

Political macroeconomics

“Macroeconomics contaminates its principles in subordination to the societal contingent, in a way, creating states of coerced generality by contextualising the truth and circumstantiating the solutions through the adjustment of hypotheses.”

A few elements blur the epistemic perception of Economics: the hegemonic position of Macroeconomics in interpreting phenomena, the substitution of Microeconomics with company management, the methodological principle of financiarisation, the prevalence of the short-term analytical perspective, the compartmentalisation of the explanation for the human behaviour into transactional medium and other parts. The consequences of the conceptual positioning on these elements are found in the manner in which Economics explains the mechanisms which satisfy the expectations on the finality of the function of economic action.

Of all the characteristic elements of the epistemic state of Economics, the most visible are the ones of the extended explicative model of Macroeconomics. The political vicinity of the theses of Macroeconomics generates streams of information – bearing the substance of interests – unfiltered by the principle of rationality, which imbues the assertions with the fluid load of the assumptions.

Methodologically speaking, Macroeconomics contaminates its principles in subordination to the societal contingent, in a way, creating states of coerced generality by contextualising the truth and circumstantiating the solutions through the adjustment of hypotheses. The cause is represented by the particularity of the theoretical intercession of Macroeconomics, its structuring on two planes: an eminently scientific one, of rationalizing the solutions, and another of political consistency, of applying the solutions.

The fault line between thought and action is unavoidable, given the specific targets of each plane: of rationality in the case of Macroeconomics and of emotion in the case of politics. In a troubling manner, the values centred on economic efficiency are split by the fault line from those centred on political efficiency. On one side, that of economic theory, matters the argument ruled by the rational calculus, while on the other side, that of politics, the pressure of representation demands estimations of opportunity on obtaining the power of decision.

The goals are not only materially different, but also in tension on their principles, to the point of having reciprocal exclusion behaviours. With no path for conciliation either in form or in essence, Macroeconomics and Politics still coexist on a plane where they betray their own functions in a manner germinated by the will for power. As a science, Macroeconomics obeys the Baconian aim of being a potential power. This very perspective confers politics with the manipulative support for connecting the scientific potentiality to the intrinsic mechanisms of the administration of power. And this is happening with no

regard to following the logic of economic efficiency in judging the extra-political impact of obtaining and administrating power.

There is no doubt that the usual similarities of language are deceiving. For instance, in the case of Macroeconomics we have pure costs of transaction, in the sense of obtaining property, while in the case of politics we have transfer costs for symbols, as a process for delegating the function of managing liberties. The transfer costs displace the rationality of the transaction costs per se, or in other words the goal of the political plane obscures the goal of the economical plane, even perverting it to a state of disposable appendix. More precisely, the transfer cost of managing freedoms sets the rule for the inter-individual arrangements and assumes the gains entirely.

The inversion of rationality at a macroeconomic level is a phenomenon turned commonplace when the actional complex is judged by the performance parameters sought by the transfer costs of the right to decide. The cyclicity in the performance of the inter-individual transfer of power is not a consequence of economic behaviour. The duration of the cycle is aleatory and independent of economic reason.

The theme of the political cycle has an area of economic resonance only in the field of regulating the governance of the economy. Otherwise, the exercise of power reduces the position of economic thought to the production of alternative solutions. With an experience sharpened by history, Economics contributes a third to the total of economic reality: identifying the solutions. The other thirds – the implementation and the reaping of results – being the attribute of Politics.

The constitutive dichotomy between Macroeconomics and Politics seems overcome across historical practice not because independence is epistemically inconsistent, but because the intellectual exercise was proven withdrawn, even obedient in the face of the political exercise. The servitude of Macroeconomics has become commonplace, complicating its objective functions especially at critical times, as it has been demonstrated from 2007 since.

Macroeconomics per se remains a valid epistemic scheme, except that it does not play its role on any real stage. What we see is the travesty of politics into a prolonged macroeconomic monologue. The two plains of the theoretical intercession of Macroeconomics are, in the end, the formula for obscuring its captivity in the black hole of Politics.

Marin Dinu

Contents

The new economic geography and regional policy in Romania Raluca Irina Clipa, Ion Pohoată, Flavian Clipa.....	5
Recent evidence on concentration and competition in Turkish banking sector Fatih Macit.....	19
Solutions against crisis applicable to the oro-dental health system in Romania Adriana Duțescu, Oana Stănilă, Daniela Sahlian, Daniela Trașcă	29
The bad public decisions' ripple – setting the education off balance. Marketing simulation – education design decisions Ioana Teodora Dinu.....	37
Prepayment risk, impact on credit products Dan Costin Nițescu.....	53
Financial stability, monetary policy and budgetary coordination in EMU Claudiu Tiberiu Albulescu	85
Central Bank independence Vasile Dedu, Tiberiu Stoica	97
Re(De)-Forming public administration: an expert outlook on reform planning in Romania Diana Camelia Iancu	103
The economic crisis – implications on methods and instruments used in quality of life studies Mihaela Constantinescu	125
The Wagner hypothesis from the perspective of the Romanian economy Ana-Maria Țepuș.....	135
Effects of interest rate, exchange rate and their volatilities on stock prices: evidence from banking industry of Pakistan Syed Tehseen Jawaid, Anwar Ul Haq.....	153
Considerations on hospital financing in the context of health care decentralization Cătălin Bulgariu	167

Note: The authors are responsible for the content of their articles and for obtaining necessary permissions.

Text revision:

Gabriela Ochiană

Computerized drawing up:

Nicoleta Bobocea

Cover:

Nicoleta Bobocea

Subscriptions distribution:

Mircea Dinu

Tel./Fax: 021/210.73.10; 021/210.63.07
021/210.63.08

Data base indexation:

EconLit

<http://www.aeaweb.org>

Research Papers in Economics (RePEc)

<http://www.ideas.repec.org>

<http://econpapers.repec.org>

Directory of Open Access Journals (DOAJ)

<http://www.doaj.org>

EBSCO Publishing

<http://www.ebscohost.com>

**International Consortium for the Advancement
of Academic Publication (ICAAP)**

<http://www.icaap.org>

CNCSIS B+

www.economieteoreticasiaplicata.ro; www.ectap.ro

Reception of texts: economia.ta@edeconomica.com

ISSN 1841-8678 (Print)
ISSN 1844-0029 (Online)

The new economic geography and regional policy in Romania

Raluca Irina CLIPA

“Gh. Zane” University, Iași
raluclipa@yahoo.com

Ion POHOATĂ

„Al.I. Cuza” University, Iași
ionpohoata@yahoo.com

Flavian CLIPA

“Gh. Zane” University, Iași
flaclipa@yahoo.com

Abstract. *The aim of our paper is to capture, using logical analysis and graphic modelling, the implications of the new economic geography (NEG) in terms of regional policy in Romania, aiming to answer the question whether NEG and agglomeration economies should concern the policy makers in our country. The analysis of the macroeconomic model based on the interdependencies between regional disparities, agglomeration and economic growth shows that in the case of core-periphery dual regional structured economies, the cohesion policy effects can be avoided, in that the central agglomeration will generate a higher growth rate at national level, but with the price of amplifying the existent regional disparities. One way of dampening this negative effect over Romania is to launch an innovation and knowledge-promoting policy, by developing regional innovation systems.*

Keywords: new economic geography; regional policy; agglomeration economies; agglomeration externalities; regional innovation system.

JEL Codes: R10, R12, R58.

REL Codes: 16D, 16H.

1. Introduction

Romania's development is characterized by disparities at the level of its eight regions, caused by an unequal distribution of natural resources and human capital, by economic, social, political and demographic inequalities, but also by the manner in which all these interact, against the backdrop of these regions' historical evolution.

Reducing economic disparities is one of the most complex and difficult tasks of regional policy. Allocation of structural funds for development has failed so far to solve this problem. This means that the attraction and use of structural funds is a necessary but not sufficient condition for economic development in peripheral regions. The existence of a core-periphery structure between the regions of some countries may lead to a distortion of the effects of cohesion policy, in that the central agglomeration will generate a higher national growth rate, but with the price of amplifying the existent regional disparities. One way of dampening this negative effect over Romania is to allocate structural funds in an area capable of triggering regional development.

The first chapters are devoted to the concept of the new economic geography (NEG), analysing its evolution from a theoretical point of view, as well as its conceptual and instrumental framework. NEG must give us explanations as to why businesses and individuals choose to locate in one place rather than another. The existence of certain factors, such as a pool of skilled labour, specialised suppliers, knowledge spillovers (Marshall's trinity of agglomeration sources), the opportunities generated by existing economic activities or a wide commercial market, entrepreneurial characteristics or cultural affiliation of individuals, all contribute to the decision of location.

Because geography is a crucial factor in development, it certainly generates strong political repercussions, worthy of consideration, which we try to analyse in the final study. By this we want to answer the purpose of this paper: to render the implications of NEG over Romania's regional policy, using logical analysis and graphical modelling research.

2. The evolution of theoretical approaches regarding NEG

A major stream in spatial economic literature was created due to the papers of Paul Krugman, who, since 1990, has turned to the study of economic geography and particularly location issues, his contribution to this field representing the cornerstone of the New Economic Geography (NEG). His theory generated a mainstream in economics of agglomeration, which has developed exponentially in the 1990s, culminating in the work of Fujita,

Krugman and Venables, “The Spatial Economy: Cities, Regions and International Trade”, published in 1999. Subsequently, the literature dedicated to this domain was enriched by the contributions made by Baldwin, Forslid, Martin, Ottaviano and Robert-Nicoud (2003), Fujita and Thisse (2003), but also by other researchers who sought to respond to pragmatic aspects in relation with the contemporary economy, such as globalization, integration, the German reunification, urban agglomeration, trade policy making, etc.

Recent research (Behrens & Robert-Nicoud, 2011) point out that it is unlikely that the progress made within the “straitjacket” of Krugman's original framework will generate new insights in this sector. There are, however, great opportunities to go outside the established framework, to expand NEG approaches in ways that have received little attention so far. Heterogeneity, cities, transportation, public policies are elements that NEG must and can use to make progress.

The future of NEG is foreseeable, as we mentioned in a previous paper (Clipa et al., 2011), by *extending the theoretical framework, developing empirical research and analysing social and political implications*. As a corollary of these three directions, Fujita and Krugman (2004) consider that we need to *develop theoretical quantitative models* that will allow us to perform real simulation exercises. In some economic fields (public finance and international trade) such models play an important role as analytical tools. These models would constitute a major step in considering the theoretical economic geography as a real predictive discipline, capable of evaluating the impact of hypothetical shocks on the spatial structure of economy.

Related to the theoretical developments, if for two decades NEG focused on the macro-heterogeneity of locations, showing how this can be generated endogenously by the decisions taken at micro-economic level by individuals and identical companies, the specialists (Ottaviano, 2011) show that the future research should analyse more deeply the *micro-heterogeneity* of individuals and companies, throwing a light upon how interactions between the two levels of heterogeneity affect the existence and intensity of agglomeration economies.

The transition to the next step – empirical research – can be done successfully only after the inclusion within the NEG models of all *centripetal forces* (linkages, markets, knowledge spillovers) and *centrifugal ones* (immobile factors, land rent/commuting, congestion), as well as after the analysis of how the predictions of these models depend on the relative importance of these forces. Only after doing such an exploration we will be able to interpret the results of empirical research and analyse their implications for social and economic policy. Although it is difficult to move from theoretical, analytical models to empirical ones, destined to assess public policy, the goal should remain the following: developing the normative basis of the new economic geography.

3. The conceptual and instrumental framework of NEG

The New Economic Geography is viewed, on one hand, as a synthesis of the polarisation theory, and, on the other hand, as a neoclassical theory of location, adopting theoretical concepts from the first and using a formalised set of instruments from the second. Neoclassical location theory is based on the inherent tendency of the economic market system towards a spatial equilibrium. If the conditions of a reasonable framework are recorded by the economic policy, regions converge. Instead, polarisation theory involves a process of strengthening the concentration and spatial imbalances. While according to the neoclassical theory, any deviation from equilibrium triggers contrary forces that restore the balance of the system, the theory of polarisation is a cumulative circular process based on feedback connections that increasingly alter the system's balance. These latter aspects are plausible within the theory of polarisation, but will suffer from an inadequate formalisation with reference to the neoclassical theory. In the neoclassical theory, self retained and empirically testable models are formalised, while in the polarisation theory there are mostly plausible arguments or vague formulations. This deficiency is removed by the new economic geography.

Key terms

The major theoretical contributions have enabled NEG researchers, as Fujita and Krugman demonstrate (2004), to operate with several key-terms: the general equilibrium model of a spatial economy, which is different from the approach derived from the traditional theory of location and economic geography; increasing returns or indivisibilities of the individual producer, which prevent the economy to degenerate into a “backyard capitalism” (in which every household produces for personal consumption); imperfect competition, due to increasing returns; transport costs, which make location matter; changing the location of production factors and consumers is a prerequisite for agglomeration.

The causes of agglomeration; two agglomeration forces and a dispersion one

A major concern of the new economic geography models was and is about achieving the equilibrium in the short and long term. Besides the equilibrium of all markets and of some additional conditions depending on the model [for example, the core-periphery model with vertical linkages (Krugman, Veanable, 1995), the number of active companies found in the North and South

is exogenous in the short-term and endogenous in the long-term], we define the equilibrium as a result of two forces of *agglomeration* and a *dispersion* one.

Agglomeration occurs when spatial concentration of one or more economic activities increases the size of the market and thus determines a new spatial concentration of industries, while dispersion favours the dissipation of economic activities within a given economic space. Agglomeration, which means concentration, and dispersion, which means anti-concentration, operate simultaneously, affecting the geographical distribution of economic activities.

Agglomeration size is dictated by market demand, on one hand, which in its turn is determined by market size and purchasing power of consumers, and, on the other hand, by the efficiency of production factors, which is reflected in the total average cost of the product. The level of demand, which is market-size dependent, provides incentives for companies or industries that want to reduce their transaction costs by exploiting their proximity to the market, suppliers and economies of scale generated by market size. Once they enter a large market, these companies will stimulate activity in this area, by supplying themselves from the locals, by hiring the local labour pool, aspects that will further reflect in revenue growth, aggregate demand and hence in the concentration in that location.

Opposite to the concentration one, the dispersion force favours the geographical spread of economic activities, and derives from the intensity of local competition. For example, when a company migrates from South to North, it increases competition and, therefore, requires companies to migrate from North to South. This force is present in all NEG models. Besides this, some models operate with other dispersion factors, such as land prices and commuting.

The core-periphery model

The core-periphery model introduced by Krugman (1991) provides the framework for the new economic geography, framework that illustrates how the interaction of increasing returns in relation to the company, transport and mobility of factors may cause spatial economic structure and change.

In the model there are two regions (central and peripheral), two production sectors (agricultural and industrial) and two types of work factors (skilled workers, industrial and agricultural workers); some authors called it “model 2 x 2 x 2 core-periphery” (Fujita, Krugman, 2004). Industry produces a variety of horizontally differentiated goods, each variety is produced by an individual company benefiting from economies of scale, using labourers as the only input. Workers enjoy full mobility between regions, whereas farmers are immobile, equally distributed between the two regions. Agricultural goods are

sold free of charge between the two regions, while the interregional exchange of industrial goods implies positive transportation charges, following the “iceberg” type.

The model operates with three fundamental parameters: the costs of industrial goods, the appreciation of diversity in consumption and commercial or transport costs between different regions. Conducting simulations with different commercial costs, important alterations of the model in terms of equilibrium and system stability can be observed.

Circular causality

In the core-periphery model, farmers' immobility is a *centrifugal force*, in that they consume both types of products. *Centripetal force* is more complex, involving a *circular causality*. Firstly, if a large number of firms locate in a region, a large number of varieties of goods start being produced here. Then, workers, who are consumers in the region as well, gain increased access to a greater number of varieties in comparison to those in the other region. Thus, workers in the first region achieve a higher income, causing other workers to migrate to the site. Secondly, the increase in the number of workers (consumers) creates a bigger market than in the other region. This is explained by the fact that, due to economies of scale, there is a tendency of concentration of each variety in a single region. In addition, it is more profitable to produce goods in the region having greater commercial markets and to ship the products to the other region. This determines the availability of more differentiated goods in the first region. In conclusion, the centripetal force is generated by a circular causality of *forward linkages*, driven by the desire of workers to be in the proximity of consumer goods producers, and of *backward linkages*, explained by the producers' temptation to concentrate in areas where there is a larger market (Fujita, Krugman, 2004).

Symmetrical equilibrium

If the forward and backward linkages are strong enough to defeat the centrifugal force generated by immobile farmers, the economy will reach a core-periphery structure in which all industrial producers are concentrated in one region. In other words, the low values of free trade indicate a symmetric equilibrium, while a higher level of free trade causes agglomeration to become stronger and, consequently, the model shows a total cluster. Krugman (1991) was able to establish the conditions under which the core-periphery structure becomes unstable locally and defined that level with the term “sustain point”. The point where local stability interrupts symmetry was defined as “breakpoint” and has been studied closely by Puga (1999).

Contrary to the H-O-S model, in which factors have an incentive to migrate to a place that shows a tendency to equalize relative factors, the NEG models are endogenously asymmetric: a continued decrease in trade costs between two initially symmetric regions determines a regional asymmetry. This “bang-bang” characteristic was defined by Ottaviano and Thisse (2004). The fact that multiple stable equilibria exist in a certain framework of parameters determines the model to be dependent. Conversely, a temporary shock that alters the equilibrium model would not require, therefore, a return to the original balance. This property of historical aspects is of great importance in shaping the political implications of NEG. All previous results are still under the assumption that regions are intrinsically symmetric. In fact, regions can rarely be assumed to have exactly the same endowments and trade barriers. This is also underlined by the fact that the study of complex systems focuses nowadays on imbalances, on critical aspects, on potential bifurcations, rather than on equilibria.

4. Agglomeration economies and location

In the context of economic geography, agglomeration refers to the spatial concentration of entities or to the creation process of an agglomerated structure. There are two main causes of the formation of economic clusters. The first is related to the permanent endowments of each region, such as climate, geographical location, proximity to transportation routes, etc., while the second refers to factors that influence the decision to locate in a particular location. Regarding the latter case, firms and individuals tend to locate where they can find a labour pool, specialised suppliers and knowledge spillovers (Marshall's trinity regarding the sources of agglomerations), as well as opportunities generated by existing economic activities or by a large market, entrepreneurial characteristics or cultural affiliation of individuals specific to a certain location.

Contrary to the neoclassical theory of economic growth, which stipulates that economies characterized by similar structural features tend to experience a convergence of incomes, the new economic geography (Krugman, 1991) provides some justification for the lack of convergence. One of them refers to the neoclassical hypothesis of constant returns of scale, which explains why a region twice as endowed with factors of production will produce twice as much. In fact, producers register fixed costs and increasing returns to scale, which prompts them to locate close to large retail markets, in order to benefit from economies of scale and low transportation costs. Regarding the labour market, workers are attracted to locations with high productivity, where salaries are higher, leading to increasing employment and productivity.

This trend of concentration of economic activities in already crowded locations (*core*), based on centripetal forces (bonds, retail market, diffusion of knowledge), is to be balanced with the contrary tendency, based on centrifugal forces (immobile factors, rents/commuting, congestion), which determine a relocation of economic activities towards *the periphery*. The agglomeration of activities in a region is a prerequisite for economic growth in that area, attracting production factors and further increasing congestion. The explanation stems from the fact that if congestion translates into increased productivity, then it can lead to higher wages, incomes and living standards. The immediate consequence of the individuals' behaviour is their desire to move in order to take advantage of higher living standards in locations with higher productivity. By default, there is an increasing volume of economic activities in areas with high productivity and this, in turn, through economies of agglomeration, leads to a further increase in productivity, causing the population density to increase through migration, as well. Thus, within a country, the regional differences in productivity and economic development continue to deepen, because of people who choose to relocate in high productivity areas. Fortunately, the migration process of work force and economic activities cannot last forever, because factors such as increasing rents or housing prices will reduce congestion.

Additionally, location decisions produce external effects for other categories of individuals, effects which can be negative or positive. For example, when we decide to live and work in locations with high productivity, we contribute to the increase of congestion and emissions (pollution) in that area, an effect negatively perceived by other inhabitants, or we can help existing companies or individuals benefit from our R & D results, without additional charges. These *agglomeration externalities* should be taken into account by political factors when developing a spatial policy.

But for externalities to become a clear justification for direct intervention through a spatial policy, by redistributing activities from the areas with high productivity towards the ones with low productivity, we need to know how these positive and negative externalities balance themselves in practice. Unfortunately, evidence regarding the prevalence of positive or negative externalities are far from conclusive (MIER, p. 31). In addition, the location decisions of individuals and economic activities are based on *net benefits*, obtained by subtracting the compensation costs from the productivity value. This is because high productivity in a particular location tends to be compensated by higher costs of living and production, and the differences in productivity prove to be an insufficient argument for a location change.

5. The implications of NEG on Romania's regional policy

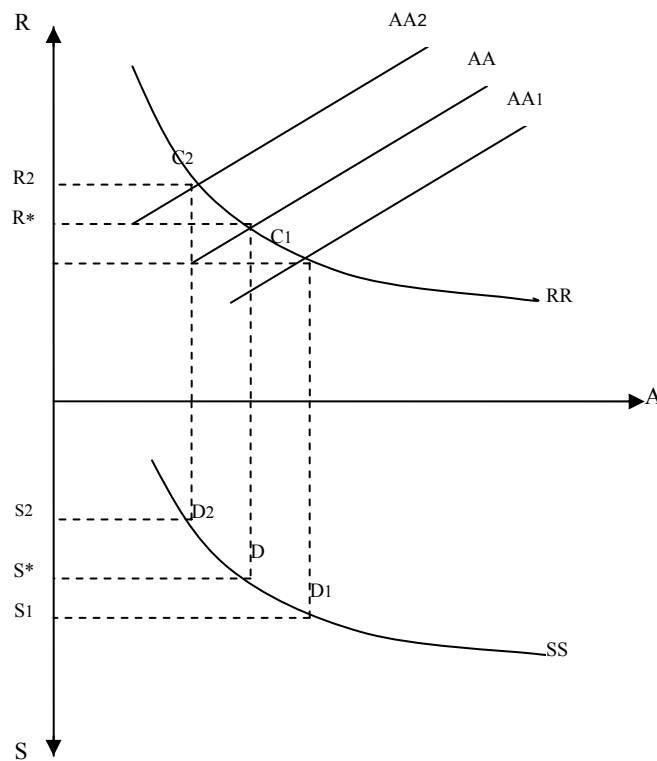
An extremely useful analysis in developing a spatial policy in Romania is the macroeconomic model that takes into account the interdependencies of regional disparities, agglomerations and economic growth (Pelkmans, 2001, Socol, Socol, 2006, p. 65), model based on theories of endogenous growth and economic geography.

The model functions based on the following assumptions: 1. *two regions*, core (C) and periphery (P); 2. *agglomeration index* (A) is an index which measures the concentration of activities, calculated as the ratio between the number of companies in C and the total number of businesses; 3. *inequality index* (R), measured as the ratio between the income per capita from C and the one from P; 4. *geographical effect (centripetal force)* (line AA in Figure 1), the relationship between the degree of agglomeration (A) and the level of regional disparities of income (R) is positive, because the greater regional inequalities are, the higher are companies' interest in locating in C; 5. *growth relationship* (SS curve) expressing the fact that the agglomeration of activities generates technological externalities, which reduce the cost of innovation and lead to a higher national economic growth rate (s); 6. *competition effect (centrifugal force)* (RR curve), the presence of a strong competition leading to reduced profits in C, thus causing a negative relationship between R and A.

Using Figure 1 we are able to analyse the impact of transaction costs on agglomerations. The initial equilibrium is represented by points C and D. If transaction costs between regions are reduced, the agglomeration will increase (line AA shifts in AA1), resulting in a higher growth rate (s1) and lower income inequalities (R1), C1 and D1 becoming the new equilibrium reference points. On the other hand, if transaction costs within the poor region are reduced, then the agglomeration in the core will be reduced as well (line AA shifts in AA2). Companies shifting towards P reduce the innovation rate and increase revenues in C, emphasizing inter-regional inequalities. The equilibrium is restored between reference points C2 and D2. In terms of regional policy measures, the analysis leads us to two conclusions.

Firstly, infrastructure improvement is a policy measure with direct effects on growth and economic and social cohesion. At intra-regional level, public interventions favour regional convergence, resulting in a lower economic growth rate. At inter-regional level, the economic growth rate is higher, due to the conditions generated by the concentration of activities.

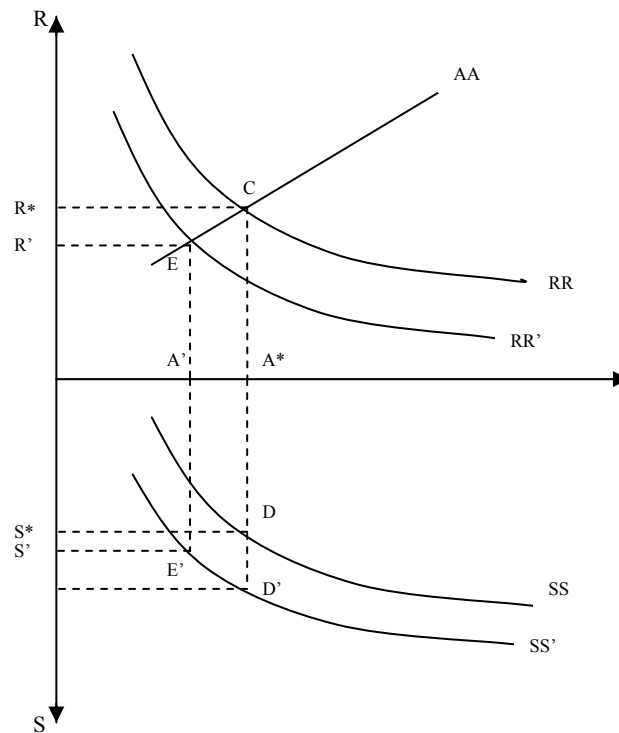
Secondly, regional policy may cover the *granting of funds for industrial conversion in peripheral regions*. This leads to a diminished agglomeration in the more prosperous region (C), due to a lower desire to leave the periphery, but the growth rate will be scaled down, because the agglomeration index is reduced and income inequalities between C and P are increased. However, the relocation of economic activities in peripheral areas rarely leads to economic growth because, on the one hand, the economic activities conducted in the periphery do not involve research and development, but are more attracted by a cheap work force, and, on the other hand, the number of these activities is not sufficient enough to generate an agglomeration capable of triggering economic growth in the periphery.



Source: Socol, Socol, 2006, p. 65.

Figure 1. The impact of transaction costs on agglomerations

Besides these two measures of regional policy, decision makers can intervene *to promote innovation*, by providing incentives for research and development or by investing in educational infrastructure. Looking at Figure 2, we can observe that a reduction in innovation costs, by providing subsidies and public investments in research, development and education, determines a higher growth rate of agglomeration, which translates into a displacement of the growth relationship curve from SS to SS' . Increasing innovation leads to a reduction of profits in region C, which, in turn, leads to a reduction of income inequalities between C and P, i.e. the shifting of the RR curve towards RR' . Agglomeration will tend to decrease, so the new equilibrium reference points will be E and E'.



Source: Socol, Socol, 2006, p. 65.

Figure 2. The impact of innovation on agglomerations

The importance of innovation, research and knowledge to economic development is undoubtedly recognized. The theories that refer to regions as nodes of knowledge, based on Schumpeter's theory and evolutionary economy, place innovation and the interactive learning process in the centre of economic development. All the factors that encourage innovation in a region, such as partners, competition, human capital, regional knowledge infrastructure, institutions, regulations, legislation, form the regional innovation system. The existence of regional competitive industrial clusters shows that the regional innovation system is viable and gives long-term competitive advantages to the economic actors.

6. Conclusions

The analysis of the new economic geography theories led us to conclude that, although it is difficult to move from theoretical, analytical models to empirical ones, destined to assess public policies, the goal should remain the following: developing the normative basis of the new economic geography. We believe that the new economic geography and agglomeration economies should constitute major concerns for policy makers in our country, as it is more efficient to look at these tools as a way of increasing overall productivity, output, income and welfare (efficiency) than as a mechanism designed to cope with economic inequality.

Romania's regional policy should be based on analyses that include all centripetal (bonds, market, diffusion of knowledge) and centrifugal forces (immobile factors, rents/commuting, congestion) of the new economic geography models. The economic activities and individuals' decision to locate depends on the existence of a specialised work-force, suppliers of intermediate goods, the degree of diffusion of knowledge and technology, the opportunities generated by existing economic activities or by retail markets, the entrepreneurial characteristics and cultural affiliation of individuals. In addition to this, agglomeration externalities and net benefits obtained by localisation should be taken into account by policy makers when developing a regional policy.

The analysis of the macroeconomic model based on the interdependencies between regional disparities, agglomeration and economic growth shows that in the case of core-periphery dual regional structured economies, the cohesion policy effects can be avoided, in that the central agglomeration will generate a higher growth rate at national level, but with the price of amplifying the existent regional disparities. One way of dampening this negative effect over Romania is

investing in those areas which could trigger regional development. We are talking about policies designed to promote innovation and knowledge, by providing incentives for research and development or by investing in educational infrastructure. That is why studies identifying areas of interest for the development of regional clusters and measures necessary for their support are and must remain one of the objectives of most regional development strategies.

Aknowledgements

This work was supported by the project “Post-Doctoral Studies in Economics: training program for elite researchers – SPODE”, co-funded from the European Social Fund through the Development of Human Resources Operational Programme 2007-2013, contract no. POSDRU/89/1.5/S/61755.

Some ideas of this paper was presented at The International Conference “Economic Thought and Performance”, Timișoara 27-28 April 2012.

References

- Baldwin, R., Forslid, R., Martin, P., Ottaviano, G., Robert-Nicoud, F. (2003). “Economic Geography and Public Policy”, Princeton: Princeton University Press
- Behrens, K., Robert-Nicoud, F. (2011). “Tempora mutantur: in search of a new testament for NEG”, *Journal of Economic Geography*, 11(2), pp. 215-230
- Clipa, R.I., Pohoata, I., Clipa, F. (2011). “The New Economic Geography: After Two Golden Decades”, *Annals of DAAAM for 2011 & Proceedings of the 22nd International DAAAM Symposium*, pp. 1391-1392, Editor B[ranko] Katalinic, Published by DAAAM International, Vienna, Austria 2011
- Fujita, M., Krugman, P., Venables, A. (1999). *The Spatial Economy: Cities, Regions, and International Trade*, MA: MIT Press
- Fujita, M., Thisse, J.F. (2003). *Economie des Villes et de la Localisation*, Bruxelles: Editions De Boeck
- Fujita, M., Krugman, P. (2004). “The new economic geography: Past, present and the future”, *Papers in Regional Science*, 83(1), pp. 139-164
- Krugman, P. (1991). “Increasing returns and economic geography”, *Journal of Political Economy*, 99(3), pp. 483-499
- Krugman, P., Veanable, A. (1995). “Globalization and inequality of nations”, *Quartely Journal of Economics*, 110(4), pp. 857-880
- Ottaviano, G.I.P. (2011). “‘New’ new economic geography: firm heterogeneity and agglomeration economies”, *Journal of Economic Geography*, 11(2), pp. 231-240
- Ottaviano, G., Thisse, J.F. (2004). *Agglomeration and economic geography*, in: Henderson, J.V. & Thisse, J.F. (ed.), *Handbook of Regional and Urban Economics*, edition 1, volume 4, pp. 2563-2608, Elsevier

- Pelkmans, J. (2001), *European Integration Methods and Economy Analysis*, Pearson Education Limited, Third Edition, ISBN: 978-0-273-69449-6
- Puga, D. (1999). "The rise and fall of regional inequalities", *European Economic Review*, 43(2), pp. 303-334
- Socol, C., Socol, A. (2006), "The European model: growth, convergence and cohesion", *Theoretical and Applied Economics*, 13 (8), pp. 61-66
- *** *The Case for Agglomeration Economies*, Manchester Independent Economic Review (MIER)

Recent evidence on concentration and competition in Turkish banking sector

Fatih MACIT

Suleyman Sah University, Istambul, Turkey
fmacit@ssu.edu.tr

Abstract. *In this paper I investigate the concentration and competition in the Turkish banking sector by looking at the recent empirical evidence that covers the period from 2005 to 2010. I look at concentration indicators for different balance sheet items including total assets, loans, and deposits. I find that the degree of concentration did not show a big change since 2005; in fact for some balance sheet items it decreased. Besides that, using Panzar and Rosse's methodology, I look at the competition in Turkish banking sector during this period. I find that the Turkish banking sector is characterized by monopolistic competition and the degree of competition has decreased over the relevant period.*

Keywords: competition; concentration; banking industry.

JEL Codes: G21, L13.

REL Code: 11C.

1. Introduction

Banks are assumed to play an important role in capital accumulation as they channelize the savings of the economy to productive investment projects. However, this was not the case for Turkish banking sector during 1990s due to the unstable macroeconomic environment. As can be seen in Figure 1, due to the high levels of budget deficits public sector borrowing requirement was very high and the main business of the banking sector was to finance these high budget deficits.

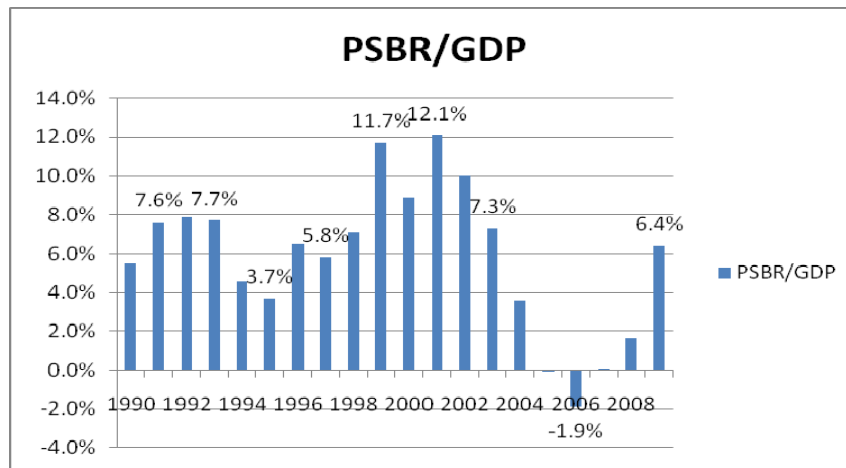


Figure 1. Public sector borrowing requirement (PSBR) as a percentage of GDP

After the 2001 economic crisis macroeconomic environment changed significantly and this created important changes in the banking sector. The fiscal discipline resulted in large declines in budget deficits and in turn public sector borrowing requirement was significantly reduced. As a result, the banking sector has turned to its fundamental business that is providing credit to the economy. Figure 2 shows that the loans were only 24% of total assets in 2001 whereas by the end of 2010 more that 50% of assets is composed of loans. Loan-deposit ratio was as low as 34% in 2001 and by the end of 2010 the loan-deposit ratio has reached to 89%.

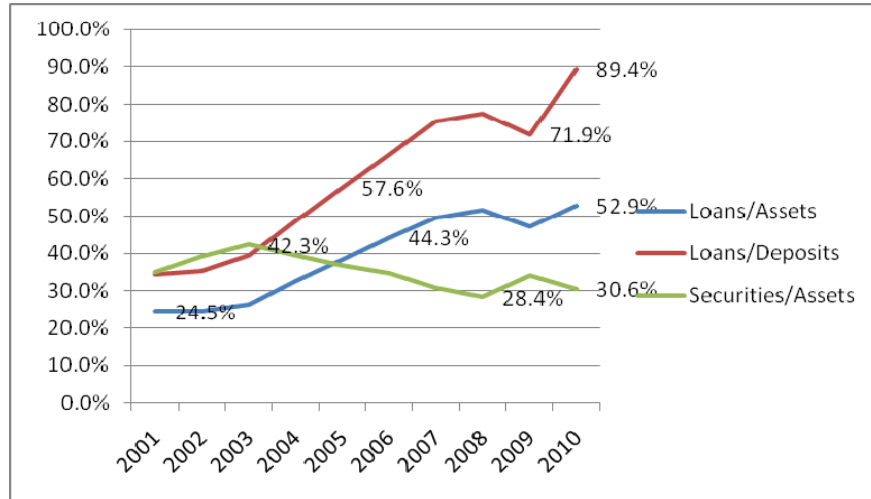


Figure 2. *Some selected balance sheet ratios*

In this paper I investigate the concentration and competition in Turkish banking sector by looking at the recent empirical evidence. In particular I look at the period between 2005 and 2010. Abbasoglu, Aysan and Gunes (2007) investigated the concentration and competition in Turkish banking sector for the years between 2001 and 2005 and find that during this period concentration in terms of total assets has increased and the degree of competition has decreased in Turkish banking sector. However, the period between 2001 and 2005 is characterized by important mergers and acquisitions in Turkish banking sector and therefore the number of banks has declined significantly. For instance, by 2001 the number of commercial banks in the system was 46, whereas by 2005 the number has declined to 34. Under such a consolidation in the banking sector it is quite normal to see an increase in concentration ratios and a decline in the degree of competition. In this regard it is more interesting to investigate the recent period in terms of concentration and competition in Turkish banking sector as the number of banks did not show a big change during this period. From 2005 to 2010 the number of commercial banks in Turkish banking sector has declined only by two and the total number of commercial banks in the system by the end of 2010 is 32.

There are two competing views in the literature in terms of investigating the relationship between concentration and competition, namely the structure-conduct-performance (SCP) and the efficiency hypothesis (EH). The former one developed by Bain (1951) claims that in a highly concentrated market the degree of competition will be lower and firms will enjoy higher profits. The

latter hypothesis developed by Demsetz (1973) and Peltzman (1977) argues that efficient firms will be able to increase their market share as they are able to generate higher profits and therefore the degree of concentration will naturally increase. According to the efficiency hypothesis there is no relationship between concentration and competition. There are different findings in the banking literature in terms of supporting either hypothesis. Bikker and Groeneveld (2000) investigate the European banking sector and find that there is a negative relationship between the level of concentration and the degree of competition. On the other hand, Jansen and Haan (2003) argue that competition and concentration are not related.

In terms of concentration I explore three important balance sheet items in the banking sector, namely total assets, loans, and deposits. I find that the largest concentration appears to be in total deposits, whereas the smallest concentration appears to be in total loans. As far as the competition is concerned I calculate H-statistics using the Panzar and Rosse's methodology. I find that Turkish banking sector during the particular time period is characterized by monopolistic competition and the degree of competition has decreased over the relevant period.

Panzar and Rosse methodology has been commonly used in analyzing competition in banking sector especially for European banking industry. Lloyd-Williams, Molyneux, and Thornton (1994) investigate the level of competition in a sample of French, German, Italian, Spanish, and UK banks for the period 1986-1989 and find that the banking industry in these countries is characterized by monopolistic competition. Bikker and Haaf (2002) investigate the banking industry for 23 OECD countries and find that the banking sector has a monopolistically competitive market structure in these countries. Claessens and Laeven (2004) carry out banking sector competition analysis for a very huge dataset including fifty developed and developing countries covering the period from 1994 to 2001. They find that monopolistic competition is the dominant market structure for banking industry. Staikouras et al. (2006) investigate the market structure in the EU for 25 member states and find that the banking industry is characterized by monopolistic competition and new member countries have a more competitive banking sector.

The rest of the paper is organized as follows: Section II gives a brief description of the data and presents the results for concentration indicators. Section III provides the estimation results regarding the degree of competition. Section IV concludes.

2. Data

The data uses the unconsolidated balance sheets of commercial banks that operated between the years 2005 and 2010. The data is obtained from Banks Association of Turkey database. Table 1 shows the composition of banks during this period. The table shows that the total number of commercial banks did not show a big change during this particular time interval. The number of non-depository institutions remained the same during this period and the number of commercial banks has declined from 34 to 32. An important fact that is seen in the table is that the number of foreign banks has significantly increased during this period as some privately owned banks are acquired by foreign banks.

Table 1

Composition of banks between 2005 and 2010						
	2005	2006	2007	2008	2009	2010
Sector Total	47	46	46	45	45	45
Commercial	34	33	33	32	32	32
State-owned	3	3	3	3	3	3
Privately-owned	17	14	11	11	11	11
Foreign	13	15	18	17	17	17
Under SDIF	1	1	1	1	1	1
Non-depository	13	13	13	13	13	13
State-owned	3	3	3	3	3	3
Privately-owned	9	8	8	8	8	7
Foreign	1	2	2	2	2	3

2.1. Concentration indicators

In order to measure the degree of concentration I first look at k-bank concentration ratios for different balance sheet items namely total assets, loans, and deposits. For this purpose I calculate C-3 and C-5 ratios which measure the market share of largest 3 and 5 banks respectively. Figure 3 shows the results for C-3 ratios and Figure 4 shows the results for C-5 ratios. For both ratios it is seen that the biggest concentration appears to be in total deposits and the smallest concentration appears to be in total loans. For all three balance sheet items the market share of the largest three firms has slightly decreased from 2005 to 2010 whereas the market share of the largest five firms has slightly increased for loans and deposits and remained constant for assets.

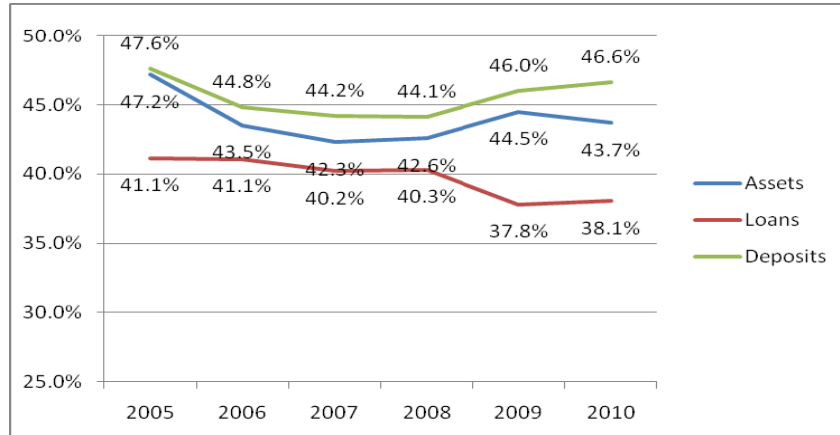


Figure 3. Market share of the largest three banks in terms of assets, loans, and deposits

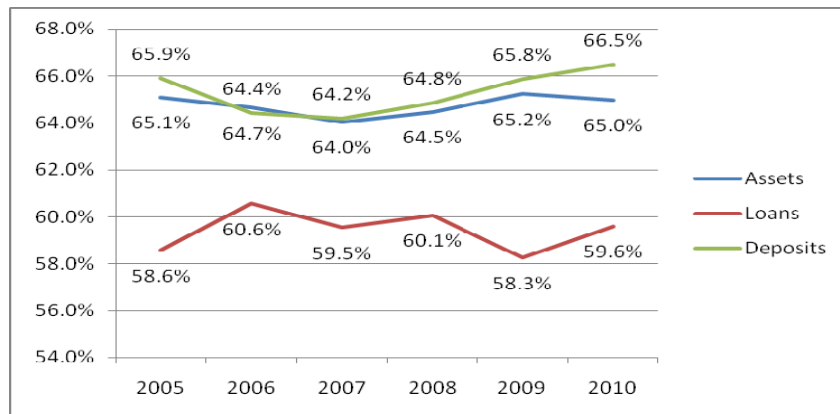


Figure 4. Market share of the largest five banks in terms of assets, loans, and deposits

Concentration ratios use information only for a limited number of banks. In order to be able to use information for other banks I also calculate the Herfindahl-Hirschman Index (HHI). Figure 5 shows the results for HHI values for assets, loans, and deposits. In the literature it is generally accepted that HHI values below 0.10 indicate a non-concentrated market, values between 0.10 and 0.18 indicate a moderately concentrated market, and values higher than 0.18 imply a highly concentrated market. As in concentration ratios the highest HHI value appears to be in total deposits and the smallest index value is seen in total loans. Both for total assets and total deposits HHI takes a value slightly higher than 0.10 indicating a moderately concentrated market. However, for total loans the index takes a value less than 0.10 for all years between 2005 and 2010 indicating a non-concentrated market. In terms of changes in the value of the

indices in the particular time period one cannot see a remarkable change in HHI values for the years between 2005 and 2010.

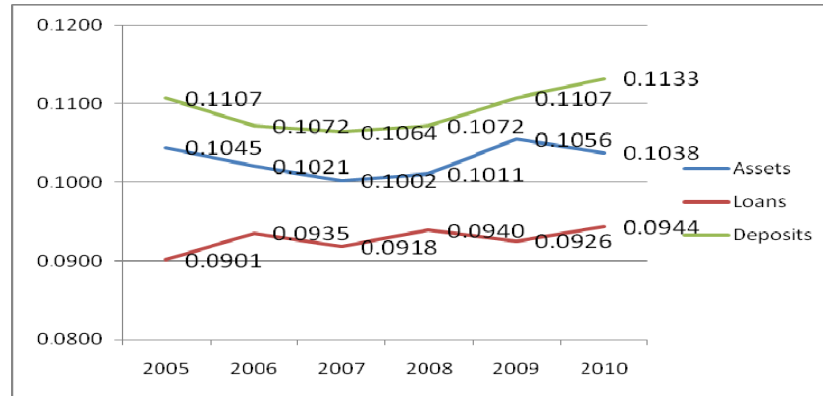


Figure 5. HHI values for assets, loans, and deposits

3. Results for competition

In order to measure the level of competition I use the non-structural methodology developed by Panzar and Rosse (1987). The method involves the calculation of an H-statistics which is the sum of factor price elasticities with respect to interest revenue. Gutierrez de Rozas (2007) uses factor price elasticities with respect to total revenue when calculating the H-statistics for Spanish banking sector. As an alternative specification I also look at what value the H-statistics takes when I use total revenue as the dependent variable. In order to calculate the H-statistics the following reduced form equation is estimated:

$$\ln(IRT_{it}) = \alpha_t + \beta_1 \ln(INTE_{it}) + \beta_2 \ln(PPE_{it}) + \beta_3 \ln(PCE_{it}) + \beta_4 \ln(ETA_{it}) + \beta_5 \ln(NLTA_{it}) + \beta_6 \ln(RA_{it}) + u_{it}$$

The dependent variable, IRTA, is the ratio of interest revenue to total assets. INTE stands for interest expenses to total funds represents the price of capital. PPE is calculated as the ratio of personnel expenses to the number of employees and is an indicator for the price of labor. PCE is the price of capital and is calculated as the other operations and administrative expenses to total assets. In order to capture bank specific effects I include three other explanatory variables. ETA is the ratio of equity to total assets, NLTA is the ratio of net loans to total assets, and RA represents real assets. The H-statistics which is the

sum of factor price elasticities is calculated as $\beta_1 + \beta_2 + \beta_3$. Panzar and Rosse methodology implies that for the H-statistics a value less than or equal to zero represents a monopoly. Under monopolistic competition the H-statistics is between zero and one and under perfect competition it becomes one.

Table 2 shows the estimation results for the whole period and also for subperiods. The data used involves 29 commercial banks as for two banks namely Adabank which is under SDIF and JP Morgan net loans to total assets ratio is zero which makes it impossible for them to calculate the log of this variable. Due to the considerations of heteroskedasticity in the data following Gutierrez de Rozas (2007) I use pooled feasible generalized least squares for the estimation of regression equation. The results reveal that the market structure in Turkish banking sector is characterized by monopolistic competition between 2005 and 2010. For the whole period the H-statistics takes a value of 0.388 and the related p-values reveal that the null hypotheses of H-statistics equal to zero and equal to one are both rejected. When one looks at the subperiods one can see that in the first subperiod that covers the years between 2005 and 2007 Turkish banking sector has a monopolistically competitive market structure. However, the H-statistics shows a decline in the second subperiod covering the years between 2008 and 2010 indicating a deterioration in the level of competition.

Table 2

**Pooled generalized least squares estimation results,
interest revenue as a dependent variable**

Coefficient	2005-2007	2008-2010	2005-2010
ln(INTE)	0.478***	0.335***	0.392***
ln(PPE)	-0.073*	-0.585***	-0.094**
ln(PCE)	0.082**	0.204***	0.090***
ln(ETA)	0.084**	0.121***	0.141***
ln(NLTA)	-0.003	-0.074*	0.012
ln(RA)	0.050***	-0.019**	0.031***
const.	-0.767	2.315***	-0.501**
H-statistics	0.487	-0.046	0.388
H ₀ : H=0	0.000	0.566	0.000
H ₀ : H=1	0.000	0.000	0.000

Notes: In terms of the statistical significance of the coefficient estimates * denotes the significance at 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. The values reported for hypothesis tests are the relevant p-values.

As I mentioned before some authors use total revenue instead of interest revenue as a dependent variable in estimating H-statistics. For Turkish banking sector the non-interest revenue of commercial banks including fees and commissions is about 13% of their total revenues. In this regard it is worthwhile

to look at the level of competition by using total revenue as a dependent variable. Table 3 shows the results. As can be seen using total revenue instead of interest revenue does not make a big difference and the market is still characterized by monopolistic competition. The H-statistics for the whole period is 0.386 and the null hypotheses of H-statistics equal to zero and equal to one are both rejected. Again in the first subperiod the sector has a monopolistically competitive market structure whereas a decline in the level of competition is seen in the second subperiod covering the years between 2008 and 2010.

Table 3

**Pooled generalized least squares estimation results,
total revenue as a dependent variable**

Coefficient	2005-2007	2008-2010	2005-2010
ln(INTE)	0.361***	0.286***	0.342***
ln(PPE)	-0.032	-0.464***	-0.074*
ln(PCE)	0.112***	0.246***	0.118***
ln(ETA)	0.127***	0.090**	0.177***
ln(NLTA)	0.015	-0.082**	0.020
ln(RA)	0.056***	-0.003	0.038***
const.	-0.935***	1.731***	-0.469**
H-statistics	0.441	0.068	0.386
H ₀ : H=0	0.000	0.435	0.000
H ₀ : H=1	0.000	0.000	0.000

Notes: In terms of the statistical significance of the coefficient estimates * denotes the significance at 10% level, ** denotes significance at the 5% level, and *** denotes significance at the 1% level. The values reported for hypothesis tests are the relevant p-values.

4. Conclusions

In this paper I investigate the concentration and competition in Turkish banking sector by looking at the recent period covering the years between 2005 and 2010. In another paper Abbasoglu, Aysan, and Gunes (2007) look at the concentration and competition in Turkish banking sector between 2001 and 2005 and find that the degree of concentration has increased and the level of competition has decreased in those years. However, during that period Turkish banking sector was subject to a considerable consolidation and it is normal to see such a change in market structure. In the recent period that is analyzed in this paper one cannot see an important change in the number of commercial banks in the sector. Therefore, it is worthwhile investigating how the concentration and competition evolved in the market during this period.

In terms of concentration I look at total assets, loans, and deposits and find that there has not been an important change in concentration indicators during this particular period. It is seen that the largest concentration is observed in deposits and the smallest concentration is realized in total loans. In terms of competition I run two different regressions with the first one having interest revenue as the dependent variable and the second one having total revenue including fees and commissions as the dependent variable. The results of both regressions reveal that Turkish banking sector is characterized by monopolistic competition for the years between 2005 and 2010. When I divide into two subperiods I find that the level of competition has decreased in this period.

References

- Abbasoglu O.F., Aysan, A.F., Gunes, A. (2007). "Concentration, Competition, Efficiency and Profitability of the Turkish Banking Sector in the Post-Crises Period", *Bogazici University Research Papers*, ISS/EC 2007-16
- Bain, J.S. (1951). "Relation of Profit Rate to Industry Concentration: American Manufacturing 1936-1940", *Quarterly Journal of Economics*, 65(3), pp. 293-324
- Bikker, J.A., Groeneveld, J.M. (2000). "Competition and Concentration in the EU Banking Industry", *Kredit und Kapital*, 33, pp. 62-98
- Bikker, J.A., Haaf, K. (2002), "Competition, Concentration and their Relationship: An Empirical Analysis of the Banking Industry", *Journal of Banking and Finance*, 26, pp. 2191-2214
- Casu, B., Girardone, C. (2006), "Bank Competition, Concentration and Efficiency in the Single European Market", *The Manchester School*, 74(4), pp. 441-468
- Claessens, S., Laeven, L. (2004), "What Drives Bank Competition? Some International Evidence", *Journal of Money, Credit, and Banking*, 36(3), pp. 563-583
- De Bandt, O., Davis, P. (2000), "Competition, Contestability and Market Structure in the European Banking Sectors on the Eve of EMU", *Journal of Banking and Finance*, 24, pp. 1045-1066
- Demsetz, H. (1973). "Industry Structure, Market Rivalry and Public Policy", *Journal of Law Economics*, 16, pp. 1-10
- Gutierrez de Rozas, L. (2007), "Testing for Competition in the Spanish Banking Industry: The Panzar-Rosse Approach Revisited", *Documentos de Trabajo*, No. 726
- Lloyd-Williams, D.M., Molyneux, P., Thornton, J. (1991), "Competitive Conditions in European Banking", *Journal of Banking and Finance*, 18(3), pp. 444-459
- Panzar, J.C., Rosse, J.N. (1987), "Testing for Monopoly Equilibrium", *Journal of Industrial Economics*, 25, pp. 443-456
- Peltzman, S. (1977). "The Gains and Losses from Industrial Concentration", *Journal of Law and Economics*, 20, pp. 229-263
- Staikouras, C. Koutsomanoli-Fillipaki, A. (2006), "Competition and Concentration in the New European Banking Landscape", *European Financial Management*, 12(3), pp. 443-482
- Weill, L. (2004), "On the Relationship Between Competition and Efficiency in the EU Banking Sector", *Kredit und Kapital*, 37(3), pp. 329-352

Solutions against crisis applicable to the oro-dental health system in Romania

Adriana DUȚESCU

Bucharest Academy of Economic Studies
adriana.dutescu@bsm-mba.ro

Oana STĂNILĂ

Bucharest Academy of Economic Studies
gostanila@gmail.com

Daniela SAHLIAN

Bucharest Academy of Economic Studies
daniela.sahlian@gmail.com

Daniela TRĂȘCĂ

Bucharest Academy of Economic Studies
daniela.trasca@gmail.com

Abstract. *The health systems consume a lot of resources. In the last thirty years, there was registered a continuous increase of the necessary resources' level. This increase was mainly due to: the ageing of the population, discovery of more efficient medicines and of more advanced and costly technologies, the increase of the number of persons who benefits by medical assistance.*

Theoretically, the financial supporting could be upgraded by help of a series of measures: restriction of the access to services, reduction of the quality of the services or increase of the private financing weight (which has consequences connected to the limitation of the access to services). None of these is desired from social point of view.

From social perspective, the most indicated modality of upgrading the financial supporting is the efficient increase of the health system. In this situation, the efficiency makes reference to the decrease of costs, maintaining at the same level the quantity and quality, achieved by preventing the overconsumption (which could be connected to oversupply) of medical services and assignment of sufficient resources for the prevention and health maintenance programs with the purpose to reduce some future potential expenses. The performed comparisons between different international experiences based on the resulted/expenses rapport could represent a useful guide referring to the efficiency.

Keywords: health and inequality; efficiency; crisis; quality of life; sustainability.

JEL Codes: I14, D6, H1, I1, Q0.

REL Codes: 11E, 13K.

Introduction

The program of the European Union within the public health domain contains actions which could be complementary to the national policies in the domain concerning the protection of the human health and upgrading of the public health. The main objectives of this European Union program are: the upgrading of the information quality and knowledge for the development of the public health; the increase of the capacity concerning the rapid and coordinated answer to the risk factors for health; promoting the health and preventing the diseases for actions over the factors which determine the health status, by help of actions over all policies and activities.

In this context, at the 53th General Assembly of WHO, there is recommended for the member states to develop national programs, or at an equivalent level, which corresponds to the global strategies oriented to the prevention and control of the major chronic diseases in a general and specific way. In this context, the oro-dental prevention appeared as a necessity given by the special prevalence of the oro-dental affections and by the biological, economic and psycho-social impact caused by their evolution and treatment.

The identification of the optimal allocation of the resources in view of maximizing the health state of the population will be a key instigation of the health system from Romania which will affect both the involved state and the private bodies in the next ten days. The medical research will continue to produce a big number of alternatives in order to detect, prevent and treat different diseases. Taking all this into account, the budgetary constraints will limit the access to these solutions or at least to one of their party.

According to the Convergence Program 2011-2014 from Romania, even if the indicators of the health state progressed, they are still at an improper level as compared to the average of the EU.

The best result of the health national state reform consists of the simultaneous upgrading of: *health state or cares*, by increasing the efficiency and the service range, *medical adequate technology and raising of the medical assistance quality, economic efficiency* (reduced costs, best utilization of the resources, increase of the economic or health benefits for the same level of expenses, increase of the work productivity), *satisfying the major power centres from the system* (health, financial and psychological benefit for the interest groups: communities, medical professional persons, health insurances persons, health managers, politicians). Both Romania and other European states also confronts with the public finances sustainability and, as resulting from the next table, the tendency of the public funds allocated for the health sector is

increasing, being estimated an increase as compared to 2010 year when it was an increase of 0.8 percentage points for the level of 2030 year.

Table 1

The sustainability of public finance on the long term

% from GDP	2007	2010	2020	2030	2040	2050	2060
Total expenditures	33.6	40.7	41.5	43.0	43.5	43.3	42.2
Which: age-related spending							
Pensions	6.7	9.0	10.5	10.8	11.3	11.5	10.8
Health care	3.3	3.4	3.8	4.2	4.4	4.7	4.9
Education	2.8	2.4	2.3	2.2	2.1	2.2	2.3

Source: MFP.

This tendency corroborated with the significant increase of the expenses with the pensions will put more pressure upon the situation of the public finances due to the fact there is imposed the identification of the most efficient methods concerning the allocation of the resources, especially the public one and not only.

The quality of persons' life represents a consequence of the simultaneous actions of more influence factors out of which: health, education, personal actions, government and political environment, social relations, environment conditions, etc. Health represents certainly the most important influence factor of persons' life quality. The crisis of the sovereign with which deals many of the EU member countries continue to impose the adaptation of some difficult austerity measures which certainly will also point out the influence over the health sector. Consequently, there is imposed the identification of some resources allocation optimal measures concerning the diminution of the negative effects which are to be also felt at the level of the medical services.

This research has rather in view to make a research at the macro-economic level by identifying the most efficient methods of costs' calculation due to the fact that, in nowadays context, the main problems result from the character as limited as possible of the resources allocated for each activity sector partly.

The researchers carried-out up to now in the medical services domain lead to the conclusion that there is a clear list of treatments (with the proper therapeutic manoeuvres) which could be applied in (almost) all dental surgeries from Romania.

In the same time, in function of the aggregation principals of the costs, there are many calculation methods of the costs which could be extra polar to the dental surgeries: traditional method; global calculation method; job order costing method; ABC method – Activity-based method.

The traditional method is a method specific for that economic entities which make products or services whose direct costs are important and represent the major share in the total costs.

The global calculation method (also called “process costing”) is proper for those economic entities (pharmaceutics industry, energy, chemical industry, etc.) which make a big volume of identical products (the same category of product or services) and in which the allocation of the indirect expenses – with a significant share in the total productivity costs – is executed at the end of the period for which the production costs are calculated by the simple dividing of the indirect expenses at the end quantity (or value of the proper direct expenses) of the products/executed services; even if the dental surgeries are far away from this type of activity. In Romania, we have met this system of allocation of the indirect expenses for many of these cabinets;

Job order costing method is used within those economic entities (consultancy cabinets, private medicine cabinets, dentistry, advocate cabinets, architecture, etc.) which executes a “small series of production” or individual/special or where it is rather worked on projects. The calculation object is represented by the project (specific treatment, patient X, etc.). Practically, on the calculation object are aggregated all direct determined expenses;

Activity based costing method – represents a calculation methodology of the costs which are based on the performance of the processes, costs of the resources and costs of the objectives. The main premises of ABC method are those that the activities are resources consumers (salaries, materials, utilities, etc.) for producing results. As compared to the traditional calculation methods which are concentrated on products/services, ABC method is concentrated on activities. Taking all these into account, ABC method has also among its objectives the determination of the costs/on products services, but through the resources consumers’ calculation objects. ABC could generate the determination of some relevant costs of the services as compared to the traditional methods as consequence of the nature and big number of the basis concerning the allocation of the costs based on activities. The recent researches concerning the ABC method in the medical practice were based on the conceptual discussions of this method’s benefits. Also, the cases based on the medical practice were utilized along the time in order to demonstrate the utility and general benefits of ABC method.

A cost driver basis represents an element which has a direct “cost-effect” relation with the cost and is an activity which creates costs. Therefore, each treatment or therapeutic manoeuvre should be detailed in a sequence of activities and each activity partly should “receive” a basis of allocation of the

costs of that activities which is to be relevant. Obviously, each basis of allocation of the costs of the activities should have relevance for the cost “of the final product/therapeutically treatment”.

An essential objective of our research is represented by the execution of a practical methodology and scientifically validated through which there is possible the informatics shaping of the costs, determined based on ABC method for the economic and operational substantiation of the prices and rates and efficiency of the activity.

A major decision of any industry management is the establishment of products, respectively of services which are to be sold to the clients/beneficiaries. The decisions connected to the establishment of the prices which could be of type:

- establishment of the price of a new product or service;
- establishment of the price of a sold product or service under a certain own mark;
- establishment of a new price as response to the actions of the competition;
- price offers for the closed/open bids.

The decisions concerning the establishment of the prices depend on the characteristics of the market. In case of an imperfect competition (as now it is the case of all markets of the world), the price which the organizations claim that influences the quantity (number) of sold products (services). The economic legitimacies denote that the bringing down of the prices generates an increase of sales and vice-versa. Obviously, the price which an organization claims for a sold product or services should be correlated with the cost of manufacturing of this product/service in the idea that the minimum level, the limit for starting the construction of the prices should be the cost of the consumed resources for its manufacturing.

Now, the health system from Romania deals with a series of lacks, from the financial ones up to those concerning the medical personal.

In the case of private dental services, it should be also taken into account the tolerance level of the population because it exists, for example, very costly materials, generally important and which could generate very high complete costs and which could not be supported by the “medium” patient of the dental surgery.

On the other side, a performance management means also the possibility to execute the optimal combination of all variables from this equation (for example, a certain necessary dental treatment), cost-efficiency-efficacy so that each treatment to be configured in function of the health care necessities of the

patient and of its financial power at a certain level of quality of the dental interventions.

A wide-spread method concerning the determination of the prices is *cost-plus-pricing*, through which it starts from the establishment of the reference costs (which could also be represented by the entire cost or the production cost or variable cost) and a desired profit margin is added. The profit margin could be freely established or restricted in function of the professional remuneration system, professional non-concurrence agreements, etc. This method could be utilized in the situation of that products or services where the managerial decisions could influence the market price. The most part of dental surgeries of the world adopts this method in order to establish the prices of the services executed in private system.

In the situation when the decisional factors could influence the market price of the products/services, either due to the fact that it is limited or due to the fact that is limited to the sums which the Health Insurance Funds could deduct (totally or partially), either due to a aggressive concurrence when the only alternative for the execution of a profit margin is to “work” over the costs and limit their value. This method is called “*target costing*” and starts from the supplied price from which is knocked off the desired and obtained profit at the determination of the “target” costing in function of which the product/service is then configured.

In our country, the diffusion rhythm of the information to those interested is very low. The informational system is not adequate and not ensures sufficient information and of big accuracy concerning the context of the quality of the dental services and especially over the management of the private dental surgery.

In this moment, there is utilized information from the site of different institutions or associations having this type of preoccupations or from the content of different publications, there is utilized information which has not the guarantee of reflecting a reality in the domain.

The calculation module of the indicators whose value could be identified by help of different informational sources is not a little one and many times it could remain unknown to the patient and this fact leads to wrong decisions and many of them have disastrous effects. The accuracy of the information is also affected by the inexistence of a viable system, fast system concerning the procurement the information, consequently their delay procurement, but especially late processing due to the fact that there is not a centre specialized in the analysis of data or a national basis of data.

The information sources do not cover their entire field, the most part of it offering out-of-date information or without being totally available in the area of dental services.

The idea of making and activating such a calculation and information basis over the private dental surgery management was generated by the fact that in the countries advanced from economic point of view the existence of such a basis facilitates the decisional act of those persons who are interested.

Conclusions

In the majority of EU member states, the crisis of the sovereign duties put pressure over the situation of the public finances. Nowadays, Romania is in between few countries which still respect the criterion of the public duty (public duty does not exceed 60% from Gross Domestic Product).

For Romania's economy, the rhythm of this increasing is alarming, not the level of public duty. As it is demonstrated by the Convergence Program for 2011-2014 period, all the public expenses have the long term increasing tendency and this tendency could be also seen in the health domain.

In this research paper, we identified both the causes of the financial resources increasing necessary for the health domain and the vulnerability of this system. The population ageing tendency corroborated with the over-consume tendency of the medical services and of the financial resources lack in relation to the necessities of the population represents the main causes which imposes measures for the identification of the most efficient methods concerning the allocation of the public and private financial resources.

After the analysis made, we consider that the methods concerning the allocation of the financial resources within this system could be upgraded by:

1. Making and activating a calculation and information basis over the management of the private dental surgeries and not only;
2. Preparing and supporting an efficient private insurance system;
3. Applying some efficient methods concerning the identification of the costs as for example the cost-plus-pricing method or target costing method;
4. Adopting measures which prevent the over-consume of medical services;
5. Adopting some efficient programs concerning the prevention and maintenance of health.

In order to draw up a conclusion, the main objectives of this scientifically research could have the purpose to inform: the private dental clinics and cabinets in order to indentify the development opportunities; the potential

Romanian or foreign investors in order to develop some businesses; organisms of the public power in order to prepare the statistical situations; research institutes and universities in the current activity of presenting the specific calculation methodologies of some costs categories; dental surgeries in the activity of perfection and efficiency of the dental surgery management; consultancy, stock exchanging or insurance societies in order to prepare, respectively support a private system of dental insurances in clinics which respect the ISO European standard.

References

- Gustafson, D. (1992). *The functions of a nurse manager in a health care setting*, 3rd Edition, Redwood City, CA: Addison – Wesley
- Koontz, H. (1992). *Managing Health services organizations*, 3rd Edition, Baltimore, Health Professions Press
- Meinsenheimer, C.G. (1997). *Improving quality. A guide to effective programs*, 2nd Edition, Gaithersburg, MD Aspen
- Overetveit, J. (1992). *Health services quality – An introduction to quality methods for health services*, Oxford
- Petersen, P.E. (2005). “Priorities for Research for Oral Health in the 21st Century”, the approach of the WHO Global Oral Health Programme, *Community Dental Health*, 22, pp. 71-74
- Petersen, P.E., Bourgeois, D., Bratthal, D., Ogawa, H. (2005). “Oral Health Information Systems – Towards Measuring Progress in Oral Health Promotion and Disease Prevention”, *Bulletin of the World Health Organisation*, 83 (9)
- Rakish, S.J. (1992). “Managing Health services organizations, *Health Professions Press*
- Torrance, G.W. (1982), “Preferences for health states: a review of measurement methods”, In *Clinical and Economic Evaluation of Perinatal Programmes* (ed. J. C. Sinclair), *Proceedings of the Mead Johnson Symposium on Perinatal and Developmental Medicine*, 20, pp. 37-45
- Weinstein, M., Zeckhauser, R. (1973). “Critical ratios and efficient allocation”, *Journal of Public Economics*, Elsevier, vol. 2(2), pp. 147-157, April
- Whitney C.W., Milgrom P., Conrad D., Fiset L., O'Hara David (1997). “The relationship between prices of services, quality of care, and patient time costs for general dental practice” Feb, http://findarticles.com/p/articles/mi_m4149/is_n6_v31/ai_19210118
- Widström, E., Eaton, K.A., Borutta, A., Dybizbánska, E., Broukal, Z. (2001). “Public dental health: Oral healthcare in transition in Eastern Europe”, *British Dental Journal* 190, pp. 580-584
- European Parliament (2007). “Public health: adequate funding needed for EU action programme”, *The legislative observatory REF.: 20070507IPR06343* <http://www.europarl.europa.eu/sides>
- www.ces-asso.org, Association des économistes de la santé
- www.bda.org, British Dental Association
- www.cnas.ro, Casa Națională de Asigurări de Sănătate
- www.mfp.ro, Ministerul Finanțelor Publice

The bad public decisions' ripple – setting the education off balance. Marketing simulation – education design decisions

Ioana Teodora DINU

National School of Political Studies and Public Administration, Bucharest
tdinu@snsipa.ro

Abstract. *The research goes in-depth of a highly debated public decision on education due to its topicality and suddenly enforced changes. The analysis argues that the perceptions of the groups which are mostly impacted by the changes contradict the effects targeted by the Law. These perceptions are tested in a split focus group (in three target subgroups – teaching staff, students and secretarial staff) and both the initial observations and the ones filtered through the field literature prove a strong burden on the higher education system, which will only multiply like ripples in the context of the current economic situation.*

Keywords: higher education; public decision; perceptions.

JEL Codes: H11, I21.

REL Codes: 13C, 13J.

Introduction

We have known for ever that the economic activity has a cyclic nature, it is definitely not linear and if we have the nerve to look back we can even substantiate our argument with the seven good years versus seven bad years of the Old Testament.

But it seems that the time of the two cycles has set and we have entered an era of permanent turbulence, pause free and chaos stressed (Kotler, Caslione, 2009, p. 19). When the 2008 crisis occurred we partly put our faith in the “natural” balance restoration. The economic theory of recessions provides us with the belief that we cannot escape the recession – expansion alternation, whether we shall have Kitchin, Juglar or Kondratieff cycles. No matter the timeline we keep setting our mind to a course correction by default.

The public decisions need to have a better system in which they are made, especially during downturns. If the public decisions taken during crisis or depression are “rotten” then they will definitely not restore balance, as they will rather trigger a chain reaction that will lead to constant bad judgment with regard to the services needed to be provided by the public administration for its customers.

This paper will follow the ripples created by the interventions (changes, suspensions, introductions, repeals, dismissals, replacements, approvals, extensions or reinstatements) of the decision triangle (managerial on the level of the executive power, political on the level of the legislative power and legal on the level of the judicial power) on the Law on Education over its existence in the late crisis period. The results of a focus group established for the purpose of validating or invalidating the hypothesis presented below shall be presented.

So, the work hypothesis refers to the fact that the interventions made by the new Law on Education set the undergrad and postgrad studies off balance after a rapid enforcement of poorly substantiated public decisions. Moreover, the marketing instruments that allow us to map the educational service in accordance with the consumers’ needs are ignored and this proves fatal for the educational system as a whole. Is it righteous to leave aside these instruments thus throwing the undergrad and postgrad studies into a burden ripple?

The purpose of this analysis is to further develop a previous research (Matei, Dinu, 2011) that focused upon the multi-fold object of public decisions on a different level, namely the one of certain groups impacted by those public decisions, and their perceptions and attitudes towards the implemented changes. The previous analysis focused on the applicability of the theoretic concept of public decision and the fact that it has specific characteristics as it pertains to each of the state’s powers (legislative, executive and judicial). In practice, the

decision takes different forms: managerial on the level of the executive power, political on the level of the legislative power and legal on the level of the judicial power. These approaches are not separate, but they are embodied by the tri-dimensional view (managerial, administrative and political) of the public decision, as it follows: the government, as a representative of the executive power, applies the political decision coming from the legislative level and observes the other adopted decisions. These can refer to changes, suspensions, introductions, repeals, dismissals, replacements, approvals, extensions or reinstatements (Matei, Dinu, 2011, pp. 158-159). Thus, the previous analysis on which we are substantiating this new one aimed at establishing how this process was carried out in Romania. Normally, was the public decision typology righteously balanced in between the three powers? The case study followed the evolution of this typology for the Law on the Civil Servants' Statute, Law on the Local Public Administration and the Law on Education and used the gathered data to test two hypotheses formulated in accordance with two of Zions' (1997) ten myths that haunt the decision-making process, be it managerial, political or legal.

The first myth refers to the decision itself. What it says is that though sometimes there is a well-defined decision and a timeframe for the decision, often there is not. The decision just happens.

After manipulating the gathered data, the first myth was invalidated by our analysis, which showed that the decision was not made in a well-defined timeframe, as it was continuously changing through the state's powers will.

The second one, the decision maker's myth places the decision-maker in the position of a wise isolated man who takes the decision on his own. In fact, also this one was invalidated. The scenario of a group, rather than an individual, taking the decision was confirmed by the active role that all the three state powers have.

In terms of methodology the study is proceeding *via* bibliographical research, and further it makes use of direct observation, field text analysis with regard to public decision under analysis, and qualitative marketing research, namely a focus group comprising actors of all three areas on which the Law has an impact upon (academics, technical personnel and students). The focus group was based on open-ended survey queries and, for that reason, a formalized coding scheme was used so to identify a pattern should the responses suggest it. The code did not damage the qualitative data as the sample groups were reduced to four respondents for each relevant target group (three target groups in total) in order to avoid reviews' elimination.

1. Our focus group, a tether to reality

1.1. Who were the subjects

The focus group had twelve subjects who covered three subgroups of interest for the analysis: teaching staff, students, and secretarial staff. Each subgroup was selected based on their relevance for the topic under analysis and had four representatives coming from different levels pertaining to their specific organization or hierarchy.

The first subgroup was represented by the teaching staff, and had all teaching degrees represented: teaching assistant, lecturer, associate professor and full professor (according to Law on Education no.1/2011⁽¹⁾).

The second subgroup consisted in four students, one from each form of education: bachelor studies full-time, bachelor studies (distance learning), master studies and doctoral studies (in accordance with the same above mentioned law).

The third subgroup was formed by the secretarial staff: one secretary from the full-time undergrad programs, one from the distance-learning programs, and head secretary on the faculty level and another on the university level.

The difference in age, education and social status was meant to be kept as a main feature of the focus group primarily because the product (Law) in itself is targeting those different groups and secondly because it is also a condition for validation (Babbie, 2010, p. 424).

1.2. Formulating the queries

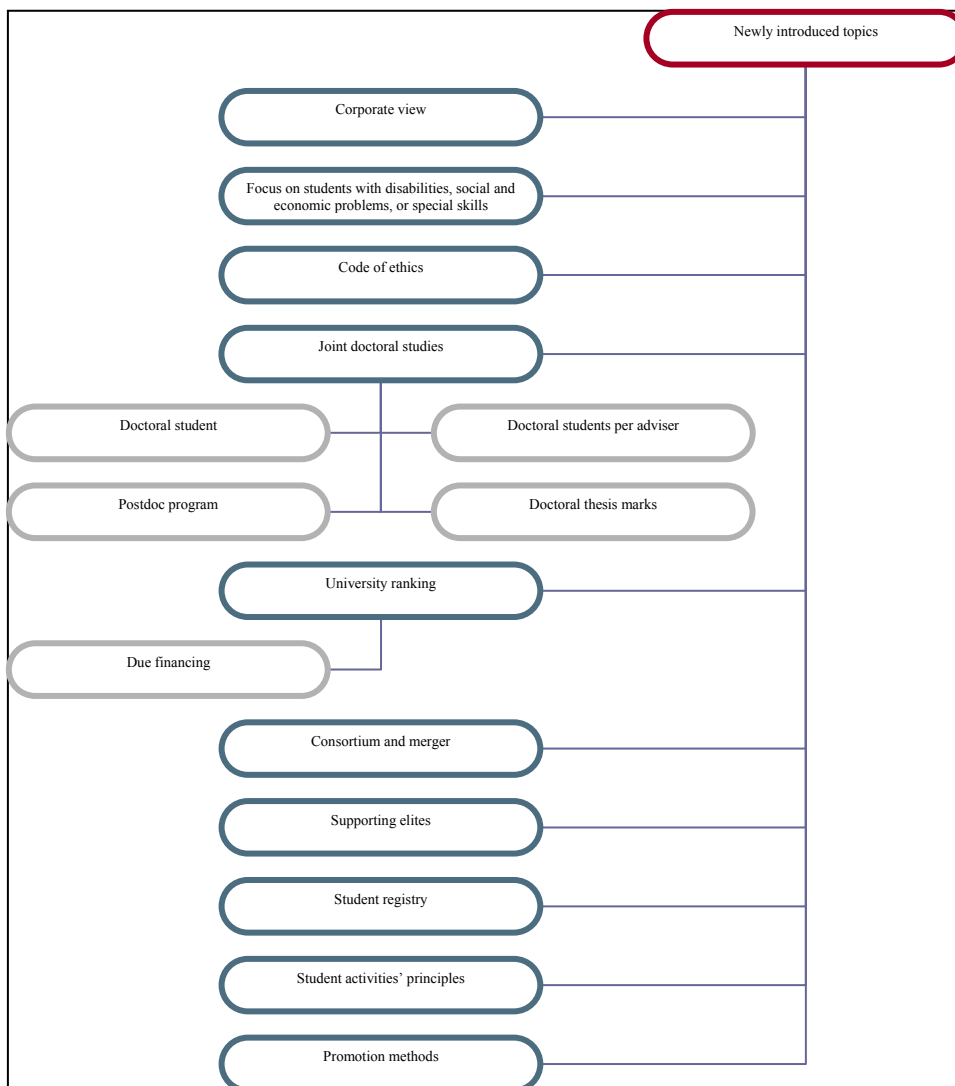
This scientific initiative was born after a very specific decision analysis that made the author wonder whether there is a need to also assess the impact that the public decisions under analysis have upon their target group and not only focus on the impact of all the state's bodies involved in the decision making process (with its tri-dimensional view) (Matei, Dinu, 2011, pp. 158-159).

Moreover, in the context of the economic and financial crisis, the focus upon the target group and less on the decision-making parties can prove to be helpful, giving our previous results that showed no significant problems with the decision-makers' activity balance. There, we cannot help but wonder: what is the target groups' perception? Maybe therein lies the problem.

The queries were formulated based on the results of a comparative analysis made between the former law on education (no. 84/1995⁽²⁾) and the current law (no. 1/2011). The new law entered into force in a time considered quite delicate in the context of Romania's Stand-by Arrangement (2009-2011)

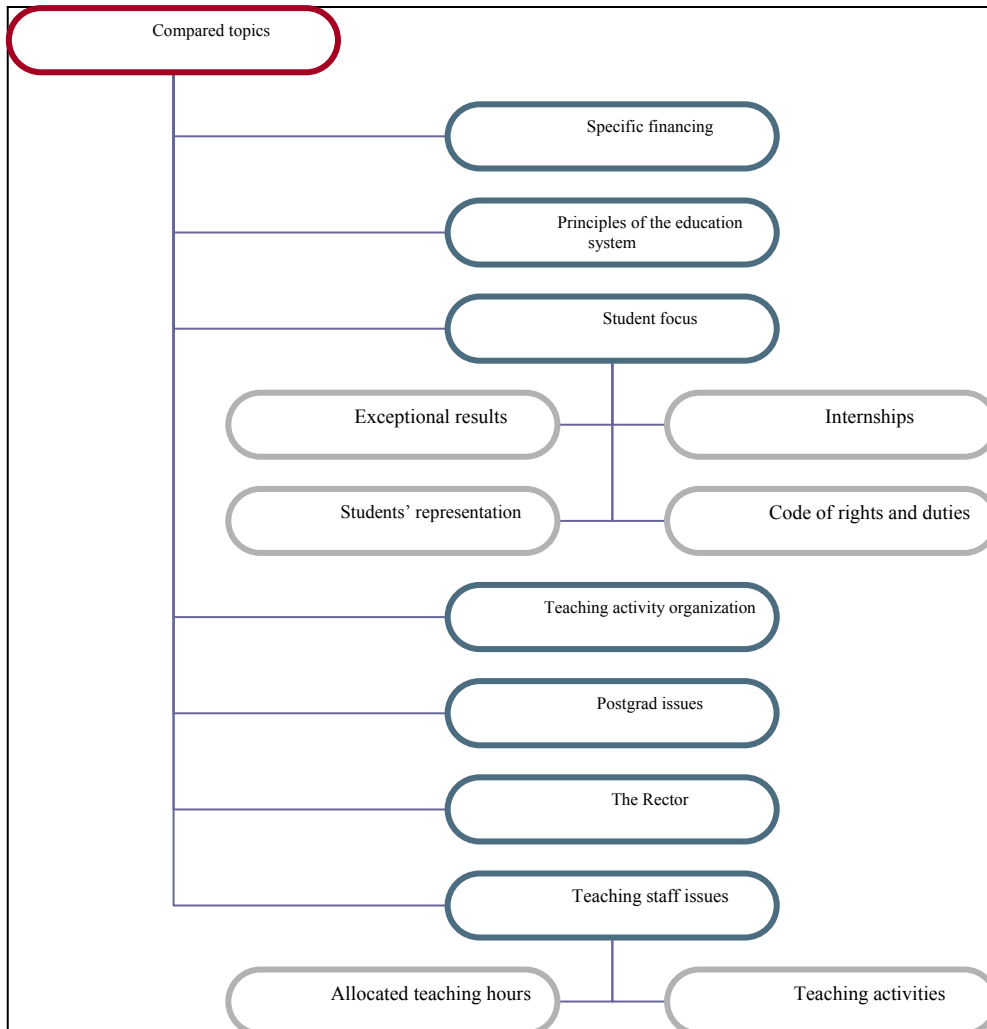
with the International Monetary Fund, with special reference to the downsizing decisions unitary implemented (Dinu, 2011).

The queries covered aspects specific to each of the focus subgroups but also more general topics that were revealed by the comparative analysis, i.e. the mission that the law is following, the principles that is setting etc. The topics emphasized by the research are presented in the figures below.



Source: own elaboration based on the findings of the comparative analysis.

Figure 1. *The newly introduced topics for the queries*



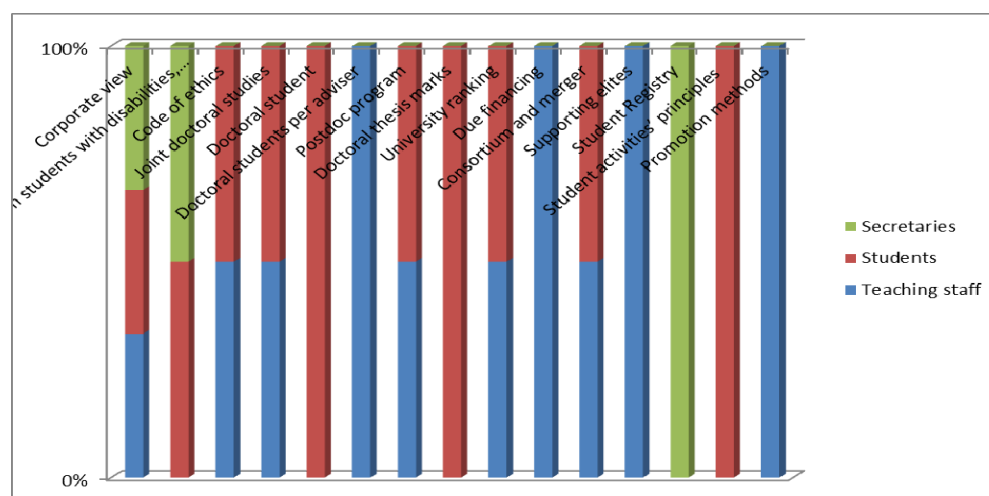
Source: own elaboration based on the findings of the comparative analysis.

Figure 2. *The queries' topics subjected to comparison*

The queries that the moderator had at the beginning of the focus group covered a different number of topics (as shown above) that aimed at each of the focus subgroups (figures 3 and 4). Keeping in mind the free discussions the topics per subgroup could rebalance the three focus subgroups, as we shall see after reviewing the observations.

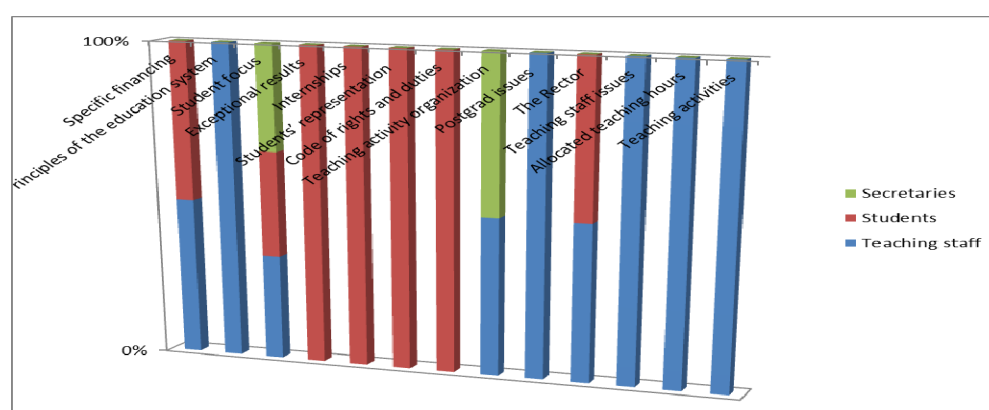
The ongoing economic and financial crisis urges us to adapt our educational strategies to the market movements. The problem is that changing an entire system does not come cheap, which contradicts the budgetary cuts that

Romania has been forced to make. Nevertheless, the bulk expenditure cuts must be avoided and we should rather focus on righteously sized and focused cuts (Kotler, Caslione, 2009, p. 78). What we aim to test here is whether the selected target groups perceive the changes enforced by the new law on education as a rescuing strategy for the education system also facing the crisis. Perception is a powerful instrument and should not be ignored by decision-makers.



Source: own elaboration based on the findings of the comparative analysis.

Figure 3. The queries' newly topics on each focus subgroup



Source: own elaboration based on the findings of the comparative analysis.

Figure 4. The queries' compared topics on each focus subgroup

2. Writing down the observations

2.1. Empirical observations

The results collected from the first focus subgroup (teaching staff) was structured in terms of ten items impacting this subgroup with regard to the newly introduced topics and also nine items from the category consisting in the compared topics, as follows:

1) Observations on the ten items representing the newly introduced topics:

a. Corporate view

The respondents agree that the corporate view is only declared but in fact the market-driven education that is suggested can easily be avoided, even obeying the law. Therefore, it can be argued that it does not show a unitary corporate vision but a collection of different ones.

b. Code of ethics

It is important to be established but seems a bit conflicting with the corporate view.

c. Joint doctoral studies

The doctoral studies also allow professors to enlarge their research horizons.

d. Doctoral students per adviser

It can be argued that the doctoral adviser puts more focus on each doctoral student but for an even better assessment of quantity versus quality focus a minimum and a maximum limit should have been set.

e. Postdoc program

There are many possibilities for this type of programs, both national and international, but very few financial support mechanisms.

f. University ranking

It is relevant only for those who know what it stands for, and it can be an incentive for the next evaluation.

g. Due financing

There is a lack of well-established financing criteria which only put more doubt into the rankings.

h. Consortium and merger

It can prove to be an advantage as long as the universities opt for consortium, not for mergers, which can trigger an identity loss.

i. Supporting elites

There are too many institutes that do the same thing. Nevertheless, they are quite invisible for the academics; more emphasis should be put on promoting the existent ones.

j. Promotion methods

It is worth having fast promotion methods as long as you back them with strong instruments that the academics can use in order to fulfill the set criteria.

2) Observations on the nine items representing the compared topics:

a. Specific financing

It is important to have a threshold, but the current situation also calls for more emphasis on the education sector that is the leading force pulling us out of the crisis.

b. Principles of the education system

Having certain guidelines is important for the academic environment, but it also important to present them as such and, at the same time, take into account the academic culture.

c. Student focus

The university is created for the students; therefore they should be at its core, a valid partner for dialogue. It may also stimulate the students to keep a high training level.

d. Teaching activity organization

It has no real impact on our university as we did not have evening classes. We can refer here to the mandatory full-time doctoral studies (the elimination of the part-time ones) corroborated with the tuition increase that will decrease the competition at the entry exam.

e. Postgrad issues

Places us ahead of the competition if we only look at the condition according to which we must have undergrad studies to be allowed to organize postgrad studies. With regard to the suggested partnerships with the possible employers so to better answer market needs, the question is “Who assesses market demands?”. Is it the jobs’ freeze measure taken three years ago for the public administration?

f. The Rector

The academics stressed that all universities (from what they know) dismissed the competition option that the law gave and practically chose the one that was more similar to the old one (vote). By doing that, they practically rejected the corporate view, reducing also the students’ weight in the election procedure.

g. Teaching staff issues

With more restrictive condition for obtaining an academic degree the teaching level will be kept high. Nevertheless, the issue of the promotion instruments comes back in the debate.

h. Allocated teaching hours

In the present context of the forced minimum payroll threshold the increase in the number of allocated teaching hours is clearly contrary to teaching quality.

i. Teaching activities

In the same line, limiting the extra hours paid does contravene the enhance quality claim of the Law in the context of the current financial restrictions.

The perception of the second focus subgroup (students) was the most debated both for the newly introduced topics and for the compared topics that were presented by the moderator. For the first category (the newly introduced topics) ten items were subjected to query, and for the second category (the compared topics) there were seven items, as follows:

1) Observations on the ten items representing the newly introduced topics:

a. Corporate view

The reported results on this item referred to both ends, namely that according to which the law must have a “soul” pointed out through mission, vision and so on (like it actually does), and the other end saying that this corporate view is only of surface as it has no successful implementation methods.

b. Focus on students with disabilities, social and economic problems, or special skills

None of the respondents felt the results of such provisions, especially in the current crisis situation. Therefore, they considered these provisions that aimed supporting students with disabilities and also students coming from low income families (through state guaranteed bank loans) as strictly declarative.

c. Code of ethics

Also in this case, there were respondents who delivered no opinions on this issue being unaware of such provisions, and there were also students who pleaded for the importance of such a code giving the massive reestablishment of social layers during these crisis’ years, and thus of the students’ behavior.

d. Joint doctoral studies

One student was surprised of the idea but very interested in finding out how does it work, and the others were familiar with the new form of doctoral

studies but pointed out the fact that, in the context of the few financing possibilities, there is also a lack of implementing guidelines.

e. Doctoral student

On one hand, the idea of specifically nominating the doctoral student creates a link between the teaching staff and the regular students but, on the other hand, it confuses the students with regard to their representation in the university's management structures. The doctoral student's status could be biased towards its role there, considering that is both a student and also engages in teaching activities.

f. Postdoc program

Even though the abrogated law did not specifically provided for postdoc programs, there were different other legal documents establishing this possibility. The problem lies more within the methods of financing than with its existence.

g. Doctoral thesis marks

The respondents here unanimously disagreed with the relevance of grading the result of a doctoral research work as all researches are relevant. They argued that, in the current situation of the budgetary cuts, the research should be greatly stimulated, especially in the field of administrative studies (relevant to our faculty).

h. University ranking

In terms of perceiving the differences between the three ranking categories established by the law, the students are unable to distinguish between them as they are too vaguely defined. The perception is that there are only empty words without a clear explanation of each ranking's meaning.

i. Consortium and merger

The respondents again split in two teams, one arguing that they do not perceive a consortium or merger affecting them in anyhow (maybe for the better in terms of more financial resources), and the other that such a provision is forced into the new law, as a Law on consortiums⁽³⁾ was already into force and established quite clear terms.

j. Student activities' principles

Their knowledge of specific principles was very limited, but the respondents acknowledge the importance of defining such principles in the current changing environment but also underlined the difficulty of following them or, even worse, abusing them.

2) Observations on the seven items representing the compared topics:

a. Specific financing

Establishing a specific percentage for financing education and research is important as long as it is followed. Moreover, in the context of economic

downturn and falling GDP, even a fixed percentage does not cover the educational and research needs. Also, with regard to the percentage dedicated to research activities it is not enough to fix a more profound problem, which refers to the lack of an investment and revaluating culture.

b. Student focus

The mutual feeling is that this new emphasis empowers the student. In times of crisis, when the budget is low, one needs to have strong negotiation powers to obtain what he demands.

c. Exceptional results

The performance criterion for graduating two years in one, which was established by the abrogated law, should also be kept in the new one. The current economic and financial terms do not mean a lower performance bar. On the other hand, the current provision related to no more than five percentages of the students that could graduate two years in one is also too prohibitive. Should more than five percent of one generation be exceptional they should be allowed to cumulate the study years.

d. Internships

The university should be the one establishing contact with the public institutions to receive students for internships. It will also have more control on the students' work and develop a trusty relationship with the future employers, a big necessity during this period of public sector downsizing.

e. Students' representation

The students' bargaining power is somewhat diminished as the law distinguishes between students and doctoral students, thus creating a dispute with regard to council or senate representation, even though they are both students in the eyes of the new law.

f. Code of rights and duties

Yes, there was a need for an enhanced visibility of students' rights and duties. As a matter of fact, at the beginning of April this Code was passed through the Minister's ordinance⁽⁴⁾. There is a problem though with the fact that the Minister only consulted the students' federations and many of the students' associations from different universities (ours included) are not part of any federation.

g. The Rector

The students did not have any idea about the way in which a university is administered, therefore could not express an opinion about the new vision on the rector.

The third subgroup (secretaries) gave a very technical assessment (in accordance with their job description), out of which the moderator separated

those fitting the category of the newly introduced topics (three items) from that of the compared topics (two items), as presented below:

1) Observations on the three items representing the newly introduced topics:

a. Corporate view

The technic and administrative staff is not listed as part of the academic community by the new law (thus not part of the Senate nor the Council), therefore unable to get more involved in the managerial activities.

b. Focus on students with disabilities, social and economic problems, or special skills

Special attention should be given to the evaluation criteria; it is not enough to establish as a principle financial support for the less fortunate if you do not enforce fit evaluation mechanisms and bodies.

c. Student Registry

This registry allows us not only to have control over the number of students, but also over the issued diplomas. We can easily compare our secretarial outcomes with those of other universities.

2) Observations on the two items representing the compared topics:

a. Student focus

Placing them on a higher level also increases our role as a liaison between the academic staff and the students.

b. Teaching activity organization

The new organization reduces our workload.

2.2. Filtered observations

When testing our hypothesis we turn to the initial observations provided by the focus group and further filter them in terms of connection to the budgetary cuts (Dinu, 2011) and to the field literature evidence with regard to the market-driven changes of the educational system (Diedrich, 2012, Kearney, Arnold, 1994, Kerka, 1996, Alam et al., 2010, Rosenberg, Sindelar, 1998, Olssen, Peters, 2005, Conway et al., 1994).

There are five derived hypotheses that we considered important in the testing process:

The market driven feature of the education system cannot work by itself under the current economic downturn.

Teaching performance can fade if not supported by strong teaching hours' allocation and righteous payroll.

The ethical issues peak in the framework of a market driven system.

The merit based system should be the primary guideline in the entry exams.

A corporate view is not established without firstly testing the market feeling.

A number of observations stand out in the light of the “strainer”. The first one refers to a narrow view upon the education system supported by the observations of the first subgroup with regard to the market driven feature which is suggested through the master studies’ partnerships with the employers that can be part of the public sector (like in our case). Moreover, turning public education into a competitive market to drive reform misses the mark because none of the five conditions needed for pure competition exist in public education (Diedrich, 2012, pp. 15-23). For example, the Education Reform Act 1988 in UK similarly pushed the higher education institutions to operate within a much greater competitive context and need therefore to incorporate a greater market orientation into their strategic planning process in order to acquire a competitive advantage over their rivals (Conway et al., 1994).

A second filtered observation also comes from the first subgroup and refers to the allocated teaching hours that are currently forced to the minimum payroll threshold and, at the same time, increased in number. Both the provisions outbalance the teaching quality. For the school to be market driven the reward structure must be more and more oriented toward performance, under the theory of public choice (Kearney, Arnold, 1994).

Pertaining to both the first and the second subgroup the importance of the Code of ethics is not sufficiently stressed in practical terms. Ethical issues also arise when self-sufficiency or market demand drives program (Kerka, 1996).

There is a great emphasis on the social and economic problems that must be taken into account with regard to supporting students in accessing the higher education system, but no emphasis on the merit criterion. Meritocracy should be the only parameter in the recruitment and selection process of institutions of Education (Alam et al., 2010, p. 3411).

An important aspect outlined by all three subgroups refers to the so-called corporate view that the new law tries to establish for the higher education system. The problem is the lack of substantiation behind such an important shift, which is shown by the universities opposite choices pertaining to the rectors’ election. In fact, the field literature stresses that the movement toward a more corporate approach to activities and governance in the higher education community is antithetical if not hostile to the agenda of teacher education reform (Rosenberg, Sindelar, 1998). Some authors even argue that when organizations are ruled by new governance arrangements and models, under relations of managerialized accountability, what happens to the presumption of trust that public servants will act in the public good? (Olssen, Peters, 2005, p. 324).

3. Conclusion and further research

To sum up, the work hypothesis referring to the fact that the interventions made by the new Law on Education set the undergrad and postgrad studies off balance after a rapid enforcement of poorly substantiated public decisions is validated through all five of its derived hypotheses. The focus group results showed us that the changes felt by the stakeholders do throw both the undergrad and postgrad studies into a burden ripple pertaining to the teaching staff group (mainly in terms of teaching activities organization), to the students group (in terms of a focus only on a declarative level), and to the secretarial staff (in terms of reduced involvement).

The limitations of the research pertain to the testing period available at the time of the focus group as the new Law on Education only entered into force last January, and was effectively applied with the beginning of the new academic year (October, 2011). Further research is required for at least two consecutive academic years.

Notes

- (1) Published in the Official Journal of Romania, part I, no. 18 on January 10, 2011.
- (2) Published in the Official Journal of Romania, part I, no. 606 on December 10, 1999.
- (3) Law no. 287/2004 published in the Official Gazette of Romania, part I, no. 614 on July 7, 2004.
- (4) MO no. 3,666/2012 published in the Official Gazette of Romania, part I, no. 225, on April 4, 2012.

References

- Alam et al. (2010). "Do developing countries need Education laws to manage its system or are ethics and a market-driven approach sufficient?", *African Journal of Business Management*, Vol. 4(15), pp. 3406-3416
- Babbie, E. (2010). *Practica cercetarii sociale*, Collegium, Editura Polirom, București
- Conway, T., Mackay, S., Yorke, D. (1994). "Strategic Planning in Higher Education: Who Are the Customers", *International Journal of Educational Management*, Vol. 8, Issue 6, pp. 29-36, doi: 10.1108/09513549410069202
- Diedrich, M. (2012). *False choices: the economic argument against market-driven education reform*, Minnesota 2020, Saint Paul
- Dinu, T. (2011). "Looking ahead: public decisions under increasing scarcity. The case of the

- Romanian Public Administration”, NISPAcee PRESS, Public Administration of the Future, Varna Free University, Bulgaria
- Kearney, C.P., Arnold, M.L. (1994). “Market Driven Schools and Educational Choices”, *Theory into Practice*, Vol. 33, No. 2, The Ohio State University
- Kerka, S. (1996). *Continuing Education: Market Driven or Learner Centered? Myths and Realities*, ERIC Publications, Office on Educational Research and Improvement, Washington, DC
- Kotler, P., Caslione, J.A. (2009). *Chaotics: management și marketing în era turbulenței*, Editura Publica, București
- Matei, L., Dinu, T. (2011). “The Multi-fold Object of Public Decisions. Case study: Law on the Civil Servants’ Statute, Law on the Local PA, Law on Education”, ASsee Online Series, no. 4, National and European Values of Public Administration in the Balkans, pp. 158-165
- Olssen, M., Peters, M.A. (2005). “Neoliberalism, higher education and the knowledge economy: from the free market to knowledge capitalism”, *Journal of Education Policy*, 20:3, pp. 313-345
- Rosenberg, M.S., Sindelar, P.T (1998). “Teacher Education and Special Education”, *The Journal of the Teacher Education Division of the Council for Exceptional Children*, Vol. 21, No. 3, pp. 227-235, doi: 10.1177/088840649802100307
- Zionts, S. (1997). “Decision Making: Some Experiences, Myths and Observations, Multiple Criteria Decision Making”, *Proceedings of the Twelfth International Conference*, Haagen (Germany), Gunter Fandel, Tomas Gal (Eds.). In collaboration with Thomas Hanne Lecture Notes in Economics and Mathematical Systems 448, Springer, 1997

Prepayment risk, impact on credit products

Dan Costin NIȚESCU

Bucharest Academy of Economic Studies
dancostinn@gmail.com

Abstract. *Credit pricing is always an important aspect of operations of banks, as loans are generally two thirds of bank assets. Therefore, the study of factors influencing a bank customer behavior and their impact on early repayment of loans may have a significant influence in reducing the risk assumed by such unexpected operations.*

Objective analysis of prepayment risk is to estimate the probability of repayment to better manage its manifestation. The existence of potential customers that use this option exposes the bank to a number of risks, such as interest rate risk, the maturity mismatch risk and liquidity risk.

Proper evaluation and forecasting the evolution of this risk can bring great benefits for a credit institution in the management of loan products and customer relationship: lower risk of over-ensure against fixed rate mortgage, a better management of short-term and long term liquidity needs (thus reducing the risk of over-financing) can offer customers more competitive pricing (achieved by reducing funding costs due to better assessment and management of risks involved early repayment).

Keywords: prepayment risk; credit products; consumer behavior; indebtedness; refinancing; loans portfolio.

JEL Code: E51.

REL Codes: 11B, 11C.

1. Introduction

Earlier studies used different prepayment risk models to describe the behavior of borrowers, which can be divided into two categories. The first category includes models based on data aggregated using law of large numbers to predict prepayments for the entire mortgage portfolio. Examples of this type of studies we have in the works of Brennan and Schwarz (1985), Kang and Zenia (1992) or Golub and Pohlman (1994). The main disadvantage of this class of models is that behavior prepayment forecasts can be inaccurate if the main features of population change, compared to the population used for the design model. Therefore, the second category, which includes studies on early repayment option based on individual data sets of credit, offers improved accuracy. These types of analyzes were conducted by Archer, Ling and McGill (1996) and Green and Shoven (1986).

The main factors determining the early repayment of a loan can be separated into four categories (Consalvi, Scotto di Freca, 2010): incentives to refinance the existing loan on the market; value of collateral; default state of the client; refund the customer credit as a result of contracting a new loan with the same institution, other conditions to the original.

2. Analysis of early repayment

Tackling prepayment rate quantization can be viewed from two perspectives (Jacobs et al., 2005): financial perspective, which is based on the absence of arbitrage opportunities (analyzed using theoretical models), and behavioral perspective (analyzed via econometric models). Financial models are suitable for the analysis of securitized assets or corporate loans. Behavioral models are used to explain the early repayment of credit retail market, a risk that the bank is continuously exposed.

Difficulties in applying financial models retail market consists of various reasons, the most important being that the level of financial knowledge of participants makes them move away from efficient market theory. In terms of behavioral patterns, there are used in particular those developed using survival analysis.

Survival analysis aims to analyze relations between survival and function of explanatory variables. To achieve this purpose, often using a vector of explanatory variables z to divide the model into two parts: a model for the distribution of time to onset of event, where the vector z is null, and another model used to determine the distribution time of occurrence when variables are nonzero. In the survival analysis the relationship between survival and

explanatory variables function is usually expressed through two models: *the accelerated life and proportional hazard model*.

Option to repay the loan early would be exercised by the client in order to minimize the amount paid. As a result, the mortgage would be paid when the actual value exceeds the option exercise price. Given these issues, the value of a mortgage can be calculated according to the theory of evaluation of options, it can be likened to a call option.

However, studies reveal that decisions are often early repayment of loans even when the refinancing rate is higher than the current contract or, in opposition, there are times when a mortgage is not paid while the market rate is small and the repayment decision would be ideal.

Therefore, we have developed numerous econometric models, aimed to explain the relationship between reimbursement rates and explanatory variables that influence this decision. Most models used in the literature estimate the probability of repayment and are part of survival analysis, whose goal is to model the distribution of "time of occurrence" of the event by defining the relationship with the explanatory variables.

3. Methodology of analysis

In order to achieve an empirical study on the analysis for determining relations between the variables influencing survival function⁽¹⁾ and risk of early repayment manifestation it can be used proportional hazard model developed by Cox (1972, pp. 187-220). This direction will be developed in future work. For now, we will summarize to present and analyze the explanatory variables considered to be relevant in such a study.

The data that can be used in such an empirical analysis represents the mortgage portfolio of a small bank from Romania. In this regard, I appeal to consider a data set comprising 1,178 mortgage, fixed rate or linked to the reference EURIBOR 6M. Lack of individual information on the type of interest can be a source of errors for the model mentioned above. Also, relatively small size of this portfolio and the small number of recorded events can have the same result. After eliminating incomplete records, missing data for some variables, the data set was reduced to 1,053 credits.

The following figure shows the evolution of repayments over the entire range studied.

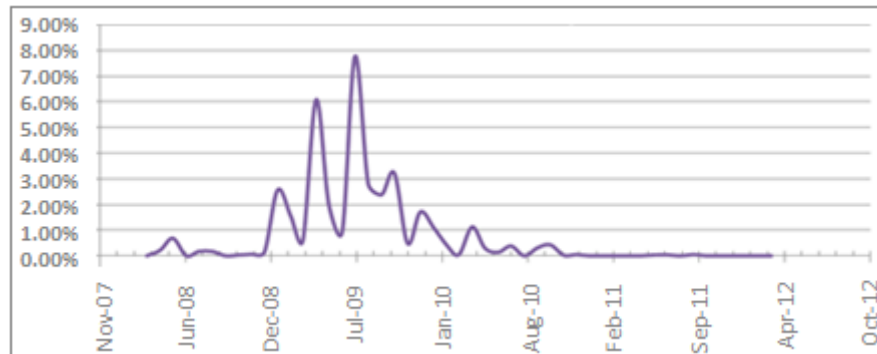


Figure 1. *Evolution of early repayment in the period studied*

Following the chart, we see a period with low rates of reimbursement by December 2008, at which point the values of this ratio increases to a peak in July 2009. It continues a downward trend, and since October 2010 reimbursement rate dynamics becomes similar to the beginning of the period, with little credit repaid early.

The significant repayments beginning in December 2008 may be also a consequence of the international financial and banking crisis, which has led customers to look into a more prudent mortgage problem.

However, the crisis hit our country and caused the reduction of lending to new businesses and the development of numerous refinancing offers to attract customers of other banks, generating mainly the repayment of existing loans.

Using the estimation model developed by Cox, we will select five explanatory variables as follows: age, initial value of the loan, the repayment period of loan, indebtedness of the client signing the contract, the incentive to refinance, calculated as the difference between the interest of the loan contract and the current interest.

3.1. Age

The first variable listed is the age of the mortgage contractor. From the distribution of values, we see an average age of the entire loan portfolio of about 34 years, showing the distribution of positive asymmetry, implying a greater frequency of extreme values above average in terms of this type of loan customers.

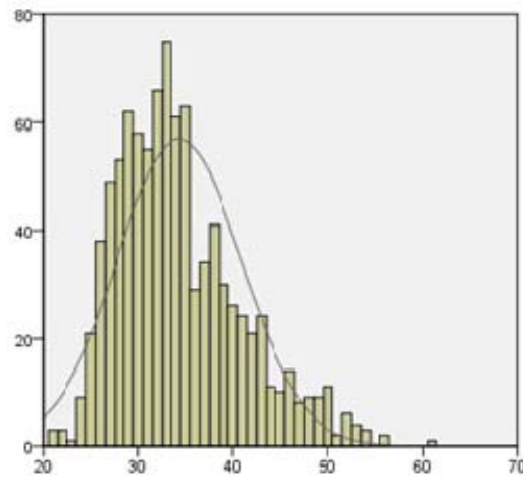


Figure 2. *Distribution of values, normal distribution overlay*

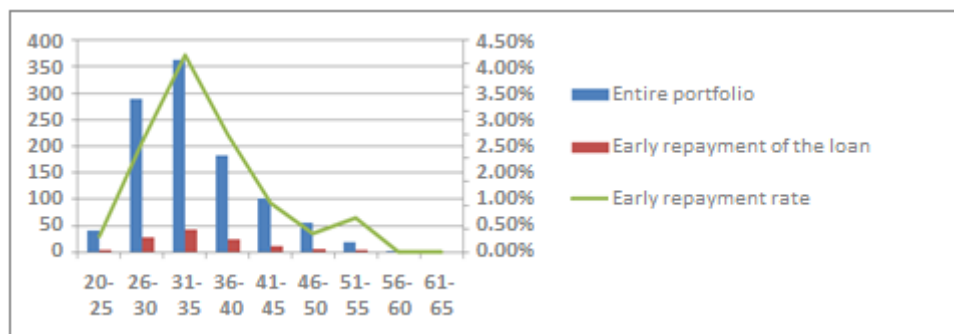


Figure 3. *Influence of age on the rate of prepayment*

Figure 3 shows the percentage of loans repaid early recorded in portfolio analysis. Thus, an increase in repayment rate with age until age group 31-35 years, after which it is reduced. This behavior was observed in previous studies in the specialized literature, the explanation being that young families at the beginning foundation of a home, originally purchased a smaller home, sufficient for the needs of a couple. But with the advent of a child in family life, there is a need for space to hold a larger home, for which the loan is repaid following the sale of existing homes.

3.2. The initial contract

For the initial value of the credit agreement, we have the following values that define the distribution:

Table 1

Main statistical indicators of the initial value of the contract

Number of observations	1,053	Number of observations	117
Mean	44,799.53	Mean	37,964.10
Skewness	2,936	Skewness	1,491
Kurtosis	18,284	Kurtosis	2,155
Minimum	6200	Minimum	7,800
Maximum	400,000	Maximum	119,700

Average of the whole portfolio is 44,800 euros, and loans repaid is 38,000. Both distributions are asymmetric positive, specific to loan portfolios, as contracts with large values are reduced in number and are very far from average.

Given the asymmetry coefficient twice as small loans repaid early, we see that once the loan is higher repayment is higher. This is not surprising, a bigger credit is much more difficult to repay because the less likely a customer to be eligible for a loan of such value considering the economic crisis and financial market turmoil of recent years.

3.3. The period of loan repayment

Most loans are closed for periods greater than average for the entire portfolio of 353 months (29.4 years), as confirmed by negative asymmetry coefficient of -0.945; so the duration loans are rare and represent less extreme the average portfolio, a situation that has resulted in a distribution skewed to the left. To trace the influence of the period in which the loan is repaid on early repayment behavior, we grouped portfolio in several ranges:

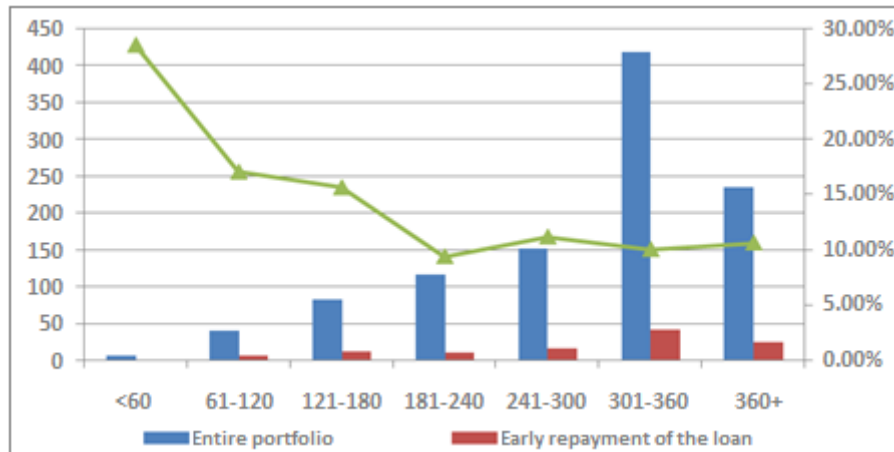


Figure 4. Influence of the contract period of the loan repayment rate

Table 2

Main statistical indicators of the loan repayment period			
Number of observations	1,053	Number of observations	117
Mean	302.88	Mean	288.52
Skewness	-.945	Skewness	-.980
Kurtosis	.168	Kurtosis	-.330
Minimum	36	Minimum	60
Maximum	481	Maximum	384

Following the chart, it appears that most of the loans are contracted for more than 300 months. In contrast, for loans which have lower contract period rates of reimbursement are higher.

One explanation for this would be to obtain welfare or safety of future extraordinary income for customers who have made these loans: those who contracted the short-term loans received faith in the ability to make higher monthly payments, therefore such may be able to repay early, others may have been credited with great certainty of future income to pay the mortgage before they ordered a full refund.

3.4. Indebtedness

Indebtedness of the customer is calculated by referring all monthly financial obligations to income received monthly; in this simplistic definition, we can be induced to believe that a high level of debt implies a lower possibility of early repayment of the loan, as the customer remains provide less

financial resources that could be saved and used later to pay the obligation. Illustrative of this can be the following figure:

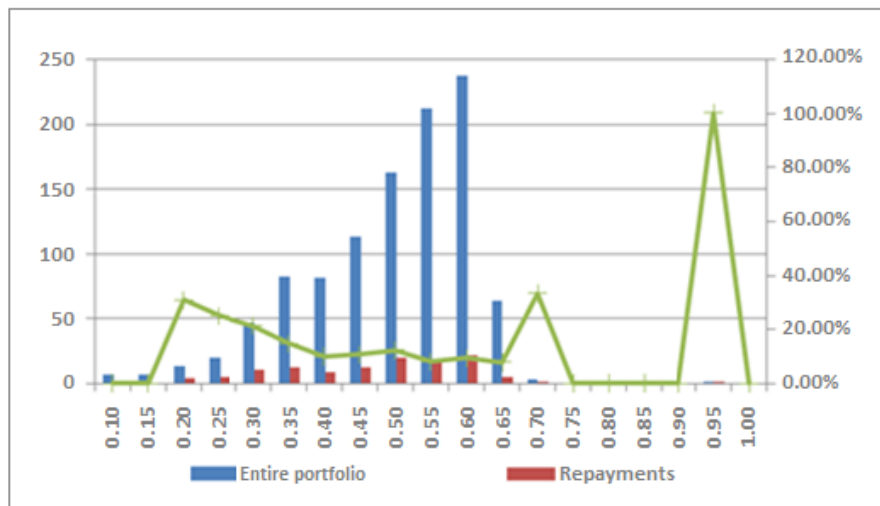


Figure 5. The influence of indebtedness on the rate of prepayment

Starting with contractors whose credit group had a gearing of between 15% and 20%, which represents 30% of total repayments, this rate drops to 65% values of indebtedness, in the range 60-65% reimbursement rate being 7.81%. In other intervals, the degree of leverage applications containing over 65% or below 15%, the link does not keep the same direction, but the results are inconclusive with regard to the proportion of only 1.8% of the total loan portfolio.

Media across the portfolio is 47.05% and the coefficient of asymmetry of -0.886 series is skewed to the left, most of the values of the variable ranging between 50% and 65%. Values over 70% are rare in the used portfolio, as it is higher customer acceptance threshold for such credit type, within the analysed commercial bank.

The main values that describe the distribution per the table below.

Table 3

Main statistical indicators of variable gearing

Number of observations	1,053	Number of observations	117
Mean	.470565	Mean	.446664
Skewness	-.886	Skewness	-.062
Kurtosis	.829	Kurtosis	.541
Minimum	.0586	Minimum	.1596
Maximum	.9210	Maximum	.9210

3.5. The incentive to refinance

Refinancing incentive may be considered to quantify the gain obtained by the client chooses to repay the loan early. Therefore, assuming that most customers seek to minimize interest payments made by the credit institution, this variable should have an important impact on the level of credit worthiness of the portfolio.

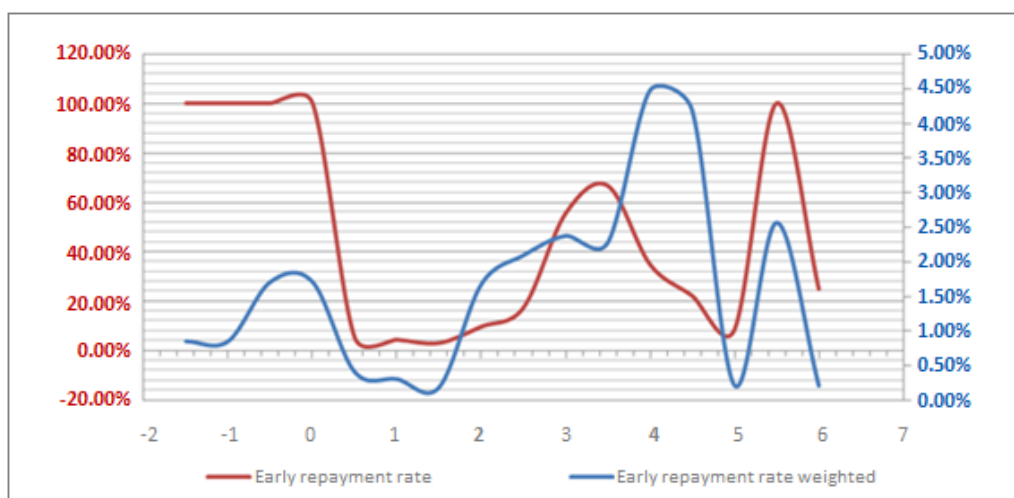


Figure 6. *Influence of incentive to refinance the prepayment rates*

This behavior of customers can be seen in the figure above, suggestive being early repayment rate weighted, where is also taken into consideration the proportion of reimbursement for that respective value of the index compared with the total.

It is evident within 2-4 pp increase reimbursements to values lower than 2, their rate fluctuating around small values. We can deduce from this graph that a client consider early repayment of its loan when refinancing incentive amount is more than 2 percentage points perhaps to a lower value of this indicator refinancing costs exceed the favorable interest rate difference, reimbursement being not optimal. However, reimbursements are not always optimal from the point of view, so we see positive values also for a negative incentive to refinance.

4. Conclusions

Risk analysis is useful for early repayment of any credit institution, as better management of this risk may result in an increased efficiency of available funds, the development of competitive and flexible products within the banking market, sound budgeting targets for credit sales and a proper allocation of resources accordingly.

By using an econometric model, we can help improvement loan portfolios held, so to minimize the risk of early repayment of credit record. As a result, better risk management can be achieved by managing variables with significant impact on loan portfolio and on early repayment.

Note

- ⁽¹⁾ The survival function describes the probability as an aleator variable to get bigger values than a given x rate (Evans et al, 2000, pp. 6).

References

- Consalvi, M., Scotto di Freca, G. (2010). "Measuring prepayment risk: an application to UniCredit Family Financing", *Working Paper Series, UniCredit&Universities*, no. 5
- Cox, D.R. (1972). "Regression Models and Life-Tables", *Journal of the Royal Statistical Society, Series B (Methodological)*, 34(2)
- Dedu, V. (2011). "Politica monetară și piața imobiliară", *Economie teoretică și aplicată*, XVIII (12), pp. 3-12
- Evans, M., Hastings, N., Peacock, B. (2000). *Statistical Distributions*, 3rd ed. New York: Wiley, p. 13
- Green, J., Shoven, J.B. (1986). „The Effects of Interest Rates on Mortgage Prepayments”, *Journal of Money, Credit and Banking*, 18 (1), pp. 41-59
- Jacobs, J.P.A.M., Koning, R.H., Sterken, E. (2005). *Modelling prepayment risk*, University of Groningen
- Schwartz, E.S., Torous, W.N. (1989). "Prepayment and the Valuation of Mortgage Backed Securities", *Journal of Finance*, 44 (5), pp. 375-392
- Stanhouse, B., Stock, D. (2007). *Managing the risk of loan prepayments and the optimal structure of short term lending rates*, Berlin: Springer-Verlag
- Stanton, R. (1995). "Rational Prepayment and the Valuation of Mortgage-Backed Securities", *The Review of Financial Studies*, 8 (3), pp. 677-708

Financial stability, monetary policy and budgetary coordination in EMU

Claudiu Tiberiu ALBULESCU

“Politehnica” University of Timișoara
claudiu.albulescu@ct.upt.ro

Abstract. *A series of recent studies analyze the impact of financial crisis on the fiscal soundness in the Euro area countries. Even if their documented results present the transmission mechanisms of the financial instability toward the fiscal sector, a more realistic problem is related to the contribution of the fiscal and budgetary disequilibrium to the financial instability propagation. In this line, we show, based on a simple econometric model, that, beside the expansionary monetary policy, the budgetary deficit conducts to the financial stability deterioration. The financial stability of the Euro area is measured based on an aggregate financial stability index, constructed by employing the IMF methodology used for the financial stress index.*

Keywords: financial stability; policy mix; fiscal soundness; Euro area; aggregate financial stability index.

JEL Codes: E58, E61, G01.

REL Codes: 8M, 10C, 20H.

1. Introduction

Once the sovereign debt crisis made its appearance in the Euro area, several economists have associated the deterioration of the public finances situation with the global financial crisis. And this link can not be neglected (see the situation of the Portugal, Ireland, Greece and Spain, so called PIGS countries). The transmission mechanisms of the financial instability toward the fiscal sector are complex. The financial crisis can influence the fiscal sector in different ways. First, the fiscal balance deteriorates due to a decrease in tax revenue resulting from the economic recession and due to an increase in the government expenditures in order to stimulate economic activities. Second, the government debt increases because the governments, in order to save troubled financial institutions and overcoming financial crisis, make appeal to public bonds. In this line, Schuknecht et al. (2011) speak about an unpunctual reformation of the Stability and Growth Pact, associated with the lack of fiscal policy coordination.

It is true that a crisis has a negative impact on the fiscal sector, but is also true that we had a crisis because the fiscal policy and monetary policy coordination was very poor. That is why, a more realistic problem is related to the contribution of the fiscal and budgetary disequilibrium to the financial instability propagation. In this line, we show, based on a simple econometric model, that beside the expansionary monetary policy, the budgetary deficit conducts to a financial stability deterioration. The financial stability of the Euro area is measured based on an aggregate financial stability index, constructed by employing the IMF methodology used for the construction of the financial stress index. Our results show that the financial stability is correlated with the other objectives of the European Central Bank (ECB) and of the national governments in the European Monetary Union (EMU). Consequently, in order to avoid a new crisis appearance, it is necessary to have a better coordination between the ECB and the national governments. This coordination can be achieved by considering financial stability as a common objective. The authorities' cooperation is also supported by different financial stability committees that have been lately created.

The reminder of the paper is the following: section 1 presents the reform of the financial stability framework in EMU, describing the structure of the financial stability committees that have been created at national level; section 2 presents the aggregate financial stability index construction and the econometric test, highlighting the relationship between the financial stability and the others authorities' objectives; the last section concludes.

1. A reform of the financial stability framework in EMU

The recent economic crisis put into discussion the economic policies coordination mechanism inside a monetary area. The policy mix literature, related to the fiscal and monetary coordination, does not look answers in terms of financial stability. Even if a lot of studies (see Beetsma et al., 2001, Laskar, 2003, Oros, 2008) show that the budgetary coordination is necessary for the reduction of asymmetric shocks impact at EMU level, none of these works analyzes the close relation which exist between the macroeconomic stabilization and the systemic financial stability.

The disequilibrium which appears in the real activity has a spillover effect toward the financial system and the public authorities (central banks and governments) are forced to make an intervention strategy. In the Euro area, during the recent economic crisis, the ECB and the national governments have taken repeated measures in order to stabilize the financial activity. At the beginning, the interventions were represented by the liquidity injections in the market – lender of last resort actions. Afterwards, an ample reform of the institutional framework for regulation and supervision was made.

In this context, the European Financial Stability Facility (EFSF) was created by the Euro area Member States following the decisions taken on 9 May 2010 within the framework of the Ecofin Council. The EFSF's mandate is to safeguard financial stability in Europe by providing financial assistance to Euro area member states. EFSF is authorized to use the following instruments linked to appropriate conditionality: loans to countries in financial difficulties, interventions in the debt primary and secondary markets and finance recapitalizations of financial institutions through loans to governments.

In the same time, the European System of Financial Supervisors (ESFS) was created. The establishment of the ESFS is associated with a complicated network of regulatory and supervisory institutions. His objectives are to facilitate cooperation among EU and national supervisors. In the same spirit, on 1 January 2011, the three ESAs were created: the European Banking Authority (EBA), the European Securities and Markets Authority (ESMA), and the European Insurance and Occupational Pensions Authority (EIOPA).

Beside the development of the regulation and supervision institutional structure at EU level, even before the crisis burst-up, different cooperation mechanisms in terms of financial stability was putted into place in several European countries. Financial Stability Committees were created in order to facilitate the cooperation between central banks, national supervision agencies and national governments, in terms of financial stability (Table 1).

As we have saw, the cooperation between authorities in terms of financial stability was improved. However, it is difficult to state that these frameworks are efficient and can achieve only by themselves the Euro area financial system stability. They can have an important contribution in terms of stability, but it is more useful to declare the financial stability as a common objective of the authorities, in order to intensify their efforts in this direction. Furthermore, in this case we do not speak only about a cooperation strategy; we speak about a coordination framework. In the next section we will demonstrate that the financial stability objective is compatible with the others objectives of the ECB (prices stability) and national governments (growth and budgetary equilibrium), and this coordination framework can be established.

Table 1

Financial stability committees

Country	Establishment date	Name	Composition
Spain	2006	Financial Stability Committee	- Central bank - Financial supervision agencies - Ministry of Economy and Finance
Czech Republic	2006	Financial Market Committee	- Central bank - Ministry of Finance - Budget Committee of the Chamber of Deputies
Romania	2007	National Committee for Financial Stability	- Central bank - Financial supervision agencies - Ministry of Finance
Portugal	2007	National Financial Stability Committee	- Central bank - Financial supervision agencies - Ministry of Finance and Public Administration
Austria	2008	Financial Market Committee	- Central bank - Financial supervision agencies - Ministry of Economy and Finance
Poland	2008	Financial Stability Committee	- Central bank - Financial supervision agency - Ministry of Finance
Italy	2008	Financial Stability Safeguard Committee	- Central bank - Financial supervision agencies - Public Treasury
Greece	2008	Financial Stability Committee	- Central bank - Financial supervision agencies - Ministry of Economy and Finance
Finland	2008	Memoranda of Understanding (MoU)	- EU and central banks from Nordic countries - Supervisory authorities - Ministries of finance
Denmark	2008	Danish Act on Financial Stability	- Government - Parliament - Banking association
World-Europe	2009	Financial Stability Board	- Central banks - Financial supervision agencies and national governments

Country	Establishment date	Name	Composition
			- International institutions
Hungary	2010	Financial Stability Board	- Ministry of Finance - Central bank - Hungarian Financial Supervisory Authority
Belgium	2010	Committee for Systemic Risks and System-relevant Financial Institutions	- Central bank - Banking, Finance, and Insurance Commission - Ministry of Finance
France	2011	Financial Regulation and Systemic Risk Council	- Central bank - Public Treasury - Financial supervision agencies - Ministry of Economy
England	2011	Financial Policy Committee	- Central bank - Financial Services Authority
Sweden	2011	Financial stability cooperation arrangements	- Central bank - Financial supervision agency - Ministry of Finance - National Debt Office

Source: Internet site of central banks, ministries of finances, supervision authorities, Financial Stability Board and International Monetary Fund.

2. Financial stability as a common objective for ECB and national governments

2.1. The construction of the Euro area aggregate financial stability index

The main advantage of such an index, called stability or stress index, depending on its construction method, resides in the fact that it represents a dynamic analysis of the financial stability level. It was developed in studies like those of Illing and Liu (2003), Nelson and Perli (2005), Gersl and Hemanek (2006), Cihák (2007), Rouabah (2007) or Albulescu (2010) and it became more popular when it was used by the IMF in 2008 or by the ECB in 2010, in the case of the financial stress index. Such an index can be constructed in different ways. Most of the existing stress indexes are based on high-frequency data, but they differ in the selected variables (banks capitalization, credit ratings, credit growth, interest rate spreads or volatility of different asset classes), country coverage and aggregation method. An important advantage of continuous stress indicators (or financial instability indicators) is that they may reveal periods of small-scale stress that did not result in full-blown crisis and were neglected in studies based on binary crisis variables.

No matter the employed technique, there are few steps that should be followed in the construction of the aggregate financial instability index. After the indicators are defined, they have to be quantified. The accuracy level and the measurement scale have to be established. It often happens that the individual indicators do not have the same accuracy or the same measurement units, situation which is obviously complicating the aggregation into a synthetic index. The indicators' values have thus to be normalized (different normalization methods can be used). Even if the normalization and the aggregation methods raise important theoretical and practical problems, the major inconvenient relates to the indicators weighting. We can choose either to give the same importance to all the variables or to apply a different weight based on the decision making criteria. The standard procedure consists in giving the same weight to all the variables which are included in the aggregate index.

The use of a composite index has a number of benefits (Baxa et al., 2011). First, it approximates the evolution of the financial stress caused by different factors and thus it is not limited to one specific type of instability. Second, the inclusion of additional variables into the instability or stress index does not affect the evolution of the indicator. Third, the composition of the indicator allows breaking down the reactions of the central bank with respect to different stress sub-components.

In this study, in the first phase of the index construction demarche, we have identified the individual indicators, which are calculated on a quarterly basis covering the period 1999: Q1 to 2011: Q1. The 10 financial instability indicators, employed in different research papers on this subject, are presented in Table 2.

Table 2

Financial instability indicators		
Individual indicators	Expected contribution to the financial instability	Database
Financial market instability index (FMII)		
Volatility of the stock index return	+	Yahoo finance
Short term interest rate volatility	+	OECD and Eurostat
Economic sentiment indicator	-	European Commission
Banks' financial soundness index (BFSI)		
Bank nonperforming loans to total loans	+	OECD and IMF
Bank regulatory capital to risk-weighted assets	-	OECD and IMF
ROE	-	OECD and IMF
Liquid assets to total assets	-	OECD and IMF
Interest rate spread: three-month Euribor rate – ECB monetary key rate in t-1	+	Eurostat and ECB
External financial vulnerability index (EFVI)		
REER excessive depreciation or appreciation	+	Eurostat
Current account deficit to GDP	+	OECD and Eurostat

Because we want to retain the IMF normalization procedure (see FMI, 2008), we are forced to construct an instability index (AFII), and afterwards an aggregate financial stability index (AFSI) as its opposite. The AFII takes values in the interval $[1;10]$ where 10 represents a high level of financial stress. Consequently, the AFSI retained in our study is the difference between the maximum value which can be registered by the AFII and its real value. In this case, a high value of the AFSI is associated with a satisfactory level of financial stability.

As we can see in Table 2, the impact of the individual indicators on the financial instability can be either positive or negative. In order to use the IMF normalization procedure, we have retained the indicators with a positive contribution and we have transformed the others using their inverse value (e.g. for the indicator "I": $1/I$ or $100-I$). In this way, all the indicators will have a positive contribution to instability (a high level of the indicators points out a high instability).

The normalization procedure for each indicator (and for all the EMU members) is based on the formula:

$$X_{in} = \frac{X_i - \bar{X}_t}{\sigma_t} \quad (1)$$

where: X_{in} – is the normalized value of the X indicator, for the i quarter ; $\bar{X}_t$ represents the average value of the indicator X during the period t and σ_t is the indicator X standard deviation during the period t .

After the computation of the normalized values, we have calculated the partial index (FMII, BFSI and EFVI – see Table 2 above), using the arithmetic mean of the individual indicators incorporated in each index. Finally, the AFII is obtained for each Euro area country, based on the formula:

$$AFII_{iz} = \frac{3 \times FMII_{iz} + 5 \times BFSI_{iz} + 2 \times EFVI_{iz}}{10} \quad (2)$$

where: $AFII_{iz}$ is the aggregate financial instability index for the country z in the i quarter.

Calculated in this manner, the AFII values can be positive or negative. That is why, in order to have a clear picture of the AFII dynamics, it is necessary to use a rescaling method for repositioning the index values in an one interval ($[1;100]$), as for example that of the IMF, or in another interval that we

have chosen by ourselves ([1;10]), where we usually find the values of the indicators introduced later in the econometric analysis.

$$AFII_{izt} = \frac{AFII_{iz} + abs[\min(X_{in1}, X_{in2}, X_{in3} \dots)]}{\max(AFII_{iz}) + abs[\min(X_{in1}, X_{in2}, X_{in3} \dots)]} \times 10 \quad (3)$$

where: $AFII_{izt}$ is the aggregate financial instability index, rescaled, for the country z in the i quarter; $AFII_{iz}$ is the aggregate financial instability index, for the country z in the t period (1999: Q1 to 2011: Q1) and X_{in1} are the normalized values of the individual instability indicators, for each period taken into consideration.

The last step is represented by the construction of the AFII for the Eurozone. The AFII for each country was weighted with the country GDP to Euro area GDP ratio (a weighted mean was then calculated, based on the importance of each country in the Euro area GDP). This choice was made due to the fact that the governments of big countries, like Germany or France, have an important influence in the EU structures and that the ECB decisions are different if the financial systems of large countries become unstable. However, we reached the conclusion that the results obtained with the weighted mean and with the arithmetic mean do not differ significantly.

$$AFII_{iEUR} = \sum_{z=1}^{17} AFII_{izt} \times \frac{GDP_{iz}}{GDP_{iEUR}} \quad (4)$$

where: $AFII_{iEUR}$ is the Euro zone aggregate instability index for the quarter i ; GDP_{iz} is the GDP of the country z for the quarter i and GDP_{iEUR} is the GDP of the Euro area for the quarter i .

Finally, we have estimated, like we have mentioned at the beginning of this section, an aggregate financial stability index, based on the aggregate instability index for the Euro area ($AFSI_{iEUR} = 10 - AFII_{iEUR}$). Its trend is presented in Figure 1 below, where a high level of financial stability is associated with a high score of the AFSI and the opposite case:



Figure 1. *Euro area financial stability index dynamics*

2.2. Compatibility of the authorities' objectives: an econometric analysis

In this section we have tested the link between financial stability (measured based on an aggregate index) and the other objectives of the authorities (national governments and central banks), namely: the economic growth rate, the inflation rate, the interest rate smoothing and the budgetary deficit. The description of the explanatory variables is made in the Table 3, below.

Table 3

Description of the explanatory variables and expected sign

Indicators	Description	Database	Expected sign	Explanations
GDP	Economic growth rate (quarterly basis, compared to the same period of the previous year)	Eurostat	+	The economic growth rate has a positive impact on the financial stability. An important number of financial crisis appear due to the deterioration of the real economy situation.
Inflation	The inflation rate (quarterly basis, compared to the same period of the previous year)	Eurostat and OECD (starting with 2003:Q2)	+	As a rule, a general increase in consumer's prices is associated with a higher demand on the market. This higher demand is supported by an economic growth and by a financial stability period. In this case, we assist to a sort of short term trade-off between financial stability and prices stability, in relation with the central banks' objectives.
Euribor	Euribor at three months (a proxy for the key interest rate)	ECB	-	A decrease in the interest rate entails benefits for the financial stability in terms of credit activity reprisal. The burst-up of crisis

Indicators	Description	Database	Expected sign	Explanations
	- which has a weak dynamic) – the average of the period (quarter)			episodes is accompanied by a high level of the interest rate, associated with the risk on the market. Indeed, the authorities make efforts in order to solve liquidity problems and to stimulate the economic growth towards the decrease of the interest rate, even if an inflationary pressure appears on short run. This behaviour favours the financial stability.
Deficit	Budgetary deficit, (calculated as the difference between public expenses and budgetary incomes)	ECB	-	An important public deficit has a negative influence on the investors' perception and, as a result, on the financial stability. Even if it is hard to demonstrate that a higher deficit produces a deterioration of the financial system stability in an automatic manner, we can observe that, at the beginning of the crisis periods, the budgetary deficit is important.

The tested equation is the following (in brackets we have the t-statistic values and the associated p-values):

$$AFSI = 2.84 + 0.16 GDP + 0.37 INFLATION - 0.37 EURIBOR - 0.10 DEFICIT + \varepsilon_t \quad (5)$$

$$\begin{pmatrix} 5.73 \\ <0.0001 \end{pmatrix} \quad \begin{pmatrix} 3.13 \\ 0.003 \end{pmatrix} \quad \begin{pmatrix} 2.61 \\ 0.012 \end{pmatrix} \quad \begin{pmatrix} -3.34 \\ 0.001 \end{pmatrix} \quad \begin{pmatrix} -1.69 \\ 0.098 \end{pmatrix}$$

$$R^2=0.40; F=7.43 (p<0.0001)$$

The results show that the expected sign of the coefficients are obtained and all these coefficients prove significant. The economic growth and the interest rate have, as expected, the most significant impact on financial stability. Due to this link between the financial stability and the other objectives of the authorities, we can state that the financial stability must be considered as a common and declared objective of the ECB and of the national governments in the Euro area countries.

Conclusions

The financial crisis has confirmed the fact that the cooperation mechanisms in terms of financial stability, established at the EMU level, were not efficient. The authorities' interventions in order to save the financial systems had a negative impact in terms of fiscal soundness and credibility. The institutional regulation framework was improved but it is necessary to have not

only cooperation but coordination of the ECB and national governments actions, in order to achieve the financial system stability.

The policy-mix literature focused on the coordination problems in the EMU, but the financial stability objective was not taken into account, as a solution for empower this coordination. In this context and based on the effort made on the institutional side, we sustain the idea according to which the financial crisis can be avoided if the financial stability became *de facto* and *de jure* a common objective of the ECB and of the national governments.

In order to support this idea, we have used a complex and documented methodology for the construction of a financial stability aggregate index for the Euro area. Afterwards, we have demonstrated the existence of a strong compatibility between the stability objective and the others declared and stipulated objectives of the authorities, namely the economic growth, the price stability, the interest rate smoothing and the budgetary soundness (a short term trade-off appears in terms of prices stability). Our econometric test results indicate the necessity to consider the financial stability as a common objective at EMU level.

Acknowledgements

This work was supported by the project “Post-Doctoral Studies in Economics: training program for elite researchers – SPODE” co-funded from the European Social Fund through the Development of Human Resources Operational Programme 2007-2013, contract no. POSDRU/89/1.5/S/61755.

References

- Albulescu, C.T. (2010). “Forecasting the Romanian Financial System Stability Using a Stochastic Simulation Model”, *Romanian Journal of Economic Forecasting*, 13(1), pp. 81-98
- Baxa, J., Horváth, R., Vašíček, B. (2011). “Time-Varying Monetary-Policy Rules and Financial Stress: Does Financial Instability Matter for Monetary Policy?”, *Czech National Bank Working Paper*, No. 3
- Beetsma R., Debrun X., Klaassen F. (2001). “Is Fiscal Policy Coordination in EMU Desirable?”, *CEPR Discussion Paper*, No. 3035
- Gersl, A., Hermanek, J. (2006). “Financial Stability Indicators: Advantages and Disadvantages of their Use in the Assessment of the Financial System Stability”, *Czech National Bank Financial Stability Report*
- Illing, M., Liu, Y. (2003). “An index of Financial Stress for Canada”, *National Bank of Canada Working Papers*, No. 14

- Laskar, D. (2003). "Policy-mix: le besoin de coordination des politiques budgétaires entre pays est-il accru en union monétaire?", *Louvain Economic Review*, 69(3), pp. 267-291
- Nelson, W.R., Perli, R. (2005). "Selected Indicators of Financial Stability", *Fourth Joint Central Bank Research Conference*, ECB, Frankfurt am Main, 8 Noiembre
- Oros, C. (2008). "Macroeconomic Stabilization in a Heterogeneous Monetary Union: Some Insights into the Effects of Fiscal Policy Coordination", *Economics Bulletin*, 5(34), pp. 1-12
- Rouabah, A. (2007). "Mesure de la vulnérabilité du secteur bancaire luxembourgeois", *Luxembourg Central Bank Working Paper*, No. 24
- Schuknecht, L., Moutot, P., Rother, P., Stark, J. (2011). "The Stability and Growth Pact crisis and reform", *ECB Occasional Papers Series*, No. 129

Central Bank independence

Vasile DEDU

Bucharest Academy of Economic Studies
vdedu03@yahoo.com

Tiberiu STOICA

Bucharest Academy of Economic Studies

Abstract. *In this paper we present the key aspects regarding central bank's independence. Most economists consider that the factor which positively influences the efficiency of monetary policy measures is the high independence of the central bank. We determined that the National Bank of Romania (NBR) has a high degree of independence. NBR has both goal and instrument independence. We also consider that the hike of NBR's independence played an important role in the significant disinflation process, as headline inflation dropped inside the targeted band of $3\% \pm 1$ percentage point recently.*

Keywords: central bank independence; monetary policy; Great Moderation; inflation; output.

JEL Codes: E50, E58, E59.

REL Code: 8J.

Introduction

Government control on the central bank generally reduces the efficiency of monetary policy measures. In 1970s, the industrialized countries faced high inflation and output volatility to a certain extent due to fiscal domination. Therefore, the authorities in the developed countries gradually increased central bank independence in order to increase the impact of monetary policy measures. Between the mid 1980s and 2006, inflation and output smoothened in many developed countries, determining specialists to name this period “The Great Moderation”. According to Bernanke (2004), “The Great Moderation” is the result of three important factors: 1) structural changes, 2) better macroeconomic policies and 3) good luck. Consequently, the changes of economic institutions, technology and business practices enhanced economies’ ability to deal with multiple shocks. As regarding macroeconomic policies, certain economists agree that the high inflation and output volatility in the 1970s was partly driven by inadequate monetary policies (Romer, Romer, 2002). After mid-1980s, higher central bank independence (CBI), as well as the increased ability of the monetary authority to better quantify the monetary policy transmission mechanism enhanced the efficiency of monetary policy measures. CBI is also an important institutional requirement for adopting inflation targeting (IT). In conclusion, we consider that increased central bank independence is compatible to modern monetary policy. In this paper, we present the main issues regarding central bank independence. We also calculate NBR independence considering certain factors presented in previous research papers.

1. Short history of central banks

The first central banks were created in Sweden and England and their main task was to finance the budget deficits. The frequent and severe financial crisis, as well as the lack of regulation of the banking system determined the authorities to extend central banks’ objectives in the developed countries. After the two World Wars, central banks dealt with high inflation and unemployment and low output especially in the countries severely affected by the military conflicts. Certain specialists realized that there could be trade offs between certain goals established for the central bank, as the monetary authority can not maintain price stability, high economic growths, low unemployment, external equilibrium and a stable exchange rate at the same time. In the 1960s, Friedman stated that the central banks can only influence in the long-run the inflation, the money supply and the exchange rate. Therefore, central banks focused on three

main monetary policy strategies. In the last several decades, specialists realized that the institutional framework can also influence the efficiency of monetary policy measures.

2. Central bank independence

Central bank independence problem is not new in the academic literature, as in the early nineteenth century Ricardo emphasized the fact the central banks must not directly finance the public deficit. In 1913, Keynes stated the same thing in his speech at the inauguration of the Reserve Bank of India. Posen (1995) considers that the interests of the political parties determine the degree of the central bank independence, as it can affect the inflation in the long-run. Cukierman (1992) and Eijffinger and De Haan (1996) believe that central bank independence in the industrialized countries is inversely correlated with the annualized inflation rate. A higher degree of central bank independence reduces disinflation costs (Debelle, Fischer, 1994, Walsh, 1995, 2003). Cukierman, Webb and Neyapti (1992) quantify CBI considering the following factors: 1) the manner central bank governor is appointed, 2) the relation between the central bank and the government and 3) central bank goal. According to previous research papers, there are three types of central bank independence: 1) goal independence, 2) instrument independence, 3) both. In Canada and New Zealand, the central bank governor and the ministry of public finance establish the long-term goals of the central bank, while NBR has total independence in implementing the necessary instruments in order to achieve the stated goals. Therefore, Bank of Canada and the Reserve Bank of New Zealand have instrument independence but not goal independence while NBR has both goal and instrument independence as the governor establishes both the inflation target and the necessary instruments. Central bank independence is stipulated in special laws (in Romania, Law no. 312/2004). Despite special laws that guard CBI, in certain countries there are customs that prevail. An example is Argentina. Although the governors' mandate stipulated by the law is of four years, governors usually resign when a new minister of finance is appointed.

3. NBR's independence

In this paper, we determine NBR's degree of independence using a simple methodology. We construct an indicator that incorporates the following factors: 1) NBR governor, 2) NBR actions, 3) NBR Board. The factors are similar to the ones used by Cukierman (1992) in constructing the Legal Variables Aggregate

Unweighted (LVAU) indicator. We give a score for each criterion. The indicator is presented bellow.

0 – there is no central bank independence considering that criterion

1 – total central bank independence considering the criterion

I. NBR Governor				
1.	NBR's Governor mandate	1. over 8 years	1	0.50
		2. [6,8) years	0.75	
		3. 5 years	0.50	
		4. 4 years	0.25	
		5. <4 years	0	
2.	NBR Governor is appointed by			0.50
	a. NBR Board		1	
	b. NBR Board, Parliament and Government		0.75	
	c. Parliament		0.50	
	d. Government		0.25	
e. Prime Minister/Ministry of Public Finance or both			0	
3.	The law permits NBR Governor to held other public positions			1
	a. No		1	
	b. Only if the Government approves		0.50	
c. Yes			0	
4.	NBR Governor could be revoked			0.60
	a. Only for reasons that are not political or he is unable to continue his work		1	
	b. NBR Board		0.80	
	c. Parliament only for thorough reasons		0.60	
	d. Parliament		0.40	
	e. Government only for thorough reasons		0.20	
f. Government			0	
II. NBR Actions				
5.	NBR can purchase government bonds or T-Bills from the primary market			1
	a. The law does not allow		1	
	b. The law allows		0	
6.	NBR is also a development bank for the public and private sectors			1
	a. No		1	
	b. To a certain extent		0.66	
	c. Yes		0.33	
d. It is NBR's main task			0	
7.	NBR budget is established by			1
	a. NBR		1	
	b. NBR, Government and Parliament		0.50	
c. Government and Parliament Commissions			0	
8.	NBR profit is distributed to			1
	a. According to NBR Act		1	
	b. NBR		0.5	
c. Government			0	
9.	NBR loans have maturities of			1
	a. 6 months and less		1	
	b. One year		0.66	
	c. More than one year		0.33	
d. It is not stipulated			0.25	
10.	NBR may grant short-term loans to the State Treasury. The maximum loan value is			0.66
	a. A nominal value		1	

	b. Established as a percentage of NBR's capital	0.66	
	c. Established as a percentage of total public revenues	0.33	
	d. Established as a percentage of total public expenses	0	
	NBR's interest rate for the short-term loans granted to the State Treasury is:		
11.	a. A market interest rate	1	1
	b. It is not allowed to be below a certain value	0.75	
	c. It is not allowed to be above a certain value	0.50	
	d. It is not stipulated	0.25	
	c. Zero	0	
	If there is a conflict between NBR and the Government		
12.	a. NBR decides	1	0.50
	b. The law does not stipulate	0.5	
	c. Government decides	0	
	The inflation target is established by		
13.	a. NBR	1	1
	b. NBR, Ministry of Public Finance or other institutions	0.5	
	c. Other institutions with the exception of NBR	0	
	The monetary policy rate is established only by NBR		
14.	a. Yes	1	1
	b. No	0	
	NBR can grant loans to other public institutions		
15.	a. No	1	1
	b. Yes	0	
	III. NBR Board		
	NBR Board members are appointed by		
16.	a. Parliament	1	1
	b. Government	0	
	The mandate of NBR's Board members is higher than Government mandate		
17.	a. Yes	1	1
	b. No	0	
	NBR Board members are allowed to have other public positions		
18.	a. No	1	1
	b. Yes	0	

Source: Authors' calculations.

The maximum degree of independence = 18

NBR's degree of independence = 15.76

NBR's index of independence = $15.76/18 = 0.8755$ (87.55 %)

According to our indicator, NBR has a high degree of independence. We consider that the adoption of the Law no. 312/2004 regarding the Statute of the National Bank of Romania significantly increased the CBI. We also consider that the hike of NBR's independence played an important role in the disinflation process, as headline inflation dropped inside the targeted band of $3\% \pm 1$ percentage point in the first part of 2012. NBR has both goal and instrument independence according to NBR's Statute. Further research should focus on comparing the degree of independence of the monetary authorities in Central and Eastern Europe (CEE).

The main disadvantage of the presented approach is that we attributed equal weights to each criterion introduced and this could negatively affect the final results. Determining optimal weights could be a very difficult task.

Another disadvantage is that the indicator offers a static view regarding the CBI and does not present how central bank independence changed in the past twenty years. We are aware of the fact that Law no. 312/2004 increased the CBI but we do not have figures indicating this process.

Conclusion

In this paper, we present the key aspects regarding central bank's independence. Most economists consider that the factor which positively influences the efficiency of monetary policy measures is the high independence of the central bank. We determined that NBR has a high degree of independence. According to our calculations, NBR has a degree of independence of 87.55 %. The Romanian monetary authority has both goal and instrument independence. We also consider that the hike of NBR's independence played an important role in the significant disinflation process, as headline inflation dropped inside the targeted band of 3 % +/- 1 percentage point in the first part of 2012.

References

- Ahsan, A., Skully, M., Wickramanayake, J. (2006). "Determinants of central bank independence and governance: Problems and policy implications", *JOAAG*, Vol. 1, No. 1
- Bernanke, B.S. (2004). „The Great Moderation”, remarks at the meetings of the Eastern Economic Association, Washington DC, February 20
- Cukierman, A. (1992). *Central Bank Strategies, Credibility and Independence*, MIT Press
- Cukierman, A., Webb, S., Neyapti, B. (1992). „Measuring the independence of central bank and its effects on policy outcomes”, *World Bank Economic Review*, No. 6
- Debelle, G., Fischer, S. (1994). *How Independent Should a Central Bank Be?*, in J. C. Fuhrer (ed.), *Goals, Guidelines and Constraints Facing Monetary Policymakers*, Federal Reserve Bank of Boston, pp. 195-221
- Eijffinger, S., De Haan, J. (1996). „The Political Economy of Central-Bank Independence”, *Special Papers in International Economics*, No. 19, Princeton
- Maslowska, A. (2007). "On the precision of central bank independence measures and their relationship with inflation: panel data approach", paper written for the *Annual Meeting of the European Public Choice Society*, Turku Department of Economics, Finland
- Posen, A. (1995). *Declarations Are Not Enough: Financial Sector Sources of Central Bank Independence*, in B. Bernanke and J. Rotemberg (eds.), *NBER Macroeconomics Annual*, Cambridge, MA: MIT Press, pp. 253-274
- Romer, C., Romer, D. (2002). *The Evolution of Economic Understanding and Postwar Stabilization Policy*, Rethinking Stabilization Policy, Federal Reserve Bank of Kansas City, pp. 11-78
- Walsh, C.E. (2003). *Monetary Policy and Theory*, MIT Press, Cambridge
- Reserve Bank of Australia Bulletin (1994). *Central Bank independence: What does it mean?*

Re(De)-Forming public administration: an expert outlook on reform planning in Romania⁽¹⁾

Diana-Camelia IANCU

National School of Political Studies and Public Administration, Bucharest
dciancu@snsipa.ro

Abstract. *It has been argued that the West with its well-established democracies was largely responsible for the filling of the institutional vacuum the East experienced after the fall of totalitarian regimes in the eve of the 90s. Scholars of international relations and public policies loudly debated on the existent causality between the European enlargement and the administrative reforms Central and Eastern European countries experienced in the last two decades. Be it in the form of soft or hard law, financial aid or penalties, Western norms were supposed to have been transferred to acceding countries in a rather alert tempo, and with a high(er) rate of compliance success. This research builds on these arguments without yet embracing them completely and tackles the issue of Western values successful transfer to public administration reform planning in Romania. The main question it attempts to answer is to what extent substantial compliance to the European expectations for building a consolidated public administration was achieved. In doing so, it compares formal national discourses of successful public administration reform with personal experiences of Romanian public managers, four years after Romania's accession to the European Union. Between 2005 and 2008, the Romanian Government acknowledged the need for developing a highly professional, apolitical category of civil servants later to be called "public managers". These managers, young people that were offered Governmental grants to train themselves in Western universities, were supposed to guide national reforms from the inside of the system. Their informal role was to use their Western academic and training experiences and place them against the national background so as to plan and execute a "good" public administration reform. Was this achieved? What were the intervening*

factors? The interviews performed on public managers from central government organizations are placed against the framework of post-enlargement Europeanization studies and sustain the original hypothesis of the paper: there is a gap between reform discourse and reform practice, and transfer of Western values is hardly visible when the agents of this transfer are solely public managers.

Keywords: post-enlargement europeanization; public manager; administration reform.

JEL Code: H11.

REL Code: 13G.

1. Introduction

One of the first definitions of Europeanization in the social sciences framework was provided by Ladrech (1994); in his view, the Europeanization was an incremental process that aimed at integrating the economic and political dynamics of the EU within the domestic logic of policymaking. In turn, Knill and Lehmkuhl (1999) defined Europeanization as the impact of European policies on the internal structures of a member state. In their approach, being Europeanized was a consequence of the European impact and a synonym to “being changed by EU policies”. In analyzing how much change was involved in this causal relation, Knill and Lehmkuhl (1999), as well as Töller (2004), Bauer et al. (2007) or Sedelmeier (2011), for that matter, hypothesized that the domestic changes experienced by member (and applicant) states varied along the institutional arrangements provided by different EU policies. Radaelli (2000) on the other hand, spoke of the EU adaptational pressures member states were subject to and discussed the latter’s reaction to them in terms of coercion and mimetism. So did to some extent Grabbe (2006) when addressing the case of applicant countries and their accession process to the European Union.

All these analyses above had in common a “top-down” approach, genuinely part of the so called “first generation” in the studies of Europeanization – national reactions to EU pressures were explained by assuming a legal, institutional or procedural misfit of the domestic setting against the European one. This approach proves useful also to the scope of this paper, as it assumes that Romania’s misfit in connection to the EU requirements on civil service reform may have contributed to the development of a new type of bureaucrat: the public manager. In fact, the argument goes that since 2000 (the year when negotiation for EU accession started), the Romanian civil service was subject to a stick and carrot mechanism: should reforms successfully married the European milestones (e.g. they managed to be produced in a rather sustainable manner and on time), they would have generated (more) funding (e.g. via PHARE), (more) delivering of expertise (e.g. via twinning projects) or (more) political support (e.g. via awarding green flags). Subsequently, a lack of progress in the area would have implied less or no financial support to further strengthen the reform, a cut-down or a shortening in expert training via twinning projects as well as the flying of red flags alerting the public and the authorities on the unsatisfactory political performance. Arguably, such an assumption may prove its merits *during* the accession period, in view of an uncertain finish (inside or outside the European Union); but what about *after* accession? As argued by the literature (Vachudova, 2009; Dimitrova and Toshkov, 2009; Meyer-Sahling, 2009; Levitz and Pop-Eleches, 2010;

Junjan and Iancu, 2011), post-accession trends of reforms are quite optimistically stable, yet rather realistically, less alert than prior accession. As such, it might be fair to assume that the Romanian civil service experienced an accelerated rhythm of reform between 2000 and 2007 and got stabilized after 2007. This paper argues a slightly different turn of events: while assuming that the carrot of EU accession did play a role in balancing the existent misfit in civil service performance with the European expectations in the matter up to the year 2007, it provides two arguments for considering that not only the civil service reform stopped after accession, but that a de-form process started once the stick of European monitoring disappeared. As argued in this paper, the de-form process implied a politicization of the civil service (from its top to its bottom) and a process of diminishing the “change-agent” role of public managers inside the system.

2. In civil service for a political boss⁽²⁾

In 1971, William Niskanen developed a theory of bureaucratic inefficiency. His model of bureaucracy started from the assumptions previously made by Downs (1965) and Tullock (1965): first, that collective action should be explained through individual actions; second, that individuals are utility maximizers. Additionally it assumed that there are only two actors in the model world: the bureau chief (head of the agency) and the sponsor (the financing political body). They both maximize utility in the form of a bigger budget (the bureau chief) and re-election (politicians). The essential premise of the model is that of bilateral monopoly, which characterized the relationship between the bureau chief and the sponsor (Niskanen, 1971, p. 24). It consisted in the assumption that the bureau was placed in a monopoly position (unique seller), whereas the sponsor is in a monopsony position (unique buyer). The sponsor is, though, unaware of the real production costs of the bureau (informational asymmetry). From these assumptions (and a few others that I won't mention here).⁽³⁾ Niskanen derives its famous conclusion: bureaucratic production is inefficient; the budgets will be greater than optimal and there will be a supra-production of public goods (more than the ideal points of citizens and politicians).

This model generated a large amount of subsequent literature; most of the following researches on bureaucracy focused on its efficiency, refining it or building other negotiation models between sponsor and bureau chiefs (Romer and Rosenthal, 1978; McGuire, Coiner, and Spancake, 1979; Miller and Mow, 1983). Almost all, though, assumed a relative independence between bureaucrats and politicians and a fully developed bureaucratic system. There are

at least two problems here. First, in reality, we have different degrees of bureaucratization. Real states could be placed, thus, on an imaginary scale, starting from the fully politicized (spoils) system and ending with a fully bureaucratic system. The bureaucracy models mentioned above will apply only to the fully bureaucratic systems (if any). Second, as discussed by Iancu and Ungureanu (2010), spoils and bureaucracies could hardly be analyzed in the same way. In an ideal bureaucratic organization, the civil servant is not dependent of the politicians and there are far more incentives to efficiently produce public goods, than in spoil systems. However, the independence of the civil servant from the politicians may cause losses to political firms⁽⁴⁾ and it is for this reason that normally, politicians prefer more politicized systems looking as much as possible as bureaucracies, so as the production of public goods to not be visibly affected. This last sentence refers to a problem of the collective action as identified by Downs (1957). Individuals are not motivated to monitor governmental actions, to inform themselves upon costs and levels of public goods production.⁽⁵⁾ For this reason, up to some point, politicization may pass unnoticed. Also, as long as for the rational ignorant, the production of public goods is not visibly affected, then it might arrive in a quantity and with a quality less than optimal without consequences for politicians. From this, politicians will rather have mixed systems of public administration – politicized, but as much as the de-professionalization to not be visible, and accordingly, the production of public goods to not show any shortages for the rational ignorant. This observation infers the reactivity to costs of politicians – politicians will politicize the public administration up to the point where the marginal cost of politicization exceeds its marginal benefits (Iancu and Ungureanu, 2010). What may be deduced from here is that if one observes change in the politicians' costs, then one may witness changes in their actions as well. Concretely, the civil service system change with the politicians' costs. The idea here is that politicians will positively react to institutional (or other kind of) incentives for maintaining a de-politicized public. If these incentives are not present though, it is to be expected that they will act like political bosses of public administrators.

3. ...Under Weber's roof, advocating NPM and JUG⁽⁶⁾...

In *Economy and Society* (1914, 1922), M. Weber largely presented and analyzed the benefits of a bureaucratic system of public administration. He described the bureaucratic organization by listing a series of organizational attributes like: rational-functionality, hierarchy and permanence. The Weberian bureaucracy provided competitive jobs (for experts) and fostered merit-based

selection and promotion criteria for its employees. In M. Weber's terms: "Bureaucracy is an administration by trained experts. Only persons who qualify under general rules are employed. The possession of educational certificates or patents is usually linked with qualification for office." (Weber, 1922, pp. 956-999).

At another end of public administration reform,⁽⁷⁾ NPM advocated in favor of restructuring (public) bureaucracy following private sector patterns. The focus on: efficiency; output and performance assessment; private ownership and alternative forms of delivering the public services; management decentralization; and enhanced mechanisms for reporting and monitoring, become pillars of the theoretical argument developed by the NPM literature (Kaboolian, 1998; Gaster, 1999, p. 36; Gruening, 2001). As commented by T. Bovaird (2003, pp. 38-39), adherents of the NPM school of thought tended to wish for redesigning ("re-engineering") organizational processes around the needs of service users and other stakeholders, while being concerned with the inefficiencies produced by political interference in managerial decisions.

If coordination is to be considered the end state in which policies and programs of the government are characterized by minimal redundancy, incoherence and lacunae (Peters, 1998, p. 296), and "joined-up government" is a phrase which denotes the aspiration to achieve horizontally and vertically coordinated thinking and action (Pollitt, 2003, p. 35), then "joined-up government" is being practiced before it was so named (Richards and Kavanagh, 2000; Ling, 2002, p. 639; Pollitt, 2003, pp. 36-37; Humpage, 2005, p. 49; Christensen et al. 2007, p. 390).

As an umbrella term describing various ways of aligning formally distinct organizations in pursuit of the objectives of the government of the day (Ling, 2002, p. 616) and a heavy British accent,⁽⁸⁾ JUG implies working across organizational boundaries (be it between portfolios or departments within a tier of government, different tiers of government, government and other sectors or the community etc.) without removing the boundaries themselves. This *modus operandi* is said to help strengthening the overall accountability of the public sector, by: achieving the democratic legitimacy through shared responsibility and building consensus around policies (McGhee, 2003, p. 348; Johnson, 2005, p. 6); make better use of scarce resources (Pollitt, 2003, p. 35); and promote innovation, by bringing together different people, backgrounds and organizations (SSA, 2007, p. 4).

Prudence is surely necessary, as joint working should not be considered a panacea to the public sector's problems (Barton and Quinn, 2001, p. 51). However, if reducing the scale to local government and considering the apparent increasing local institutional complexity given by the shift from local government towards more loosely structured local governance (Darlow et al.,

2007, p. 118), it may be argued that JUG brings an interesting addition to the debate on the subsidiarity principle as defined by the European Charter of Local Self-Government.⁽⁹⁾ Arguments in favor of this view are possible to encounter once reading strategic documents aimed at reforming local government in the United Kingdom or Australia for that matter⁽¹⁰⁾. According to them, JUG is a model of decision making, which allows active bringing of the government closer to the people (DETR, 1998b: paragraphs 3.49, 3.59, 4.3; DETR, 1998a, paragraph 1.7, corroborated to paragraphs 1.9 and 1.14); while limiting (to an extent) the failures in achieving best value or acceptable standards of service (DETR, 1998b, paragraph 7.48; SSA, 2007, p. 4).⁽¹¹⁾

Practicing JUG is not an easy task, however. "It is vital that we lose the skills of battle and find the skills of organization and partnership..." (H. Armstrong, 1997 in Wilson, 2000, p. 52); the organizational cultures, skills, capabilities, and management systems and structures that support collaborative and integrated ways of working become as such critical:

[...] One of the principal barriers to successful joined-up service delivery is the assumption that better use of traditional government systems and processes will result in joined-up solutions. Traditional systems and processes are designed to deliver government services from centrally controlled, vertically organized agencies. These systems and processes become increasingly inappropriate as government agencies move away from traditionally organized service delivery towards more customer-centric joined-up approaches". (Johnson, 2005, p. 4).

Success may also be determined by: working towards shared goals that are clearly defined and mutually agreed; measuring and evaluating progress towards the goals; having sufficient and appropriate resources available; having strong leadership, directing the team and initiative towards the goal; and working well together with a sense of shared responsibility (Ling, 2002; Pollitt, 2003, p. 44; Humpage, 2005, pp. 49-50; SSA, 2007, p. 5). Contrary to what it may be thought (in the light of so many critical success factors), joined-up arrangements aren't rare; they often (as the literature shows) nurture in the fertile ground of post NPM governance structures and take the form of:

- 1) Whole of Government Integration – characterized by a top down whole of government policy framework based on what government seeks to achieve followed by practical strategies to achieve whole of government integration (Johnson, 2005, pp. 16-18);

- 2) Service Delivery Integration (integration around partnership agreements) – the main feature of this sort of joined up arrangement is the collection together of information and services about a shared customer or common issue. These strategies seek to enhance the use of traditional centralized systems and

processes to deliver increased efficiencies and improved services. They are well suited to the role of government as a coordinator rather than a provider of services (Johnson, 2005, p. 19); or:

3) Integration around Programs – which involve ongoing cooperation and collaboration by a community of problem solvers. Membership of the community may be voluntary; while this type of joined up arrangement may be ad-hoc.

Be it Weberian bureaucracy, NPM or JUG these approaches to public reforms can hardly live together in harmony. For instance, pleasing the political boss could sometimes mean neglecting the customer; just as acting as expert might jeopardize their relation to the citizen (Aucoin, 1990; 2012). Confusion may be even more present when working inside an acceding country, interested in playing nice for the sake of the enlargement carrot, one faces the rhetoric of Weberian bureaucracy, combined with NPM and JUG under a mostly generous umbrella concept like ‘consolidated administration’.

4. ...Building a consolidated administration...

In December 1995, when the European Council urged candidate countries to adjust their administrative structures up to developing consolidated administrations, the final accession criteria was settled. No later than 1996, the European Parliament in its Resolution reply to Agenda 2000 suggested that candidate countries should continue the process of developing their capacity and quality of administrative procedures, considering that reducing corruption is necessary (paragraph 47) and that: “an efficient and trustworthy public administration is a vital element in the accession process, especially in regard to the consolidation of rule of law [...]” (paragraph 12). Also, it recommended that candidate countries should “establish through appropriate constitutional measures efficient local, regional and national administrative structures, to encourage the presence of private sector in these tiers of government and to strengthen the financial control system for a future effective use of structural funds” (paragraph 13).

It was then that one principle useful to the consolidation of public administration was firstly established: the decentralization principle. In addition, the European Parliament spoke of efficient administrations, effective use of structural funds and implication of private sector at infra-national level – possible to translate in light of the SIGMA readings⁽¹²⁾ as explicit references to the principles of efficiency, effectiveness and partnership. In 1998, the EC Regular Reports on the progress of each candidate country in the accession process appeared as possible sources for explaining and interpreting the

methods and techniques of administrative consolidation. In the same year, OECD-SIGMA proposed their first analysis on a “conventional administrative model: “Preparing Public Administration for the European Administrative Space”. In the context of national administrative reforms, it clearly pointed towards democratic principles, professionalisation of civil service and democratic administrative organization. Later, in the document entitled “European Principles of Public Administration”, OECD-SIGMA drew the picture of an “un-formalized *acquis*” (formed out of procedural, administrative principles possible to identify in EU member states) and categorized the existent administrative principles in Western Europe into four clusters: one dealing with the so-called predictable nature of the state and its administration (including principles like the rule of law, generously referred to by the literature as an example of how traditional administration is organized); one referring to openness and transparency (more appropriate for an NPM approach); another one dealing with efficiency and effectiveness (a similar aim, with different methods for Weber, NPM and JUG alike) and finally, the fourth pointing towards accountability (again, a concept of different meaning to bureaucrats). SIGMA and later on, the European Union validated these clusters as possible blueprints for administrative reforms (Iancu, 2010), and by that they basically sign a recipe to an administrative reform cocktail including elements of the Weberian bureaucracy, NPM and JUG. So it comes as no surprise that when urged to “change the system”, public managers in Romania faced a quite eclectic multi-choice exercise sheet.

5. ...With public managers as change agents...

“Young creative person, of no more than 35 years old, interested in promoting change, highly adaptable, result-oriented with critical and analytical thinking and high skills of leading negotiation teams, looks for transition public administration in need for a professional reform”.

That may very well be a humorous (yet quite accurate) reading of the provision of the legal text describing the general skills of 400-ish public managers in Romania.⁽¹³⁾ It is not entirely surprising that public managers were viewed as a deadly cocktail for inefficiency and rigidity: upon entering into force of their Statute⁽¹⁴⁾ in 2004, they were meant to create a professional and meritocratic body of civil servants, one capable of a “real cultural change”, EU style⁽¹⁵⁾. The body of the Statute contained even a Preamble where the carrot mechanism of the European accession was quite obviously present: while explaining the need for an enhancement in the civil service reform, the Romanian Government acknowledged the pressure of the “To do list” it agreed

upon opening the negotiation with the European Union and the risk of losing the contract on the PHARE Project RO 0106.03 on “Developing a professional body of civil servants in public administration – Young Professional Scheme” (which provided an initial sum of 4 million Euro and promised at the date an additional 3,5 million Euro for its continuation). Public managers were as such conceived as to approach the problems of the public sector in a creative manner, by introducing appropriate managerial tools in policy-making.⁽¹⁶⁾ And of these tools they were supposed to have learnt during their internships and postgraduate studies in old Member States (typically Great Britain, France and the Netherlands) and also, during the national training sessions aimed at developing their knowledge of human resource management, strategic management, public policy, EU policy-making, administrative law and accounting and budgeting. At the end of their trainings and internships, and after debating with their institutional mentor the necessary steps to be taken, the profile of the public manager would have looked as presented by Table 1.

Table 1

Core competencies for Romanian public managers⁽¹⁷⁾

Understand the basics of:	Know:	Be able to:
Management	To orientate towards results	Plan and prioritize activities
		Act pro-active towards problem solving
		Act determinate
		Act accountable
	To make decisions	Think critical and analytical
Personal development	Change management	Decide and implement
		Take calculated risks
		Promote change and change naturally
		Train others
	Human resource management	Train others
Communication	To develop him/herself	Learn continuously
		Be adaptable
	To think constructively	Think creatively
		Identify innovative solutions
Team spirit	To develop productive relationships	Network
		Achieve the goals consensually
	To communicate efficiently	Communicate
		Influence, negotiate, and mediate
Work in teams	Team spirit	Work in teams

All these skills and competencies would have been used in order to ensure the efficiency of the public administration reform, by: “stimulating creative yet sound solutions for problem-solving and modernization of public sector performance; enhancing the institutional capacity of the administration; assess, review and recommend improvements for current administrative practices; making new public policies, strategies and procedures; developing action plans

for implementing policies and strategies; estimate and manage human, financial, material and technical resources; and monitoring and evaluating the implementation of public policies, strategies and programs” (excerpt from article 55 of GD 783/2005).

If to shortly analyze the statute of the Romanian public manager between 2004 and 2007, it comes as no surprise that it embodies characteristics similar to those of a CEO in private organizations (Table 2).

Table 2

Core competencies for CEOs⁽¹⁸⁾

Understand the basics of:	Know:	Be able to:
Management	The culture of the organization	Lead strategic thinking and planning efforts
		Delegate appropriate decisions and responsibilities
		Make clear and timely decisions
		Create a sense of shared responsibility
Organizational development	A personal approach to change management	Constructively challenge those with power and authority
Personal and professional development	The organizations' functions and competencies	Lead an efficient and effective organizational operation according to best practices, ethical guidelines and fiduciary requirements
Planning	The organization's future needs	Create a work environment in which staff feel comfortable taking risks to help the organization meet its mission
Vision setting	What can excite the imaginations of staff, the board and pertinent external groups	Detect and manage changes in the organization's functioning, culture, or dynamics
		Educate others on the future directions and inspire them to be supporters and advocates
Collaboration and partnership	Successful personal approach(es) to collaboration	Conduct ongoing personal and professional development
Communication	The public context in which the organization operates	Relate well to a diversity of individuals
Decision-making	Personal decision-making style	Create a positive and productive work environment
		Guide cross-team and cross-organizational collaboration
Governance	The principles of laws applicable to governance	Use external consultants and experts effectively
		Manage competing interests
		Write and speak effectively and compellingly
		Convene and manage groups
		Work well as a team player

Colum 3 of Table 2 for instance describes the “to do”-s for CEOs, following the sequence presented by Colum 3 of Table 1: although CEOs add value to their organizations by acting as leaders and visionaries of the organization’s mission and goals, public managers are basically required to have similar activities. They should be able to manage, develop, communicate and decide upon the role of public organization and of the system as a whole, in light of their training in coping with the European mixed expectations. However, they are less free than a CEO is from its Shareholders Boards: public managers are civil servants working in the direct subordination of a high rank civil servant (or another top management position) but under the patronage of a politician (or more) that may not be too enthusiastic about him/her hiring people, controlling the outcomes and deciding the future directions for public action. At least not if the politician may happen to be in search of obedient personnel, as assumed in this argument. Should that be the case, then despite the very generous legal description of “can” and “cannot-s” of public managers, one should be able to find traces about the strings the politicians used for controlling their reform agents.

6. ... Coming to full-stop and reverse after 2007...

In 2007 Romania became a full member of the European Union. As of that date, the European Commission stopped providing detailed feedback such the one given between 1998 and 2006. However, safeguard clauses on corruption and weak judicial system were raised. Since, the European Commission has started to issue Reports on the Coordination and Verification Mechanism twice per year. In 2008 the European Report of July declared that: “Romania presents a mixed picture. It has put the fundamental elements of a functioning system in place. But the foundation is fragile and decisions on corruption are highly politicized. Each step in the right direction endangers a divisive internal political debate, fostering legal uncertainty. Commitment to reform by Romania's key institutions and bodies as well as with regard to different benchmarks is uneven” (p. 6). One year later, the situation got worse: while in February 2009 maintaining the rule of law became a sensitive issue, in July the Commission raised the question whether the safeguard clause should be triggered (p. 6).

What happened though, in the civil service arena? Following a documentary research of civil service related legislation between 2000 and 2011 (Annex), it became obvious that post-accession regulations on civil service were altered as to better fit the expectations of the political leadership.

Although in 2007 a new Statute on civil servants was adopted and one year later it was followed by new regulations regarding public managers, the reforms gave green light to the political appointee to assess the civil servant in his/her subordination: former high rank civil servants (directors of deconcentrated bodies of the public administration and heads of public managers) were re-converted into political appointees and the authority of assessing the performance of local civil servants was given to their superiors (instead of a national, independent body, like the former National Agency for Civil Servants). In practice, that usually meant that a politician would assess a civil servant (e.g. the mayor assessed the secretary of the city-hall; and the high rank civil servant would decide whether the public manager under his/her jurisdiction was competent or not) giving as such room for (more) political discretion. As advocated by Iancu and Ungureanu (2010), these transformations actually contributed to the politicization of the civil service. In fact, for public managers, the “de-forming process” was even more substantial: as of 2008 and the amendments adopted in 2011⁽¹⁹⁾, public managers lost their strategic role as reform experts.

The data regarding the politicization and the diminish of the role played by public managers in Romanian public bureaucracies after 2007 were also validated by a set of elite interviews conducted between March-April 2012 on a group of 12 (twelve) active public managers. The interviews were semi-structured and addressed to public managers with not more than 5 years working experience in the system, active at local level (4 persons), central level (7 persons) and European level (1 person) and dealing with regional development, tourism, finance and internal affairs. Interestingly enough, when asked to name several European values they feel that the Romanian public administration might gain from, 10 out of 12 respondents spoke of “professionalism”, 6 out of 12 named “respect for one’s profession and colleagues” and only 2 pointed towards “efficiency”. The excessive politicization, doubled by the lack of professionals and the confinement of public managers to routine work urged 10 out of 12 respondents to conclude that presently “there are only formal talks of reforms”, as “the top management agenda does not contain reform measures anymore”. More aggressively on that note, one of the public managers confessed that “we are asked to make things look good on paper, but the actual implementation of what we wrote does not basically exist”. Was the Young Professional Scheme a success? To this question, 10 out of 12 public managers responded “yes and no”: although the program created a trust-worthy body of civil servants, the actual working placement of public managers was significantly delayed (as of 2006 onward)

and the possibility of advocating change at organizational scale was considerably low. The general feeling of the interviews was that public managers are nothing but wasted experts who eagerly wait the five years contract with the Romanian government to end and move on to a more competitive working place (most likely, a private one).

7. Conclusion

This paper opened the discussion on three levels relevant to the studies of public administration reform in transition countries: the first refers to the assessment of the role the European Union played in monitoring the processes of decentralizing, coordinating, increasing efficiency of public services, while ensuring their transparency, etc. Scholars of Europeanization treat the European Union as a demanding actor, which applied sanctions and distributed awards among its applicants for the sake of reducing the degree of misfit between (amongst others) the former spoils system of administration (coming from a totalitarian experience) and Western bureaucracies. In doing so, it raised red flags and granted funds to reconstruct the administrative institutions of Romania, thus pressuring domestic actors to change themselves in a rather alert tempo. To what extent did this rhythm of change remain the same after the accession? And to what extent did the changes the European Union advocated for, create substantial practices after the accession? The argument here very briefly states that after obtaining the membership carrot, in the civil service, Romania began its return to its 'old ways of doing business', which basically meant politicization. Changes advocated between 2000 and 2007 in the area of civil service were only partly sustainable, and the documentary research of the legislation, doubled by a small scale expert interview session with public managers active in the Romanian public administration validated that hypothesis.

The second aspect addressed here deals with the existent tension between the European requirements for action in transition bureaucracies. The well debated "European administrative space" and "consolidated administration" are obvious examples for the eclectic approach to "Western standards" in public administration. Built on Weber's ideal bureaucracy model, reconfigured under the predicaments of NPM, JUG, etc., the consolidated administration is more of an eclectic theoretical tool rather than a practical concept, with technical connotations. Studying the concept of consolidated administration might in fact generate substantial contradictions whose balancing may prove quite difficult in practice.

Finally, this paper briefly addressed the issue of internal change of public administrations by discussing the role of public managers in the Romanian context. Described in the words of the accession reforms as genuine CEOs of public administration, public managers are currently performing routine duties, under the patronage of what seems to be a political employee. Is this all that is? Did the internal change of public administration fail under the pressure of politics? This paper did not address these questions, yet it surely aimed at triggering the attention on the need to further study the public administration reform in transition countries.

Notes

- (1) Paper prepared for the 20th Annual NISPAcee Conference, May 23-26, 2012 - Ohrid, Macedonia.
- (2) This section draws from the arguments presented by Iancu and Ungureanu (2010).
- (3) For an in depth analysis of Niskanen's model see Ungureanu (2012).
- (4) See Reid and Kurt, 1988, 1999 for this approach to public organizations.
- (5) This problem is called rational ignorance.
- (6) This section uses some of the arguments presented by Iancu (2009).
- (7) *Inter alia*, Hood (1991); Osborne and Gaebler (1992); Pollitt (1993); Rhodes (1996); Peters and Pierre (1998); Cope and Goodship (1999); Pollitt and Bouckaert (2000); Denhardt and Denhardt (2000, p. 549); Kettl (2000); Lane (2000).
- (8) A paraphrase of Denters and Rose (2005, p. 7).
- (9) Article 4.3: "Public responsibilities shall generally be exercised, in preference, by those authorities which are closest to the citizen. Allocation of responsibility to another authority should weigh up the extent and nature of the task and requirements of efficiency and economy".
- (10) For the British case my reference is directed towards: DETR (1998a) and DETR (1998b). In the case of Australia, the document I refer to is SSA (2007). Comments on these documents are to be found, *inter alia*, at: Richards and Kavanagh (2000); Kavanagh and Richards (2001); Martin (2002); Signoretta and Craglia (2002); Downe and Martin (2003) or Christiansen and Laegreid (2005).
- (11) It is true however that, in the case of British joining-up practices, the government plays a central, hierarchical role; this aspect has been taken into consideration when deciding which paragraphs of the quoted documents are relevant.
- (12) SIGMA was created in 1992 as a joint initiative of the OECD Centre for Cooperation with non-members economies and PHARE. Its declared mission was to "assist transition countries (PHARE beneficiaries) in increasing their administrative efficiency". One of the documents relevant here was the one elaborated on 1999, dealing with the "European Principles for Public Administration".
- (13) Article 53, GD 783/2005 on establishing the implementation methodology of the Statute of public managers, published in the Official Gazette of Romania no.717/09.08.2005. With regard to the total number of trained public managers, the available data speak of 428 persons, of which 220 were in place, active in public authorities (Source: Memorandum on

the new statute on public managers, 2008). Presently, the official website on Young Professional Scheme (www.yps.ro) - the Project responsible for creating the public managers has no updated information on the whereabouts of its trainees or their professional accomplishments.

- (14) Statute on public managers - GO 56/2004, published in the Official Gazette of Romania no. 590/01.07.2004. Since 2004, the Statute was amended several times (in 2008 and 2011). For the scope of this paper however, these amendments do not provide any major (relevant) changes and, as such, are not taken into consideration.
- (15) Excerpt from the Memorandum on the Statute of public managers (available online at: http://www.cdep.ro/pls/proiecte/upl_pck.proiect?idp=5789, last access: April 10, 2012).
- (16) Article 55, GD 783/2005.
- (17) Adaptation of the Romanian reference competence framework for public managers. Source: http://www.yps.ro/pdfs/cadru_competente.pdf, last access: April 10, 2012.
- (18) Adaptation of the Competencies for Chief Executive Officers of Private Foundations (Council of Foundations, Washington DC, 2006). Source: http://www.cof.org/files/Documents/Emerging_Issues/06CEOFFunctions.pdf, last access: April 10, 2012.
- (19) GD 78/2011 on establishing the implementation methodology of the Statute of public managers, published in the Official Gazette of Romania no.186/17.03.2011.

References

- Aucoin, P. (1990). "Administrative Reform in Public Management: Paradigms, Principles, Paradoxes and Pendulums", *Governance: An International Journal of Policy and Administration*, Vol. 3, No. 2, pp. 115-137
- Aucoin, P. (2012). "New Political Governance in Westminster Systems: Impartial Public Administration and Management Performance at Risk", *Governance: An International Journal of Policy, Administration, and Institutions*, Vol. 25, No. 2, pp. 177-199
- Barton, A., Quinn, Christina (2001). "Mandated 'Joined-Up' Working: A Pandora's Box for Welfarist Organisations?", *Public Policy and Administration*, Vol. 16, No. 2, Summer, pp. 50-62
- Bauer, M.W., Knill, Ch., Pitschel, Diana (2007). "Differential Europeanization in Eastern Europe: The Impact of Diverse EU Regulatory Governance Patterns", *Journal of European Integration*, 29(4), pp. 405-423
- Bovaird, T. (2003). "E-Government and e-Governance: Organisational Implications, Options and Dilemmas", *Public Policy and Administration*, Vol. 18, No. 2, Summer, pp. 37-56
- Christensen, T., Fimreite, Anne Lise, Lægreid, P. (2007). "Reform of the employment and welfare administrations – the challenges of co-coordinating diverse public organizations", *International Review of Administrative Sciences*, Vol. 73, No. 3, pp. 389-408
- Christensen, T., Lægreid, P. (2005). "Trust in Government – The Relative Importance of Service Satisfaction, Political Factors and Demography", *Public Performance and Management Review*, Vol. 28, No. 4, pp. 487-511
- Christensen, T., Lægreid, P. (2005). "Trust in Government – The Relative Importance of Service Satisfaction, Political Factors and Demography", *Public Performance and Management Review*, Vol. 28, No. 4, pp. 487-511
- Christensen, T., Lægreid, P. (eds.) (2007). *Transcending New Public Management*, Aldershot: Ashgate

- Cope, St., Goodship, Jo. (1999). "Regulating Collaborative Government: Towards Joined-Up Government?", *Public Policy and Administration*, Vol. 14, No. 2, Summer
- Darlow, Alison, Percy-Smith, Janie, Wells, P. (2007). "Community strategies: Are they delivering joined up governance?", *Local Government Studies*, Vol. 33, No. 1, February, pp. 117-129
- Denhardt, R.B., Denhardt, J.V. (2000). "The new public service: serving rather than steering", *Public Administration Review*, Vol. 60, No. 6, pp. 549-559
- Denters, B. Rose, L. (2005). "Local governance in the third millennium: a brave new world?", in B. Denters and L. Rose (eds.) *Comparing Local Governance*, Houndmills: Palgrave, pp. 1-11
- DETR (Department of the Environment, Transport and the Regions) (1998b). *Modern Local Government: In Touch with the People*, <http://www.local.odpm.gov.uk/sponsor/democrac/> (last access: April 10, 2012)
- DETR (Department of the Environment, Transport and the Regions) (1998a). *Modernising Local Government. Local Democracy and Community Leadership Paper*, <http://www.local.odpm.gov.uk/sponsor/democrac/> (last access: April 10, 2012)
- Dimitrova, A.L., Toshkov, D. (2009). "Post-accession compliance between administrative coordination and political bargaining", *European Integration online Papers*, 13 (2) (available online at: <http://eiop.or.at/eiop/texte/2009-019a.htm>, last access: April 10, 2012)
- Downe, J., Martin, S. (2006). "Joined up policy in practice? The coherence and impacts of the local government modernization agenda", *Local Government Studies*, Vol. 32, No. 4, August, pp. 465-488
- Downs, A. (1965). "A Theory of Bureaucracy", *The American Economic Review*, Vol. 55, No. 1/2, pp. 439-446
- Gardner, R. (1987). *A theory of the Spoils System*, *Public Choice* 54, pp. 171-185
- Gaster, Lucy (1999). "Quality Management in Local Government - Issues and Experience", *Public Policy and Administration*, Vol. 14, No. 3, Autumn, pp. 35-53
- Grabbe, Heather (2006). *The EU's Transformative Power. Europeanization Through Conditionality in Central and Eastern Europe*, Houndmills: Palgrave Macmillan
- Greuning, G. (2001). "Origin and theoretical basis of New Public Management", *International Public Management Journal*, Vol. 4, pp. 1-25
- Gunning, P. (2003). *Understanding Democracy: An Introduction to Public Choice*, Taiwan: Nomad Press
- Hood, Ch. (1991). "A Public Management for All Seasons?", *Public Administration*, Vol. 69, No.1, pp. 3-19
- Humpage, Louise (2005). "Experimenting with a 'Whole of Government Approach'. Indigenous Capacity Building in New Zealand and Australia", *Policy Studies*, Vol. 26, No.1, March, pp. 47-66
- Iancu, Diana-Camelia (2009). "Exploring change in Romania: To be or not to be Joined-up Government?", *Innovative Issues and Approaches in Social Sciences*, Vol. 2, No. 1, pp. 41-75
- Iancu, Diana-Camelia (2010). *Uniunea Europeană și administrația publică* (European Union and public administration), Editura Polirom, Iași
- Iancu, Diana-Camelia, Ungureanu, M. (2010). "Depoliticizing the civil service: A critical review of the public administration reform in Romania", *Research in Social Change*, Vol. 2, No. 2, pp. 63-106

- Johnson, B. (2005). *Strategies for Successful Joined Up Government Initiatives*, Fellowship Program supported by John Curtin Institute of Public Policy, Institute of Public Administration of Australia, Department of Premier and Cabinet
- Junjan, Veronica, Iancu, Diana-Camelia (2011). *Post EU Accession Reforms in Central and Eastern European Countries: Who Will (continue to) Bother?*, paper presented at the 19th Annual Conference NISPAcee, Varna, Bulgaria, May 2011
- Kaboolian, L. (1998). „The New Public Management: challenging the boundaries of the management versus administration debate”, *Public Administration Review*, Vol. 58, No. 3, pp. 189-193
- Kavanagh, D., Richards, D. (2001). “Departmentalism and Joined-Up Government: Back to the Future”, *Parliamentary Affairs*, No. 54, pp. 1-18
- Kettl, D.F. (2000). *The Global Public Management Revolution: a Report on the Transformation of Governance*, Washington, D.C.: Brookings Institution
- Knill, C., Lehmkuhl, D. (1999). “How Europe Matters. Different Mechanisms of Europeanization”
- Ladrech, R. (1994). “The Europeanization of Domestic Politics and Institutions: The Case of France”, *Journal of Common Market Studies*, 32(1), pp. 69-88
- Lane, J.-E. (2000). *The Public Sector – Concepts, Models, Approaches* (3rd edition), London: SAGE Publications
- Levitz, P., Pop-Eleches, G. (2010). “Why No Backsliding? The European Union’s Impact on Democracy and Governance Before and After Accession”, *Comparative Political Studies*, 43 (4), pp. 457-485
- Ling, T. (2002). “Delivering Joined-up Government in the UK: Dimensions, Issues and Problems”, *Public Administration*, Vol. 80, No. 4, pp. 615-642
- Martin, S. (2002). “The Modernization of UK Local Government: Markets, Managers, Monitors and Mixed Fortunes”, *Public Management Review*, Volume 4, No. 3, September, pp. 291-307
- McGhee, D. (2003). “Joined-Up Government, ‘Community Safety’ and Lesbian, Gay, Bisexual and Transgender ‘Active Citizens’”, *Critical Social Policy*, Vol. 23, No. 3, pp. 345-374
- McGuire, T., Coiner, M., Spancake, L. (1979). *Budget Maximizing Agencies and Efficiency in Government*, *Public Choice* 34(3/4), pp. 333-359
- Mechanisms and Contingent Results”, *European Integration online Papers*, Vol. 8, No. 9 (available online at: <http://eiop.or.at/eiop/texte/2004-009a.htm>, last access: April 10, 2012)
- Meyer-Sahling, J.-H. (2009). “Varieties of legacies: a critical review of legacy explanations of public administration reform in East Central Europe”, *International Review of Administrative Sciences*, 75, pp. 509-522
- Miller, G.J., Moe, T.M. (1983). “Bureaucrats, Legislators. and the Size of Government”, *American Political Science Review*, 77, pp. 297-322
- Mueller, D. (2003). *Public Choice III*, W Nyack, NY, USA, Cambridge University Press
- Niskanen, W.A.Jr. (1971). *Bureaucracy and Representative Government*, Chicago: Aldine-Atherton
- Niskanen, W.A.Jr. (1975). “Bureaucrats and Politicians”, *Journal of Law and Economics*, 18, pp. 617-643
- Olson, M. (1993). “Dictatorship, Democracy, and Development”, *American Political Science Review*, Vol. 87, No. 3
- Osborne, D., Gaebler, T. (1992). *Reinventing Government*. New York, NY: Penguin Press

- Perri, R.C., Bellamy, Christine (2005). "Joined-up Government and Privacy in the United Kingdom: Managing Tensions between Data Protection and Social Policy", *Public Administration*, Vol. 83, No. 1, pp. 111-133
- Peters, B.G., Pierre, J. (1998). „Governance without Government? Rethinking Public Administration”, *Journal of Public Administration Research and Theory*, Vol. 8, No. 2, pp. 223-243
- Peters, G. (1995). *Bureaucracy in a divided regime: the United States*, in J. Pierre (ed.), *Bureaucracy in the Modern State*, Aldershot: Edward Edgar Publishing Limited, pp. 18-38.
- Pollitt, Ch. (1993). *Managerialism and the Public Services: The Anglo-American Experience* (2nd edition), Oxford: Blackwell
- Pollitt, Ch. (1995). "Justification by Works or by Faith?", *Evaluation*, Vol. 1, No. 2, pp. 133-54
- Pollitt, Ch. (2003). "Joined-up Government: a Survey", *Political Studies Review*, Vol. 1, pp. 34-49
- Pollitt, Ch., Bouckaert, G. (2000). *Public Management Reform. A Comparative Analysis*, Oxford: Oxford University Press
- Radaelli, C.M. (2000). "Whither Europeanization? Concept stretching and substantive change", *European Integration online Papers*, Vol. 4, No. 8 (available online at: <http://eiop.or.at/eiop/pdf/2000-008.pdf>, last access: April 10, 2012)
- Reid Jr., J.D., Kurth, M.M. (1988). "Public Employees in Political Firms: Part A. The Patronage Era", *Public Choice*, 59, pp. 253-262
- Reid Jr., J.D.; Kurth, M.M. (1989). "Public Employees in Political Firms: Part B. Civil Service and Militancy", *Public Choice*, 60, pp. 41-54
- Rescher, N. (1980). "Scientific Truth and the Arbitrament of Praxis", *Noûs*, Vol. 14, Issue 1, 1980 A.P.A. Western Division Meetings, pp. 59-74
- Rhodes, R.A.W. (1996). "The New Governance: Governing without Government", *Political Studies*, XLIV, pp. 652-667
- Richards, D., Kavanagh, D. (2000). *Can Joined-Up Government be a Reality? A Case Study of the British Labour Government 1997-2000*, paper presented at the Australian Political Studies Association Conference, the Australian National University, Canberra 4-6 October
- Romer, T., Rosenthal, H. (1978). "Political Resource Allocation, Controlled Agendas, and the Status Quo", *Public Choice*, 33(4), pp. 27-43
- Sedelmeier, U. (2011). "Europeanisation in new member and candidate states", *Living Reviews in European Governance*, 6 (1) (available online at: <http://www.livingreviews.org/lreg-2011-1>, last access: April 10, 2012)
- SIGMA (1998). "Preparing Public Administration for the European Administrative Space", *SIGMA paper*, No. 23, Paris: OCDE
- SIGMA (1999). "European Principles for Public Administration", *SIGMA paper*, No. 27, Paris: OCDE
- Signoretta, Paola, Craglia, M. (2002). "Joined-up Government in Practice: A Case Study of Children's Needs in Sheffield", *Local Government Studies*, Vol. 28, No. 1, January, pp. 59-76
- SSA (State Government of Victoria State Services Authority) (2007). "Joined up Government. A Review of National and International Experiences", *Occasional Papers No. 1*, Melbourne, Australia

- Töller, A.E. (2004). "The Europeanization of Public Policies. Understanding Idiosyncratic Mechanisms and Contingent Results", *European Integration online Papers*, Vol. 3, No. 7 (available online at: <http://eiop.or.at/eiop/pdf/2004-009.pdf>, last access: April 10, 2012)
- Tullock, G. (1965). *The politics of bureaucracy*. Washington, DC: Public Affairs Press
- Ungureanu, M. (2012). "Science and Social Responsibility: the Bureaucratic Wars from Public Choice Theory", *European Journal of Science and Theology*, June 2012, Vol. 8, Supplement 1, pp. 235-244
- Vachudova, Milada Anna (2009). "Corruption and Compliance in the EU's Post-Communist Members and Candidates", *Journal of Common Market Studies*, 47(s1), pp. 43-62
- Weber, M. (1914, 1922) (1978). *Economy and Society: an outline of interpretive Sociology*, Berkely, University of California Press
- Wilson, D. (2000). "Towards Local Governance: rhetoric and reality", *Public Policy and Administration*, Vol. 15, No. 1, Spring, pp. 43-57

Annex

**National legal texts and European reports relevant
to the selection of bureaucrats in Romania**

A. National legal texts

Year	Area of the regulation (provided by the official text)	Official data (about publication)
1999	Statute of Civil Servants	Law no.188/08.12.1999, Official Gazette of Romania no. 600/08.12.1999
2003	Measures for ensuring transparency in exercising public offices and public functions	Law no.161/19.04.2003, Official Gazette of Romania no. 279/21.04.2003
2003	Organization and development of civil servants' career	Governmental Decision no.1209/14.10.2003, Official Gazette of Romania no. 757/29.10.2003
2004	Code of conduct for civil servants	Law no.7/18.02.2004, Official Gazette of Romania no. 157/23.02.2004, republished in the Official Gazette of Romania no. 525/02.08.2007
2004	Civil Servants Statute	Law no.188/08.12.1999 as republished in the Official Gazette of Romania no. 251/22.03.2004
2006	Law amending the Civil Servant Statute	Law no. 251/23.06.2003, Official Gazette of Romania no. 574/04.07.2006
2007	Recruitment of high-level civil servants, their career management and mobility	Governmental Decision no.341/2007, Official Gazette of Romania no. 247/12.04.2007
2008	Norms for organization and development of the civil servants' career	Governmental Decision no. 611/2008, Official Gazette of Romania no. 530/14.07.2008, amended by Governmental Decision no.1173/24.09.2008, Official Gazette of Romania no. 677/02.10.2008
2009	Measures for improving the public administration activity	Governmental Decision no.37/22.04.2009, Official Gazette of Romania no. 264/22.04.2009
2009	Civil Servants Statute	Law no.188/08.12.1999 – consolidated version (up to 22.04.2009), after second republication in the Official Gazette of Romania no. 365/29.05.2007
2010	Law amending the Civil Servants Statute	Law no.140/07.07.2010, Official Gazette of Romania no.471/08.07.2010

B. European reports

Year	Title of the document	Abbreviation
1998	Regular Report from the Commission on Romania's Progress towards Accession	R 1998
1999	Regular Report from the Commission on Romania's Progress towards Accession	R 1999
2000	Regular Report from the Commission on Romania's Progress towards Accession	R 2000
2001	Regular Report from the Commission on Romania's Progress towards Accession	R 2001
2002	Regular Report from the Commission on Romania's Progress towards Accession	R 2002
2003	Regular Report from the Commission on Romania's Progress towards Accession	R 2003
2004	Regular Report from the Commission on Romania's Progress towards Accession	R 2004
2005	Romania – Comprehensive Monitoring Report	M 2005
2006	Romania – Comprehensive Monitoring Report, first release	M 2006a
2006	Romania – Comprehensive Monitoring Report, second release	M 2006b
2007 - 2011	Report from the European Commission to the European Parliament and the Council on Progress in Romania under the Co-operation and Verification Mechanism	CVM

The economic crisis – implications on methods and instruments used in quality of life studies

Mihaela CONSTANTINESCU

Bucharest Academy of Economic Studies
mihaela.co@gmail.com

Abstract. *Since many of the factors influencing quality of life have both a transnational and a national dimension, in the last four years quality of life studies consider also the influence of the economic crisis on that phenomenon. Quality of life dimensions are analyzed from the perspective of economic indicators evolution during the crisis years, but also in terms of individual perception on quality of life in the present context of the market. This article highlights the changes in the quality of life studies due to the influence of the economic crisis. The analysis is made at the level of the research objectives, measurement indicators, methods of analysis and research methodology. The main consequence of the economic crisis for the quality of life studies refers to the fact that they are designed such that they respond better to the market new requirements for economic recovery, as well as to the individual needs of well-being.*

Keywords: quality of life; economic crisis; well-being; level of satisfaction.

JEL Code: I31.

REL Code: 12C.

1. Introduction

The economic crisis that the entire world is facing is considered to be the most severe since the Great Depression of the 1930s. In the beginning, it was considered to be a credit crisis, but as its effects were more visible at the macroeconomic level, specialists have given the due importance, investigating the influence of the crisis in all areas of activity.

The crisis manifested itself globally starting with the second half of 2007, when US investors have lost confidence in secured mortgage, leading to a liquidity crisis. The immediate reaction was substantial capital injection from the American Federal Reserve, Bank of England and European Central Bank (Șerbănică et al., 2009, pp. 44-59). One of the most important indicators for the crisis analysis, TED Spread Index (describing the perceived credit risk in the general economy), has increased substantially in July 2007, then fluctuated for a year and increased again in September 2008 (with a record on October 10, 2008, according to the economic and financial analysis website Bloomberg). The domino effect of the crisis was manifested by the collapse of numerous bourses or by a significant period of instability at their level, leading to bankruptcy of many banks, lenders and insurance companies.

The severity of the crisis effects for the national economies as well as for each individual led state institutions, together with various international bodies, to take a series of measures for economic recovery.

Since many of the factors influencing quality of life have both a transnational and a national dimension, EU institutions have a special responsibility in promoting quality of life throughout the European Union. The financial crisis is a new opportunity for the EU to prove its effectiveness in this area at a time of the economic difficulties experienced at international level. Since the economic crisis is affecting the whole European market, EU institutions and national governments are pressed even more to act. Long-term commitment of the EU and social partners in the sense of cooperation between management and employees may encourage the recognition of a collective interest in respect to measures of promoting economic recovery (Eurofund, 2009).

2. Researches about the economic crisis influence on quality of life

The first step in a strategy of economic recovery is the development of a scientific research that can provide the answer to questions like: why the crisis occurred, which were its trigger factors, which are its effects on society, how

did the crisis influence population living standards, what recovery measures can be taken and which ones are best adapted to the economic needs of society as well as to the individual sociological needs.

Many of the questions above are directly connected with quality of life and welfare. Thus the necessity of a detailed study of the economic crisis influence on the quality of life.

Starting with 2009, a series of such studies have been undertaken with a double purpose: to find solutions for improving quality of life under crisis conditions, and to readjust the science to the new economic climate by identifying the most relevant evaluation criteria and the most effective tools of measurement.

An example in this direction is the report of the Commission for Measurement of Economic Performance and Social Progress (CMEPSP, 2009), also known as the Stiglitz-Sen-Fitoussi Commission (named after the three specialists who have formed it). This committee was founded in 2008 at the request of French President Nicholas Sarkozy, who was dissatisfied with the level and quality of statistical information concerning economy and society. The aim of the commission was to overcome the GDP limits as an indicator for assessing economic performance and social progress and to identify socio-economic indicators more relevant under the new emerging economic and financial crisis.

Following Stiglitz report is the study conducted in 2010 at the request of Franco-German Ministerial Council - "Monitoring economic performance, quality of life and sustainability". The study presents the results of applying the recommendations from the Stiglitz report in France by the Council of Economic Analysis, and Germany through the German Council of Economic Experts (Franco-German Ministerial Council, 2010).

There are also smaller studies in terms of applicability either because they are targeting only one country, or because they refer to crisis influence on some dimensions of quality of life.

One such example is the survey conducted in 2009 by the University of Turin (Rollero, Targlia, 2009, pp. 75-87) which aims to identify factors that contribute to maintaining the level of satisfaction with life during the crisis. Research focused on three aspects of life: socio-demographic characteristics, psychological variables and employment (in relation to expectations of income).

Another study that focuses on crisis influence on the quality of life only in certain countries was conducted by the Observatory for Human Security in Portugal in 2010. Research focused on developing countries and the issues that this crisis brings to the quality of life in these countries: poverty, hunger, pollution, increases in food prices along with lower purchasing power, etc. Given that economic decline in developing countries affect also the economy of other, the research conclusion relates to the need for international cooperation to implement a series of sustainable development strategies in these countries (Observatory for Human Security, 2010).

There are also researches that focus on the economic crisis effects on the quality of life within a single population group. For example, the study conducted by M.D. Shapiro for the University of Michigan, referring to the effect of the financial crisis on the welfare of older people in the United States (Shapiro, 2010). The research was a longitudinal one, with a first phase in 2008, followed by one in 2009 to assess changes occurred with the emergence of the economic crisis and its negative effects on population.

Another longitudinal study was conducted on the Canadian market, to assess how one of the main effects of the crisis – unemployment – affects also the psychological welfare of an individual (Latif, 2010, pp. 520-530). Research highlights the importance of non-pecuniary costs due to loss of employment, the main conclusion being that policy makers have a strategic role in lowering these costs by creating new jobs.

Given that the main dimension of quality of life influenced by the crisis is employment, there are numerous studies addressing this issue, either in terms of layoffs and unemployment, or in terms of stress at work. In the first category we can mention a scientific paper wrote by M. Aceleanu, which targets the implications of the financial crisis upon the employment policies, making a parallel between Romania and the situation of other EU countries (Aceleanu, 2011, pp. 4-13). From the second category we can mention the research conducted by I. Suciu, who studied how stress at work induced by the economic crisis affect also the harmony in the family (Suciu, 2010).

Another dimension of quality of life in which many authors studied the influence of economic crisis is education, given the fact that this dimension is reflected in a double stance in relation to the crisis: as a victim – given the negative effect that the crisis brings on the investment in education (Badea, 2011, p. 71) or as a control factor in the economy – through ideas and solutions that can be developed in the main economic schools of the world.

Another research focused on the economic crisis influence on the quality of life in Romania was conducted in 2009 under the coordination of TNS Opinion & Social, at the request of the European Commission, and is part of Eurobarometer 72 - Public Opinion in the European Union. The research was based on a survey that assesses the population opinion about the effects of the crisis, the confidence in national and European institutions and also life satisfaction in general (Eurobarometer 72, 2009).

One of the most detailed and statistically grounded researches on crisis influence on the quality of life was conducted in March 2011 at the Institute for the Study of Labor (IZA). The study is based on the results of a longitudinal research conducted by Gallup starting with January 2008 and analyzes the evolution of six indicators: physical health index, the work environment index, basic access index, life evaluation index, emotional health index and healthy behavior index in order to identify how the values of these indexes have changed with the emergence and evolution of the economic crisis (Askitas, Zimmermann, 2011).

All these studies have led to conceptual changes in quality of life evaluation, changes in the importance given to different dimensions of and also changes in research methodology.

3. Conceptual and methodological changes in quality of life studies

As mentioned above, the economic crisis has left its mark on quality of life studies, affecting not only the research objectives, but also its methodology, especially the sampling and analysis. In the following there are presented these changes, highlighting how they contribute to a better quality of life assessment.

a) Changes in quality of life dimensions

Most systems for quality of life evaluation are based on a series of composite indicators; the calculation of these indicators involves evaluating various dimensions of quality of life and, later, weighting them according to the importance attributed by the society, but also by each individual. The economic crisis has brought a number of changes on the weight that each dimension holds in the overall quality of life, placing more emphasis on elements that were affected by this crisis: employment and unemployment, availability of products and services, purchasing power. We notice that measuring quality of life changes according to the needs of individuals and society. If by 2008 the

priority was on superior needs, it returns now at the base of Maslow's pyramid, given that individuals have somewhat lowered their standards of quality of life evaluation (in the developing countries, to have a decent life is to have a job, housing and money for daily food consumption).

b) Changes in quality of life research objectives, which automatically leads to the orientation of importance to other indicators of evaluation:

- *Identifying the factors that contribute to maintaining the quality of life satisfaction in the crisis period* (Rollero, Targlia, 2009, pp. 75-87) – thus the focus is on psychological variables such as optimism or the need for cognitive closure (NFCC); the concept of NFCC was identified by AW Kruglanski in 1989 and refers to the way individuals approach and build up their knowledge about social environment; generally people with a high NFCC are characterized by a preference for structure, predictability, fast decision making, rigidity in thinking and low tolerance for ambiguity; NFCC is determined based on five criteria: preference for order, preference for predictability, discomfort with ambiguity, limited horizon of thought, determination; NFCC affects also how individuals interpret and respond to the emergence of the economic crisis (Kossowska et al., 2002, pp. 267-286);
- *people's trust in the institutions responsible for economic recovery* (Eurobarometer 72, 2009) – the study should aim at a comparative analysis between the confidence in national and European institutions (such as European Parliament and European Commission, EU Council or European Central Bank);
- *individual's perception about the impact that the crisis had on his income* (Rova, Mano, 2009, pp. 514-524) – this objective should be correlated with the statistical indicators available at national level regarding the evolution of income, in order to eliminate research errors due to the false perception of respondents regarding crisis-income correlation;
- *main solutions to overcome the crisis that the citizens considers to have priority* (Eurobarometer 72, 2009), and the actions taken by each individual to cope with the crisis, especially the changes in the consumer behavior;
- *influence of the economic recovery on the quality of life* – a subjective approach in terms of individual perception about the life changes occurred because of the government decisions to take measures to fight

the economic crisis; this is the main argument of those who recommend the subjective approach for quality of life compared to the objective one – you can not conclude that a country has a high level for quality of life just because the economic recovery policies are effective, as long as such action often involves a financial sacrifice of some sectors or population groups, which automatically affects negatively the welfare of individuals related to those sectors or groups of population.

c) Changes in methods of analysis – multivariate analysis are made:

- *household income* growth correlation with the type of household according to income in order to determine the influence of the crisis on the patrimony; the patrimony is an indicator proposed also by the Stiglitz-Sen-Fitoussi Commission for describing more accurately than welfare;
- correlation between *knowledge about the crisis*, demographic elements (such as place of residence, house ownership and level of education) and interest in the political environment (Rova, Mano, 2009, pp. 514-524); it is assumed that the level of satisfaction with quality of life in crisis conditions depends on the knowledge about the crisis, the factors that led to its appearance, and how to exit from such an impasse;

d) Changes in research sampling – one of the concerns in quality of life studies over the past three years relates to the identification of demographic categories that have been affected by the economic crisis; but such concerns can find relevant and representative answers only if changes are made in regard to the size and structure of the research sample:

- *sample size* – the European surveys on quality of life have usually national sub-samples between 1000 and 2000 people; such sample size allows inter-group analysis only for those social groups very well represented, taking into account that a segmentation too deep would create groups of people underrepresented in the sample, so that data obtained from them can not be considered representative for all the researched collectivity; increasing the number of respondents would lead to the possibility of multiple layers segmentation, within which

then can be made a pertinent analysis of the crisis influence on the quality of life;

- *structure sample* – not all socio-demographic categories are sufficiently represented in quality of life surveys (for example, single mothers or immigrants), others are not represented at all (the homeless); unfortunately these are the categories among which the economic crisis has left its mark, therefore a change in the structure of the sample, accompanied by an increase in its size, could provide pertinent information from all relevant socio-demographic categories.

4. Conclusions

Since many of the factors influencing quality of life have both a transnational and a national dimension, in the last three years quality of life studies consider also the influence of the economic crisis on that phenomenon. Quality of life dimensions are analyzed from the perspective of economic indicators evolution during the years of crisis, but also in terms of individual perception on quality of life in the present context of the market. Thus the influence of the economic crisis is evaluated both through the objective approach on the quality of life and the subjective one.

Changes in quality of life evaluation can be found both in the research objectives (including new evaluating indicators or the change in the importance given to certain dimensions) and in its methodology (by changing the size and structure of the sample). These changes lead to designing a research more adapted to market new requests (economic recovery), as well as to individual needs (keeping a balance between the severe measures of economic recovery and the personal well-being).

Following the economic crisis, most changes have been implemented successfully in quality of life studies, but there are some areas to which we still recorded deficiencies, such as building a representative sample for a research that seeks to identify the most affected social segments by the crisis. For such a situation it is recommended to increase the number of respondents and deeper the sampling methods so that the research should include representatives of all relevant socio-demographic categories.

Acknowledgements

This work was co-financed from the European Social Fund through Sectoral Operational Programme Human Resources Development 2007-2013, project number POSDRU/1.5/S/59184 „Performance and excellence in postdoctoral research in Romanian economics science domain”.

References

- Aceleanu, M. (2011). „Implication Of The Financial Crisis On The Employment Policies In Romania And EU Countries”, publicat în *Journal of International Scientific Publications*, ISSN 1313-2555, Vol. 5, Part 1, pp. 4-13
- Askitas, N., Zimmermann, K. (2011). *Health and Well-Being in the Crisis*, Institutul pentru Studiul Muncii (IZA), Bonn
- Badea, L. (2011). „Economic crisis and education. Case study: the Romanian educational system”, *Equilibrium. Quarterly Journal of Economics and Economic Policy*, Volume 6, Issue 3, pp. 71- 84
- Kossowska, M., Van Hiel, A., Chun, W.Y., Kruglanski, A.W. (2002). „The need for cognitive closure scale: Structure, cross-cultural invariance, and comparison of mean ratings between European American and East Asian Samples”, *Psychologica Belgica*, No. 42, pp. 267-286
- Latif, E. (2010). “Crisis, Unemployment and Psychological Wellbeing in Canada”, în *Journal of Policy Modeling*, Vol. 32, pp. 520-530
- Rollero, C., Tartaglia, S. (2009). „Preserving life satisfaction during the economic crisis. Which factors can help?”, *Psihologia Politica*, No. 39, pp. 75-87
- Rova, L., Mano, R. (2009). „The impact of financial crisis on the quality of life”, în *Journal of Applied Quantitative Methods*, Vol. 4, No. 4, pp. 514-524
- Șerbănică, D., Constantinescu, M., Căescu, Ș.C. (2009). „The influence of the Global Economic Crisis on the Strategic Marketing Instruments Used by Companies on the Romanian B2B Market”, în *Transformations in Business & Economics*, Vol. 8, Nr. 3 (18), supliment A, pp. 44-59
- Shapiro, M.D. (2010). *Efectul crizei financiare asupra bunăstării persoanelor de vârstă a treia din Statele Unite: Dovezi din Studiul Economiei Cognitive*, University of Michigan Retirement Research Center
- Suciu, I. (2010). “Criza economică și stresul la locul de muncă- noi provocări în armonia familiei”, Conferința *Reconstruind socialul. Riscuri și solidarități noi*, organizată de Societatea Sociologilor din România, 2-4 decembrie 2010, Cluj-Napoca

- CMEPSP – Commission on the Measurement of Economic Performance and Social Progress (2009), “Report by the Commission on the Measurement of Economic Performance and Social Progress”, disponibil la http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf (accesat la data de 14 aprilie 2011)
- Consiliul Ministerial Franco-German (2010), „Monitorizarea performanței economice, a calității vieții și a sustenabilității”, disponibil la <http://www.cae.gouv.fr/spip.php?article178> (accesat la data de 16 iunie 2011)
- Eurobarometru 72/Toamna 2009, „Opinia publică în Uniunea Europeană, Raport Național România”, Comisia Europeană
- Eurofund - Fundația Europeană pentru Îmbunătățirea Condițiilor de Viață și de Muncă (2009), „Al doilea sondaj european privind calitatea vieții. Calitatea vieții în Europa”, 2003–2007, disponibil la <http://www.eurofound.europa.eu/pubdocs/2009/771/ro/1/EF09771RO.pdf> (accesat la data de 19 mai 2011)
- Observatorul pentru Securitatea Umană (2010), „Impactul crizei financiare asupra dezvoltării umane (The financial crisis impact on human development)”, Portugal
<http://www.bloomberg.com/apps/quote?ticker=.TEDSP:IND> (accesat la data de 20 mai 2011)
<http://www.stiglitz-sen-fitoussi.fr/fr/index.htm> (accesat la data de 14 martie 2011)

The Wagner hypothesis from the perspective of the Romanian economy

Ana-Maria ȚEPUȘ

Bucharest Academy of Economic Studies
anamaria.tepus@yahoo.com

Abstract. *The study consists in determining a long term relationship between the size of the governmental expenses and the economic growth in Romania during the 2000-2010 period. By using the quarterly data of this period and the econometric techniques like the Granger causality, the co-integration analysis and VAR analysis, we have reached the conclusion that there is enough proof in favour of validating the Wagner law.*

Keywords: Wagner law; Granger causality; the size of the governmental sector.

JEL Codes: E20, E21.

REL Codes: 13C, 13K.

1. Introduction

The economic growth is one of the most fascinating subjects of the macro economy; the budgetary expenses represent one of the potential factors interesting to be studied in connection with the growth of an economy. The empiric studies regarding the impact of the budgetary expenses on the long term economic growth include the works of Romer⁽¹⁾ (1990), Barro⁽²⁾ (1991), Levine and Renelt⁽³⁾ (1992), Feder⁽⁴⁾ (1997). Most of the studies utilize transversal data series for connecting the governmental expenses with the economic growth rates. The disadvantage of these studies is that the transversal analysis can identify the correlation but not the causality between the variables (Hsieh, Lai, 1994), because it provides only pooled estimations of the effect of the governmental sector size on the economic growth (Ghali, 1999), not allowing to identify the effect generated by each country.

The traditional OLS regression analysis is not enough for determining the sense of the causality⁽⁵⁾. In any case, the value of the coefficient (which is a significant one) is compatible with the Keynes vision (causality from the budgetary expenses toward economic growth), the law of Wagner (causality from growth toward expense) and bidirectional causality between the two variables. The most indicated method for determining this relation is that of using the Granger⁽⁶⁾ causality test.

The paper models the relationship between the GDP and the share of budgetary expenses in the GDP, by starting from the study of Ghali, correlated with the literature on the law of Wagner.

2. The level of knowledge regarding the *Wagner hypothesis*

The Law of Wagner⁽⁷⁾ on expanding the activity of the state within the economy, which states that the determining factor for increasing the size of the governmental sector is economic growth, continues to attract the econometricians. The critical examination of the most relevant articles (written during a time interval of four decades) that approaches this subject highlights the repeated divagations from the *definition of Wagner on the activity of the state*⁽⁸⁾ and sacrificing the essence of formulating it with the view of presenting sophisticated econometric models, that will rival and even outrank those of the predecessors⁽⁹⁾.

In the period following the second World War, due to the incentives provided by the state with the purpose of consolidating and at the same time controlling the economy, it was observed within the Western economies that the influence of the government grew on the consumption structure and on the

investment expenses; thus there was a question of the long term evolution of the governmental expenses and of the causes that generate their growth.

The *Law of Wagner* is brought back to our attention and it presupposes the following:

1. Detects certain regularities on increasing the size of the governmental sector;
2. Including the public finances of the central and local administration as well as of the state enterprises within the definition of the governmental sector;
3. Wagner utilizes the term of “law” when referring to this regularities, stating also that its sense is imposed by the Wilhelm Lexis statistician (1911)⁽¹⁰⁾.
4. Determining an absolute and relative growth of the public sector size, in comparison with the national economy, and a different growth rhythm from one branch to the other;
5. Including the traditional services (defence, justice, public order), as well as education, social assistance services and expenses generated by the modification of the economic structures⁽¹¹⁾;
6. Wagner was aware of the fact that by associating the growth of the governmental activity with the development of industrial companies raises the problem of the analysis period⁽¹²⁾ and he is reserved in the attempt of finding this kind of limits. He also states that there are no specific limits regarding the contribution of the economic and cultural progress on the growth of the governmental sector.

The law of Wagner offers two possibilities of expanding the research in the field of measuring the growth of governmental expenses:

- It does not present an articulate model of the growth process of the of the governmental process within which the cause and effect have to be clearly defined;
- The agents involved in this dynamic process are not clearly identified.

Rowley and Tollison (1994) state the hypothesis of Wagner is consistent with the comparative advantage doctrine. Wagner brings to the table the complementarity between the growth of the industrial sector and the growth of the demand for public services with economic character (like transportation and other communication networks, waste management and the other services provided in general by the state agencies). Therefore, Stigler (1986) expands the idea and explains the long term demand for the governmental expenses.

It is difficult to see in the studies of Wagner the idea according to which the demand for public services is supported by a passive adjustment from the government supplying services complementary to the development of the

private industry. Instead the governmental sector is seen as a planner of the economy working for the public interest and it takes intelligent decisions that would promote the industrial development in line with taking over and developing the basic public utilities.

The rather vague hypotheses of the Wagner theory do not satisfy the rigors of the partisans of the present economic models that use statistic techniques very advanced for testing, yet the *advantages* do not counter weight the survival power of the theory.

The numerous testing of the theory have focused on the following aspects:

a) measuring the size of the governmental sector

- there are approximately 14 different techniques for measuring the governmental expenses, starting with the restrictive definitions (which excludes the transfers or expenses related to defence) up to the very detailed definitions (that include all the expenses that can be found in the public accounts⁽¹³⁾);
- misinterpretation of the Wagner theory (which also includes the public utilities in the governmental sector); omission of the influence of public enterprises can be seen as being intentional;
- three possibilities of referring to increasing the variable which depends on the governmental sector (G) were identified;
 - the *stricto sensu* increase of the governmental sector (G);
 - increase of the governmental sector share within the GDP (G/Y);
 - increase of the public expense value *per capita* (G/N).

Each of these possibilities is consistent with a certain interpretation of the Wagner law. By corroborating these options with the 14 modalities of measuring the governmental expenses we reach a result of 42 possible dependent variables.

b) independent variables

- gross national income/GDP;
- changes regarding the population;
- the degree of industrialization;
- the degree of urbanization.

Difficulties: Wagner draws the attention in regard to the analysis period of his law; therefore in a period characterized by deindustrialization it is called into question if the governmental activity, as an important component of the services sector, would be influenced by the productivity *lag* associated with the *Baumol effect*⁽¹⁴⁾, a fact which introduces a structural element in the analysis, which suggests testing a hypothesis with totally different ideas.

c) data series

- focus on comparisons between the developed countries and the emerging markets, as well as between the developed countries (there is a uniformity regarding the growth levels of the G/Y ratio in the Western-European economies, yet there is a difference between G/Y of Sweden vs. Japan).

d) testing methods

- multiple regression (it presents the deficiencies which are trying to be resolved by utilizing more complex models);
- co-integration – the one most consistent with the hypothesis of Wagner (who states that there isn't necessarily a cause-effect type of relationship between the economic development and the increase of the governmental expenses⁽¹⁵⁾), that is trying to identify the existence of a long term relationship between the variables, which cannot be pointed out through the multiple regression method⁽¹⁶⁾;
- later on the presence/direction of a causality is determined => the Granger causality test⁽¹⁷⁾.

The various tests applied to the Wagner law are criticized: on the one hand, the omission (the superficial approach of the governmental activity significance), and on the other hand, commission (utilizing excessively the econometric techniques, which led to fake precision in formulating the causal relationship identified between the governmental activity variable and other macroeconomic variables).

The Wagner law for Romania was tested in various forms, thus obtaining results which converge toward the same conclusion: there is a causality link between the GDP and the governmental expenses, yet this relationship is a unidirectional one, the orientation being from the GDP towards the governmental expenses. There were also situations when this law was not complied with, should the analysis be reduced just to governmental expenses specific to certain sectors. Therefore, Cosimo (2010) prepared a cross-section analysis for the 27 countries of the European Union, by using annual data and reached the conclusion that the law of Wagner is valid for the majority of the analyzed countries, especially for Romania. Andrei et al. (2010) have analysed the relationship that exists between the expenses of the education sector and the dynamic of the GDP, the conclusion being that there is no Granger causality between these two variables. On the other hand, Dritsaki⁽¹⁸⁾ (2010) prepared an analysis based on annual data for the 12 new member countries of the European Union and reached the conclusion that the law of Wagner is valid if we compare the total governmental expenses and the GDP.

3. Data and methodology

In order to present for Romania the accuracy of the law of Wagner, we have utilized the data that have a quarterly frequency available on the EUROSTAT web site, for the following variables in the 2000-2010 period:

- y = the real ratio of governmental expenses in the GDP;
- x = real GDP (expressed in the prices of 2005);

Due to the fact that the quarterly data present an accentuated seasonality, the variables were de-seasoned by using the TRAMO/SEATS procedure, available in Eviews5.

We decided to utilize the quarterly data instead of the annual ones, for two reasons:

- from the perspective of efficiency and significance of the statistic tests, the annual data series is too restricted to allow obtaining trustworthy results;
- the variables that characterize the Romanian economy in the 1990-2010 period have serious structural gaps and significant trend reversals, which makes an analysis for this time horizon by utilizing the annual data to be not feasible.

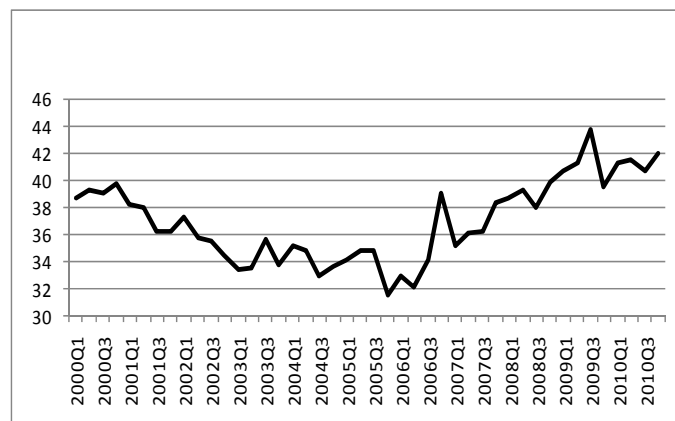


Figure 1. *The share of the governmental expenses in the GDP (%) – series adjusted in a seasonal manner*

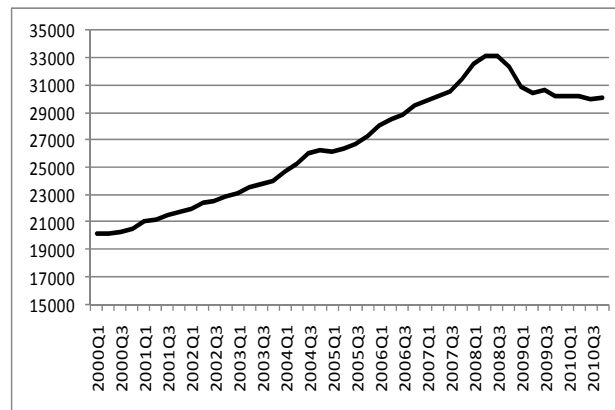


Figure 2. Real GDP (million lei, for the average prices of 2005) – series adjusted in a seasonal manner

3.1. The regression method utilized to determine the correlation between the GDP and the governmental expenses

The easiest method for determining the potential correlations between the analysed variables is the classic linear regression; unfortunately, its hypotheses are very restricted and such a model can only signal the presence of a linear correlation. Furthermore it is improper to speak about the regression as a method for determining the existence of causality.

Nevertheless, the estimation of a regression model can provide clues regarding the existence of a possible long term relationship between the variables.

In the following, we have tested the law of Wagner in the formal sense of Mann (1980), in accordance to which the share of governmental expenses within the GDP can be expressed according to the real GDP:

$\ln y_t = \beta_0 + \beta_1 \ln x_t + \varepsilon_t$, where ε_t is a variable which respects the hypotheses of the regression model.

In order to validate the law of Wagner, the β_1 coefficient needs to be significant and furthermore $\beta_1 > 0$.

3.2. Stationary and co-integration tests

In order to determine the existence of a potential Granger type of causality between the two analysed variables, we need to check before anything else the existence of co-integration between the time series.

Practically, the two time series are co-integrated if they have the same order of integration, yet their linear combination has a lower integration order.

For example, we can have two integrated series of order one, e.g. the order one differences are stationary, yet there can be a linear combination of the two series which should be stationary, namely an order 0 integral.

The stationary test was carried out through the *Augmented Dickey-Fuller* general procedure, by estimating the following regression model:

$$\Delta y_t = \beta_0 + \beta_1 t + (\rho - 1)y_{t-1} + \sum_{i=1}^p \rho_i \Delta y_{t-i} + u_t, \text{ where } y_t \text{ is the variable for}$$

which the stationary is verified, and p is the optimum number of lags utilized to verify the possible auto-correlations of higher order. The optimum number of lags utilized for the ADF test can be chosen based on maximizing the *Schwarz informational criteria (SIC)*.

The hypotheses of the test are the following $\begin{cases} H_0 : \rho = 1 \\ H_A : \rho < 1 \end{cases}$, rejecting the null

hypothesis equivalent with accepting the stationary r.

We have $Y_t = (\ln y_t \ln x_t)'$ the vector of the time series so that $\ln y_t \in I(1)$ and $\ln x_t \in I(1)$. Then $\ln y_t$ and $\ln x_t$ are co-integrated if there is a β matrix so that $\beta' Y_t \in I(0)$.

In order to be able to check if the two data series are co-integrated we have applied the Johansen (1991) procedure.

Therefore, we have a VAR model of the order p :

$Y_t = A_1 Y_{t-1} + \dots + A_p Y_{t-p} + \varepsilon_t$, where $Y_t = (\ln y_t \ln x_t)'$ is the vector of the two studied variables, integrated of order one, and ε_t is the vector of innovations.

The above VAR model can be rewritten:

$$\Delta Y_t = \Pi Y_{t-1} + \sum_{i=1}^{p-1} \Gamma_i Y_{t-i} + \varepsilon_t, \text{ where } \Pi = \sum_{i=1}^p A_i - I \text{ and } \Gamma_i = -\sum_{j=i+1}^p A_j.$$

The Granger representation theorem states that if the matrix of the Π coefficients has the rank $r < k$, then we have matrix $\alpha, \beta \in M(k \times r)$, each having rank k , so that $\Pi = \alpha \beta'$ and $\beta' Y_t \in I(0)$.

Rank r actually represents the number of co-integration relations and each column of matrix β contains the coefficients of the co-integration equations.

The Johansen method consists in estimating the Π matrix from a VAR model without restrictions and afterwards testing the restrictions that results from taking a rank $r < k$.

In fact, the following possible situations are being tested:

- vector Y_t does not have a deterministic trend, and the co-integration equations do not have an absolute term: $\Pi Y_{t-1} = \alpha \beta' Y_{t-1}$;
- vector Y_t does not have a deterministic trend, and the co-integration equations have the absolute term: $\Pi Y_{t-1} = \alpha(\beta' Y_{t-1} + \rho_0)$;
- vector Y_t has a deterministic trend, and the co-integration equations only have absolute term: $\Pi Y_{t-1} = \alpha(\beta' Y_{t-1} + \rho_0) + \alpha_t \gamma_0$;
- vector Y_t and the co-integration equations have a linear trend: $\Pi Y_{t-1} = \alpha(\beta' Y_{t-1} + \rho_0 + \rho_1 t) + \alpha_t \gamma_0$;
- vector Y_t has a square trend, and the co-integration equations have a linear trend: $\Pi Y_{t-1} = \alpha(\beta' Y_{t-1} + \rho_0 + \rho_1 t) + \alpha_t(\gamma_0 + \gamma_1 t)$.

3.3. The Granger causality

We can determine the existence of a long term relationship between the GDP and the governmental expenses by testing the bi-varied Granger causality.

The Granger causality between two variables refers to the manner in which the past values of a variable can be utilized in order to explain the values of the other variables.

In our situation, testing the Granger causality is reduced to estimating the regression models:

$$\ln y_t = \alpha_0 + \alpha_1 \ln y_{t-1} + \dots + \alpha_l \ln y_{t-l} + \beta_1 \ln x_{t-1} + \dots + \beta_l \ln x_{t-l} + \varepsilon_t$$

$$\ln x_t = \alpha_0 + \alpha_1 \ln x_{t-1} + \dots + \alpha_l \ln x_{t-l} + \beta_1 \ln y_{t-1} + \dots + \beta_l \ln y_{t-l} + u_t$$

The null hypothesis for which the validity is being tested is $H_0: \beta_1 = \dots = \beta_l = 0$ in other words, we have tested for the first equation the fact that $\ln x$ does not cause Granger on $\ln y$, and in the second equation we have tested the fact that $\ln y$ does not cause Granger $\ln x$.

In the absence of a long term relationship between the variables, it is interesting to study the short term relationship. Without the proof of co-integration, a model for correcting the errors cannot be utilized.

Before applying the test we need to determine the correct VAR model⁽¹⁹⁾. Between a VAR model with dummy variables and one with “forged” periods, the second one seems to be a model with better specifications. During the causality testing, the results are sensitive to the number of lags utilized in the analysis.

3.4. The VAR model for the relationship between the governmental expenses and the GDP

In order to express the magnitude and the sense of the GDP-governmental expenses causality relation, we have estimated the VAR(p) model:

$Y_t = A_1 Y_{t-1} + \dots + A_p Y_{t-p} + \varepsilon_t$, where $Y_t = (\ln y_t \ln x_t)'$ is the vector of the two studied variables, integrated of order one, and ε_t is the vector of innovations.

The results of such a model show the orientation of the link between the two variables as well as the significant temporal delay which describes this link.

4. Results

Due to the fact that we have worked with quarterly data, it is normal that there would be a temporal delay between the GDP evolution and the evolution of the governmental expenses; because of this we have estimated the following types of regression models:

$\ln y_t = \beta_0 + \beta_1 \ln x_{t-k} + \varepsilon_t$, where k is the temporal delay and ε_t is a variable that complies with the hypothesis of the regression model.

Table 1

Results of the regression models with lags

k	β_1	SE (β_1)	Statistic t	Prob t	R ²	Statistic F	Prob F
0	0.128	0.077	1.658	0.105	0.061	2.749	0.105
1	0.166	0.077	2.165	0.036	0.103	4.685	0.036
2	0.214	0.075	2.863	0.007	0.170	8.196	0.007
3	0.262	0.072	3.640	0.001	0.254	13.250	0.001
4	0.307	0.068	4.524	0.000	0.350	20.464	0.000
5	0.342	0.065	5.234	0.000	0.425	27.397	0.000
6	0.376	0.063	6.004	0.000	0.500	36.047	0.000
7	0.399	0.061	6.497	0.000	0.547	42.210	0.000
8	0.428	0.059	7.227	0.000	0.606	52.226	0.000
9	0.467	0.056	8.279	0.000	0.675	68.542	0.000
10	0.501	0.057	8.759	0.000	0.706	76.721	0.000
11	0.539	0.058	9.227	0.000	0.733	85.137	0.000
12	0.571	0.062	9.219	0.000	0.739	84.985	0.000

As it can be observed from the results of the estimated models, there is a significant direct correlation between the GDP and the share of governmental expenses in the GDP, but this relation does not have a mechanism of immediate communication, which suggests the existence of a potential long term correlation.

In other words, it is expected that the law of Wagner should have empiric verification for Romania, as there is a positive relation between the two variables.

Nevertheless the classic regression model does not provide robust results, if the two series are not stationary, otherwise having the possibility of obtaining a false regression.

In order to test the stationary of the two series, as well as their integration order, we have used the ADF test, above described, for the level series and for the order one differences.

Table 2

Unit root test for $\ln y$, $\ln x$, $\Delta \ln y$, $\Delta \ln x$

	$\ln y$	$\Delta \ln y$	$\ln x$	$\Delta \ln x$
$\rho - 1$	-0.143	-1.349	-0.023	-0.427
Statistic t	-1.620	-3.597	-1.770	-3.296
Critical value (5%)	-2.931	-2.933	-2.933	-2.933
R^2_{adj}	0.037	0.673	0.346	0.194
Statistic F	2.625	82.256	11.836	10.865
Prob F	0.113	0.000	0.000	0.002

Due to the fact that the probability associated with the null hypothesis of unitary root is lower than the usual level of significance of 5%, we reject the non-stationary hypothesis, therefore the order one differences of the two series are stationary and as a consequence the $\ln y_t$ and $\ln x_t$ series have the same integration order ($\ln y_t \in I(1)$ and $\ln x_t \in I(1)$).

Table 3

Results of the co-integration tests

Data trend:	None	None	Linear	Linear	Quadratic
Test type	No intercept	Intercept	Intercept	Intercept	Intercept
	No trend	No trend	No trend	Trend	Trend
Trace	1	2	2	1	0
Max-Eig	0	2	2	0	0

In accordance with the results of the co-integration tests, by applying the Schwarz methodology, we have derived the existence of at least one and no more than two co-integration relations between the GDP and the governmental expenses.

Table 4

Results of the Granger causality test for $l = 5$

The causality	F-Statistic	P-value
GDP→Governmental expenses	4.30021	0.005
Governmental expenses→ GDP	1.96548	0.11502

Because the probability of the Granger test is lower than the level of significance only for the first causality relationship, the conclusion is that the Granger causality relationship is unique, and the orientation is given from the GDP toward the governmental expenses and not the other way around.

Taking into account that we have established that there is a significant Granger causality relationship in the GDP→Governmental expenses orientation, we can estimate a VAR(p) model in order to evaluate the direction of this causality relationship. We have estimated for this a VAR model without restrictions and a VECM (*Vector Error Correction Model*), to take into consideration the co-integration relationship which exists between the two series of data.

Taking into account the results of the Granger causality test, we chose the order for the two models $p=4$.

The VAR model

The VAR(4) Model has the following form:

$$\begin{cases} \ln y_t = \alpha_{10} + \alpha_{11} \ln y_{t-1} + \alpha_{12} \ln y_{t-2} + \alpha_{13} \ln y_{t-3} + \alpha_{14} \ln y_{t-4} + \\ \quad + \beta_{11} \ln x_{t-1} + \beta_{12} \ln x_{t-2} + \beta_{13} \ln x_{t-3} + \beta_{14} \ln x_{t-4} + \varepsilon_{1t} \\ \ln x_t = \alpha_{20} + \alpha_{21} \ln y_{t-1} + \alpha_{22} \ln y_{t-2} + \alpha_{23} \ln y_{t-3} + \alpha_{24} \ln y_{t-4} + \\ \quad + \beta_{21} \ln x_{t-1} + \beta_{22} \ln x_{t-2} + \beta_{23} \ln x_{t-3} + \beta_{24} \ln x_{t-4} + \varepsilon_{2t} \end{cases}$$

The results of the estimates are presented in the following table.

Table 5

Estimates of the VAR(4) model

	$\ln y_t$	$\ln x_t$
$\ln y_{t-1}$	0.396545 *	-0.02393
$\ln y_{t-2}$	0.267232	0.022208
$\ln y_{t-3}$	0.12822	-0.05277
$\ln y_{t-4}$	0.043196	-0.02461
$\ln x_{t-1}$	-0.1818	1.429455 *
$\ln x_{t-2}$	-0.75814	-0.59259

	$\ln y_t$	$\ln x_t$
$\ln x_{t-3}$	2.15127 *	0.021248
$\ln x_{t-4}$	-1.07979	0.11666
Intercept	-0.74253	0.549136 *
R^2	0.811269	0.993496
R^2_{adj}	0.762564	0.991817
F-statistic	16.65683	591.8782

* - statistically significant with a probability of 95%

From the analysis of the coefficients of the estimated VAR(4) model we can observe a significant influence of the GDP on the governmental expenses, with a delay of three quarters, all the other coefficients are not significantly different from zero. The fact that this coefficient is positive symbolizes the existence of a direct relationship between the two variables, which is a validity clue of the Wagner law.

Also, the coefficients corresponding to the governmental expenses are not significant to any lag in the GDP equation, which is in accordance with the results of the Granger causality test.

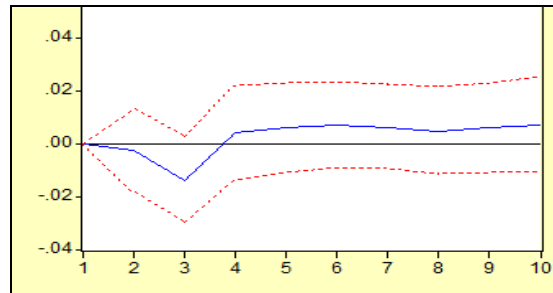


Figure 3. The governmental expenses function of responding to a shock of the GDP

As it can be observed in the impulse-response graph, the governmental expenses react significantly to a shock of the GDP with a delay of at least three quarters.

The VECM model

The VECM(4) model has the following form:

$$\begin{cases} \Delta \ln y_t = \alpha_{10} + a_1(a + b \ln y_{t-1} + c \ln x_{t-1}) + \alpha_{11} \Delta \ln y_{t-1} + \alpha_{12} \Delta \ln y_{t-2} + \alpha_{13} \Delta \ln y_{t-3} + \\ \quad + \alpha_{14} \Delta \ln y_{t-4} + \beta_{11} \Delta \ln x_{t-1} + \beta_{12} \Delta \ln x_{t-2} + \beta_{13} \Delta \ln x_{t-3} + \beta_{14} \Delta \ln x_{t-4} + \varepsilon_{1t} \\ \Delta \ln x_t = \alpha_{20} + a_2(a + b \ln y_{t-1} + c \ln x_{t-1}) + \alpha_{21} \Delta \ln y_{t-1} + \alpha_{22} \Delta \ln y_{t-2} + \alpha_{23} \Delta \ln y_{t-3} + \\ \quad + \alpha_{24} \Delta \ln y_{t-4} + \beta_{21} \Delta \ln x_{t-1} + \beta_{22} \Delta \ln x_{t-2} + \beta_{23} \Delta \ln x_{t-3} + \beta_{24} \Delta \ln x_{t-4} + \varepsilon_{2t} \end{cases}$$

The a, b, c coefficients are estimated based on a co-integration relationship between $\ln y_t$ and $\ln x_t$.

In the above model the c coefficient describes, for the long term, the elasticity of the governmental expenses in relation to the Gross Domestic Product.

The results of the estimates are presented in the following table:

Table 6

Estimates of the VECM model

	$\Delta \ln y_t$	$\Delta \ln x_t$
$\Delta \ln y_{t-1}$	-0.6852*	0.0680
$\Delta \ln y_{t-2}$	-0.4028*	0.0837
$\Delta \ln y_{t-3}$	-0.3188	0.0064
$\Delta \ln y_{t-4}$	-0.4468*	-0.0099
$\Delta \ln x_{t-1}$	0.0006	0.4895*
$\Delta \ln x_{t-2}$	-0.6544	-0.1096
$\Delta \ln x_{t-3}$	1.0216	0.1505
$\Delta \ln x_{t-4}$	0.5199	-0.2698
Intercept	-0.0051	0.0066
Deadline of the co-integration equation	0.112*	-0.027*
b	1	
c	1.375*	
a	-17.619*	
R^2	0.512	0.470
R^2_{adj}	0.361	0.306
F-statistic	3.386	2.866

* - statistically significant with a probability of 95%

The results of this model's estimates show a direct and significant relationship between the governmental expenses and the GDP.

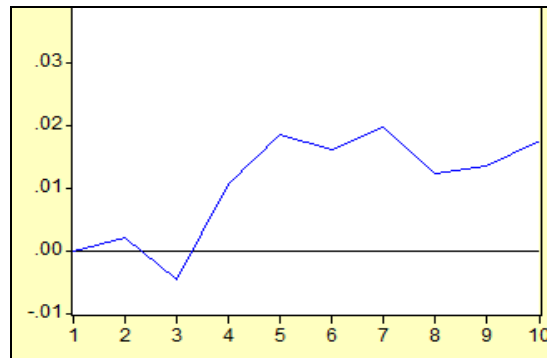


Figure 4. The governmental expenses function of responding to a shock of the GDP

This long term influence can be observed in an even clearer manner from the impulse-response graph, as the governmental expenses react in a significant manner to a shock of the GDP, even for a longer period.

An interesting conclusion can be drawn from the value and sign of the long term elasticity coefficient ($c=1.375$), which suggests a direct relationship between the dynamic of the Gross Domestic Product and the dynamic of the share of the governmental expenses within the GDP.

5. Conclusions

The law of Wagner, which postulates the existence of a causality relationship between the GDP and the evolution of the governmental sector, is one of the subjects that are intensely studied by the economists. The difficulty of the empiric verification consists in the fact that there are various functional forms of this causality relation, and the econometric methods that were used over time provided contradictory results.

In this study we have verified the validity of this law for the Romanian economy, using the quarterly data belonging to the 2000-2010 period. The results obtained from applying certain varied econometric techniques are consistent with those obtained by other researchers in this area.

The data series of the governmental expenses and of the GDP series are integrated of order one, and there is a significant co-integration relationship between them. Furthermore, we can establish the existence of a Granger causality relationship between the size of the governmental sector and the GDP, but this causality is unidirectional, manifesting from the GDP toward the governmental sector. The fact that as a following of the applied tests there was no significant causality from the dimension of the governmental sector toward the GDP is an illustration of the fact that the effects of the governmental policies did not manifest in the direction of generating economic growth, the latter actually having exogenous causes, because of the favourable international and local context⁽²⁰⁾.

The study should be extended by taking into consideration the structures of the governmental expenses in relation to the GDP dynamic, as well as including in the analysis other factors as well as the dynamic of the population, foreign investments volume, and dynamic of the industrial production.

Notes

- (1) Paul Romer, *Stanford University*- California.
- (2) Robert Barro, *Harvard University*- Cambridge, MA; one of the most influential economists at global level in accordance with *IDEAS- Research Papers in Economics*.
- (3) Ross Levine (*World Bank*) and David Renelt (*Harvard University*, Cambridge, MA).
- (4) Kris Feder, *Leon Levy Institute*- New York.
- (5) When the economic growth is regressed based on the governmental expenses, the researches tend to interpret the result as being a confirmation of the causality from the last toward the first variable.
- (6) Clive Granger (1934-2009), winner of the Nobel prize for economy in 2003; the results of this technique shows that the size of the governmental sector determine in a positive manner the economic growth – which supports the Keynes vision (Ghali, 1999, in the study that focuses on the OCDE countries); Hsieh and Lai (1994), on the other hand drew the conclusion that there is no proof of the presence of a certain Granger causality from the governmental expense toward the GDP growth PIB per capita for the G7 countries.
- (7) Named after the German economist Adolph Wagner (1835-1917).
- (8) “*The appearance of an industrialized modern society entails a political pressure having the purpose of supporting the social progress and the allocation by the industry of certain higher amounts for promoting the social aspects*” (Wagner) – “law” formulated for the first time in 1883, finalized in 1911 and utilized for the first time in English in 1958 by the American economist of German origins Richard A. Musgrave (economist-researcher of *FED* and a professor at *Harvard University*).
- (9) Wahab (2004 – “Economic Growth and Expenditure: evidence from a new test specification”) tried to point out the effects of a increasing or decreasing rhythm of the economic growth for the OCDE, EU and G7 countries for the 1950-2000 period; it established that the Wagner law is complied with only for the EU countries (in regard to the other countries, it determined that the size of the governmental sector increases with a rhythm lower than the one of the economic growth and it decreases more than proportional along with the decrease of the economic growth rhythm). Contrary the study of Kolluri *et al.* (2000) focuses on the relationship between the economic growth and certain components of the public expenses (the dependent utilized variables are: total budgetary expenses, total governmental consumption and the expenses with the governmental transfer) of the G7 countries and it certifies that the law of Wagner is respected. For the UK especially, the law of Wagner was confirmed for all the categories of public expenses taking into account the positive sign of the coefficients.
- (10) It utilizes the term of “law” with the meaning of “uniformity observed from the empiric perspective”, and not with the meaning applied by Pareto to the law of income distribution.
- (11) The increase of the governmental sector is also associated with the extensive use of the legislation regulating the economy.
- (12) Along which this empiric uniformity is being verified.
- (13) German public finance manuals, like Andel (1992) or Blankart (1994) utilize the term of *public finances-governmental sector* and not the one of the *public sector* as dependent variable.

- (14) A phenomena described in the 60's, which implies salary increases in the areas that have not experienced an improvement of the labor productivity, as an answer to the salary increases in areas that have registered an increase of the labor productivity.
- (15) The presence of co-integration does not imply causality.
- (16) The interpretation is the following one: once we establish the integration degree of the independent variables, we can establish the degree of co-integration of the series (if a linear combination of the integrated series is very static).
- (17) The verification of the law depends on verifying the causality direction of the co-integrated data series, namely it has be from the *economic development* variable toward the *governmental activity* variable.
- (18) *Technological Institute of Western Macedonia*, Department of Financial Informatics.
- (19) A VAR model specified in the correct manner needs to take into consideration the data gaps.
- (20) Namely, taking into account the very globalized international economic context and the weak industrialization of the Romanian economy vs. the one of the developed European states, the increase of the budgetary expenses was actually translated into an increase of the budgetary deficit; the low share of the capital expenses led to increasing the external deficit (the relationship is 1 p.p. budget deficit growth binds a 0.75 p.p. external deficit growth), attracting thus a reaction contrary to that originally expected - namely boosting the imports and depreciating the national currency; there were measures taken to fight against inflation (increasing the monetary interest rate) which generated a deceleration of the Romanian economy.

References

- Andrei, T., Lefter, V., Oancea, B., Stancu, S. (2010). "A Comparative Study of Some Features of Higher Education in Romania, Bulgaria and Hungary", *Romanian Journal for Economic Forecasting*, Institute for Economic Forecasting, Vol. 2, July, pp. 280-294
- Barro, R.J. (1990). "Government spending in a simple model of endogenous growth", *Journal of Political Economy*, 98, pp. 103-S124
- Barro, R.J. (1991). "Economic growth in a cross section of countries", *Quarterly Journal of Economics*, 106, pp. 407-44
- Cosimo, M. (2010). "Wagner's law and augmented Wagner's law in EU-27. A time-series analysis on stationarity, cointegration and causality", *C.R.E.I. Working Papers*, No. 5 (October 2010)
- Dritsaki, C., Dritsaki, M. (2010). "Government Expenditure and National Income: Causality Tests for Twelve New Members of E.E.", *Romanian Economic Journal*, Year XIII, No. 38, December 2010
- Feder, G. (1983). "On exports and economic growth", *Journal of Development Economics*, 12, pp. 59-73
- Ghali, K.H. (1999). "Government size and economic growth: Evidence from a multivariate cointegration analysis", *Applied Economics*, 31, pp. 975-987

- Hsieh, E., Lai, K. (1994). "Government Spending and Economic Growth: The G- 7 Experience", *Applied Economics*, Vol. 26, pp. 535-542
- Levine, R., Renelt, D. (1992). "A sensitivity analysis of cross-country growth regressions", *American Economic Review*, 82, pp. 943-63
- Romer, P.M. (1990). "Endogenous technological change", *Journal of Political Economy*, 98, pp. 71-102
- Wagner, A. (1890). *Fiannzwissenschaft* (3rd ed.), partly reprinted in (Eds.) R.A. Musgrave and A. T. Peacock, *Classic in the Theory of Public Finance*, Macmillan, London, 1958
- Wahab, M. (2004). "Economic growth and expenditure: evidence from a new test specification", *Applied Economics*, 36, pp. 2125-2135
- EUROSTAT Database, ec.europa.eu/eurostat

Effects of interest rate, exchange rate and their volatilities on stock prices: evidence from banking industry of Pakistan

Syed Tehseen JAWAID

Iqra University, Karachi, Pakistan
jawaid.t@iuk.edu.pk

Anwar Ul HAQ

Iqra University, Karachi, Pakistan
anwarhaq@faysalbank.com

Abstract. *This study investigates the effects of exchange rate, interest rates, and their volatilities on stock prices of banking industry of Pakistan. Cointegration results suggests the existence of significant negative long run relationship between exchange rate and short term interest rate with stock prices. On the other hand, positive and significant relationship exists between volatilities of exchange rate and interest rate with stock prices. Causality analysis confirms bidirectional causality between exchange rate and stock prices. Whereas, unidirectional causality runs from short term interest rate to stock prices. Sensitivity analysis confirms that the results are robust. It is suggested that investors should invest in banking sector stocks when exchange rate and interest rates are highly volatile. The result also supports the view that exchange rate and interest rate can be used as an indicator for investment decision making in banking sector stocks.*

Keywords: interest rate; exchange rate; GARCH; cointegration.

JEL Codes: C32, G11, G21, E43.

REL Code: 11B.

1. Introduction

Interest rate and foreign exchange rate risks are two important economic factors affecting the common stocks (Hyde, 2007, Vazz et al., 2008). Interest rate has a more direct effect on financial market, an increase in interest rate leads investing decisions to make a change in the structure of investment, generally from capital market to fixed income securities. Variability in interest rates directly generates a momentum to the money market from capital market. The stocks are sensitive to interest rates, as the changes in interest rates are inversely related to stocks (Alam, Uddin, 2009). Theoretically, the relation between exchange rate and stocks can be postulated as either positive (currency depreciation makes local firms more competitive, leading to an increase in exports as a result stocks prices increase), or negative (if the production is dependent on imported input, cost of production would rise as a result of currency depreciation, thus reducing profitability and a resulting decline in stocks returns), and a weak or no relation (an export oriented firm's prices rises with currency depreciation, since the input cost is also affected by this currency depreciation than the effect would be nullified to some extent because of increased cost of production).

Number of macroeconomic indicators which influence stock markets have been analyzed in past and recent empirical literature⁽¹⁾. Most of the previous studies only focused on the stock market as a whole ignoring the effects of these variables on different sectors of the economy (Ahmed et al., 2010, Hussain, Mahmood, 2001), while this is significant but investor must understand that different sectors of the economy react differently to changes in macroeconomic variables⁽²⁾.

The last decade has seen exceptional growth and profitability in the banking industry of Pakistan. Even during the recent financial crises in world which saw liquidation of huge financial institutions, this sector came out without major loses, in fact the profitability of this sector kept climbing, making it a lucrative sector in the stock market. At this stage we cannot set a specific relationship of interest rate and exchange rate with stock prices of banking industry unless the empirical analysis is done. Thus in the this paper we intend to shed some light on the existing relationship of interest rate, exchange rate and banking sector stock prices, based on empirical evidence from Pakistan.

Rest of the paper is structured in this manner, following introduction, section 2 represents some selected reviews of literature. Modeling frame work

is discussed in section 3, Section 4 shows estimation and results while section 5, concludes the study and give some policy implications.

2. Review of literature

Choi et al. (1992) estimate a multi-index model for measuring sensitivity of commercial banks stock returns to interest rate and exchange rate. Dummy models are used to separate the results attributable to money center banks from other banks. A significant exchange rate effect occurs for money center banks after October 1979, while interest sensitivity is stronger before October 1979. The exchange rate effect is attributed to increased foreign loan exposure of money center banks.

Habibullah and Baharumshah (1996) studied the relationship between money, output and stock prices in Malaysia. They employed co integration test on data from January 1978 to September 1992. Six different indices of stock exchange were tested by using money supply (both M1 and M2) and GDP as a proxy of output.⁽³⁾ They concluded that Malaysian stock market is informationally efficient with respect to both these variables.

Bashir and Hassan (1997) analyzed interest rate sensitivity to stocks in UAE. Data covering a period of January 1990 to December 1994 are analyzed. Simple OLS technique was adopted. Results showed that interest rate fluctuations have a significant and negative effect on the stocks of banking sector. Furthermore, even in absence of an official stock market, investors in UAE do take in to consideration the interest rate factor while dealing in stocks.

Nishat and Shaheen (2004) investigated the long run relation between macroeconomic variables and KSE index. Quarterly data covering a period of 1973- 2004 are used. Industrial production index, inflation, broad money, value of an investment earning and money market rate are tested with error correction model and Granger causality technique. The cointegration results indicate a long term relation among these variables. It is further concluded that industrial production and inflation are the largest positive and negative determinants respectively. There also existed a casual relation between stock market and interest rate.

Maysami et al. (2004) studied co integration between economic variables and sector indices, as well as stock market index of the stock exchange. Sectors whose relation was analyzed comprises finance index, property index and hotel index using monthly data covering a period from January 1989 to December 2001. Short and long term interest rates, industrial production, price levels,

exchange rate and money supply were tested by applying co integration and Vector Error Correction Model (VECM). Results show significant relationship of stock index and property index with all the variables. While significant relationship with selected variables only was established for finance and hotel indices⁽⁴⁾.

Hyde (2007) explored the sensitivity of stock returns of 33 industry portfolios of four European economies to exchange rate, interest rate and market risk. Data covered a period from January 1973 to December 2004. Results revealed that both exchange rate and market risks are significant and positive for all four economies, while interest rate risk is positively significant for France and Germany.⁽⁵⁾ Further decomposition of the risks showed that news relating to future dividends, real interest rates and excess returns are the main determinants.

Vardar et al. (2008) analyze the impact of interest rates and exchange rate on volatility of different sectors (financial, industrial, services and technology) and composite indices in Istanbul stock exchange. Daily data covering a period within interval 2001-2008 was analyzed using GARCH model. Results show strong power of prediction of the two variables on the volatility of the composite index. Specifically exchange rate changes are strongly predictive for all the indices except technology index. Moreover interest rate volatility showed significant positive relationship with all indices except services sector, which shows a negative relationship. It is suggested that investors should follow the monetary policies in order to effectively manage risk while taking investment decision in these sectors.

Vaz et al. (2008) examined the changes in interest rates on stocks returns of major Australian banks during the period from January 1990 to June 2005. The study used market model event study methodology. Results show no negative impact on Australian banks stock returns after announced increase in interest rates, in comparison to banks in US, where a negative impact is observed with an increase interest rate. Also there is a net positive abnormal return in the event of cash rate increase. It is concluded that Australian banks working in less competitive and concentrated environment are able to advantageously manage earnings impacts when cash rate changes are announced.

Adjasi et al. (2008) analyzed the effect of exchange rate fluctuations and their impact on the Ghana stock exchange. The monthly data covered period of 1951:1 – 2005:6. EGARCH model is used to determine and forecast the variance. It is concluded that volatility in stock return is not the sole result of

exchange rate volatility, but it is also affected by other macroeconomic factors. Furthermore, results also showed an inverse relationship between exchange rate volatility and stock market returns. It is recommended that measure should be taken to ensure stable macroeconomic environment, for better investor inflow and informed and decision making for future investment.

Aydemir and Demirhan, (2009) explored causality between stocks and exchange rates in Turkey. Data from 23rd February 2001 to 11th January 2008 was tested using cointegration and error correction model. Five indices⁽⁶⁾ were selected to represent the stocks. The results show existence of bi directional causality between exchange rate and all stock market indices. Four out of five selected indices showed a negative causality (running from indices to exchange rate) except technology.

Beirne et al. (2009) analyzed the relationship between macroeconomic variables and stock returns in three financial sectors i-e banking, financial services and insurance in 16 different countries. Furthermore they studied the causality in mean and volatility. A four variate GARCH model was used. The variables include three financial sector indices, T-bills, govt bonds, exchange rates, long and short term interest rates. Results showed a negative significant effect of interest rate, while exchange rate showed a mixed significant effect with stock prices.

3. Modeling framework

On the basis of theoretical and empirical discussion above this paper attempts to examine the effect of interest rate, exchange rate and their volatilities on stock prices of banking sector by using the following functions:

$$SP = f(I, F) \quad (3.1)$$

$$SP = f(I, VF) \quad (3.2)$$

Where SP represents stock prices of banking sector, F shows the focus variables of the study which are exchange rate (ER) (Beirne et al., 2009), short term interest rate (SIR) and long term interest rate (LIR). " I " represents the control variables in the model, comprising of foreign direct investment (FDI), trade balance (BOT) and inflation (CPI) (Pilinkus, 2009) portfolio investment as a percentage of total foreign investment (PI),⁽⁷⁾ foreign reserves (FR) (Mohammad et al., 2009) remittances (REM), whereas VF shows the volatilities of exchange rate, and interest rates.

In this study six vectors have been examined, *ER*, *SIR* and *LIR* along with their volatilities with all control variables. The equations used for this purpose are:

$$SP = \alpha_0 + \alpha_1 \times F + \alpha_2 \times I + \varepsilon_t \quad (3.3)$$

$$SP = \alpha_0 + \alpha_1 \times VF + \alpha_2 \times I + \varepsilon_t \quad (3.4)$$

Here “ ε_t ” represents the error term. Volatilities of exchange rate and interest rates are measured by GARCH(1,1) model.⁽⁸⁾ Monthly data from January 2004 to December 2010 are used. All data is acquired from Karachi stock Exchange, and the State Bank of Pakistan.

4. Estimation and results

Since our data is time series therefore preliminary stationarity check is performed by using Dickey and Fuller (1979) statistics as well as Philips and Perron (1988) methodology. Results of the tests are presented in Table 1.

Table 1

Variables	Stationarity test results							
	ADF test				PP test			
	I(0)		I(1)		I(0)		I(1)	
	C	C&T	C	C&T	C	C&T	C	C&T
ER	-0.05	-1.80	-3.55	-3.55	0.34	-1.67	-5.22	-5.25
SIR	-2.52	-3.04	-5.52	-5.67	-1.95	-2.31	-7.14	-7.27
LIR	-1.68	-1.85	-5.29	-5.26	-1.02	-1.86	-8.15	-8.10
FDI	-4.64	-4.79	-10.40	-10.35	-6.04	-6.12	-12.76	-12.69
PI	-5.57	-5.64	-10.45	-10.38	-9.01	-9.07	-17.72	-17.60
CPI	-1.36	-1.69	-3.81	-3.78	-1.22	-1.39	-6.17	-6.12
REM	-1.74	-2.15	-5.51	-5.47	-1.39	-1.72	-5.78	-5.74
AVB	-0.96	-1.97	-6.01	-6.07	-0.67	-1.85	-5.93	-5.95
LFDI	-8.54	-8.53	-9.1880	-9.1270	-8.63	-8.61	-60.67	-59.80
LPI	-7.37	-7.49	-14.24	-14.16	-7.35	-7.39	-33.10	-33.11
VER	-2.55	-2.53	-14.87	-14.78	-4.35	-4.39	-14.70	-14.62
VSIR	-2.54	-2.53	-14.87	-14.76	-4.34	-4.38	-14.70	-14.62
VLIR	-5.14	-5.08	-10.86	-10.80	-5.14	-5.08	-14.26	-14.13

Note: The critical values for ADF and PP tests with constant (C) and with constant & trend (C&T) 1%, 5% and 10% level of significance are -3.711, -2.981, -2.629 and -4.394, -3.612, -3.243 respectively.

Source: Author's estimations.

The result shows existence of non-stationary in all variables at level. Here equation is used to check stationary in the data first with intercept and then with trend and intercept. Assuming null hypothesis to be representing non-stationary in the data and alternative hypothesis means stationary in the data. All the given variables are non-stationary at level. Analyzing the stationary in the data at level consequently checking stationary at first difference the result indicates that all the variables becomes stationary at first difference $\{i.e.I(1)\}$. Since the data is stationary it means that it is significant in revealing a long run relationship respectively, and the regression estimates are not superior (Gujrati, 2004, p. 806).

Test results of regression analysis are given in Table 2.

Table 2

Long run determinant of stock prices

Variables	Model of ER			Model of SIR			Model of LIR		
	Coefficient	t-stats	Prob.	Coefficient	t-stats	Prob.	Coefficient	t-stats	Prob.
Constant	215.545	3.624	0.000	290.163	4.695	0.000	317.764	4.674	0.000
F	-1.000	-4.263	0.000	-2.243	-2.350	0.023	-0.695	-0.620	0.538
FDI	9.128	2.026	0.049	13.870	2.835	0.007	13.647	2.635	0.012
PI	2.712	1.537	0.132	10.178	2.426	0.019	11.570	2.674	0.010
CPI	-2.062	-4.311	0.000	-2.914	-6.333	0.000	-3.132	-6.422	0.000
REM	0.029	4.926	0.000	0.044	9.300	0.000	0.051	11.176	0.000
FR	-32.823	-1.924	0.058	-67.170	-4.367	0.000	-77.604	-4.523	0.000
BOT	0.027	4.695	0.000	0.026	3.707	0.001	0.021	2.314	0.025
Adj. R ²	0.939			0.923			0.914		
D-W stats	2.022			2.107			2.021		
F-stats(prob)	112.514 (0.000)			88.341 (0.000)			78.520 (0.000)		

Source: Author's estimation.

From Table 2 it is clear that exchange rate and short term interest rate has significant negative effect on stock prices, which is logical when interest rate and exchange rates are high, investors do not invest more in stocks because of increased returns in bank deposits and forex market. On the other hand *LIR* has insignificant effect on stock prices, this is so because usually the long-term changes in interest rate does not effect the short-term investment of stocks. Results of equation 3.4 indicates the existence of autocorrelation in the model, which is removed by using Cochrane-Orcutt iterative procedure (Gujrati, 2004, p. 507). Table 3 shows the GARCH results after removing autocorrelation. Here log of *FDI*, *CPI* and *FR* have been used for estimation.

Table 3

Long run determinants of stock prices

Variables	Model of Volatility Of ER			Model Of volatility Of SIR		
	Coefficient	t-stats	Prob.	Coefficient	t-stats	Prob.
Constant	185.252	16.101	0.000	55.281	19.897	0.000
VF	0.937	23.398	0.000	0.957	23.776	0.000
FDI	1.959	7.555	0.000	1.983	7.631	0.000
PI	-23.546	-24.637	0.000	-23.324	-24.511	0.000
CPI	0.008	5.227	0.000	0.010	5.729	0.000
FR	-16.632	-13.812	0.000	-0.003	-13.780	0.000
REM	0.050	51.345	0.000	0.051	51.331	0.000
BOT	0.013	9.245	0.000	0.015	9.83043	0.000
Adj. R ²	0.988			0.988		
D-W stats	1.663			1.682		
F-stats(prob)	854.926 (0.000)			851.823 (0.000)		

Source: Author's estimation.

It is evident from table 3 that volatility of exchange rate and short term interest rate are positive and significant, if the exchange rate and interest rates are more volatile than the flow of investment would be shifted from exchange rate and bank deposits to stocks, thus increasing the value of stocks. The higher the volatility in the exchange rate and interest rate the higher the diversion from it towards a relatively more secure investment like stocks.

Johanson and Juuselieus (1990) cointegration method is applied to estimate the Long run relationship among the variables. The two test statistics used for cointegration are Trace statistics and maximum eigen value statistics. The calculated values of these two stats and their respective critical values for equation 3.3 are presented in Table 4.

Table 4

Cointegration test results of ER & SIR

Models	Hypothesis No. of CE(s)	Trace statistics	5% critical values	Max. Eigen value statistics	5% critical values
Model 1 ER	None	208.777	143.669	62.453	48.877
	At Most 1	146.323	111.78	49.17	42.772
	At Most 2	97.153	83.937	43.599	36.63
	At Most 3	53.553	60.061	25.648	30.439
	At Most 4	27.904	40.174	11.576	24.159
Model 2 SIR	None	176.853	143.669	57.18	48.877
	At Most 1	119.672	111.78	47.048	42.772
	At Most 2	72.624	83.937	26.38	36.63
	At Most 3	46.243	60.061	19.433	30.436
	At Most 4	26.81	40.174	13.731	24.159

Source: Authors' estimations.

Table 4 reports rejection of null hypothesis at five percent level of significance, for both the trace statistics and the maximum eigen value statistics, in favour of alternative that there are three cointegration vectors for the first model of *ER*, and two cointegration vectors for the model of *SIR*. Therefore, based on the results it is concluded that long-run relationship exists between the considered variables.

Table 5

Cointegration test results of volatility of ER & SIR

Models	Hypothesis No. of CE(s)	Trace statistics	5% critical values	Max. eigen value statistics	5% critical values
Model 1 VER	None	176.988	143.669	54.085	48.877
	At Most 1	122.902	111.78	43.953	42.772
	At Most 2	78.949	83.937	29.705	36.63
	At Most 3	49.243	60.061	22.677	30.439
	At Most 4	26.566	40.174	14.879	24.159
Model 2 VSIR	None	206.538	143.669	69.365	48.877
	At Most 1	137.173	111.78	54.165	42.772
	At Most 2	83.007	83.937	33.252	36.63
	At Most 3	49.754	60.061	23.444	30.439
	At Most 4	26.31	40.174	15.514	24.159

Source: Authors' estimations.

Table 5 presents the results for the volatility equation 3.4. The results show existence of two cointegration vectors for both models of volatilitis of exchange rate and short-term interest rate. These results also show the existence of long-term relationship for the volatilitis of focus variables. While performing cointegration the proxy of long-term interest rate was not considered because it was found insignificant during our initial results.⁽⁹⁾

Causality analysis

In this section Granger causality analysis has been performed to find the causal relationship among the focus variables (*ER*, *SIR* & *LIR*) and stock prices. Standard Granger (1969) structure has been used. Jones (1989) expresses that ad hoc selection method for lag length in Granger causality is better than some of the statistical method used to determine optimal lag. Consequently two lag lengths are assumed for the whole model. The results of Granger causality are reported in Table 6.

Table 6

Granger causality			
Dependant variables	AVB	ER	SIR
AVB	–	3.49154 (0.03536)	3.31385 (0.04163)
ER	3.834406 (0.02563)	–	5.42734 (0.00624)
SIR	0.05227 (0.94911)	1.98691 (0.14409)	–

Note: Lag length in each case is two as per Akaike Information Criteria (AIC). Critical values for F-statistics can be found in Gujarati (1995), p. 814.

Source: Author's estimations.

Table 6 shows the existance of bidirectional causality among exchange rate and stock prices⁽¹⁰⁾. However, unidirectional causality was found running from short-term interest rate to stock prices. These findings supports the results of Nishat and Shaheen (2004), who found causal relation between interest rate and stock exchange prices. Since the result of long-term interest rate was insignificant therefore its causality analysis is not logical.

Sensitivity analysis

This section covers the sensitivity analysis of initial results to check the robustness. Levine and Renelt (1992) established degree of confidence between the dependent and explanatory variables. After placing additional variables in the model if the coefficient of focus variables remains unchanged and significant than this shows that the results are robust. If there is a change either in the sign of the coefficient of focus variable or it loses its significance then this means that the relation between variables is weak and the result is fragile.

In our basic model exchange rate and short-term interest rate are the two focus variables. Table 7 shows the results of sensitivity analysis after introducing three new variables Industrial Production Index (*IP*) (Mohammad et al., 2009), Exports (*EXP*) and Imports (*IMP*).⁽¹¹⁾

Table 7

Sensitivity analysis of ER and SIR

Variables		Coeff. of F	t-stat. (prob)	Adj.R ²	F-Stat (prob)
Model of ER	Basic Model	-1.00	-4.263 (-0.001)	0.939	112.514 (0.000)
	Model 1 IPI	-1.11	-4.82 (0.000)	0.944	104.957 (0.000)
	Model 2 EXP	-1.31	-5.897 (0.000)	0.946	111.741 0
	Model 3 IMP	-1.21	-5.59 (0.000)	0.942	104.899 (0.000)
Model of SIR	Basic Model	-2.243	-2.53 (-0.023)	0.923	88.341 (0.000)
	Model 1 IPI	-2.406	-2.279 (-0.028)	0.911	63.741 (0.000)
	Model 2 EXP	-4.648	-3.608 (-0.001)	0.923	77.829 (0.000)
	Model 3 IMP	-4.295	-3.39 (-0.001)	0.921	75.556 (0.000)

Source: Authors' estimations.

This analysis is also performed for the volatilities of two focus variables namely exchange rate and short term interest rate, results of this are given in Table 8.

Table 8

Sensitivity analysis of volatility of ER and SIR

Variables		Coeff. of volatility of F	t-stat. (prob)	Adj.R ²	F-Stat (prob)
Model of ER	Basic Model	0.937	23.398 (0.000)	0.988	854.926 (0.000)
	Model 1 IPI	0.935	22.831 (0.000)	0.989	683.237 (0.000)
	Model 2 EXP	0.939	22.765 (0.000)	0.987	678.958 (0.000)
	Model 3 IMP	0.938	22.961 (0.000)	0.989	681.361 (0.000)
Model of SIR	Basic Model	0.957	23.776 (0.000)	0.988	851.823 0.000
	Model 1 IPI	0.949	22.667 (0.000)	0.987	655.555 (0.000)
	Model 2 EXP	0.948	22.924 (0.000)	0.987	672.267 (0.000)
	Model 3 IMP	0.952	22.705 (0.000)	0.987	650.324 (0.000)

Source: Authors' estimations.

As clear from the tables, that even after inclusion of additional variables there is not much change in the coefficient of focus variables, also their sign and significance remains unchanged as well. This confirms that the results are robust.

5. Conclusions

Number of studies have been conducted to find the relationship among macroeconomic variables and stock prices, but a very few studies focused on sector wise relationship. This study investigates the effects of exchange rate, interest rates, and their volatilities on stock prices of banking industry of Pakistan. Cointegration results suggests the existence of significant negative long-run relationship between exchange rate and short-term interest rate with stock prices. On the other hand, positive and significant relationship exists between volatilities of exchange rate and interest rate with stock prices. Causality analysis confirms bidirectional causality between exchange rate and stock prices. Whereas unidirectional causality runs from short-term interest rate to stock prices. Sensitivity analysis confirms that the results are robust. It is suggested that investors should invest in banking sector stocks when exchange rate and interest rates are highly volatile. The result also supports the view that exchange rate and interest rate can be used as an indicator for investment decision making in banking sector stocks.

Notes

- (1) Some studies are: Ryan and Worthington, (2004), Zafar et al. (2008), Pilinkus (2009), Wong et al. (2005).
- (2) Bernie and Caporale, (2009) concluded the effect of interest rate is different for banking, insurance and financial services.
- (3) The indices were composite, industrial, finance, property, plantation and tin.
- (4) These variables were IR, inflation, ER, IPI and money supply.
- (5) German and French stocks are more sensitive to interest rate risk.
- (6) These indices were National 100, services, financial, industrial and technology.
- (7) Being part of total Foreign investment, theoretically it should effect the stock prices.
- (8) For details see Gujrati (2004).
- (9) To test the short run relationship error correction model has been used, but the results were insignificant in all variables.
- (10) This result is consistent with Aydemir and Demirhan (2009).
- (11) Pilinkus (2009) used EXP & IMP.

References

- Adjasi, C., Harvey, S.K., Agyapong, D. (2008). "Effect of Exchange rate volatility on Ghana Stock Exchange", *African Journal of Accounting, Economics, Finance and Banking research*, III (3), pp. 28-47
- Ahmed, M.A., Rehman, R.U., Raoof, A. (2010). "Do interest rate, Exchange Rates effect Stock Returns? A Pakistani Perspective", *Interantional Research Journal of Finance and Economics* (50), pp. 146-150
- Alam, M.M., Uddin, M.G. (2009). "Relationship between interest rates and stock prices: empirical evidence from developed and developing countries", *International Journal of Business and Management*, IV (3), pp. 43-50
- Ali, I., Rehman, K.U., Yilmaz, A.K., Khan, M.A., Afzal, H. (2010). "Casual Relationship between macroeconomic indicators and stock exchange prices in Pakistan", *African Journal of Business Management*, 4 (3), pp. 312-319
- Aydemir, O., Demirhan, E. (2009). "The Relation between Stock Prices and Exchange Rates: Evidence from Turkey", *International Research Journal of Finance and Economics*, (23), pp. 207-215
- Bashir, A.H., Hassan, A.M. (1997). "Interest rate sensitivity and stocks returns in UAE", *J. King saud uni, Admin .Sci journal*, IX, pp. 79-89
- Beirne, J., Caporale, G.M., Spagnolo, N. (2009). "Market, Interest Rate and Exchange Rate Risk effects on Finanail Stock Returns: A GARCH M appraoch", *Quantitative and Qualitative Analysis in Social Sciences*, III (2), pp. 44-68
- Choi, J.J., Elyasiani, E., Kopecky, K.J. (1992). "The sensitivity of bank stock returns to market, interest and exchange rate risks", *Journal of Banking and Finance*, pp. 983-1004
- Dicky, D.A., Fuller, W.A. (1979). "Distribution of the estimators for autoregressive time series with a unit root", *Journal of the American Statiscal Association*, (74), pp. 427-431
- Engle., R.F., Grange, C.W. (1987). "Cointegration and Error Correction: Representation; Estimation and Testing", *Econometrica*, (55), pp. 251-76
- Gujarati, D.N. (2004). *Basic Econometrics* (4th ed.). The McGraw-Hill Companies
- Habibullah, M.S., Baharumshah, A. Z. (1996). "Money, output and stock prices in Malaysia: An application of the Cointegration Tests", *International Economic Journal*, X (2), pp. 121-130
- Hussain, F., Mahmood, T. (2001). "The stock Market and the Economy in Pakistan", *Pakistan Development Review*, pp. 107-114
- Hyde, S.J. (2007). "The resposne of Industry stock returns to market, exchange rate and interest rate risks", *Managerial Finance*, pp. 693-709
- Ihsan, H., Ahmad, E., Haq, M.I., Sadia, H. (2007). "Relationship of Economic and Financial Variables with stock returns", *Journal of Economic Cooperation*, XXVIII (2), pp. 1-24
- Johansen, S., Juselius, K. (1990). "Maimum Likelihood Estimation and Infererence on Cointegration Wtih Applications to the Demand of Money", *Oxford Bulletin of Econometrics and Statistics*, pp. 169-210
- Levine, R., Renelt, R.D. (1992). "A Sensitivity Analysis of Cross Country GrowthRegression", *American Economic Review*, (82), pp. 924-963

- Maysami, R.C., Howe, L.C., Hamzah, M.A. (2004). "Relationship between macroeconomic variables and stock indices: Cointegration Evidence from stock exchange of Singapore All-S sector indices", *Jurnal Pengurusan*, (24), pp. 47-77
- Mohammad, S.D., Hussain, A., Ali, A. (2009). "Impact of macroeconomic variables on stock Prices: Empirical Evidence in case of KSE", *European Journal of Scientific Research*, 38 (1), pp. 96-103
- Nishat, M., Shaheen, R. (2005). "Macroeconomic Factors and Pakistani Equity Market", *Pakistan development and Economic review*
- Phillips, P.B., Perron, P. (1988). "Testing for a unit root in time series regression", *Biometrika*, (75), pp. 335-346
- Pilinkus, D. (2009). "Stock market and Macroeconomic Variables: Evidences from Lithuania", *Economics And Management*, (14), pp. 884-891
- Ryan, S.K., Worthington, A.C. (2004). "Market, interest rate and Foreign exchange rate risk in Australian banking: A GARCH-M approach", *International Journal of Applied Business and Economics Research*, II (2), pp. 81-103
- Vardar, G., Aksoy, G., Can, E. (2008). "Effects of Interest and Exchange Rate on Volatility and Return of Sector Price Indices at Istanbul Stock Exchange", *European journal of Economics, Finance and Administrative Sciences* (11), pp. 126-135
- Vaz, J.J., Ariff, M., Brooks, R.D. (2008). "Effect of Interest rate change on Bank stock returns", *Investment Management and Financial Innovations*, 5 (4), pp. 221-236
- Wong, W.K., Khan, H., Du, J. (2005). "Money, Interest rates and Stock Prices: New Evidence from Singapore and United states", *U21 Global Working Papers*, VII, pp. 1-28
- Zafar, N., Urooj, S.F., Durrani, T.K. (2008). "Interest Rate volatility and stock returns and volatility", *European Journal of Economics, Finance and Administrative Sciences*, (14), pp. 135-140
- www.sbp.org.pk (2011. June)
- www.kse.com.pk (2011. June)

Considerations on hospital financing in the context of health care decentralization

Cătălin BULGARIU
„Petre Andrei” University, Iași
bulgariuc@xnet.ro

Abstract. *2010 represented the moment when the reform was applied in the health field by decentralizing the management of the health units with beds (hospitals). This analysis points out the way hospital financing was carried out after that and the main problems the health care system of Romania has to deal with. In the end there are presented a few personal considerations on the main challenges for the future.*

Keywords: decentralization; hospital financing; health insurance; local administration; cost per patient.

JEL Code: I18.

REL Codes: 11E, 13K.

2010 represented, after a much too long delay, the moment when the decentralization of the activity of health protection was performed by transferring the hospitals from the administration of the Ministry of Health to the administration of the local public authorities (county councils and local councils). In this study we analyzed how the transfer of property was carried out and how it was conceived to provide financing for the health protection units with beds in 2011. We point out, since the beginning, that the decentralization of the health units is an absolutely necessary measure and which should have been taken a long time before. The responsibility of the local public authorities for the management of the public needs is a principle which also had to be applied in the health system as it was done in the community assistance, public services, education, culture, sports, etc.

In the analysis of the decentralization process of the health units with beds we focused especially on two elements:

- 1) The way the decentralization of hospitals management carried out;
- 2) The financing system of the health protection units with beds after being transferred to the patrimony of the local authorities.

Concerning the first level of the analysis, how the decentralization was carried out, we have to point out that the hospitals classification in three categories (of national importance, which continue to be administered by the Ministry of Health; of regional and county importance – which are transferred to the Local Councils) is the right one even if there are opposite points of view concerning the regional hospitals which are going to be analyzed separately. As for the rest, although one may notice a significant interference of the politics in the act of the reorganization, we may consider the decentralization of hospitals management as a benefit for Romania.

However, there are two inexplicable elements of the hand over-take over procedure of the hospitals. The first one: why didn't the Ministry of Health restructure the hospitals compliant to the analyses performed on closing up some hospitals, on the reduction of the number of beds by merging some hospitals and they transferred to the administration of the local authorities hospitals which later on were closed down or turned into retirement homes? The second one: why was the hand over-take over procedure a forced one; some town halls and county councils were obliged to take over the hospitals although they didn't want to?

The two aspects underline the lack of responsibility of the political factor from the ministry, the fact that they did not take responsibility for the negative, unavoidable effects, too, of a process that was absolutely necessary. Moreover,

the social effects are much more increased when one lets the population believe that the local authorities are incompetent and cannot administrate a hospital although the reality is entirely different.

As for the management of the regional hospitals by the county councils the financing problem is rather complicated because the National Health Insurance House (CNAS) reimburses, compliant to the cost standards, a certain amount for each patient, as a rule 1,600 lei (irrespective of his/her residence). But to the regional hospitals, in accordance with the health procedures, there are sent the serious cases which cannot be solved by the local hospitals, and need specialists, medical equipment and health care that is much more expensive than for the common cases. This means that the regional hospitals will provide health care with an additional cost for a category of patients which cannot be supported by the county council the hospital belongs to because the patient is not a resident there, which will lead to the accumulation of debts and, most probably, to closing down these hospitals in the following years.

We think that the cost standard for the regional hospitals should be changed for emergency cases because otherwise one of the following scenarios may happen: either the hospitals accumulate debts and go bankrupt; or they refuse to receive patients from outside the county transferring them to the national hospitals which may result in delays in patients' treatment – delays that may be fatal sometimes.

For the second part of the analysis, that of hospital financing, it is necessary to look retrospectively how the expenses were supported by the CNAS. In Table 1 we presented the evolution of the patrimony elements of the institution during the period 2007-2010.

Table 1

**The evolution of the balance indicators of the
National Health Insurance House during 2007-2010**

– thousand lei –

Indicators	2007	2008	2009	2010
Total assets	4,205,172.3	4,505,762.1	4,825,290.5	5,723,370.8
Total debts	373,885.0	504,022.0	3,160,525.4	4,534,651.2
Net assets	3,831,287.3	4,001,740.1	1,664,765.1	1,188,719.6

Source: CNAS balance for 2007-2010.

As one may notice, the volume of the debts accumulated during the analyzed period increased every year, and its amount exceeded 4.5 billion lei, which represents approximately 80% of the institution assets. The fact that CNAS was on the brink of insolvency in 2010 justifies the haste with which the

decentralization was carried out and, something very important, the hospitals were handed over with debts and though they are admitted by the central authorities.

Concerning the budget indicators one may notice that the CNAS revenues registered fluctuations during the period 2007 – 2010. The registered amounts are presented in Table 2.

Table 2

**The evolution of the revenues of the National Health Insurance House
during the period 2007-2010**

– thousand lei –

Indicators	2007	2008	2009	2010
<i>Revenues initially forecast</i>	11,925,772.0	16,923,536.0	16,022,646.0	15,865,336.0
<i>Achieved revenues</i>	13,080,571.1	15,780,537.4	14,623,750.9	17,258,727.0

Source: CNAS balance for 2007-2010.

The basis of the National Health Insurance House revenues, as it results from Table 2 has serious deficiencies because the initial provisions are much below the accomplishments of 2007, and in following years they are over dimensioned. One can clearly notice that the effects of the economic crisis were underestimated in 2009 which contributed to the fact that the amount of the accumulated debts increased exponentially, and the institution decapitalization became alarming. In 2010 the situation was contradictory because the foundation of the revenues was done according to the level of constraint of the whole economy (up to 2%) but the receipts were 18% higher than the year before.

Leaving aside the revenue contraction in 2009 one may conclude that health financing in Romania has registered a significant increase in the last four years, from 13 billion lei to 17.2 billion lei, that is over 30%, and that there are premises that this increase of the resources allotted to the health sector may also transpose into an increase of the quality of the health care provided by the public health system. In order to reach this objective it is necessary to have a more efficient management of public funds and they hope to achieve it by transferring the hospitals to the local administration, because even though CNAS spent more every year (except for 2009) they did not succeed in offering the population an improvement of the health care. The evolution of the spending during 2007-2010 is presented in Table 3.

Table 3

**The evolution of the spending at the National Health Insurance House
during the period 2007-2010**

– thousand lei –

Indicators	2007	2008	2009	2010
<i>Spending initially forecast</i>	11,812,119.0	16,775,238.0	15,299,568.0	15,725,390.0
<i>Achieved spending</i>	12,859,102.8	16,636,256.2	15,274,757.8	17,507,384.0

Source: CNAS balance for 2007-2010.

The spending justification is much more realistic compared to the revenues, which is certified by a rather small difference between the initially forecast amounts and the amounts achieved. However, one may also notice in this institution, as well as in many others, the practical application of the damaging principle according to which “if there is money in the budget then it has to be spent by all means”. This explains why in 2008 it was spent approximately 29.4% more than the year before although the economic crisis was unavoidable, and its signs became obvious for everyone ever since the middle of the year.

Although it was a year of crisis, 2009 may be characterized as the year when the reform started because the general reduction of spending only would not have resulted in an improvement of the health care. Moreover, people became aware of the fact that increasing public spending for health (as it happened in 2008) does not increase quality if the money is not correctly managed. Considering this and the fact that the accumulated debts due to the registered deficit (Figure 1) reached a record level, the decentralization of hospital management had become a priority.

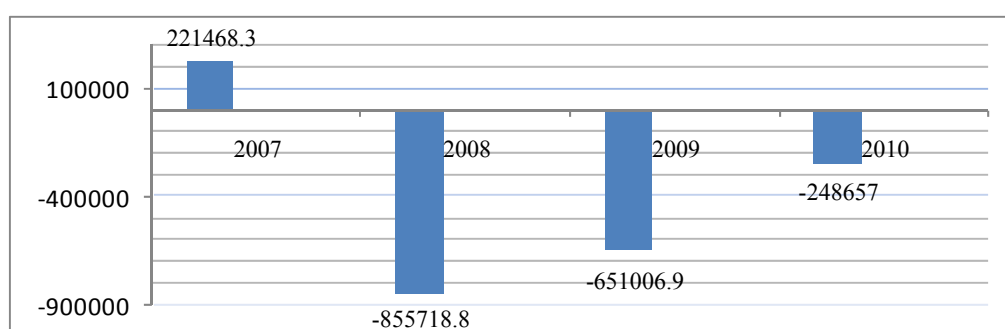


Figure 1. Budget surplus/deficit (expressed in thousand lei) of the National Health Insurance House during 2007-2010

In the management of the national unique fund for health insurance registered the highest budget deficit of the past ten years. Although 2007 started with a budget surplus, although the revenues collected in 2008 increased by more than 20%, still the executed spending was even higher and lead to over 5% deficit.

The deficit accumulation from every year leads to creating financial blockages for the suppliers of the health system which triggers the snowball effect in the private sector (many pharmacies went bankrupt during this period) which finally affects the same public budgets by the lack of contributors or by the decrease of the paid contributions. That is why an increased exigency is necessary for the management of the public funds so that not to affect the other fields of activity and a more rigorous analysis of the financed spending. For the period 2007-2010, the structure of the spending performed by the CNAS is presented in the Figure 2.

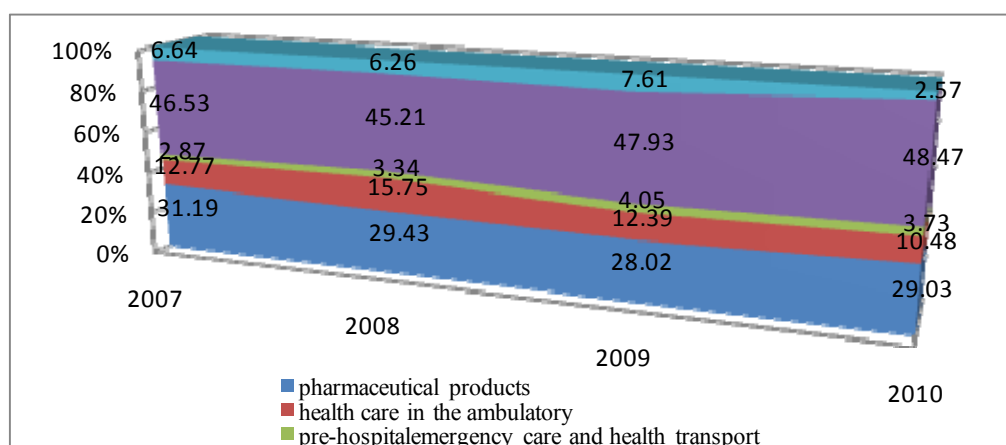


Figure 2. Structure of the spending reimbursed by the National Health Insurance House during 2007-2010 (in percentages)

The weight of spending for the reimbursement of the health care provided by the hospitals is the highest and tends to consume half of the entire national unique fund for health insurance. Medicine and health materials consumption follows in the top with a constant weight of approximately 30%. We can see that the two activities consume about 80% of the CNAS budget every year. From this perspective we think that the decentralization of the hospitals was the only solution to reintroduce the notion of efficiency in fund management.

From the analysis of spending we notice another element which should interest the managers of the Romanian health system and that is to cut spending (both as weight and net amounts) for health care in the ambulatory. One may see that in our country there is no preventive medicine but only curative medicine which has a double negative impact. First, because a sick population has diminished work productivity, and secondly the costs for disease treatment are much higher than for their prevention.

All elements presented above converge to the idea that the decentralization of the health system was something necessary but concerning the procedure there were many weak points. But what is going to happen after that? What indicators should improve? Why would the local authorities be a better manager than the central authorities? Why couldn't they reduce corruption in the Ministry of Health and in the CNAS?

The answers to some of these questions and to many others don't have any objective argumentation, but it is sure that the elaboration of cost standards and their application will have results (due to spending reduction) after the decentralization only. 2011 represented the enforcement of these instruments. But in this case as in most policies applied in the health sector, the decisions were taken in the last moment, without a rigorous foundation and following the saying "don't do today what you may leave for tomorrow". So by a ministry order (Order of the Finance Minister no. 7/2011), in compliance with the cost standards, the budget credits were limited to the level of the administrative territorial units. It is a laudable measure meant to help the local authorities but it has to be justified. More precisely, this order should show the local and county councils the maximum spending to be performed so that the local budgets may be correctly elaborated. Except that, in Iasi for example, although the number of the medical and auxiliary personnel is much below the maximum admitted level, by applying the cost standards they obtained an amount which covers the salaries of the existing personnel (although insufficient especially due to doctors' migration) for 10 months only. Moreover, this order was changed in March and it increased the limit so that at the beginning of the 4th term there were ensured budget credits (but not the related funds) for 11 months only in 2011 for the whole Iasi County.

The doctors and nurses solved the problem because they left the national health protection system and thus the budget credits became enough.

In these conditions the doctors' migration will continue because the uncertainty of their job is significant and the hospital managers don't have any arguments in the discussions with the system unions.

The amount of the health services reimbursements by the CNAS was also limited to 1600lei for each case solved. However, there still are two unsolved issues concerning this matter, even if they apply a complexity ratio to the mentioned amount.

The first one refers to the fact that this amount is insufficient for some categories of hospitals. For example, for the pneumophtisiology specialty the food allowance is not enough to provide for the caloric level stipulated by the law and it is a treatment of long duration.

The second one refers to the limitation of the number of patients a hospital has to provide care for per year. For example, at “CuzaVoda” Maternity Hospital of Iasi, the number of assisted births approved by the contract between the health unit and the County Health Insurance House of Iasi for 2011 is 500, although in 2010 there were 1,000, and in the hospital records there were registered over 700 births and pregnancies in various development stages. The question one should ask is: after reaching the 500 birth limit stipulated in the contract will the pregnant women be denied the right to give birth in this public hospital?

The situation of the town halls is also very sensitive because they administer hospitals with debts to the suppliers of community services (water, salubrity, heating) and which should have the supply of these services interrupted although the debts were accumulated during the central administration of the health units. The delay of the money transfer also made impossible for these hospitals, which provided food to the patients by a catering system, to offer the daily food to the patients.

That is why the payment of the overdue debts of the hospitals has to be a priority so that the decentralization may bring the desired results because the local authorities don't have any specialists in hospital management who may find *miraculous, overnight* solutions, so that the activity may be carried out fluently and with increased quality. Thus, the hospitals will have the same destiny as the SMURD stations from many localities in Romania: to be closed down.

There is another very important aspect in this process of decentralization which is not well clarified: the necessary financing sources for equipping and modernizing the hospitals with medical equipment and instruments. We consider that the role of the Ministry of Health is very important at present to provide counseling to the local public authorities to elaborate new projects in order to obtain European funds because there is little time left to access the structural funds. Otherwise, the hospitals equipment will get older, not to take

into account the moral depreciation, which will lead to a decrease in the quality of health care.

In the end we can draw some conclusions:

- the hospital decentralization should lead to a change in the population's view concerning health care and should move the center of gravity from therapy to prevention;
- some hospitals were closed down in a brutal manner and without offering, at least temporarily, an alternative to the inhabitants of those localities;
- the cost standards represent a big step ahead to make more efficient the use of the public money, but the exceptional situations should not be eliminated, even if it is known that most of the times the enforcement of the law is an exception in Romania. One should not endanger the life of certain categories of patients just because their treatment is more expensive.
- the situation of the regional hospitals should be considered carefully because the refusal to receive patients from other counties may have very serious consequences;
- I think that the position of the CNAS is not appropriate to the present time, and the way they impose contracts signing is abusive and very little adapted to the needs of the localities;
- I am very skeptical about the possibility to modernize hospitals in the next period because the financial autonomy of the local public authorities is very limited. Hospital financing in towns and cities will be in many cases similar to financing the SMURD emergency service from the communes and the result will be the same: closing down the units.

Acknowledgements

This study benefited from financial support due to the project "Postdoctoral studies in Economics: Continuous training programme of the elite researchers – SPODE", co-financed from the European Social Fund, through the Sectorial Operational Program Human Resources Development 2007-2013, contract no. POSDRU/89/1.5/S/61755.

References

CNAS balance for 2007-2010

Budget of revenues and receipts and the budget execution of CNAS for 2007- 2010

Common order of the Ministry of Administration and Interior and of the Ministry of Public Finance no. 7/2011 on the maximum limit of the budget credits approved for the administrative territorial units