian banking, while below we will discuss the concept, different types thereof and the factors, which influence them. The development of the financial sector has kindled the interest of large foreign banks to the Georgian banking market:

TB Bank (Georgia), one of the largest banks was established in 1994, as a result of the merger of three state banks. In 2005, VTB Bank of Russia acquired 51% stock of the United Bank.

In 1991, Bank Republic, one of the most successful and oldest financial institutions, was established. In terms of total assets, the bank is the fifth in the Georgian banking system. In 2006, „Societe Generale” Group acquired the controlling interest in the Bank Republic. Bank Republic has debt tranches from the EBRD to finance the lending operations.

In 1992, TBC Bank, one of the leading companies in the region, was established. The bank stands out for its strong and effective managerial and sales systems. TBC Bank has debt tranches from the EBRD to finance the lending operations.

In 1994, Bank of Georgia, in terms of assets, one of the key universal companies in the country, was established. The bank was the first to place its own shares in the form of global and depository receipts on the London Stock Exchange (LSE: BGEO). The Bank has branches in Ukraine and Belarus.

The main objective of this paper is to identify the performance of the Georgian banks and assess whether recent reforms have been effective. What variables influence the performance of a bank? According to Ahmed and Khababa (1999), in terms of financial performance, it is of interest where a bank is heading for and how the managerial decisions change its capability to cover losses. They used three indicators ROA, ROE and Earnings per share (EPS) total earnings divided by number of shares outstanding, to measure the banks by size. The main variables were business risk and bank size, which determine the financial performance of a bank. According to Viviane Y. Naimy (2005), the important indicators of banks' overall performance are ROA and ROE. Return on Assets (ROA), defined as net income divided by average or total assets, measures bank profits. Return on Equity (ROE) measures profitability from the shareholder's perspective.

The Georgian banking sector has faced major challenges in the past two decades. In order to maintain financial stability of the banking industry, there are external and internal extensive factors to identify the determinants of banks' overall performance. Bashir (2000) examined performance of the Islamic banking sector and used a number of internal and external factors to predict profitability and efficiency of the banks. Internal determinants of the bank performance include the conditions and forces within the institution. Internal determinants consist of their owners, the Board, employees and the work environment. Some of the Boards perform the main oversight functions and get closely involved in the day-to-day management of the company. The concept of external determinants of bank profitability

implies each outside factor, which can influence the institution. Macroeconomic factors and financial structure are the main components of the external determinants. External determinant in which the bank operates is very important for further development of the company. Besides, the Management of the company should realize how important a decision is.

2. Methodology

The general methodology of this paper is to examine the activities and results of the Georgian Banks in the country. In order to examine the operating efficiency, employee productivity and overall performance, the methodology provides analysis of financial ratios of the banks, which measures banks by size. Apart from that, I consolidated these bank assets, loans and deposits in 2005-2007. The mentioned banks applied eight very important and interrelated components through which they carry out their activities. Each component has a unique mechanism of implementation.

Financial ratios arranged in the following categories:

- Return on assets (ROA) Net income to assets
- Return on Equity (ROE) Net income to equity
- Owner's equity to total assets
- Loans to deposits
- Loans to total assets
- Expenses to revenues
- Fixed assets to total assets
- Assets to the number of employees
- Loans to the number of employees

In this study, I define how the Management uses the bank's real investment. The definition generates banks overall performance, which is measured by its return on assets (ROA). According to Sinkey (2002) and Gilbert and Wheelock, (2007) the most popular financial indicators of a bank's overall performance are ROE and ROA that measure banks by size.

ROE decomposition analysis:

Stage 1: $ROE = ROA \times EM$

Stage 2: $ROA = PM \times AU$

Decomposition of return on equity (ROE):

$$ROE = \frac{\text{Net Profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Equity}}$$

According to Sinkey (1992) and Staikouras and Wood (2003), the size of a bank plays an important part in its profitability. The study shows that smaller banks achieved higher level of profits than the larger ones.

3. Financial analysis of the banks in 2005, 2006 and 2007

I collected data for the bank assets, loans and deposits for each of the past three years (2005-2007). The data indicate that in 2006 the bank assets increased by 79% and amounted to 2,957 billion GEL and in 2007, assets increased by 77% – 5,221 billion GEL. In 2006, the banks' loans increased by 66% – 1,809 billion GEL and in 2007, loans increased by 78% – 3,220 billion GEL. In 2006, the banks' deposit increased by 40% - 1,689 billion GEL and in 2007, deposits increased by 53% 2,582 billion GEL.

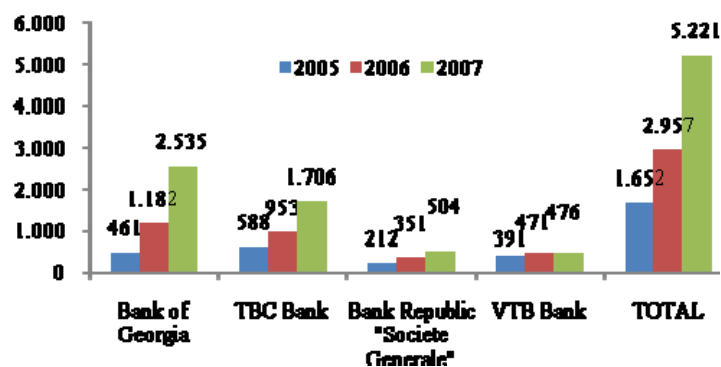


Figure 1. Commercial Banks' Accounting in Assets (million GEL)

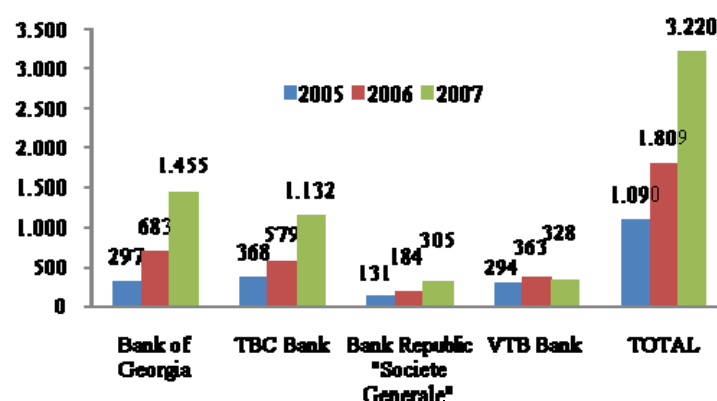


Figure 2. Commercial Banks' Accounting in Loans (million GEL)

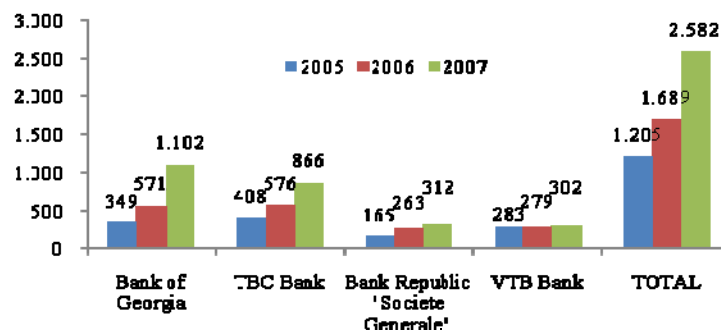


Figure 3. Commercial Banks' Accounting in Deposits (million GEL)

Eight important financial ratios indicating the results of the banks' overall performance

In 2005, return on Assets (ROA) was 2.96% for the Bank of Georgia and 5.41% for the TBC bank. The respective ratios for the other two Georgian banks were ranging from 0.75% for VTB bank to 5.44% for the Republic Bank. In 2006, the ratio was slightly different between Bank of Georgia – 2.83% and 3.20% – the TBC Bank. The respective ratio for the Republic Bank was 2.31% higher than that of the VTB Bank – 1.63%. In 2007, ROA was 2.39% for the Bank of Georgia and 1.82% for the TBC Bank. The respective ratio for the Republic Bank was 0.60% and – 4.97% for the VTB Bank (Figure 4).

In 2005, return on Equity (ROE) for Bank of Georgia was 14.90%, sharply less than 37.48% of the TBC bank. The respective ratio for the Republic Bank was 29.95 –

considerably higher than 6.62% of the VTB bank. In 2006, the ratio between Bank of Georgia and Republic Bank was the same- 14.66%. The respective ratio for VTB Bank was 17.17%, less than 25.32% of the TBC Bank. In 2007, ROA was 11.31% for Bank of Georgia and 13.14% for TBC Bank. The respective ratio for the Republic Bank was 3.58% and -45.02% for the VTB Bank (Figure 5).

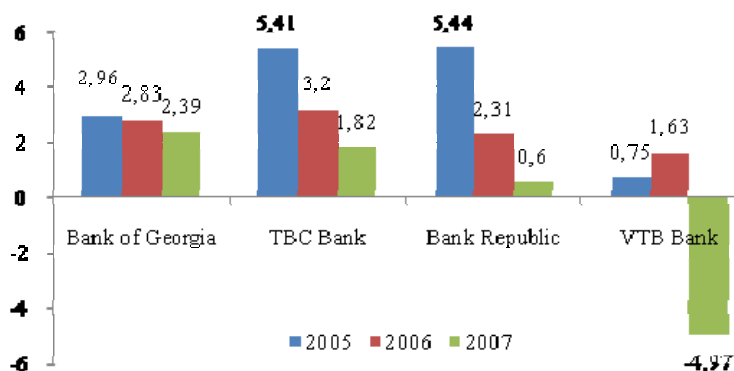


Figure 4. Comparative Analysis of Performance Ratio of Net Income to Total Assets (ROA)

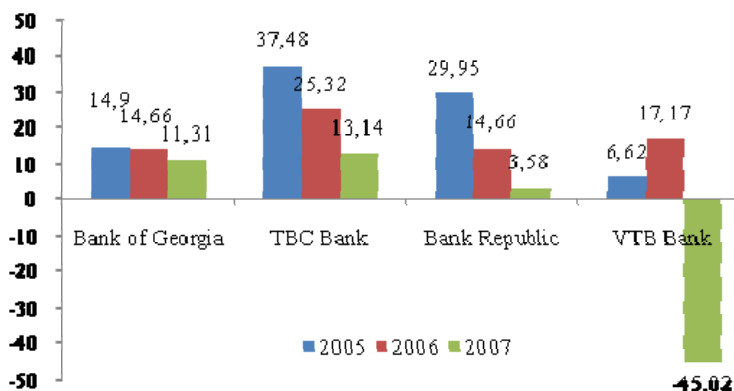


Figure 5. Comparative Analysis of Performance Ratio of Net Income to Total Assets (ROE)

In 2005, the ratio of the owner's equity to total assets was ranging from 6.33% for VTB Bank and 15.54% for Republic Bank, 16.81% for TBC Bank and 19.86% for Bank of Georgia. In 2006, the ratio was 30% for Bank of Georgia, considerably higher than that of the other three Georgian banks and was ranging from 11.04% for VTB Bank to 12.53% for TBC Bank and 17.79% for Republic Bank. In 2007, the ratio was 19.62% for Bank of Georgia, 18% for TBC Bank, slightly higher than for Republic Bank with 17.05% while for VTB Bank the ratio was 11.89% (Figure 6).

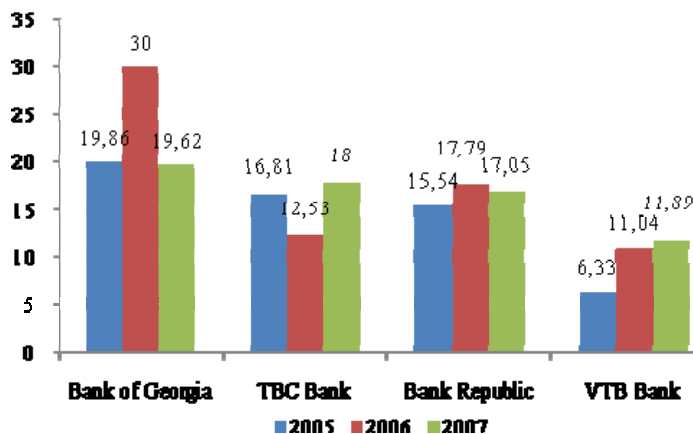


Figure 6. Comparative Analysis of Owner's equity to Total Assets (ROA)

In 2005, the ratio of loans to total assets was on average 49.93% for four Georgian banks, and it was ranging from 61.93% for Republic Bank, 62.53% for TBC Bank, 64.57% for Bank of Georgia and 75.24% of the VTB Bank. In 2006, the ratio was ranging from 52.27% for Republic Bank, 57.82% for Bank of Georgia, 60.71% for TBC Bank, less than 77% for the VTB Bank. In 2007, the ratio of loans to total assets was 68.92% for VTB Bank, compared to the respective 66% of the TBC Bank, 60.44% for Republic Bank and 57.41% for the Bank of Georgia (Figure 7).

In 2005, the loans to deposits were 103.7% for VTB Bank, compared to the respective 90.09% for the TBC Bank, 85.25% for Bank of Georgia, and 79.29% for the Republic Bank. In 2006, the ratio for VTB Bank was 129.76%, compared to 119.55% for the Bank of Georgia. The ratio for Republic Bank was 69.83%, less than 100% of the TBC Bank. In 2007, loans to deposits ratio was approximately 130% for TBC Bank and Bank of Georgia and it was ranging from 131% to 132%. The respective ratio for Republic Bank was 97.72%, less than 108.75% for the VTB Bank (Figure 8).

Table 7. Comparative Analysis of Performance Ratio of Loans to Total Assets

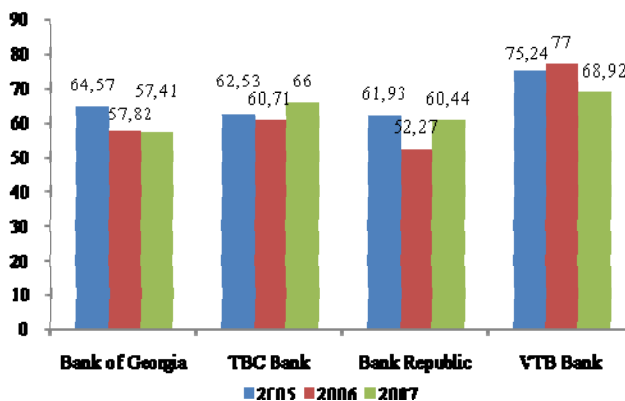


Figure 7. Comparative Analysis of Performance Ratio of Loans to Total Assets

Table 8. Comparative Analysis of Performance Ratio of Loans to Deposits

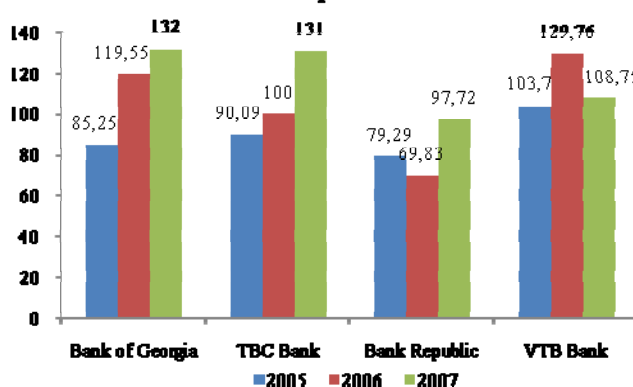


Figure 8. Comparative Analysis of Performance Ratio of Loans to Total Assets

In 2005, expenses to revenues ratio was considerably higher for Bank of Georgia- 87.62% and 57.61% for the TBC bank. The respective ratio for Republic Bank was 54.71%, less than 77.71% for the VTB Bank. In 2006, the ratio of expenses to revenues was on average 80% for four Georgian banks and it was ranging from 66% for TBC Bank, 67.09% for Bank of Georgia, 69.23% for Republic Bank and 81.61% for the VTB Bank. In 2007, the ratio was 65.93% for Bank of Georgia, compared to the respective 68.22% for the TBC Bank, 89.7% for Republic Bank and 86.08% for the VTB Bank (Figure 9).

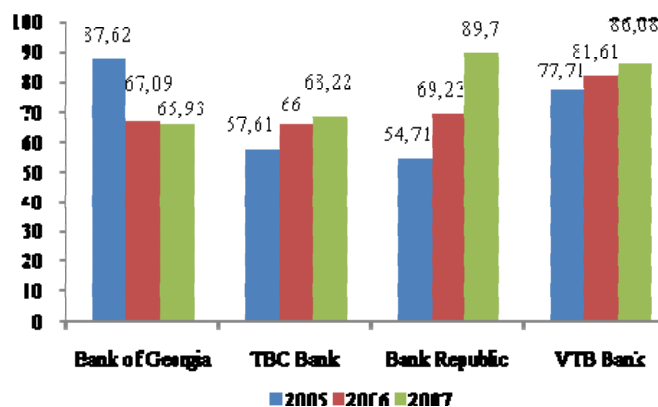


Figure 9. Comparative Analysis of Performance Ratio of Expenses to Revenues

Comparative analysis of performance assets to number of employees in thousands GEL

Table 10

Year	Bank of Georgia	TBC Bank	Bank Republic	VTB Bank
2005	0,206	0,248	0,301	0,438
2006	0,530	0,403	0,350	0,576
2007	0,306	0,722	0,419	0,549

Comparative analysis of performance loans to number of employee's in thousands GEL

Table 11

Year	Bank of Georgia	TBC Bank	Bank Republic	VTB Bank
2005	0,133	0,155	0,186	0,329
2006	0,306	0,244	0,183	0,444
2007	0,326	0,478	0,253	0,379

In 2005, assets to number of employees for four Georgian banks were ranging from 206,904 for Bank of Georgia, 248,793 for TBC Bank, 301,497 for Republic Bank and 437,782 for VTB Bank, in thousands GEL. In 2006, the respective figures for Bank of Georgia was 530,644, compared to 403,009 for the TBC Bank, in thousands GEL, 350,320 for Republic Bank, compared to 576,423 for the VTB Bank, thousands GEL. In 2007, assets to number of employees for TBC Bank were 722,152, considerably higher than for the other three banks and it was ranging from 306,823 for Bank of Georgia, 419,711 for Republic Bank and 549,542 for VTB Bank, thousands GEL (Table 1).

In 2005, loans to number of employees were 133,592 for Bank of Georgia, less than 155,567 for the TBC Bank, thousands GEL and 329,412 for VTB Bank and considerably higher than 186,737 for the Republic Bank. In 2006, the respective figures for four Georgian banks were ranging from 183,109 for Republic Bank, 244,685 for TBC Bank, 306,823 for Bank of Georgia and 443,884 for VTB Bank. In 2007, the figures for Bank of Georgia were 326,237, compared to 478,787 for the TBC Bank, thousands GEL. The respective figures for Republic Bank were 253,688, compared to 378,794 of the VTB Bank (Table 2).

4. Conclusion

The purpose of these observations was to assess the quality of the specific Georgian Banks and give an indication of the performance, relying on the structure of their financial statements. The selected banks were compared in terms of assets, loans and deposits for each of the past three years. The consolidated data indicate that the positive trend of the banks'

assets, loans and deposits was reversed in each year. The conclusion evaluates the analysis of financial ratios in order to examine operating efficiency, employee productivity, the banks' overall performance, which is measured by the size thereof. These summarized data are presented with the attached tables. Nowadays, the Georgian banking system has become increasingly important to meeting the changing requirements of the new economy and plays an important part therein.

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ARAB STOCK MARKET AND THE GLOBAL ECONOMIC CRISIS: SOME CASES ANALYSES

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***Abstract.** The purpose of this paper is to investigate whether Arab stock markets are characterized by excessive volatility of returns after the global crisis economic. In this study, the Schwert measure is obtained from a two-step regression technique and is an estimation of the conditional standard deviation of weekly returns. The Schwert measure used at the group level so that it could reveal not only the potential trends in volatility of returns in Arab markets but also their level of volatility relative to that of emerging and developed markets. The graphs show that Arab markets exhibit the lowest level of volatility of returns and also that they are not affected by international financial crises. Finally, the study addresses the issue of volatility spillovers. The results indicate that Arab markets are characterized by low correlations with each other and with international market.*

Keywords: stock market; financial and economic crisis; Arab economy; financial market.

1. Introduction

Being an integral part of the world economy, Arab economies could not escape the negative impact of the global financial and economic crisis. However, Arab economies did not suffer as much as most other economies because they are not driven by exports or consumption, financial services or even industrial production. Arab banks for example did not invest in toxic assets; and thus they incurred small losses; however the losses incurred by Arab sovereign funds and the major stock markets were initially estimated at 30%-40% and 20%-60% of their values, respectively, but much of the losses have since then been recovered. Nevertheless, fearing a deepening economic crisis and seeing oil prices and thus revenues falling, most Arab states and private companies felt the need to slow down to weather the storm without more losses. The economic sector hurt most by the crisis is the real estate causing few banks and many construction companies to suffer badly. Since investments in real estate and stocks represent the major individual and institutional assets, the Arab losses due to the global crisis have been estimated at \$2-2.5 trillion.

Generally speaking, the Arab economy is driven by oil and how oil revenues are used. Regardless of how rich or poor the Arab state is, almost all states demonstrate, with varying degrees, the symptoms of volatile and low economic growth rates, low labor productivity, high unemployment rates, weak social safety nets, relatively high illiteracy rates, deep pockets of poverty, lack of transparency and freedom, widespread corruption, and a very bad income distribution. There is also a high degree of disparity in income, wealth and access to social services between Arab states as well as among social classes and groups within each state. The richer the state is, the more volatile its per capita growth rates are; and the more densely populated the state is, the more poverty and corruption and income disparity it suffers from. For example, poverty in Egypt is estimated at about 50% of the population, 52% in the rural areas, and 46% in the urban areas. As for the safety net, it is mainly traditional, with the family being the backbone of the system; other sources include religious and sectarian organizations, Zakat, and charitable foundations and individuals. However, changes in life

conditions, globalization, and emigration of the able and talented are gradually undermining the traditional family and its role as a source of social safety. Moreover, most societies are expected to face a tough problem in the near future due the steady increase in life expectancy. While more people are living longer, the healthcare needs of the elderly are more than the current system is able to provide.

2. Economic structure

As high fertility rates continue in most states, and economic growth rates remain low and volatile, unemployment is expected to rise, causing social distress, increased poverty and possibly social and political unrest. Unemployment among the youth who are between 15 and 24 years of age is about twice the average rate for adult males and more so for females. In fact, Unemployment among Arab youth has been estimated by the ALO in 2005 to have been 30% compared to 14.4% for the world at large; in Sub-Saharan Africa, the rate was 21%, and 16.4% for South East Asia. Arab unemployment reflects structural economic weaknesses and deep sociocultural and political problems that continue to cripple Arab societies in general and limit their abilities to grow economically; they also pave the way for radical organizations to flourish. Jordan has the distinction among all rich and poor states in the world of being a major exporter of nationals and a major importer of foreign labor; while more than 25% of its national labor force lives and works in foreign countries; not less than 30% of its labor force is foreign, most of which are Egyptians. Since Jordan has the highest rate of literacy among Arab states, one might think that it should have one of the lowest rates of unemployment and the highest rate of female employment. But contrary to expectations and logic, Jordan has the second highest rate of youth unemployment (30%), and the lowest rate of female employment (43%).

Can the Arabs solve their economic problems by using the tools prescribed by the World Bank and other international development agencies? The simple answer is No. One can easily argue that Arab states as a region has had surplus capital since the mid-1970s; yet they have failed to develop and industrialize. Economic development in Arab countries cannot succeed if not preceded by or accompanied with deep sociocultural transformations that include political and legal and educational reforms. Prince Hassan of Jordan said lately that “The absence of a modern industrial base diminishes the absorptive capacity of regional economies for the surplus generated by oil revenues. Many countries as a result have set up sovereign wealth funds to invest that surplus in international markets. The managers of these funds quite rightly complain that insufficient investment opportunities exist in the region in agriculture and manufacturing. The question is how to increase the absorptive and carrying capacity of the region and build a modern industrial base.” Such a base needs economic integration, financial coordination, free movement of labor and investment capital, and, above all, political will to make the right and necessary policy changes. Moreover, as the global economic crisis causes economic growth to slow down, it strengthens the arguments in favor of religious fundamentalism and cultural particularism; it also gives Arab autocrats an excuse to postpone badly needed reforms, while giving radical groups an opportunity to spread their ideas and gain more recruits. Economic and financial crises do not happen in vacuum, they are usually preceded by political and social and moral crises. As a consequence, the impact of the global economic crisis is expected to be deep and long lasting, and to cause more unemployment and widespread poverty, more radicalism and possibly social unrest in poorer Arab states.

Economic structural adjustments that worked in many parts of the world cannot work in the majority of Third World states. Such states do not need economic structural adjustments only; they need sociocultural adjustments as well; they also need political and educational and

legal reforms to limit corruption and abuse of power, while fostering transparency and accountability and productivity. If the current trend in income distribution remains the same, world markets will not be able to expand fast enough to get us soon out of the economic crisis we are in today. The industrial giants of the world have built a combined production capacity that exceeds the consumption capacity of the world's developed markets. To grow out of recession, the world needs to expand international markets for all types of good and services. In order to do so, the major powers need to do two things: develop new markets by helping develop the economies of the Third World, and enact new laws and regulations to enable the poor nations and social classes to get a larger share of the incomes and wealth generated by their talents and in their societies.

4. Financial analyses

4.1. Volatility in Arab stock markets

The efficient market hypothesis (EMH) is based on the notion that stock prices quickly and fully reflect all available information. Over the last three decades, the EMH has been tested extensively and continues to be tested as more advanced econometric techniques are being developed. In a recent two volume set devoted entirely to market efficiency, Lo (1997) puts together the leading articles on the subject. The editor classifies empirical testing of EMH in four categories. The first category is based on the random hypothesis. If stock prices follow a random walk, price changes over time are random. Tests in this category involve the question of whether all information contained in the sequence of past prices is fully reflected in current price. The second category is concerned with the volatility of prices. The third category tests the EMH by considering investors' reactions to new information, whether they overreact or underreact. Finally, the fourth category tests whether an observed anomaly, that is, a regular and reliable pattern in stock return which implies predictability, constitutes a violation of the EMH. Excessive volatility of stock prices is an important phenomenon to investigate because of its negative effect on risk-averse investors, and ultimately on the economy. The volatility tests, also called variance bounds tests, were initially developed by Shiller (1979, 1981) and LeRoy and Porter (1981). These tests, using the dividend-discount model, are based on decomposition of the variance of the ex post present value of all future dividends into the variance of the market price and the variance of the forecast error. If the variance of stock prices exceeds that of ex post present values, then the variance bound is violated. Whether a violation of the variance bound implies that the EMH is false is still being debated in the literature. (Al. Lougham, 1995) Regardless of the debate over empirical testing of volatility, the fact remains that volatility is a relative measure. In effect, as stated by El Erian and Kumar (1995), „In theory, while it is difficult to have a clear criterion for defining the degree of „excessiveness”, in practice, the standard usually. For a discussion of this issue and the modelling of volatility clustering in the returns with autoregressive conditional heteroskedasticity (ARCH) and generalized ARCH (GARCH) models, Bollerslev and Hodrick (1992). adopted is that of the volatility of the established industrial country stock markets” (p. 155).

This purpose of this paper is to investigate whether Arab stock markets are characterized by excessive volatility of returns. To this end, the study includes, in addition to eight Arab stock markets for which data is available over the sample period selected, two emerging and three developed markets.

The data set consists of weekly stock price indexes of those markets over the period extending from October 1994 to November 2009 Section 2 provides a brief background on the markets included in the study with a focus on Arab markets. Section 3 discusses the data and summary statistics. Section 4 provides some measures of volatility and section 5 concludes.

4.2. Characteristics of the markets

The Arab markets included in this study are the following: Bahrain, Egypt, Jordan, Kuwait, Morocco, Oman, Saudi Arabia and Tunisia. By international standard, Arab markets are considered relatively new. Four of them (Bahrain, Jordan, Oman, and Saudi Arabia) started operating over the last two decades, while others (Egypt and Morocco in particular) have been in existence for much longer but until recently their level of activity was not significant. (Moosa, 1997) The other markets included in the study belong to two different groups: India and Mexico are emerging markets; Japan, the United Kingdom (U.K.) and the United States (U.S.) are developed markets. For a discussion of the development of Arab markets, see Arab Monetary Fund (1997).

Although all Arab markets are emerging markets and three of them (Egypt, Jordan and Morocco) are included in the IFC indexes for emerging markets, the distinction in this study between Arab and emerging markets is made only for the purpose of the analysis. In terms of market accessibility to foreign investors, there are significant differences between Arab markets. Whereas Egypt, Jordan and Morocco are freely available to foreign investors, Oman and Tunisia restrict foreign ownership to 49 percent of common stock of listed companies. Bahrain restricts foreign ownership to 49 percent for Gulf Cooperation Council (GCC) nationals, and to 24 percent for other investors but only in a limited number of companies. Kuwait limits ownership to GCC nationals, but does not put any ceiling on their investment. Saudi Arabia allows only GCC nationals to own a limited number of shares and in a limited number of companies.⁴ With respect to the other markets, only India imposes some restrictions on foreign ownership which is currently limited to 24 percent of stock of listed companies (Table1)

With respect to market capitalization, Arab markets are small by international standard; their total capitalization constitutes less than 2 percent of that of the U.S. market and only about 85 percent of that of Mexico, an emerging market. Within the group of Arab markets, the Saudi Arabian market is the largest with a share of about 37 percent of the total, followed by Egypt and Kuwait. In terms of monthly turnover, which is the ratio of the monthly trading value to market capitalization at the end of the month, the Kuwaiti market is the most active among Arab markets and is surpassed only by the U.S. market of all the markets covered. Oman and Egypt can also be characterized as active markets.

4.3. Volatility of Returns

In this section, two measures of volatility are presented and discussed: the coefficient of variation and the Schwert measure of volatility.

a-Coefficient of Variation

The coefficient of variation figures presented in Table 4 measure the degree of volatility of weekly market return relatives. For the group of Arab markets, Tunisia appears to be, by far, the most volatile followed by Saudi Arabia and Jordan, with Morocco the least volatile.

However, for Tunisia it should be noted that the figure is out of proportion because the mean return is almost zero. To a lesser extent, the same can be said about Saudi Arabia and Jordan. For the emerging markets, the coefficients of variation are higher on average than those for most of the Arab markets. As for the developed markets, only Japan exhibits a high level of volatility of return relatives because it has both the highest standard deviation and the lowest mean return of the group. Overall, based on the coefficient of variation, the figures do

not seem to indicate any distinct level of volatility of the returns in Arab markets as a group vis-à-vis that of the other 2 group.

b-Schwert Measure

Following Schwert (1989), a two-step regression technique is applied to estimate weekly volatilities from weekly returns.¹⁰ In the first step, the weekly returns are regressed on 13 lagged values. The absolute value of the residue from this equation is an estimate of the standard deviation of the return for week t . In the second step, the absolute value of the residual from the previous equation is regressed on 13 lagged absolute values of the residuals. The fitted values from this second equation, multiplied by 2 are estimates of the conditional weekly return standard deviations given information available before week t . After the volatility measures are estimated for each market separately, an average measure of volatility is then constructed for each group of markets. This measure is calculated by taking the weighted average of the different market volatilities, with the weights representing the share of each market in the total market capitalization of the group.

Studies which have used the Schwert measure of volatility include Kim and Singal (1993) and Richards (1996). Kim and Singal applied it only to emerging markets, and Richards to both emerging and developed markets. To calculate the weights, the following base periods are used: for Arab markets, the third quarters of 1996, 1997 and 1998; for emerging and developed markets, the end of the years 1996 and 1997.¹⁴ In the case of the coefficient of variation, volatility in Arab markets (and in emerging and developed markets) has been measured at the market level.

The figures in Table 2 do not provide a clear assessment of the degree volatility of returns in Arab markets as a group compared to that in the other 2 groups of markets. The Schwert measure of volatility used at the group level should reveal not only the potential trends in volatility of returns in Arab markets but also their level of volatility relative to that of emerging and developed markets.

The first observation that could be made from the figure is that Arab markets as a group exhibit the lowest level of volatility and emerging markets the highest. Both emerging and developed markets show an increase in volatility, particularly over the periods corresponding to the last 2 major financial crises that the world has experienced over the last 4 years. For these 2 groups, the figure also shows an upward trend in volatility starting around the time of the Russian crisis and sustained most probably because of the fear about a potential Brazilian crisis.

The high level of volatility in emerging markets at the beginning of the sample period should be considered with caution since Mexico, the country where the first crisis originated, represents slightly more than half the total weight of the group. As to the Arab markets as a group, they do not seem to have been affected by any of the international crises. However, the figure shows a slight increase in their level of volatility beginning in the last quarter of 1997, period which corresponds to the downturn in world oil prices. As mentioned earlier in the discussion of the figure of market returns, volatility of returns in GCC markets increased over this period. Since the weight of GCC markets constitutes about 2/3 of the total weight of the group, it is evident that any increase in their level of volatility will impact noticeably upon the volatility of the group. However, the same fact about the weight distribution could be used to argue that Arab markets show the lowest level of volatility because they are the most insulated from international shocks, being as a group the least open to foreign investment of all markets included in the study. Therefore, the main sources of volatility in these markets are only of two types, world oil prices and domestic factors.

Even though the 2 figures seem to indicate that Arab markets are not affected by international financial crises, it is worth completing the analysis by considering the issue of volatility spillovers. In the framework of stock market integration, it is believed that the more

integrated in international markets a particular market is, the more affected by volatility in those markets it will be. Therefore, by providing a measure of the degree of integration of Arab markets in international markets, it would be possible to estimate the likelihood of occurrence of volatility spillovers into Arab markets. One traditional measure of the degree of integration of stock markets in international markets is the correlation of the returns. Based on the previous results and discussion, the correlation between Arab markets and the other markets is expected to be quite low. Table 5 presents the correlation coefficients for the 3 groups of markets. The combined weight of Saudi Arabia and Kuwait, closed to non-GCC investors, constitutes almost 60 percent of the total.

Conclusion

The purpose of this study has been to examine whether Arab stock markets were characterized by excessive volatility. Since volatility is a relative measure, a benchmark needed to be used in order to assess the degree of volatility of Arab markets. To this end, the study included a group of emerging markets and a group of developed markets. The data set consisted of weekly stock price indexes over the period extending from October 1994 to November 2008. After a discussion of the main characteristics of the markets covered such as market accessibility to foreign investors, market size and level of activity, the paper presented the main summary statistics of the weekly returns in these markets. Then, the issue of volatility of returns was tackled through two different measures. The first, the coefficient of variation measures the degree of volatility of weekly market return relatives. The overall results did not seem to indicate any distinct level of volatility of the returns in Arab markets as a group relative to that of the other two groups, also given that the coefficient of variation measures volatility at the market level. The second measure of volatility used in this study, the Schwert measure, is obtained from a two-step regression technique and is an estimate of the conditional standard deviation of weekly returns.

The Schwert measure was used at the group level so that it could reveal not only the potential trends in volatility of returns in Arab markets but also their level of volatility relative to that of emerging and developed markets. The graphs showed that Arab markets exhibited the lowest level of volatility of returns and also that they were not affected by international financial crises.

Finally, the study addressed the issue of volatility spillovers. The results indicated that Arab markets were characterized by low correlations with each other and with international markets. One interpretation of the results on volatility of returns in Arab markets may require a differentiation between these markets. For the main GCC markets, basically closed to foreign investment, it may be difficult at this juncture to predict how their volatility will be affected when they become accessible to international portfolio flows. As to the other markets, some of which compare to the main developed markets in terms of openness, it could be that their low level of volatility reflects the small size of international portfolio flows. It could also be that their macroeconomic fundamentals are sound and their risk-return tradeoff is favorable, so that there is no ground for international portfolio flows to have a destabilizing effect. A study at the market level should shed some light on these issues.

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Stock Markets: Some Indicators

Table 1

(millions of	Capitalization	Market	
(millions of	Trading Value	Monthly	U.S. Dollars)
(Percent)	Ratio	Turnover	U.S. Dollars)
cs: Weekly Returns	(October 25, 1994- November 17, 1998)	Market Mean Median Maximum Minimum Standard Deviation Skewness Kurtosis Bera- Jarque	Arab Markets
Bahrain 0.001686 0.000453 0.068736 - 0.050197 0.015709 0.675022 6.452247 121.3756	Egypt 0.002029 - 0.000212 0.094951 - 0.054749 0.020941 1.552187 7.870112 294.6369	Jordan 0.000626 - 0.001507 0.064604 - 0.052667 0.016188 0.597825 5.105245 51.77780	Kuwait 0.003108 0.001600 0.065745 - 0.079565 0.019546 - 0.156997 4.690469 26.11380
Morocco 0.004390 0.002608 0.062714 - 0.059899 0.014618 0.509528 7.393545 179.6851	Oman 0.002932 0.001540 0.102636 - 0.073970 0.024455 0.356613 5.325460 52.26202	Saudi Arabia 0.000481 0.000362 0.070678 - 0.058907 0.017521 0.082360 4.926048 33.00833	Tunisia -0.000088 0.000356 0.055717 - 0.085189 0.013943 - 1.185629 13.27067 981.4682

Correlations of the Returns

Table 5

Egypt 1.000 0.030 0.031 0.156 0.002 0.097 -0.128 -0.036 0.042 -0.135 - 0.020 -0.042	Bahrain 1.000 -0.110 0.108 0.172 -0.011 0.057 0.180 -0.070 0.019 0.031 0.015 0.099 -0.047	Arab Markets	Market Bahrain Egypt Jordan Kuwait Morocco Oman Saudi Arabia Tunisia India Mexico Japan United Kingdom United States
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Oman 1.000 0.069 - 0.023 0.046 0.126 0.017 0.107 0.039	Morocco 1.000 -0.041 0.057 -0.090 0.080 - 0.028 -0.118 -0.132 - 0.038	Kuwait 1.000 -0.128 0.225 0.139 0.013 0.087 -0.080 0.040 0.093 0.004	Jordan 1.000 0.019 0.034 0.077 0.047 -0.113 0.066 -0.017 -0.015 0.137 0.074
India 1.000 0.075 -0.024 0.069 0.108	Emerging Markets	Tunisia 1.000 -0.047 - 0.033 -0.012 -0.089 - 0.004	Saudi Arabia 1.000 - 0.033 -0.075 0.055 - 0.041 0.050 0.071
United Kingdom 1.000 0.621	Japan 1.000 0.286 0.344	Developed Markets	Mexico 1.000 0.241 0.343 0.435
Egypt 1.000 0.030 0.031 0.156 0.002 0.097 -0.128 -0.036 0.042 -0.135 - 0.020 -0.042	Bahrain 1.000 -0.110 0.108 0.172 -0.011 0.057 0.180 -0.070 0.019 0.031 0.015 0.099 -0.047	Arab Markets	Market Bahrain Egypt Jordan Kuwait Morocco Oman Saudi Arabia Tunisia India Mexico Japan United Kingdom United States

Data Sources: For Arab Markets: Arab Stock Markets Data Base, Arab Monetary Fund, Third Quarter 1998. For Emerging and Developed Markets: Emerging Stock Markets Factbook 1998.

SOVEREIGN RATING DYNAMIC AND CAPITAL MARKET: ANALYTICAL PERSPECTIVE AT THE LEVEL OF THE CEE COUNTRIES

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***Abstract.** We analyze the effects of Standard and Poor's sovereign rating changes on stock market return at the level of the Central and Eastern Europe area. We remark a certain differentiation in terms of stock market indices reaction to sovereign rating dynamic. We assume that sovereign rating upgrade is associated with stock market return increase while a downgrade triggers an opposite phenomenon. This assumption is not validated at the general level.*

The differentiation can be made according to the direction of the credit rating dynamic within the rating matrix; there may be performed upgrades/downgrades within the same rating class, from one credit quality step to the other (Poland and Slovakia) as well as from one rating class to the other (Bulgaria, Romania, Hungary). A notch upgrade/downgrade within the same rating class has a different impact on investors' perception in comparison with rating class dynamics.

Keywords: sovereign rating; stock return; financial markets; emerging countries.

JEL Codes: G32, G24.

REL Codes: 11 E, 11 B.

1. Introduction

Sovereign rating reflects the perception of international credit assessment institutions on the capacity of the government to meet financial commitments. Literature revealed that sovereign rating represents the key element of spillover and sovereign ceiling theories (Cantor, Packer, 1996, Brooks et al., 2004). From the perspective of the „spillover effect”, a financial distress occurred at the macroeconomic level is likely to extend at the level of the corporations as well. Moreover, on the international capital market, a high country risk premium determines financing cost increase.

Until 1997, based on the sovereign ceiling policy, rating agencies have never rated companies higher than the countries they were located into. This policy has been relaxed by Standard and Poor's at the level of deeply dollarized economies (Latin America countries) considered to be less affected in case of sovereign default. Although initially Moody's has adopted a clear opposition to the „lite” sovereign ceiling policy, afterwhile it began applying it. Nevertheless, during the Argentine crises all the companies which have been rated higher than the countries they were located into have defaulted.

Reisen and Maltzan (1999) highlighted the impact of sovereign rating on financial markets from the perspective of the capital flows procyclicality; an upgrade usually triggers capital inflows while a downgrade generates an opposite phenomenon. Kaminsky and Schmukler (1999) revealed procyclicality even at the level of sovereign rating dynamic which is transmitted afterwhile to the financial markets, since rating upgrades (downgrades) tend to occur following market upturns (downturns).

Ever since 1992, Hand et al. revealed that rating announcements influence corporate securities. Subsequently, Cantor and Packer (1996) identified a strong impact of Moody's sovereign rating changes on dollar denominated eurobonds yield spreads while Richards and

Deddouche (1999) outlined the absence of a similar impact on bank stock prices at the level of emerging countries.

Kaminsky and Schmukler (2001) unveiled the impact of sovereign rating dynamic at the level of pool of investors possessing investment grade securities. A potential sovereign debt downgrade below investment grade has a tough effect on stock prices. Moreover, although their research focused on US data, authors pointed out this effect at the level of emerging countries where rating changes disclose new information on the macroeconomic outlook and contributes to the mitigation of informational asymmetry.

However, to our knowledge there are few approaches on CEE area in terms of sovereign rating impact on financial markets, especially from the perspective of the last updates made during the period that runs from 2003 to 2008. Most of the available studies that we analyzed focused on a mixed approach, integrating a database both at the level of Latin America and CEE countries (Kraussl, 2003, Santiago and Guillermo, 2000). To enlarge this research line, we propose an event study analysis at the level of the stock markets indices within CEE area under the impact of sovereign rating changes performed by Standard and Poor's.

We concentrate on five CEE countries (Romania, Slovakia, Hungary, Bulgaria and Poland), following up the dynamic of the sovereign rating beginning with the first time S&P made a sovereign rating change; in parallel, we analyze the relative stock markets returns .

Our paper complements the previous research on the correlation between financial markets and sovereign rating at the level of emerging countries; we propose a more specialized approach, focusing only on the CEE area in order to identify similarities and particular features of the stock markets reaction under the impact of sovereign rating dynamic. We consider that this peculiar approach, limited to a single geographical area, is worthwhile from the perspective of intrinsic features implied by the macroeconomic structures of CEE emerging countries. Previous researches pointed out that CEE countries display a high degree of similitude in terms of transition process as well as a strong correlation degree (Gros and Steinherr, A. (2004)).

.Our findings reveal that CEE stock markets reaction differs according to the intensity and the content of the rating change.

This paper is organized as follows: Section 2 elaborates on data and methodology, section 3 integrates discussions and section 4 concludes.

2. Data and methodology

We analyse the effects of Standard and Poor's sovereign rating changes on stock market return at the level of the Central and Eastern Europe area. Our research focuses on Slovakian, Polish, Romanian, Hungarian and Bulgarian stock exchange indices; data was collected from the official Standard and Poor's (S&P) and stock markets sites.

The observation period varies from one country to another because of the different time-period when Standard and Poor's assigned the first sovereign rating.

Therefore, for Hungary the observation period runs from January 22, 1998 to October 2, 2009, for Poland from June 10 1999 to October 28 2008, for Romania from January 23 1998 to October 15 2008, for Bulgaria from November 7 2001 to October 30 2008 and for Slovakia from April 5 1995 to November 27 2008.

We examined the changes of the rating relative to both local and foreign currency short and long term debt as well as the associated outlook.

Previous researches (Fatum, Hutchison, 1999, Subasi, 2008) pointed out that event-study methodology is adequate in cases where two variables are examined on a different frequency. Sovereign rating dynamic does not imply a regulated periodicity while stock exchange returns can be checked on a daily basis. Therefore, our event study analysis is based on time-windows of ten days prior and post sovereign rating event applied at the level of the stock exchange indices dynamic.

We analyze the descriptive statistics relative to the stock exchange returns in order to reveal stock exchange indices changes under the impact of the S&P sovereign rating upgrade/downgrade.

3. Discussions

From a global perspective, the most numerous sovereign credit rating events are recorded at the level of the long term debt (both local and foreign currency) in comparison with short term debt. The highest number of credit events is recorded in Romania case (12 credit events) followed by Slovakia, Bulgaria and Hungary (from 6 to 7 credit events). The most numerous credit events consist of upgrades (63 upgrades in comparison with 37 downgrades), confirming the catching-up process and the continuous tendency towards macroeconomic stabilization at the CEE level from 1997 to ²⁰⁰⁷⁽¹⁾.

Switching from a global towards an individual sovereign rating event approach, we remark a certain differentiation in terms of stock market indices reaction to sovereign rating dynamic. We assume that sovereign rating upgrade is associated with stock market return increase while a downgrade triggers an opposite phenomenon. This assumption is not validated at the general level.

The differentiation can be made according to the direction of the credit rating dynamic within the rating matrix; there may be performed upgrades/downgrades within the same rating class, from one credit quality step to the other as well as from one rating class to the other. A notch upgrade/downgrade within the same rating class has a different impact on investors' perception in comparison with rating class dynamics.

From this perspective, the analysis at the country level reveals can be approached bi-dimensionally; the first dimension consists of sovereign rating dynamic within rating class while the second dimension concentrates on inter-rating classes dynamic.

The first dimension integrates Poland and Slovakia (with only one downgrade from A rating class to B rating class in September 17, 1998, and the other sovereign rating updates made only within

A rating class) while the second dimension includes Romania, Bulgaria and Poland (with a more vivid inter-class rating dynamic).

As for Hungary, upgrade credit events generate in most of the cases a positive dynamic of the stock market indices. The mean relative to the post-upgrade credit event period is superior to the mean corresponding to the prior period. This aspect is outlined especially from the perspective of the mean values corresponding to the time period prior to the credit event which are negative in most all of the cases; once an upgrade is recorded, the mean values become positive. Moreover, the skewness indicator is the highest in case of upgrade events, confirming the stock market return tendency to increase after an upgrade. The standard deviation associated with downgrades is superior to the standard deviation relative to upgrades; the highest standard deviation values are recorded in case of double downgrade of October 2008 (0.774 and 0.771), which reveals that volatility triggered by downgrades is higher than volatility triggered by upgrades.

The highest minimum value is recorded in case of downgrades from October 2008.

The credit events relative to outlook do not impact to the same extent stock returns; post/prior mean (0.001 in comparison with 0.000 on January 26, 2006) and standard deviations (0.144 in comparison with 0.179 on October 2, 2009) do not differ in a significant manner. The same rationale applies in case of upgrades/downgrades only at the level of the long term sovereign debt; stock market returns are impacted to a higher extent in case of credit events at the level of both types of sovereign debt.

As for Romania and Bulgaria, sovereign rating upgrades generate in most of the cases an increase of the stock returns; the value of stock return mean relative to post-upgrade period of time is superior to the prior value of this indicator (0.032 corresponding to the upgrade from April 19, 2002 in comparison with 0.015 relative to the prior period in case of Romania

and 0.030 corresponding to the upgrade from October 27, 2005 in comparison with 0.011 relative to the prior period in case of Bulgaria). Moreover, the highest maximum value (9.371) is recorded in case of the sovereign rating upgrade from August 4, 2000 in case of Romania and 5.627 in case of the Bulgarian sovereign rating upgrades from November 7, 2001 and from October 27, 2005. The maximum volatility of the stock return is determined by the upgrade from August 4, 2000 (9.371) as well as by the downgrade from October 15, 2008 (5.282) in case of Romania; following the same rationale, the last Bulgarian sovereign rating downgrade from October 30, 2008 triggered the highest SOFIX volatility.

The skewness indicator increases to a significant extent during the post-upgrade periods.

Romania exhibits the most frequent sovereign rating updates, revealing the macroeconomic disequilibrium as well as the most regular negative BET index returns corresponding to the post-downgrade sovereign rating time period; following the downgrade from May 20, 1998, the BET return decreased from -0.004 to -0.011 while the last downgrade from October 15, 2008 generated a decrease from -0.014 to -0.026.

In case of Bulgaria, the last downgrade generated the increase of the negative SOFIX return as well (-0.029 corresponding to the period prior to sovereign rating downgrade and -0.037 corresponding to the post period).

Romania and Bulgaria experienced rating upgrades/downgrades implying non-investment grade rating scale in opposition with Poland and Hungary which experienced sovereign rating changes only at the level of the investment grade rating scale.

In case of Slovakia, we consider the only downgrade to non-investment rating grade (from BBB- to BB+ in September 17, 1998) during a period of time of almost three years (from September 1998 to October 2001) as impacting to a significant extent the stock exchange returns. Therefore, the dynamic corresponding to the WIG index reacts as expected. The lowest mean value is recorded during a sovereign rating downgrade post period of time (in September 17, 1998 where WIG index decreased from 0.005 to -0.008), triggering the highest standard deviation (0.287) corresponding to the post sovereign rating credit events. Moreover, the skewness indicator records the highest values at the level of the WIG index returns corresponding to the periods of time following sovereign rating upgrades.

Polish stock market index displays a different behavior in terms of reaction to sovereign rating event. Since Poland has never been rated as non-investment grade country, we can appreciate that important fluctuations have not been recorded at the level of the sovereign rating. Therefore, the impact on stock exchange return is interpreted as a weak one.

In line with the findings relative to the last Romanian and Bulgarian sovereign rating downgrades (October 2008), the Polish outlook downgrade from Positive to Stable from the same period generated the highest volatility corresponding to the time periods following sovereign rating changes (standard deviation of 0.477) as well as the lowest minimum value (-4.928) of stock exchange return.

4. Conclusions

This paper focuses on the CEE stock market reaction under the impact of sovereign rating change performed by Standard and Poor's.

We identify that the most numerous sovereign credit rating events are recorded at the level of the long term debt (both local and foreign currency) in comparison with short term debt. The highest number of credit events is recorded in Romania case (12 credit events) followed by Slovakia, Bulgaria and Hungary (from 6 to 7 credit events). The most numerous credit events consist of upgrades (63 upgrades in comparison with 37 downgrades), confirming the catching-up process and the continuous tendency towards macroeconomic stabilization at the CEE level from 1997 to 2007.

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Note

¹For space reason, we do not include statistic output; nevertheless, we can provide it upon request.

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