

Economics after

„The light beams being vaguely seen from a tunnel are not interesting neither for those who want to stay there, nor for those who never have went through it.”

John Maynard Keynes

The truth, somehow stressing one, is that the economic theory has in Romania, as in the Central and Eastern Europe as well, an intellectual support in course of being founded. The conceptual translation from a vision to another has no basis of continuity, except some explanatory instruments, methods and models concerning the efficiency aspects at microeconomic level. The break is connected with the essence. The economic structural theory around the State's invisible hand is located at the opposite extreme as sphere of significations and as zone of applicability against the economic theory focused upon the regulating role of the market.

The promoters of a theory, besides all the sensitive environments at the educational impact over the population, are in a situation, simultaneously with the option for the transition to the market economy, to stand the shock of an epistemological break.

The references of the old theory crumbled away overnight and the natural need for other references could not be provided quickly and with certain degree of confidence given the specific character of the learning processes. The support of certain miracles has no other argument than that of the mediocrity.

Putting the new set of concept at the base of the analysis has been done initially at most in a mechanic or mimic way, without existing a relevance of motivated actions connected with the assimilation of the notional system. Therefore, talking about the inadequate character of the concepts or about understanding shortages does not represent itself an senseless undertaking.

It is a common sense recognition that we are in a stage when there is an attempt, by means of approximations, to cover the expertise of a reality configured upon other conceptual alignments. These are, however, far away from being internalized through education and made efficient by routinist behaviors. The delay between the period of learning and that of applying a vision is evident from the perspectives of the cultural maturation rhythms, those of rational nature, of the individuals. Any claim contrary to these natural regularities can be nothing else but ridiculous.

Among all social sciences, the economics has been in the position of a radical reconstruction, without the possibility to re-use in a relevant manner the theoretical acquisitions originated in the period of State socialism. The fact that in

reality was present a belief, in certain circles, in relation with the making operational by beautifying the prior knowledge is certified by the managerial deviations of the transition fundamental processes. The prior economic culture has fulfilled the role of a guide for the decisions mimed by the first reformists, especially by those having the mission to manage the large transforming processes like privatization/restructuring, and the liberalization or the stabilization as well. At the same time, the internalized conceptual system of the old economy became a dam of the adequate perception of the profound senses of the transition processes. The failures of the economic reform can be explained by the inadequate character of the management vision as well, by their conditioned reflexes to resort to compatible solutions with the values assimilated through education.

The vital question of the economic school refers to the accuracy of un-miming the values of the new theory, but, also, to the implementation of a project meant to generate the public attitude that provides the attenuation of the inertial ravages involved by a experience of changing based upon incompatible vision, falsely discounted on the basis of the conflict between generations.

The recovering effort is remarkable one, at least at the level of the university expertise, but, also, at the level of the companies having a management practiced in the countries with a consolidated market economy.

There is no doubt that the things can not be forced beyond the limits of the human nature. Nor can the things be left to advance without having, especially in the academic environment, stimulating targets, especially those of high performance. The correct measure has to be searched always in order to not come back to the temptation of the revolutionary romanticism stipulating that the nature has to do leaps. Nor to the petrifying into the educative model used in the pre-transition school, in order to save the comfort of the sufficiency.

The economic sciences in this part of Europe are building their specific world. Pretending from a world only recently born the ideal results is not only ungrounded but also absurd.

Our review is a part of this world and intends to be a measure of its tentative to mature. The bilingual edition, you have now in your hands, is the beginning.

Contents

The German Social Market Economy – (Still) a Model for the European Union? ■ Klaus Dieter John	3	Statistical-Financial Valuation Methods of the Investment Projects ■ Marcel Bradu	49
Considerations Regarding the International Taxation ■ Tatiana Moșteanu, Mihaela Iacob	11	The Consolidation of Banking Supervision in the Context of a Pan European Banking System ■ Teodora Barbu, Georgeta Vintilă	53
The Impact of the Public Authorities' Messages – the European Central Bank Case ■ Ioan Talpoș, Bogdan Dima, Cosmin Enache, Valentin Munteanu, Mihai Mutașcu	17	Evolution of FDI Flows in the Integration Context ■ Alexandru Ionescu	61
		Foreign Exchange Risk in International Transactions ■ Florentina-Olivia Bălu, Daniel Armeanu	65

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The German Social Market Economy – (Still) a Model for the European Union?

■

Klaus Dieter John

Ph.D. Professor

Chemnitz Technical University, Germany

Abstract. *The model of a Social Market Economy (SME) defines a policy concept of economic order which is based on free markets but, at the same time, includes elements of social balancing. The term “Social Market Economy” can neither be found in the Treaty on European Union nor in the Treaty establishing the European Community. The documents only use the terms “open market economy” and “free competition”. The Commission has never made a clear statement whether its economic policy is guided by the principles of a SME. Because the SME-concept is not new and its value is not undisputed it is worth to reflect on it and to find out what it has to offer for the economic and social policy of the EU.*

Key words: social market economy; regulation; social policy; european model.

■

1. Introduction

During the last decade average economic growth in the countries of the European Union has been lower compared to the United States, whereas unemployment has been higher. With the “Lisbon Strategy” initially launched in 2000 and revamped in 2005 the EU aims at becoming the leading economy of the world in terms of competitiveness, dynamics and social cohesion. But so far the agenda has not delivered the expected results. There are numerous papers which address the possible reasons for this failure.

One important line of argument is based on the claim that the apparent economic weakness of Europe is not a problem of Europe as whole: in some countries economic growth has been high

and unemployment low during the last decade whereas in other countries just the opposite is true. Following early suggestions of Esping-Anderson (1990) it is meanwhile quite common to partition the European welfare regimes into four groups which correspond with more or less solid geographic clusters:

- The Nordic (or Scandinavian) model (Denmark, Finland, Sweden, Netherlands) with a high level of social protection expenditures, social benefits, that are the same for everyone, “active” labor market policy, compressed wage structures, but comparatively weak employment protection legislation (EPL).

- The Anglo-Saxon model (Ireland, United Kingdom) with emphasis on social benefits only to those in greatest need, with increasing wage dispersion and a relatively large sector of low-pay employment (The Anglo-Saxon model is also called the Beveridge, the liberal, or the residual welfare model)
- The Continental model (Austria, Belgium, Germany, Luxembourg) with unemployment and pension schemes primarily based on insurance of those who are or have been on the labor market, with a high degree of EPL and (still) influential unions (The Continental model is also known as the Central European or the achievement oriented model).
- The Mediterranean model (Greece, Italy, Portugal, Spain) which is characterized by leaving the social responsibilities in a comparatively high degree with the family, by strict EPL and a strongly compressed wage structure.

A study of Boeri (2002) empirically compares the relative performance of these models with respect to their meeting of the most relevant objectives of social policy. Sapir (2005) concludes from this study that the Continental and Mediterranean models are not sustainable due to their lack of economic efficiency. This lack of efficiency generates an efficiency problem for the EU as a whole because the combined GDP of the countries belonging to these models accounts for about two-thirds of the EU-25 GDP. As a remedy it is suggested that the Continental/Mediterranean countries should undertake reforms of their welfare systems and their labor markets by moving their systems closer to the Nordic or the Anglo-Saxon models. However, there are doubts how efficient the Nordic model really is and whether the Anglo-Saxon model is acceptable to the societies of the Continental/Mediterranean countries. Recent political events in several European countries indicate that democratically elected governments have to fear the loss of power if they move too close to the Anglo-Saxon model because people oppose to the social imbalance they associate with a pure market economy. The outbreak of riots in French suburbs following an initiative to reform the EPL provides a notable example for this.

The model of a Social Market Economy (SME) tries to take care of this tension by combining the

efficiency of a free market economy with the adjustment of social imbalances. Although (or better: because) the SME-concept is not new and its value is not undisputed it is worth to reflect on it and to find out what it has to offer for the economic and social policy of the EU. In the first part of this contribution the basic principles of the SME-concept are recalled. The second part shows that the SME-model had a big impact on the two most important fields of the European economic policy and discusses some suggestions for reforms that can be derived from the SME-model.

2. Social Market Economy: Origins and Principles

SME defines a policy concept of economic order (“Ordnungspolitik”) which is based on free markets but, at the same time, includes elements of social balancing. Important contributions to this model were made by Müller-Armack, Eucken, Boehm, Roepke, Ruestow and, with regard to establishing the concept in practical economic policy, Ludwig Erhardt. The label “Soziale Marktwirtschaft” was coined by Müller-Armack to describe his own concept of a regulated market economy. However, in general, this term is used in a broader sense, covering not only the specific ideas of Müller-Armack but also those of the other researchers mentioned above.

There remains another ambiguity: The label SME is, on the one hand, attached to a theoretical, normative framework to guide economic policy, and, on the other hand, to the practical policy that has been and is still conducted in Germany. There is an ongoing debate between German economists how far the practical economic policy has deviated from the framework. Some economist even claim that practical policy had left it as early as 1957, when pensions were linked to the overall wage increase.

The question how deeply the practical economic policy in Germany is rooted in the concept of SME is of some relevance: Were the practical economic policy in Germany closely to follow the SME-concept one would have to doubt whether the SME is a convincing model because Germany performed economically not very well during the last decade. However, there is some evidence that this weakness cannot be attributed to the model. Partly it is due to the deviation of the practical policy from

the concept, but it is also the result of the way the German unification was conducted, and, certainly the conditions of entering into the European Monetary Union cannot be neglected⁽¹⁾.

Hence, the weakness of the *real* existing German social market economy does not provide evidence for the failure of the *concept*, and it is worthwhile to closer inspect the model.

The concept has several roots. The most important one is economic liberalism. Other roots are Christian social ethics and philosophical anthropology (Gutmann, 1998, p. 50). The liberal ideas found in the work of the researchers who contributed to the concept are modern variations of classical liberalism. Figure 1 follows a suggestion of Tuchtfeldt (1994) to classify these variations.

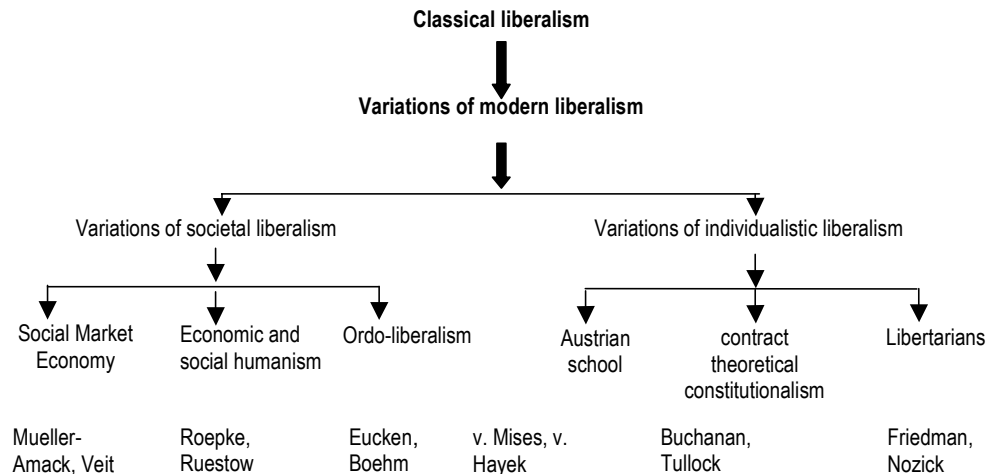


Figure 1. Modern variation classification of liberal ideas

The modern versions of liberalism are sometimes labeled “neo-liberalism”. Unfortunately, this definition is not unique. Tuchtfeldt makes a distinction between versions of neo-liberalism that are oriented towards the individual and versions that are oriented towards the society.

The first group consists of ordo-liberalism, economic and social humanism and of the SME in terms of Müller-Armack. Sometimes in the literature the label “German neo-liberalism” is used, to describe these schools. The second group consists of the Austrian school, contract theoretical constitutionalism and the so-called libertarians.

Since our topic - the SME (in the broader sense) - is linked to the schools of neo-liberalism which are oriented towards the individual and because of space considerations the second group will be only very briefly characterized. The basic approach of the second group lies in strict individualistic ethics. There is nothing like a “social end in itself” or a primary social interest. The society is defined by the individuals it consists of and the individuals act in their own interest. Because they have to interact with other individuals there might arise conflicts between different agents which in turn affect the individual sphere of freedom. To safeguard the

individual sphere of freedom from misuse by others the society has to organize “balancing justice” in form of general rules of conduct.

From the viewpoint of the individualistic versions of neo-liberalism one has to make a strict distinction between “balancing justice” and “distributive justice”. Distributive justice aims at bringing a specific individual (or a specific group of individuals) into a specific position. For individualistic neo-liberalism this is not acceptable for two reasons: First, by conducting “distributive justice” the state restricts the autonomy and the freedom of the individuals. Second, the meaning of “distributive justice” is not clear *per se*. The state has to specify norms of distribution, but this specification inevitably must be arbitrary. Hence, the state has to restrict itself to “balancing justice”.

In contrast, the versions of neo-liberalism which, in figure 1, are labeled “societal versions” and which contributed to the concept of SME not only allow for but also see the need for a certain extent of “distributive justice”. It should be mentioned here that the meaning of the phrase “certain extent of distributive justice” differs between the different versions of German neo-liberalism.

The most theoretically oriented and the most concise version of German neo-liberalism is the so called ordo-liberalism of the Freiburg-school. The most prominent representatives of ordo-liberalism are Walter Eucken and Franz Boehm⁽²⁾. The reasoning of Eucken and the other members of the Freiburg-school were shaped, on the one hand, by their critical view with respect to “laws of historical development” and, on the other hand, by the practical political evidence of their time.

The negation of “laws of historical development” aimed not only at Marxian ideas and at the ideas propagated by the German historical school, but also at the view of classical liberalism and its claim that societies automatically converge to the best economic and societal order (“natural order”) provided that economic freedom is granted (Eucken, 1990, pp. 200-225). From a more practical perspective they realized the restriction of economic freedom and self-determination of the individuals by a centrally planned economy – as it was the case in the Soviet Union – or a market economy which is dominated by conglomerates and cartels – as it was the case in the so called Weimar republic and in the Third Reich.

Especially Eucken, but to a certain extent also Müller-Armack, emphasized the importance of thinking about the economy in terms of public rules, stressing the interdependency between rules, parts of the system and reactions of agents. They used the term “Wirtschaftsordnungspolitik” or, briefly, “Ordnungspolitik” to describe an approach to economic policy which puts its main emphasis on the well considered and rationally guided building of the rules of the economic system. The argument here is that the impact of economic policy measures is not independent from the institutional framework because the framework influences the reactions and the behavior of economic agents. A well designed order will ensure not only a high degree of efficiency of the economic system but also minimize the need for regulating interventions.

To put this kind of reasoning in a modern system theory framework: The economic system comprises of many individual agents that interact in the context of public regulations. Due to the interdependences among the agents and their reactions to the regulations, the system is of a highly complex nature. That is why it is so hard to forecast the results of government interventions which can quite often have unforeseen and adverse ef-

fects⁽³⁾. From a systems thinker’s perspective the right approach is to consider carefully the structure of the system, to regard its positive and negative feedback loops, to take care of delays, etc. Due to the dynamics of complex systems it is wise not to introduce too often too strong regulations into the system because this may result in destabilization and overshooting or collapsing.

Eucken pointed out a number of principles or rules that are, from his point of view, necessary to make an economy sustainable because they ensure efficiency and flexibility. At the same time these principles allow the members of this society to live with a high degree of self determination.

Eucken distinguished between constitutive and regulating principles. He named seven constitutive and four regulating principles. The constitutive principles are (Eucken, 1990, pp. 254-291):

1. The basic principle of the economic order is the creation of a functioning price system. Such a system requires the absence of price manipulations by the government (such as price ceilings and price floors). It also requires institutions which impede the manipulation of prices by the private sector, i. e. by monopolies or cartels.

2. The primacy of monetary policy which aims at stabilizing the value of money.

3. Open markets, which allow potential suppliers to enter the market in order to increase the degree of competition in the respective market. This principle requires the government not to hamper the entering into a market by restrictive measures. As well it necessitates provisions to avoid private restrictions of entering into markets (e. g. cartels).

4. Private ownership of means of production. Decentralized planning and acting in a competitive order requires a decentralization of property rights. Private ownership of means of production can only lead to economically and socially acceptable results if the property rights are not concentrated in the hands of cartels or monopolies.

5. Freedom of contract. This principle ensures the mutual safeguarding of the agents in a decentralized economy. The freedom of contract finds its limits when it is used to constrict the freedom of contracts. An example for such a case would be the contract of a cartel.

6. The complete liability of property owners. The owners of means of production have to take the risk of wrong decisions regarding the use of their means by themselves. There should be no

legal form of a company which allows placing this risk on others.

7. Permanence and stability of economic policy. The dynamic development process of market economies is characterized by a high and unavoidable degree of uncertainty, which complicates the individual planning of suppliers and demanders. An erratic type of economic policy increases the amount of uncertainty by changing incentives and, potentially, destabilizing the economy. The higher uncertainty can be avoided by a steady economic policy that makes as little use of *ad hoc* measures as possible.

The constitutive principles are complemented by the regulating principles. Eucken believed that the constitutive principles are not sufficient to ensure the development of a practical competitive order which is free from flaws. Especially, he realized the possibility of the rise of monopolies. Beside this, he concedes that a competition order guided by the constitutive principles might lead to market results which are socially not acceptable. In Eucken's opinion the regulating principles create a framework for correcting dissatisfactory developments. The regulating principles are (Eucken, 1952, pp. 291-304):

1. Control of monopolies. The most important task of the state is to circumvent the formation of monopolies. If monopolies already exist they should, in general, be broken up. If this is not possible or advisable (as in the case of sub-additive cost structures) they have to be regulated by a monopoly control institution which should be a government independent organization.

2. Redistribution of income. The income distribution which is generated by the market process may have a higher degree of fairness than other possible distribution schemes but still it does not take care of the social needs of a society. It is the task of the state to redistribute income in a way that takes account of the social needs. Eucken recommends a progressive income tax. But, at the same time, he clearly points to the limits of redistribution because it tends to decrease investment and economic efficiency.

3. Regulation of externalities. The divergence between private and social costs gives reason for appropriate regulations by the state. As examples Eucken points out the use of natural resources, occupational health and safety, and working time regulations.

4. Price regulation in the case of non-normal reactions of labor supply (price floors).

Before now turning to the second origin of the SME it should be underlined once again that ordoliberalism, in contrast to the individualistic versions of neo-liberalism, makes a point for an assertive state. The state has the important task to constitute a competitive order, to guarantee its continued existence and to conduct regulatory measures if the market results of that competitive order are socially undesirable.

To understand the second origin of the SME one has to consider the ethical background of Müller-Armack's reasoning in a Christian and humanistic idea of man. Müller-Armack used the term "irenische Formel" to describe two aspects of his idea of SME. (The term "irenische Formel" means a peacemaking formula.) The first aspect is that he regards his concept as a way to bring such divergent ideas as socialism, catholic social doctrine and neo-liberalism together where they share common themes. The second aspect is to reconcile the "freedom of markets" with "adjustment of social imbalances".

The reconciliation of the freedom of individuals and markets, on the one hand, and the adjustment of social imbalances, on the other hand, is at the core of his program. In contrast to the protagonists of ordoliberalism, Müller-Armack did not believe that a consequent policy of economic order on its own is able to prevent socially undesirable market results. This is why, compared to Eucken and the ordoliberals, he assigns more regulating tasks of economic policy to the state⁽⁴⁾. There are six main "style-elements" of Müller-Armack's concept of SME (Tuchtfeldt, 2002, pp. 24-31):

1. Freedom of the individual. Freedom of the individual is important because it is a value in itself. With respect to economic freedom it is also the most important and indispensable incentive for the willingness to perform. Elements of economic freedom are: private ownership of the means of production, freedom of entering and leaving markets and freedom of contract. It is the obligation of the state to guarantee these elements of freedom.

2. Adjustment of social imbalances. Whereas the ordoliberals believe that a market economy in itself is basically "social", Müller-Armack sees the principles of "freedom" and "adjustment of social imbalances" in a complex relationship to

each other. In many cases this relationship will turn out to be a conflict. The market process can, at best, yield a distribution of income which reflects the efforts undertaken in the market. But this distribution does not take care of individuals that cannot participate in the market due to illness, disability or involuntary unemployment. For these and other reasons, Müller-Armack saw the necessity of a redistributive social policy albeit he conceded the tension to the incentives for the willingness to perform.

3. Business cycle policy, growth policy and structural policy. In contrast to Eucken, who was skeptical with respect to the necessity and the possibilities of business cycle policy, Müller-Armack doubted that market systems gravitate towards full employment equilibrium quickly. Hence, he regarded business cycle policy as an important style element of his concept. Unfortunately, from his writing it is not clear in which form and to what extent he believed business cycle policy, growth policy and structural policy to be useful and acceptable.

4. Criterion of market conformity. This last style element requires that all forms of market intervention should impair the allocation function of the markets as little as possible.

As we have seen, there are differences between the *ordo-liberal* concept and the concept of Müller-Armack. But both approaches emphasize the role of open and free markets, the importance of a stable value of money, and the need for competition policy. In addition, both strands acknowledge the need for a policy to adjust social imbalances. The promise to reconcile economic efficiency and distributive justice constitutes the attractiveness of the SME-concept. Today the SME-concept is accepted by all political parties and the German society.

In the following section I will briefly turn to the question which role the SME played in the development of the EU. In addition, I will point to some hints that can be derived from the SME-concept in order to guide the economic policy in Europe.

3. Social Market Economy and economic policy in Europe

The term “Social Market Economy” can neither be found in the Treaty on European Union nor in the Treaty establishing the European Com-

munity. The documents only use the terms “open market economy” and “free competition”. The Commission has never made a clear statement whether its economic policy is guided by the principles of a SME.

However, if we turn to the text of the Treaty establishing the European Community we will find several references to the concept. Two sections are especially noteworthy because they are at the core of the SME concept: The Rules on Competition (Articles 81 – 89) and the Articles on Monetary Policy (Articles 105 – 111).

Article 81 prohibits “all agreements between undertakings, decisions by associations of undertakings and concerted practices which may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the common market” and Article 82 prohibits “any abuse by one or more undertakings of a dominant position within the common market or in a substantial part of it”. Both articles may be traced back to nearly identical phrases found in the German competition law.

The independent “Deutsche Bundesbank” and its stability oriented monetary policy have always been seen as another building block of a practical implementation of the concept. And there is no doubt that the European Monetary Union was significantly influenced by the institutional structure and the monetary policy of the Deutsche Bundesbank.

On the other hand there are numerous articles in the treaty which are hardly compatible with the SME concept. To support this claim one can for instance refer to the articles on agriculture (Articles 32 – 38) and the articles on transport (Articles 70 – 80).

The examples stated above show that the concept of SME has left important marks in the economic constitution of the European Union. But certainly this economic constitution cannot be seen as the materialization of the concept.

Let me finally turn to some hints we can derive from the SME concept in order to improve the economic policy in Europe.

1. The interdependency between rules, parts of the system and reactions of agents is too often ignored by the countries of the EU. A prominent German example are the so-called Hartz laws which were meant to lower unemployment and to de-

crease the financial burden on the social security system, but in fact increased the burden sharply due to neglected reactions of the agents. The SME concept points to the importance of the rules of the game (“Ordnungspolitik”) the importance of market conformity and to the importance of permanence and stability of economic policy.

2. In many markets in Germany and the rest of Europe the degree of competition is still quite low. This is especially true for the energy markets and for agriculture. The European Commission has taken measures in the past which improved competition but according to the SME concept further measures are needed to make the EU internally and globally competitive.

3. The monetary policy of the European Central Bank is a good example for the successful implementation of a central element of the SME. Especially German economists articulated doubts regarding the stability orientation of the monetary

policy of the European Central Bank in the 1990s. As far as one can judge today, these doubts have proved to be unjustified. But it remains an important task for many countries in Europe to balance budgets and to decrease government debt in the long run in order to comply with a sustainable stability oriented monetary policy.

4. Finally, it is important to account for the principle of adjustment of social imbalances when policy measures are devised and implemented. There are numerous cases of policies which failed because politicians neglected this principle. One recent example is the attempt of the French government to reduce employment protection. The literature on the post World War II development in Germany suggests that the real existing social market economy was successful because the citizens took the term “social” as a promise of their economic order to ensure a fair participation in the growing wealth of the economy.

Notes

- (1) For an elaborate discussion of these issues see Sachverstaendigenrat (2002, pp. 205-215)
- (2) Other members of the school are Hans Grossmann-Doerth, Friedrich A. Lutz, Karl Friedrich Maier, Fritz W. Meyer, and Leonhard Miksch (see Klump 2001, p. 27).
- (3) There is a long list of examples of politic measures which showed adverse results in the history of Ger-

many: the increase in tax rates on tobacco, which yielded a lower, not a higher tax earning; the so called Hartz IV law, which was thought to lower expenditures on unemployment but, in effect, increased expenditures significantly, etc.

- (4) An early summary of his thoughts can be found in Mueller-Armack (1990), a reprint of his book „Wirtschaftslenkung und Marktwirtschaft”, first published in 1946.

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Considerations Regarding the International Taxation

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Tatiana Moșteanu

Ph.D. Professor

Mihaela Iacob

Candidate Ph.D. Assistant

Academy of Economic Studies, Bucharest

Abstract. *Taxation, an essential element of an efficient public finance system, is the best way for collecting income to achieve the public expenditures programs and, in the same time, a way to redistribute the income, in order to get rid of poverty and to ensure social equity. Studies on the topic of international taxation, in its traditional meaning, were addressed to the problems regarding the international taxation effects on trade and investments, unequitable and discriminatory taxation, also the means of preventing such cases, international fiscal evasion, all these aspects being comprised into the area of fiscal competition. The present concept of international taxation, meant to cross states borders, in order to redistribute the income or to achieve other objectives with international implications, such as fight against poverty, maintaining world peace or environment protection, is a quite recent one.*

Key words: international taxation; fiscal competition; mandatory; pigouvian taxes.

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1. Taxation and its fundamental objectives

Taxation is an extremely unpopular subject, sometimes rejected in an open manner by the taxpayers. Representatives of governmental structure and politicians are choosing not to discuss it in public, and when they are forced to approach it they are trying to emphasize the fact that they are not aiming to increase fiscal pressure. Yet, economists dare to study and to discuss this topic in an open and objective way because it is unanimous recognized that taxes and taxation are unavoidable⁽¹⁾.

According Swedish economist, *taxation is the most flexible and efficient instrument of social reform, though at the same time the most dangerous* (Myrdal, 1953, p. 188).

Taxation represents an essential element of an efficient public finance system, being the best way for *collecting income* to achieve the public expenditures program. This automatically represents an attribute that is missing from within the financing schemes on voluntary basis, meaning *obligatory*.

Taxation can be, at same time, a *way to redistribute the income* in order to get rid of poverty and to ensure social equity. Last but not least, taxation can be a *motivation*, or, on the contrary, an *impairment for certain objectives*, as public goods supply, regulation of activities with negative external costs for society and environment and promotion of activities with positive external effects.

2. The traditional concept of international taxation

If at national level the fiscal framework and laws regulating the taxes and duties are well defined, things are different at international level. International taxation, in its traditional meaning, placed the *private finances* at the core of the matter, taxes and duties being submitted to national jurisdiction, thus engendering conflicts at national taxation law level. Studies on this topic were addressed to the problems regarding the international taxation *effects on trade and investments, un-equitable and discriminatory taxation* (for example: double international judicial taxation), also the *means of preventing such cases, international fiscal evasion*. All these aspects are comprised into fiscal competition, term that, even though present for many decades within the economic science, entered the European institutions only in the '90. In an important article published in 1956, Charles Tiebout was discussing the situation of local communities that had tried to attract wealthy inhabitants by offering a reasonable combination of taxes and public goods.

Fiscal competition has two distinct dimensions: *fair fiscal competition* and *damaging fiscal competition*. Fair fiscal competition comprises the general aspects of fiscal system, like general decrease of the taxation rates that would lead to a broadening of fiscal base. Unlike fair fiscal practices, both the European institutions and Committee on Fiscal Affairs within OECD tried to identify elements of the fiscal regime considered damaging, *such as decreased rates or even their absence, fiscal facilities for foreign investors, lack of transparency, lack of information exchange, artificial definition of taxation base, exclusion of the incomes stemming from external sources, negotiable fiscal rates or negotiable fiscal base, secret provisions, unreal economic activity*.

It is considered that a fiscal competition between Member States, having in view rules preventing

inadequate behavior, can encourage a positive approach of Member States, *stopping fiscal pressure from reaching an excessive high level*.

3. The present international taxation concept

The present concept of *international taxation*, meant to cross states borders in order to *redistribute the income* or to achieve *other objectives with international implications*, such as fight against poverty, maintaining world peace or environment protection, is a quite recent one, included within official studies at the United Nations Conference of 1977. At that time, international taxation was included among the possible supplementary measures by means of which resources can be mobilized to fight against desertification. Institutions such as World Bank or International Monetary Fund, considered as international bodies, do not offer all the elements needed to solve these issues, mainly due to financial difficulties because public funds are almost entirely gathered on voluntary basis and are politically motivated. *It is crucial to define and implement a taxation system that has a periodical character, is adequate and has a positive results possibility for society*. Collection of taxes and duties could be done by national authorities, in the same way as administrating the national fiscal obligation towards the budget, and the supervision of operation the collecting system of incomes and use will be the responsibility of the specialized international bodies.

Admitting such an opinion as valid and possible, international taxation could produce effects within the present international political system by means of conventions or multinational treaties, which would ensure the legal basis for a wide range of international taxes and duties. For their implementation at least the following should be taken into account: *definition of tax base, establishing taxation rates, means of collecting, requirements that should be met before joining a convention or treaty, penalties sanctions for non observance of conditions and withdrawal procedures*.

The United Nations Organization, which is closer to the status of a purely international institution, proposed more categories of international taxes and duties, comprising: tax on income from international commerce, duty on surpluses of trade balance, duty for "drain brain", pigouvien duties.

3.1. Possible means of taxation of the income from international commerce

Main purpose of considering an income tax, at international level, is to mobilize on a continuous base the resources for supplying public goods and goods with positive externalities.

■ *General duties on international commerce*

These duties are levied on commerce across the national borders, for goods and materials and invisible services. Duties on commerce could be collected either at the import customs point or the export customs point, the second one preferably, as long as the import taxation is a more frequent practice. In respect of invisible goods and services, such as tourists, diplomats and military personnel expenditures, one of the practice, yet hardly to establish, would be the comprising of insurance and transport duties within the duties imposed at the custom point. Of course, are exempt of this kind of duties the implementation of this policy, especially as members of the European Union. It is possible that the European Union be considered as a single state, as is China or USA.

There is no solid reason for an international tax system would not to be technically feasible, even if it is confronted with all kind of administrative problems. From an economic point of view, a possible disadvantage would be the substantial increase of dealt goods' price at international level and the decrease of the total external exchange volume, if established at high value. Due to the size of the tax base, it's yet obvious that for mobilizing as much resources as possible, the duty could be established at a lower level than other tariffs whose main goal is to discourage the imports. This form of taxation needs special attention taking into consideration the fact that the dimension of international commerce, measured by means of the imports amounts, is increasing continuously.

■ *Duties on international commerce specific primary goods*

When such measure applies to producers, it would may have as effect the encouragement of preservation and internalizing of negative externalities.

■ *Duties on oil international trade* were proposed within United Nations by different entities, especially due to the large taxation base. As in the case of general duty on international trade, the oil duty could be collected either at the import customs point or at the export customs point. Oil is one of the few primary goods taxed by the export-

ing countries at the export custom point. A frequently asked question is whether it should tax the whole value of the refined goods or just the value of the crude oil out of which they are obtained. As the fiscal pressure should be sustained by the OPEC, they are expected to be against such a duty and to mobilize the opposition of other developing countries too. If the duty would be imposed mainly to the consumers, it would raise another set of problems. The countries having enough oil reserves, such as USA, Canada, United Kingdom, Norway, could benefit from this measure. Instead, developing countries would suffer.

The taxation system should ensure a more even equitable distribution of fiscal pressure. A possible solution would be taxation both of the oil for internal use and for international trade. This modality would be easy to administrate because the entire production would be involved and in addition it does not raise the re-export matter, or if it appears it is insignificant. In order that this tax be put in practice the entire cooperation of the national government is needed, a thing hard or impossible to obtain.

■ *Duties on non-renewable minerals (coal, oil and natural gas)* international trade. It is recommended that taxation points to both minerals for internal consumption and for international trade. Duties on petrol would have an internalization pigouvian effect upon negative externalities that affects the environment.

■ *Duties on primary raw materials (aluminum, copper, iron, manganese, zinc)*. Trade with these materials is quite large and the taxation base would allow a low rate to generate substantial income. And, at least at theoretic level, all states would be involved within this exchange the fiscal pressure would distribute among them.

3.2. Possible means to tax the surpluses within the commercial balance

■ Duty on surpluses within commercial balance for the trade with manufactured goods

According to this duty proposal, initiated in 1978 by the third world countries, contributions should be done by the developed countries, calculated upon a percentage rate on surplus within commercial balance for the manufactured goods exchange with the developing countries. Although this category of duty was a topic of intense debates, more details were never known. The main purpose of the implementation was clearly aiming

to ensure the income redistribution from industrialized countries towards developing ones.

Same as the income resulting from international trade of certain goods, duty on surplus would have a large taxation base: manufactured goods, excluding iron, steel and non-ferrous metals, represent the greatest weight in total world export. But such a duty would be inefficient if the taxation tares would have a high level, producing a constraint of the manufactured goods export. The involved cost of these duties could easily be transferred to the importing countries.

■ *Duty on consume*

The application sphere of the duty on consume would be consisting in a limited number of goods of which acquisition indicates a relative high level of life standard. We can point as example private airplanes and pleasure boats, automobiles, tv sets, fridges, laundry and dishes washing machines. The contribution would be established according to a uniform reduced rate of about 0,5% of acquisition price, being collected by national fiscal authorities. Gathered incomes could be used for financing international development. It is up to governments to determine taxable persons and it will be considered that they concluded their mission when annually giving the collected funds to international development organizations, already chosen within a list adopted by General Assembly of the UN. These are the only details regarding this proposal given to the public. Yet it seems that such a duty would not enjoy great support.

3.2. Duty on positive externalities: brain drain

Brain drain duty represents a way to regulate the positive externalities generated by preparing and perfecting personnel that migrates from a country to other, usually from a developing country to a developed one. Modern economic growth theories analyzed relationship between *education, migration and economic growth*. While education is the determining factor of economic growth on long term, the human capital's migration will create negative externality for the country that invested into the educational system. Data presented in table no.1 can only sustain the affirmation according to which brain export is a determining factor of economic growth for countries of destination. A careful analysis of the immigrants into the OECD member countries from developing countries shows that the large majority of them posses tertiary educational qualifications.

Number of immigrants into the OECD countries, according to the education level, 2000

Table 1

Country	Total Immigrants	Education Level		
		primary	secondary	tertiary
East Asia				
China	722.400	148.029	185.295	389.070
Indonesia	142.450	3.910	32.347	106.283
Philippines	356.134	27.604	70.079	258.451
Eastern Europe and Central Asia				
Turkey	1.913.782	263.078	534.429	1.116.275
Latin America				
Brasil	176.519	16.026	64.097	96.396
Jamaica	117.119	9.483	54.647	53.069
Middle East and North Africa				
Morocco	560.658	30.706	168.179	361.773
Tunisia	142.828	10.027	41.782	91.019
Egypt	20.372	733	3.796	15.844
South Asia				
Bangladesh	44.417	3.852	12.902	27.663
India	375.283	18.471	57.199	299.613
Pakistan	85.668	6.022	22.458	57.188
Sri Lanka	64.143	1.455	16.741	45.947
Total	4.721.944	539.396	1.263.957	2.918.597

Source: Adams (2003). International Migration, Remittances and Brain

Drain: A Study of 24 Labor – Exporting Countries.

World Bank Research Working Paper, No. 3069.

International economic migration is, in essence, determined by destination countries which are admitting or tolerate hiring of foreign citizens. It is highlighted that qualified labor force's migration represents a transfer of positive resources, which should be included into the international resources accountancy. Benefits associated to these fluxes should be divided between the two categories of countries upon the reciprocity principle. On the other hand, countries with industrialized market economies have the opinion that the suffered losses alleged by developing countries are not quite real if there are more aspects taken into account. These countries diminish their problems *related to unemployment, are beneficiating by returning into the country of incomes earned by the emigrants* through transfers that they are sending to the people remained within the country. The conclusion is that emigrants incomes should stay in the country where earned because the part sent back to origin country tends to produce inflationist effects, being same time a national source of income on which the country can not abide on, because is subject of unforeseeable fluctuations.

Generally speaking, labor force international migration is characterized by a transfer of considerable dimensions towards the emigrant's native

country. In some cases, these transfers represents o major financing source next to direct foreign investments, as shown in table no. 2.

Main external financing sources for developing countries (billion dollars)

Table 2

External Financing Sources	1997 (Billion Dollars)	2005 (Billion Dollars)
Debt net fluxes	107,2	120,1
Direct foreign investment net fluxes	168,7	237,5
Emigrants remittance	71,2	166,8

Source: The World Bank, *Global Development Finance* 2006.

In table no.3 it is shown a presentation on each country of mentioned remittance and for year 2000 countries such as India, Mexico, Philippines and China are on top.

Evidence is bringing out the fact that a great number of emigrant return eventually home, where, applying the experience and knowledge gained within deveopled countries, substantially contribute to their country development.

Emigrants remittance, distribution on countries

Table 3

Origin Country	Remittance In 2004 (Billion Dollars)
India	23
Mexico	17
Philippine	8,1
China	4,6
Pakistan	4,1
Morocco	3,6
Bangladesh	3,4
Columbia	3,1
Egypt	3,0
Brasilia	2,8
Lebanon	2,7
Dominican Republic	2,3

Source: The World Bank, *Global Development Finance* 2005.

It must be emphasized that remittances come mostly from unqualified workers, being quite insignificant when talking about high qualified persons.

Duty on labor force international migration would be justified from public finances point of view considering that producers, represented by countries where the personnel gets education, are not receiving compensation for positive externalities they are generating. The taxation base will be represented by *net revenues of migrating labor*

force, and the collected funds either will be distributed to the origin country or to the agents for multilateral assistance for further distribution. The duty will apply to *income earned at present* and not to the ones from migration moment. Without being a prohibitive duty yet represents an impediment to emigration, not totally violating the liberty principle in choosing the location. The difficulties the system is facing are related to the *determination of the taxation rate and establishment of imposing authority*, serious human rights constitutional problems been rose.

3.3. Pigouvian duties

■ *Duty on polluting*

The purpose of this duty category is not as much to *collect income* but a *measure to decrease pollution and a mean to internalize the external costs* not accounted by the market mechanism. Among biggest environment polluters are fossilized fuels like oil, coal and gas, which increased the “glass house” effect. In industrialized countries within Europe, also in Japan, there are already implemented more types of pigouvian duties that should be extended to international level because the entire world population will be, sooner or later, affected by pollution.

■ *Duty on military expenses and for military weapons traffic*

Same as duties levied to polluters, military duties were proposed by The United Nations Organization and other international organizations in order to discourage military expenses and arming race. They have the characteristics of pigovian duties, to *internalize negative externalities* generated by such expenses. But the financial matter of *collecting revenues* can not be neglected, having in view that the amount of military expenses is extremely high. Implementation of the duty is confronting with a series of political obstacles, first of all due to the fact that governments have great restrains in reporting such expenses to an international authority. The duty for weapons purchase would almost be a pure international duty, applicable to all transactions between national governments or between those obtaining warranty or state’s agreement to establish such transactions. Having in view the main purpose of this duty, meaning the discouragement of weapons traffic, a higher level of taxation rate can be established as for the rest of the duty categories.

4. Policy's valences of international taxation

To ensure the feasibility of some duties and taxes at international scale, the most important aspect is unavoidable political one. States are very much looking to their sovereignty and are not loath to submit to an international organization. It's difficult to objectively determine political feasibility, taking into account a much greater time horizon, and impossible to empirically verify. International taxation is confronting with a series of political obstacles, but the opportunities offered by this one are great. At national level, a lot of the components of present fiscal system were impracticable to a certain moment, and in United States income tax was considered unconstitutional.

Resistance to change will continue to leave marks on international taxation system but the

evolution of long term political attitude regarding the financing of objectives is a positive increasing one. Political leaders recognize the need for equity within world economic relationships. International assistance, technical and capital programs, were more and more numerous after World War II. At present, a intergovernmental consensus was reached regarding need for international assistance for development and for international cooperation.

It seems that implementation of an *international taxation system* is just a matter of time. At least as principle, almost all countries are expressing their agreement regarding a compulsory contribution regulated by the budget of international public organizations. A positive example to this is the one of the European Union where already a harmonized taxation regional system is implemented.

Notes

- (1) Benjamin Franklin was declaring that nothing in the world is for sure, except death, taxes and taxation
 (2) engl. Committee on Fiscal Affairs

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The Impact of the Public Authorities' Messages – the European Central Bank Case

■

Ioan Talpoș

Ph.D. Professor

Bogdan Dima

Ph.D. Senior Lecturer

Cosmin Enache

Candidate Ph.D. Lecturer

Valentin Munteanu

Ph.D. Senior Lecturer

Mihai Mutașcu

Ph.D. Lecturer

West University of Timisoara

Abstract. *The public authorities (the agency) messages could play a key role in the social subjects' decisions. How and when the agency communicates the path of its future policies influences the present social and economic architecture.*

The aim of this paper is to advance an explanatory framework for the connections between the transparency and credibility of the public authorities and the volatility of the social output. In order to provide some empirical evidences, the paper will consider the case of the European Central Bank as a representative monetary authority.

The main output of the paper resides in the thesis that, with a certain consistency, there are some connections between the agency's mandates, the types of the messages transmitted by the agency and the volatility of the obtained results, and also in the idea that an agency entrusted with a "strong" mandate could transmit "mixed" type messages (i.e. "informative-persuasive" ones) which, in special conditions, could influence the decisions of certain categories of clients and/ or non-members.

Of course, the following core question still remains: "How sustainable could be the effects induced by the impact of different agency messages received by the various beneficiaries?" And this, because in the end "The one who knows does not speak and the one who speaks does not know" (LAO ZI - DAO DE JING).

Key words: agency; cultural paradigm; financial markets; central bank policies; messages.

JEL Classification: C01, E44, E52, E58, Z1

Category: econometric analysis; monetary policy.

■

1. Introduction

In one of our previous papers (Talpos et al., 2005), we proposed a version of the mandate theory, which tried to explain the way in which the society, as a whole, as well as its individual components (the

associations), delegate a certain set of social responsibilities to the public authorities (the agencies), based on some social utility functions, which include the characteristics of the dominant cultural model.

Following this line of research, in a more recent paper (Talpos et al., 2006), we presented the “oasis model” as an attempt to describe the complex web of the interactions between the *agency*, its clients and the non-members in the production/(re)distribution processes.

The proposed model argued that there is an economic base for the mandate theory and it tried to explain the causes and the formation mechanisms of the social transfers.

The social allocation of the resources is a complex process in which different categories of social subjects interact in a dynamic web of negotiations, conflicts and alliances. The architecture of the power relationships between the various “points of social coagulation” is not uniquely determined by the “economic reasons”. Instead, there is a large set of factors, which influence its exact configuration including not only the economic ones, but also the cultural and behavioral variables.

In this theoretical framework, the *agency*’s activities as a (re)distribution social center depend both on its prerogatives included in the “social contract” as it was formal formulated, as well as on the power relationships with its individual clients, with *negotiation associations/parallel associations* and with non-members, and are modulated in concordance with the dominant paradigm.

In Talpos et al. (2005, p. 20), we provided the following definition of the *paradigm*: “*Through paradigm we understand the dominant collective mental model that individualizes a society from another. This paradigm represents a societal integration factor, by offering common values and goals for the members of the society. Also, this represents the subject of some learning and inter-generational transmission process, which slowly modifies itself, in “long cycles”* and we argued that multi-directional linkages between the *paradigm*, the social institutions and the economic performances can be identified. In particular, in *caeteris paribus* conditions, the differences in the production/(re)allocation processes between two social spaces will be explained by the *cultural differential*.

So, in the present paper our intention is to study much closer the interactions between the agency and its clients, in the larger framework of the entrusted mandate exertion. More precisely, in Part 2, we will try to identify the relations between the ways of communication chosen by the agency and the expected results. Using a support framework

of socio-cultural dimensions derived from Hofstede and Trompenaars, our analysis takes into account the connection between the mandate’s types, the diversity of communication messages of the agency and the volatility of expected results from the agency’s members and from external agents (clients, non-members and other *agencies*).

In Part 3, we will test our theoretical assumptions for the case of the European Central Bank as a representative monetary authority (“the agency”) in order to provide some empirical evidences.

In Part 4, we will try to advance some explanations for the output of our empirical analysis and also we will mention some limits of the proposed approach.

2. Theoretical Background

The *agency* should communicate with its members, its clients and non-members as well as with other *agencies* in order to exercise its authority. Having this in mind, it is useful to distinguish between the *internal* and *external* communications of the *agency*. The first ones are designed for its own members and have a strategic/operational content. The second ones are designed for *external agents* (clients, non-members and other *agencies*).

From a formal point of view, the *agency*’s messages could be: 1) *explicit* and respectively 2) *implicit*.

The *explicit* messages are a set of sentences with a highly operational content. This kind of message is used by the agency in order to communicate the current measures taken in the pursuit of its mandate. Additionally, these messages could be used to announce the agency’s future intentions. Their content is rather “neutral” or “technical” and is destined to “passive” receptors. Due to this fact, it could be or not an immediate reaction.

The *implicit* messages tend to have a pronounced “strategically” content, being destined to “active” subjects. Their reactions are usually expected in a longer time period, after the persuasive impact of such communications exceeds a certain “critical level”.

The impact of the *agency*’s messages is *inter alia* connected with the nature and formalization of the entrusted mandate. Several situations could be distinguished here:

1) *There is a precise and explicit mandate with a high degree of formalization*. In this case, *the messages should be formulated very clear, with a great density of information, while the receptor is*

expected to “immediately” react and to take a precise set of answer actions (case “A”).

2) There is “medium” formalization of the mandate. For such a situation, the content of the message could be structured more permissively and some receptor’s reactions could be “lagged” (case “B”).

3) There is a low formalization of the social mandate. If so, then the message is rather vague and the expected reaction is weakly defined and significantly delayed (case “C”).

From a formal point of view, given a message of the agency, the receptor’s “reaction set” could be described as a set of actions A_k , where $1 \leq k \leq N$. In this case, the expected result is $R(A_k)$, and the derived utility is $u_k = u(R(A_k))$. The temporal distribution of these results has certain volatility $D(R(A_k))$. For each of the three cases previously described, this volatility has distinct levels. At this moment, this is a central point in our argumentation:

P_i : For every type of mandate, the responses’ volatility has distinct levels and it significantly depends mostly on the degree of the formalization of the agency’s mandate given by its members.

The optimal repartition of the action set ($p_k \geq 0$) is the one that maximizes the average quantity of “useful information”. This could be derived using the “weighted informational entropy” (Guiaşu, 1967).

$$G(p, u) = - \sum_{k=1}^N u_k \times p_k \times \ln(p_k),$$

$$u_k \neq 0, 1 \leq k \leq N \quad (1)$$

with the following conditions:

$$\sum_{k=1}^N p_k = 1 \quad (2)$$

$$\sum_{k=1}^N p_k \times R(A_k) = R^* \quad (3)$$

$$\sum_{k=1}^N p_k \times D(R(A_k)) = D^* \quad (4)$$

where R^* , D^* represent the target-levels of the global result, and, respective, of the aggregate volatility which is defined by the following relation:

$$p_k = \frac{e^{\frac{a+b \times R_k + c \times D_k}{u_k}}}{\sum_{k=1}^N e^{\frac{a+b \times R_k + c \times D_k}{u_k}}} \quad (5)$$

where a, b, c are the solutions of the equation system given by the relations (2)–(4).

If the actions’ sets specific for the “A”, “B”, and “C” cases are considered together, then their ensemble structure is given by the following modified form of the relation (5):

$$p_{k_i} = \frac{\sum_{i=1}^3 e^{\frac{a_i + b_i \times R_k + c_i \times D_{k_i}}{u_k}}}{\sum_{i=1}^3 \sum_{k=1}^N e^{\frac{a + b \times R_k + c \times D_{k_i}}{u_k}}}, i = A, B, C \quad (6)$$

In accordance with the value of the c parameter, and since $|D_{k_A}| < |D_{k_B}| < |D_{k_C}|$, it is possible to obtain $p_{k_A} > p_{k_B} > p_{k_C}$.

In other words, the increased results’ volatility registered in the case of “weak” mandates determines an increased preference of the agency for messages that are focused on the mandate components which are clearly and rigorously formulated and which describe certain precise actions.

This result is questionable. In our opinion, one of the most important critics here is regarding the feedback mechanisms that are incorporated in the mandate. More precisely, if the mandate includes the penalties that the agency has to support in the case of a wrong exercise of the mandate, then the agency’s relative preference for explicit messages that have a pronounced informational character will be lower than its relative preference for implicit messages that prescribe a set of behaviors for the clients or for the non-members.

Thus, it could be considered that it is necessary to reformulate the relation (6) in order to take into account the messages’ content. One could distinguish between:

- Information messages, which are used by the agency to report the status of exercise of the entrusted mandate (IM);
- Order messages, which contain orders transmitted by the agency to hierarchically inferior entities (OM);
- Persuasion messages, which are intended to determine a certain reaction of some entities that could be or could not be hierarchically inferior to the agency (PM).

Taking into account the mandate type and the existence/inexistence of some penalty mechanisms, one could make the following combinations regarding the level of volatility:

Volatility, mandate and agency's message types

Table 1

Message Mandate	IM	OM	PM
„A”	D _{IMA} :Low	D _{OMA} :Low/Medium	D _{PMA} :Medium/High
„B”	D _{IMB} :Medium	D _{OMB} :Medium	D _{PMB} :Medium/High
„C”	D _{IMC} :Medium/High	D _{OMC} :Medium/High	D _{PMC} :High

In short, the next situations are possible:

Message Mandate	IM	OM	PM
„A”	$p_{k_{IMA}} \leq p_{k_{OMA}} \leq p_{k_{PMA}}$ $p_{k_{IMA}} < p_{k_{IMB}} < p_{k_{IMC}}$		
„B”	$p_{k_{IM,B}} \leq p_{k_{OM,B}} \leq p_{k_{PM,B}}$ $p_{k_{OM,A}} < p_{k_{OM,B}} < p_{k_{OM,C}}$		
„C”	$p_{k_{IMC}} \leq p_{k_{OMC}} \leq p_{k_{PMC}}$ $p_{k_{PMA}} < p_{k_{PMB}} < p_{k_{PMC}}$		

In other words, the agency will have a stronger relative preference for the information messages in the context of an „A” type mandate.

This conclusion has to be amended by taking into account the existence/inexistence of some *penalty mechanisms* associated to these *information messages*. More precisely, if *the mandate* entrusted to *the agency* clearly prescribes certain actions that have to be taken by *the agency* and also specifies some target-levels for the results of these actions, then the relative preference for *information messages* will be diminished by the deviation of the effective results from the target levels.

In a formal manner, if k_j is the penalty unit cost, π^*_j is the target level for an individual action j from the compulsory set of M actions and π_j is the achieved result of this action, then:

$$p_{k_i} = \frac{\sum_{i=1}^3 \sum_{j=1}^M e^{\frac{a_i + b_i \times R_k + c_i \times D_{k_i} - \alpha_j k_j (\pi^*_j - \pi_j)}{u_k}}}{\sum_{i=1}^3 \sum_{k=1}^N \sum_{j=1}^M e^{\frac{a + b \times R_k + c \times D_{k_i} - \alpha_j k_j (\pi^*_j - \pi_j)}{u_k}}}, i \in A, B, C \quad (7)$$

where d are empirical coefficients.

P_2 : *The expected results volatility for different kinds of messages, which the agency releases during the exertion of its mandate, depends inter alia on the society's cultural paradigm configuration.*

In order to find out this configuration, we propose a multidimensional model using (for the present paper) only the relevant socio-cultural dimensions from the classical models of Hofstede and Trompenaars.

In these conditions, we consider that the socio-cultural dimensions most important to us are the following:

1. *Power distance* (Hofstede model) which is associated to the social relations character and indicates the acceptance degree of the fact that the power is unequally distributed. A high power distance is specific to the societies that are characterized by a big gap between the agency and its clients, a low social mobility, a low weight of the middle class and a concentrated political power (similar to an oligarchy). A low power distance is specific to the societies that are characterized by a more leveled distance between the agency and its clients (in this case the agency represents the authority), an important social and professional mobility, a representative political system and an important influence of the middle class.

2. *Uncertainty avoidance* (Hofstede model) which is associated to the manner in which the members of a culture feel threatened by uncertain or unknown situations. The agencies that are exerting their mandate in societies that are characterized by a strong uncertainty control are concerned with the development of some methods for the minimization of the anxiety produced by the future uncertainty. These agencies use plans that are founded on detailed and rigorous forecasts and implement centralized resources collection processes. In these societies, the need for consensus is very strong and there is a low level of tolerance to dissident trends. On the other hand, the agencies which activate in societies with a low level of uncertainty avoidance consider the risk as a common part of life (which is a natural axiom). These kinds of societies are characterized by cyclical changes, with a relative high frequency and a gradual impact, and also by a decentralized resources collection and allocation system. Even more, different opinion trends are accepted and encouraged.

3. *Universalism – Particularism dichotomy* (Trompenaars model). The universalism is based on rules rather than on relations. The mandate's exertion supposes mechanisms that forbid exceptions because if these appear the system's

functioning is affected (there is only one reality perspective – a single, objective truth). The particularism opposes the people to the rules. The application of the agency’s abstract social codes depends on the inter-personal or inter-group relations. For each individual there is more than one perspective of reality (every individual has its own subjective truth).

4. *Specificity disposal* (Trompenaars model) – associated to the manner in which a situation is handled and to the interference between the private and social space of the individual. In strong specific cultures, the messages are direct, clearly formulated, and with precisely stated purposes. The elements of a message are first analyzed separately and then synthesized (the whole is the sum of its parts). In strong diffuse cultures (contextual or weak specific cultures), the communication is started from the ensemble. Each element of a message is analyzed in the context of the ensemble. The messages are analyzed from a global perspective (the whole is more than the sum of its parts; the relations between the parts represent more than the parts themselves).

5. *The relation with the nature* (Trompenaars model) - every culture has developed an attitude towards the natural environment. Survival has meant acting with or against nature. The way in which people relate to the environment is linked to the way people used to seek to have control over their own lives, destiny or fate. *Internalistic cultures* have a mechanistic view of nature. They see nature as a complex device, which can be controlled using the right and appropriate expertise. In these societies, terms like luck or predestination don’t operate: people can dominate nature if they make the effort. *Externalistic societies* have a more organic view of nature. Mankind is one of nature’s forces, so it should operate in harmony with the environment. People should cohabitate with nature and go along with its forces. The members of an externalistic society don’t believe that they can shape their own destiny, and are focused to adapt their actions to external circumstances.

Having in mind the agency’s mandate types, the type of messages preferred by the agency and the results’ volatility, and taking into account the analyzed cultural dimensions, we could construct the following table (which represents a “cultural extension” of Table 1):

Cultural differences, mandate’s nature, agency’s preference for one type of message and expected volatility of the results

Table 2

Cultural Dimension	Mandate Type	Preferred Message Type	Result's Volatility	
Power Distance	High	A	IM, OM	Low
Uncertainty Avoidance	Low	B, C	IM, PM	Medium/High
Universalism – Particularism Dichotomy	High	A	IM, OM	Low
	Low	B,C	IM, PM	Medium/High
	Universalism	A,B	IM, OM	Low/Medium
	Particularism	C	PM	High
Specificity Disposal	Specific Cultures	A	IM, OM	Low
	Diffuse Cultures	B,C	IM, PM	Medium/High
Relation with Nature	Internalistic	A,B	IM, OM	Low/Medium
	Externalistic	C	PM	High

The arguments for the logic of the table are the following:

1. A high power distance implies a high degree of formalization. This makes it to be specific for the agencies that are hierarchical oriented and that are exerting their mandate in a type “A” manner. The communication is focuses both on information/report messages and on order messages. The expected reaction is immediate, exact, focused on the result and without any interpretations (with a low volatility). A low power distance supposes a relaxation of the formalization. This is specific to the agencies that are founded on a participative democracy for which the mandate type is “B” or “C”. The preferred way of communication is represented by the information messages and, essentially, by the persuasion messages, with a higher expected volatility.

2. A high degree of uncertainty avoidance implies rigorous strategies and planning. This is specific to the agencies for which the actions should be precisely and programmed in detail. These agencies exert a type “A” mandate. They frequently make reports about the state of the mandate’s exertion and transmit precise instructions that are meant to be rigorously followed by the receptors (low volatility). On the other hand, the agencies which recognize the integral unpredictability of the future do not use a strict programming of the tasks and activities. These agencies exert medium or weak formalized mandates (type “B” and “C”). The communication is focused on information and persuasion. By consequence, they accept a medium volatility of the messages’ results (at least).

3. The universalism, being focused on rules, implies a certain degree of formalization of the way in which the agency exerts its mandate (which would be, by consequence, a type “B” or “A” one). For the transmission of rules, the agency uses information messages (which will make the rule known) and order messages (which enforce the rule). There is also a low acceptance of the interpretability of the rule (a low acceptance of the volatility of results). The particularism is focused on the relations, which makes it specific for a type “C” mandate. The transmitted messages are mainly persuasive, with the acceptance of delayed relations and with a significant abatement from the expectations (high expected volatility of results).

4. Specific cultures, being strongly focused on the results, need a rigorous exertion of the mandate (characteristic for type “A”). The communication should be clear, frequent, and with a high level of the information content (order messages and information messages). The acceptance of some temporal or objective abatement of the results is minimal (low volatility). The diffuse cultures, being strongly contextual, permit situational interpretations (high medium volatility). This makes them specific to the agencies which are exerting their mandate in a medium or low formalized manner (type “B” or “C”), with a preference for persuasion and information messages.

5. The agencies characterized by internalistic cultures are interested in environmental control as an uncertainty reduction factor. They formalize to a high degree their functioning procedures and mechanisms, exerting a type “A” or “B” mandate. These agencies use their communication channels with their subordinates in order to transmit these procedures and to make it known, that its observance is mandatory and not questionable (the preference for information and order/coordination messages, with an accepted expected volatility less than medium). The agencies characterized by externalistic cultures consider themselves as a part of the environment, accepting its dynamic. This permits them to give up a strict formalization, exerting type “C” mandates. Their communication objectives are the information and the persuasion, accepting a higher volatility of results.

A particular case of this theory is represented by the communication architecture of the monetary authorities.

There are two key features for the case of the modern central banks:

- The institutional and functional independence;
- The pursuit of financial stability as a primary objective.

So, a significant characteristic of the institutional design of the central banks of the contemporary economies is represented by their independence related to the conception and implementation of the monetary policy, as well as to the relation to the fiscal authority.

More precisely, it could be noticed that the efforts made to ensure the financial and monetary stability were synthesized during the 80’s in a functioning framework for the central banks, to ensure a high level of independence.

The arguments for a negative correlation between the central banks independence and the inflation dynamics are of three types (Eijffinger, De Haan, 1996): a) arguments based on public decision theory; b) arguments based on so called Sargent-Wallace approach (Sargent, Wallace, 1996); c) arguments based on the temporal inconsistency of the monetary policy problem.

a) According to the first category of arguments, the central bank is exposed to the political pressures in order to act in accordance to the executive objectives. A restrictive monetary policy could worsen the budgetary deficit caused by the fiscal revenues reduction due to a general reduction in the level of the economic activity and/or the raising of public debt service. In these conditions, the executive power could prefer a relaxed monetary policy which will permit the budget deficit financing. As reduced is the central bank independence as limited is its capacity to oppose such potential inflationist orientation.

b) Sargent and Wallace based their analysis on the possible relations between the central bank and the monetary authority. If the monetary policy instruments used intensively are of fiscal nature and if the central bank could not influence the budget deficit, then the money supply tends to be endogenous. If the economic subjects could not (or would not) absorb a part of the budget deficit, then the fiscal authority will try to transfer the budgetary constraint on the monetary authority, by asking it to finance the deficit through a supplementary money supply.

If, otherwise, the preference for the monetary policy prevails, the fiscal authority will be forced to reduce the deficit without the help of the central bank.

c) The third type of arguments, and the most important, refers to the temporal inconsistency of the monetary policy (time-inconsistency problem). This inconsistency appears when a monetary policy program with an optimal character in the current period becomes suboptimal in the next period due to the changes in the fundamental drawing up conditions (among the sources of temporal inconsistency are considered factors like: the changing of the fiscal authority's inflation aversion before and/or after the economic subjects have incorporated in their expectation formation mechanism a certain level of nominal interest rate; the existence of a "seigniorage revenue" for the fiscal authority, so significant that to try to determine a monetary expansion, changing its inflation aversion before and/or after the economic subjects have chosen their objective level for a real monetary balance; information asymmetry situation etc.).

The analytic models constructed so far in order to explain the temporal inconsistency problem are based on the idea that the fiscal authority and the economic subjects are confronted with a "prisoner dilemma" situation. The proposed solutions are based on the idea of some fixed rules for the conception and implementation of the monetary policy (Barro, Gordon, 1994). These rules assure some feedback mechanisms able to absorb the exogenous shocks that are affecting the level of the output. In the conditions in which the central bank has the capacity to impose this kind of rules, the fiscal authority is forced to accept some limitations of its possibilities of action on the economy (this is presumed to be stable, at least on the long run). An alternative solution to the problem of temporal inconsistency is represented by the existence of a solid reputation of the central bank, able to ensure the monetary policy credibility. Fratianii and Huang (1994) prove that in information asymmetry conditions there is no certitude that the central bank reputation will lead to the solution of the temporal inconsistency problem in the framework of Barro-Gordon model).

But in which conditions one could appreciate that a central bank is independent? We have considered that it is very difficult to answer unequivocally at this question. And this, because the central bank's independence is a multi-dimensional notion which includes a variety of institutional, operational, decisional, economic and financial aspects. More, the central bank's

independence is associated with the relationship between the central bank as monetary authority and the other state's authorities (especially the executive authority) as well as with the restrictions imposed by the internal and external economic environment in the conception and implementation of its monetary policy programs.

So, Grilli, Masciandaro and Tabellini (1991) distinguish between two components of the central bank independence: "political independence" and "economic independence". Their argumentation is based on the idea that the political independence is determined by a set of factors which include the electing procedure of the governor and the other Board's members, the duration of the mandate (longer terms being correlated with an increased level of decisional independence) and the existence of a formal note in the central bank statute regarding its responsibility for the stability of prices. In other words, the concept of political independence of the central bank reflects the degree in which this could follow its main objectives without any interference from the political authorities. More, these authors suggest that the economic independence is high when the central bank has the capacity to control the volume and the conditions of the credit granted to the executive. Also, the economic independence depends on the measure in which the central bank could choose and use the monetary policy instruments (the accent is put on the freedom to choose the refinancing of the interest rate and on the prudential supervision activity). It should be noticed that, in this vision, the political independence and the economic independence are strongly connected. For example, the limitation of the executive interference in the conditions of the credits granted to it (a component of the economic independence) could depend significantly on the political independence of the central bank.

Debelle and Fischer (1995) tackle the central bank independence problem in terms of "independence in objectives selection" and "independence in instruments selection". The first aspect is referring to the central bank liberty to choose the final objectives of the monetary policy. More exactly, they make a distinction between the stability of prices and the output level as final objectives and conclude, in accordance with Grilli, Masciandaro and Tabellini, that the central banks have a higher degree of independence in the situation in which the objective of the stability of

prices is explicitly formulated in the legal framework that is regulating their activity. It could be observed that the definition of independence in the selection of the objectives is more limited than the definition of political independence because it does not take into account the political pressures that could intervene once the monetary policy objectives were chosen. Also, the independence in the selection of the instruments is defined as the central bank's freedom "to choose the means through which it follows the accomplishment of the objectives".

Also, Loungani and Sheets (1997) distinguish between "independence in the objectives' selection" (defined as the express formulation in the central bank statute of the prices stability objective as its main objective), and "economic independence" which includes a variety of elements like: the central bank management appointment and cancellation, the mandate duration, the degree in which the executive interferes with the central bank decisions etc.

Cukierman (1992) and, respectively, Cukierman, Webb and Neyapti (1992) propose a methodology for the central bank independence degree estimation which is the most complex of the presented approaches. This methodology takes into account criterias, like the duration and the conditions of the central bank management appointment/cancellation, the central bank objectives as they are defined in the statute, the legal capacity of the autonomous conception of the monetary policy measures, the legal limits of financing the budget deficit etc.

Synthesizing the different points of view presented above, we consider that in defining the central bank independence we can distinguish between:

a. *operational independence* of the central bank, which is the effective legal capacity to define by itself the diverse objectives for its monetary policy (final, intermediary, operational), to select the set of instruments to be used in reaching these objectives and to conceive and apply its current monetary policy measures without interferences from the other state authorities;

b. *financial independence* of the central bank, which is its statutory capacity to construct and use its own financial resources according to its objectives;

c. *economic independence* of the central bank, which is the degree in which the central bank is obliged to participate in the financing the budget deficit, and it is also referring to the conditions of this participation;

d. *political independence* of the central bank, which reflects the measure in which the legal framework that regulates the monetary authority's functioning allows it to manage the pressures of the executive and other state authorities.

A complementary problem to that of independence is represented by the central bank's credibility problem.

In our analysis, our intend is not to operate with a detailed definition of the credibility concept because this creates numerous difficulties and exceeds the purpose of this paper. By the "central bank credibility" we will understand the situation in which the economic subjects are taking their current decisions based on the explicit objectives of the central bank and/or the situation in which these decisions incorporate "optimistic" expectations regarding the evolution of the macroeconomic variables that are decisively influenced (formal or informal) by the central bank.

It could be noticed that this definition of the credibility raises numerous questions. One is its vague character regarding the typology of the economic subjects that appreciate the degree of the central bank independence. So the definition permits the lack of some precise information about the central bank's attributions which limits the possibility of a frontal approach to the problem. In order to compensate this situation, we will take into account only the case in which the rational economic subjects are able to appreciate the level of this credibility. Among other aspects this is equivalent to the fact that the formal/informal objectives followed by the central bank are known.

The usage of some "discretionary" economic policy measures (we understand by discretionary economic policy that kind of policy conceived and applied by the central bank in the absence of a pre-defined set of rules) contributes to an increase of the difficulties to which the economic subjects are confronted in the process of information collection and process. From the point of view of the individual economic subjects, the discretionary economic policy generates random "white noises" which affects their expectations. Because in the framework of neoclassic macroeconomics the discretionary economic policy does not have a systematic effect on the output dynamics, the conclusion that could be drawn is that it is necessary to give up such policies and to adopt some formal rules in the conception and implementation of diverse policies, rules that have to be *ex-ante* known by the economic subjects.

The way in which *de jure* and *de facto* independence and credibility of the monetary authority are realized influences the taxonomy and the contextual structure of the operational mandate as well as of the message types which formulated and transmitted in a specific manner.

So, ensuring *de jure* the independency implies that the monetary authority is functioning in the framework of a clearly defined mandate in which “the rules of the game” are precisely formulated and the mechanisms of reinforcement of this independence are strong enough to isolate it from external interferences.

Consequently:

P₃: The more the mandate entrusted to the monetary authority places a big emphasis on the independence issue the more this mandate will present more the characteristics of a type “A” mandate.

More precisely:

The monetary authority independence and the structure of its mandate

Table 3

Fundamental objective	Clearly stated; other eventual objectives followed only in the measure in which these are non-conflictual in respect with to the primary objective
Relations with the fiscal authority	Fiscal authority non-interference stated in a non-ambiguous manner; eventual collaboration with monetary authority in the quantitative formulation of the fundamental objective; budget deficit financing – prohibited
Relations with other public authorities	Monetary policy decision competence is well designed
Choice of monetary policy instruments	At the monetary authority discretion
Penalty mechanisms for failure of fundamental objective	Precisely defined as <i>exoneration clauses</i>

If this constitutive elements could be considered as defining a type “A” mandate, then:

P₄: The monetary authority will have a relative preference for IM messages which describe the operational measures taken for the fulfilling of the fundamental objective and also the current state of accomplishment.

This output should be amended by taking into account two critical aspects: (1) the possibility that the monetary authority is functioning also as a regulating and supervising authority in the financial-banking sector, and respectively, (2) the indirect impact exercised by the measures adopted

by this authority on the decisions of different categories of economic subjects, impact that could generate a significant persuasive content for operational messages.

So, the prudential supervision implies the public authorities’ intervention in regulating and supervising the activity of financial and banking sector. These authorities’ necessity to apply a set of rules and authorizing, regulating and supervision measures derives from the crucial role exercised by them in the efficient functioning of the financial resources allocation and re-allocation mechanisms, and consequently, in the global dynamic of modern economic systems.

A critical impediment for a proper exertion of the financial-banking sector functions is represented by the information asymmetry inherent situations (that is the situations in which the information is not uniformly distributed between the participants at a financial transaction. For instance, the debtors dispose a superior volume of information regarding the characteristics and risks associated to an investment project that has to be financed with the resources gathered from the creditors. This asymmetry generates three types of problems in the functioning of the financial-banking sector: (i) adverse selection; (ii) moral hazard; (iii) free-rider problem.

(i) *Adverse selection* represents an information asymmetry situation showed clearly before a financial transaction which consists in the tendency of the debtors, who would like to finance investments with a superior level of risk, to accept to pay for attracted financial resources a interest bigger than the usual. Consequently, there is a significant probability that the financial resources requests selection made by the financial intermediaries to take into account the financial resources requests for some investments which have a higher associated level of risk, which could lead to a worsening of the financial portfolios of these intermediaries and to the restraint of their credit capacity. Avoiding such situation requires adequate methods of *ex ante* identification of diverse credit risks.

(ii) *Moral hazard* could show up clearly after a financial transaction as a result of the debtors’ tendency to engage some activities that are undesirable from the creditors’ point of view. These activities could generate higher returns but are more risky and, consequently, diminish the loaned resources recovery probability. The potential

interest conflict between creditors and debtors determined by the moral hazard could generate a reduction of the financial resources supply and a suboptimal level of investment funded using these resources. In order to solve this problem it is necessary that the creditors impose restrictions on the usage of the borrowed resources and some penalty mechanisms for debtors that do not respect this kind of restrictions.

(iii) *Free-rider problem* appears due to the possibility of diminishing the collection and processing information costs for some economic subjects. This costs reduction is due to the fact that some economic subjects use (freely) the information collected by other subjects. More precisely, the costly actions undertaken by the debtors, creditors or financial intermediaries on the base of some collected information transmit an informational signal reflected in the price of the financial resources. This will guide the actions of other participants on diverse segments of the financial markets, diminishing the marginal utility of supplementary information acquisition. Or, this fact results in to a deepening of the adverse selection and moral hazard problems, thus amplifying its negative impact.

In practice, it could be noticed an extremely diverse situation in the assignment of the responsibilities in prudential supervision field. This situation is due to the action of two contradicting factors: (a) the existence of some divergent historical evolutions of “classical” central banks; and (b) a regulation harmonization tendency respective to the prudential supervision responsible monetary authority. So, in the contemporary economies three solutions are being used: (1) responsibility assignment in central bank field (sometimes to a distinct entity organized inside the central bank); (2) prudential supervision at the fiscal authority level; (3) assignment of the supervision tasks to an entity different from the central bank and the fiscal authority. In our opinion, there are at least three significant arguments in favor of the first of these three solutions:

- The existence of a synergy effect in the case of combined functions of the central bank: as a monetary policy conception and implementation unit and as a supervision authority.

- The existence of a favorable impact of supervision activity on the central bank capacity to exert the creditor of last resort function and to ensure the stability of financial system.

- The contribution of an efficient supervision policy to the increase of the central bank capacity to control an important channel of monetary policy transmission – the credit. So, a series of studies carried out in the rational expectation hypothesis (Sargent and Wallace, 1975, Barro, 1976, etc.) argue that if the economic subjects form their expectations in a rational way, the central bank could promote an anti-cyclical monetary policy, on the base of some informational advantage. It could be remarked here that the rational expectation hypothesis implies the fact that the economic subjects recognize the form of the central bank utility function, so that the supplementary information should refer to other aspects than the ones related to the monetary policy evolution itself. Or, such information could be collected by the central bank during its prudential supervision activity and could permit a more accurate decision-making process based on an adequate perception of financial-banking system situation and general economic conjuncture. This fact becomes even more clear if one takes into account the fact that the central bank could benefit from a double information asymmetry: the one between the central bank and the financial-banking sector and the one between the financial-banking sector and the rest of the world. More precisely, if the central bank collects information about the financial-banking sector it could anticipate in a more accurate manner the way in which this system will react to diverse monetary policy measures. On the other hand, in their current activities, the components of this system obtain themselves information about the non-banking subjects’ activities. This information will be incorporated in their decisions. Or, knowing these decisions, the central bank could benefit directly or indirectly from the information on which these decisions were based.

The existence of some difficulties at the commercial bank level signals most of the times the existence of some ensemble difficulties of the economy (because the average performance level of financial-banking system is in a direct and tight dependent relation to the whole economic system performances).

In the opposite way, the financial-banking intermediaries role in the collection and redistribution of financial resources and the influence exercised by these intermediaries on some key macroeconomic variables, such as interest rates or money velocity, and their

implication on the payment system functioning make that the source of many economic problems to be under the influence of their activities.

The measure in which the central bank has some relevant information about the double connection between the nominal and real sectors of the economy determines the capacity to realize a general analysis of the economic conjuncture, to make more accurate forecasts and to conceive and apply, on this basis, monetary policy measures. It should be insist on the fact that the existence of this informational advantage of the central bank does not cancel the rational character of the expectation formulated by the other economic subjects' categories. These could form their expectations on the base of the ensemble of information that they have. Or, among this information we could also find that ones regarding the current monetary policy measures which are based on the information collected by the central bank in previous period. This fact is equivalent to the fact that the central bank distributes this information in the rest of the economy, allowing to the diverse economic subjects categories to improve their individual expectations. From this point of view, the central bank appears as a subject specialized in the collection and distribution of information.

The prudential supervision activity impact on the informational quality of monetary policy decisions could be formalized as follows:

$$X_{t+i} - E_t(X_{t+i} : I_t^*) = \alpha_0 + \alpha_1(X_{t+i} : I_t) + \alpha_2 Z_t + \varepsilon_t \quad (8)$$

where:

X_{t+i} represents the effective value at the moment $t+i$ of a set of macro-variables relevant for the monetary policy objectives;

$E_t(X_{t+i} : I_t^*)$ represents the values of these variables estimated by the central bank on the basis of the information that it have at the moment t ;

$E_t(X_{t+i} : I_t)$ is the value of the macro-variables estimated by the economic subjects on the basis of the information that they have at the moment t ;

$\alpha_0, \alpha_1, \alpha_2$ are empirical coefficients;

Z_t is a variable which contain the information collected by the central bank during the prudential supervision process;

$X_t - E_t(X_{t+i} : I_t^*)$ represents the anticipation error of the central bank. The value of the α_1 parameter permits an estimation of the degree in which the information collected by the central bank in the prudential supervision process contributes to the amelioration of the quality of its formulated expectations.

It could be appreciated that this parameter becomes extremely important in the situations in which the central bank is confronted with generalized economic crisis, placed both at the level of financial-banking system and at the level of other sectors. The central bank capacity to manage these crises and to contribute to maintain the viability of financial-banking system and payment mechanisms could critically depend on the quality and the relevance of the available information.

Even in the usual situations, the central bank needs information like the ones collected in the process of prudential supervision. This is because the malfunctions appeared at the level of diverse individual components of the financial-banking system could affect the spreading of the monetary policy measures effects and of the final results of these measures. This aspect is relevant especially if one considers that the monetary policy is non-neutral, in the long run. But, if one appreciates that the economic subjects have the possibility to also anticipate correctly, on the long run, the behavior of the financial-banking system, it could be argued that they will take into account the distortions generated by this behavior as well as *the facto* central bank intentions, and will make the necessary corrections in their decisions, "cleaning" implicitly the signals sent by the central bank from attached "informational noises". More, the economic subjects will react to the existence of the information asymmetry through an information collection process (or through an acquisition process of the information stored on the economic system), canceling or diminishing in this manner the informational advantage of the central bank. The implicit foundation of this kind of argumentation is that the existence of some informational advantage of the central bank is a background for an active monetary policy which has a disturbing potential for the stable equilibrium state. We are skeptical about the viability of such an approach. This is because as long as this informational advantage is kept, the central bank could "surprise" the economic subjects with its monetary policy measures. And this "surprise effect" remains even if the economic subjects know the utility function of the central bank, that is, they know what type of measures will adopt this authority, and this is because they can't estimate with sufficient accuracy the exact moment when a certain anti-cyclical monetary policy measure. So, it will obtain an increased efficiency of the

monetary policy and a more effective character of the measures of the central bank. Certainly, the question could be raised, if the central bank could systematically put to a good use the informational advantage gained from the prudential supervision exertion. Our opinion is that as long as the mentioned double information asymmetry remains, the operational margin of the monetary authority remains large enough to permit it to carry on anti-cyclical activities in a systematic manner.

It could be noticed the fact that the exact dimension of this operational margin depends, among others, on the reports between the financial-banking sector and the central bank. So, if its components are sensibly dependent on the refunding obtained from the central bank, the action of regulating and prudential supervision will have, at least as a rule, an increased efficiency relative to the legal measures that could be adopted by the monetary authority in the case of prudential regulations violation. More, to this we could add the fact that the supplementary pressure exerted by the central bank possibility to refuse the refunding of that financial-banking intermediaries which violate these regulations. Or, the situations in which “the banks are in the Bank” (are dependent on the financial resources obtained from the monetary authority) are frequently met in the case of the developing countries, in which the level of divers types of risks that could affect the economic system is quite high. Therefore, in these countries may exist supplementary arguments in order to entrust the regulating and prudential supervising activities of the central bank. Also, in crisis situations that affect the financial-banking sector, the central bank is facing a true dilemma: to act as a refunding of the last resort for the financial intermediaries that are in difficulty, accepting the attached moral hazard risks and also the risk of compromising the monetary stability or to choose a firm monetary policy in order to preserve this stability, even with the double risk of collapse of some entities and of amplifying crisis dimension.

In this context, the exertion of the supervision activity by the central bank could be a solution, but in the measure in which, in the virtue of the assigned duties, this authority could proceed to an “isolation” of critical points, preventing in this way a contagion of the difficulties which some individual components of the system are confronted with. Such a capacity of the monetary authority to act for identifying the cases of prudential

regulations violation and for imposing penalties permits it to avoid to resort to its role of borrower of last resort (excepting some extraordinary situations). More, depending on the concrete content of the prudential regulations, the monetary authority could influence the general conditions in which the borrowing activity is carried out and could prevent the extinction to the real sector of some shocks originated in the financial-banking sector.

So:

P₅: In the situation in which the competence sphere of the monetary authority includes the regulating and prudential supervision attributions it will register an increase of the weight of OM, through which it communicates the prudential regulations and intervention measures.

Also, besides the “direct” transmission channels for the impulses generated by the changes in the level of instrument-variable of the monetary policy, it could be emphasized an “indirect” channel represented by the impact exert on the expectation mechanisms of diverse economic subjects categories.

An uniform framework for the description of this channel could be adopted by taking into account a “rational” structure of the economic subjects’ wealth. So, it could be considered that a *rational* economic subject will structure its wealth taking into account the current and anticipated levels of the variables which define the “budgetary constraint” as well as the current and anticipated risk adjusted returns for different incorporated assets. Formally, the multi-period optimization problem for the economic subjects’ wealth structure could be described as follows:

$$\begin{aligned}
 & x_{i,t} \geq 0, \sum_{i=1}^N \sum_{t=1}^K x_{i,t} = 1 \text{ with } i=1+N \\
 & \text{and } t=1+K \quad - \text{the logical restriction} \\
 & \sum_{i=1}^N \sum_{t=1}^K x_{i,t} (c_{i,t} + c^*_{i,t}) + \sum_{a=1}^Z \sum_{t=1}^K (M_{a,t} + M^*_{a,t}) + \\
 & + \sum_{b=1}^E \sum_{t=1}^K (D_{b,t} + D^*_{b,t}) = \sum_{g=1}^F \sum_{t=1}^K (Y_{g,t} + Y^*_{g,t}) \\
 & - \text{the budgetary restriction} \\
 & \frac{\sum_{i=1}^N \sum_{t=1}^K x_{i,t} (\eta_{i,t} + \eta^*_{i,t})}{\sum_{i=1}^N \sum_{t=1}^K x_{i,t} (R_{i,t} + R^*_{i,t})} \rightarrow \text{MAX} \quad - \text{the objective function} \quad (9)
 \end{aligned}$$

where:

„*”- denotes the anticipated level of the variables;

t - current period;

N - the number of „real” and „financial non-monetary” assets which could be incorporated into the wealth;

K - the number of next periods over the which the anticipations are formatted;

Z - the number of different monetary assets available;

E - the typology of the borrowed financial resources;

F - the different types of incomes from work and capital;

x - the weight of a particular „real” or „financial non-monetary” i asset in the wealth;

c - the acquisition and usage costs for a „real” or „financial non-monetary” i;

M - the „monetary balances” (the stock of the most liquid assets);

D - the level of the financial resources which could be borrowed;

Y - incomes from work and capital;

η - the yield of the „real” and „financial non-monetary” assets;

R - the risk of detaining and using the „real” and „financial non-monetary” assets.

In this framework, it could be considered that the changes produced on the level of instrument variables of monetary policy affect both the current levels and the expected levels of the optimization problem.

So, these changes influence:

- The dynamic of the real assets prices and the return of their usage;

- The components of the interest rates system, and, through this, the prices of the financial non-monetary assets and the return of their possession;

- Exchange rates, prices and foreign financial non-monetary assets returns.

Supplementary, the instrument variables of the monetary policy could influence the expectations mechanisms taken into account for structuring the wealth in at least two cases:

- When these mechanisms have a significant self-adaptive component;

- When the implementation of the monetary policy implies the setting of some target-levels for some decisional variables, levels that will be comprised in the formulation of the expectations.

So, if *MPI* represents the set of monetary policy instruments, then, in order that its precedent and current levels to influence the economic

subjects’ expectations regarding the evolution of *X* decision variable it is necessary that their formation mechanism to be as the following:

$$X_t^* = \alpha h(X_{t-1}, X_{t-2}, \dots, X_{t-W}) + \beta (X_{t+1}^{\text{target}}, X_{t+2}^{\text{target}}, \dots, X_{t+K}^{\text{target}}) \quad (10)$$

If these conditions are verified, then the overall optimization problem framework could be rewritten as follows:

$$\begin{aligned} & x_{i,t} \geq 0, \sum_{i=1}^N \sum_{t=1}^K x_{i,t} = 1 \text{ with } i = 1 + N \\ & \text{and } t = 1 + K \quad - \text{the logical restriction} \\ & \sum_{i=1}^N \sum_{t=1}^K x_{i,t} (c_{i,t} (MPI_{t,t-1,\dots,t-W}) + c_{i,t}^* (MPI_{t,t-1,\dots,t-W})) + \\ & + \sum_{a=1}^Z \sum_{t=1}^K (M_{a,t} (MPI_{t,t-1,\dots,t-W}) + M_{a,t}^* (MPI_{t,t-1,\dots,t-W})) + \\ & + \sum_{b=1}^E \sum_{t=1}^K (D_{b,t} (MPI_{t,t-1,\dots,t-W}) + D_{b,t}^* (MPI_{t,t-1,\dots,t-W})) = \\ & = \sum_{g=1}^F \sum_{t=1}^K (Y_{g,t} (MPI_{t,t-1,\dots,t-W}) + Y_{g,t}^* (MPI_{t,t-1,\dots,t-W})) \\ & - \text{the budgetary restriction} \\ & \frac{\sum_{i=1}^N \sum_{t=1}^K x_{i,t} (\eta_{i,t} (MPI_{t,t-1,\dots,t-W}) + \eta_{i,t}^* (MPI_{t,t-1,\dots,t-W}))}{\sum_{i=1}^N \sum_{t=1}^K x_{i,t} (R_{i,t} (MPI_{t,t-1,\dots,t-W}) + R_{i,t}^* (MPI_{t,t-1,\dots,t-W}))} \\ & \text{MAX} \quad - \text{the objective function} \end{aligned} \quad (11)$$

A critical point here is represented by the fact that the incorporation of the target-level in expectation formation mechanisms depends on the credibility of the monetary authority. So, the set of arguments specific to the neoclassical macroeconomics which emphasizes better the impact of central bank credibility on formation of the economic subjects’ expectations could be described using the following hypothesis:

- The central bank is maximizing an objective function, applying a discretionary monetary policy;

- This function is regarding the achievement of some objective level of prices (P^*) and to the achievement of a certain objective level of output abatements (Y) from its “natural” level (Y^*).

On this basis, we consider an objective function of the central bank (U_g) with a random form⁽¹⁾, such as:

$$U_g = -(P^*)^2 + 2(Y - Y^*) \quad (12)$$

We suppose that in the economic system, the relationship between the inflation (the dynamic of

prices) and output is correctly explained by the natural rate of output hypothesis, so that:

$$P^* = (Y - Y^*) + P^e \tag{13}$$

where P^e represents the expected level of prices.

The economic subjects are forming their expectations in a *rational* way, trying to maximize:

$$U_p = -(P^* - P^e) \tag{14}$$

The central bank has the capacity to choose the objective level of inflation rate, which is applicable to the whole economic system.

The choice of this level has to be done in such a manner that the function given in relation (12) to be maximized, given the constraint exposed in relation (13). This leads to the choice of a non-zero positive rate of inflation (let's consider, from a formal point of view, that this rate is $P^* = 1$. Because the economic subjects expectations have a *rational* nature (and, by consequence, the choice made by the central bank is correctly anticipated), the resulted central bank disutility will equal (formally) -1 . If the central bank choose a null inflation rate ($P^* = 0$), but the economic subjects anticipate this inflation level will be the same as in the previous case). In these conditions, one could raise the next question: why the central bank will choose a non-zero positive inflation rate, as a result of a utility maximizing behavior, if this will lead to a superior disutility? This problem could be formulated and analyzed, in simplified way, using the game theory. It could be considered that the central bank and the economic subjects are participants to a "game" in which the disutility resulted from the decisions regarding the objective level of inflation, and, respectively, its expected level depends on the other part's decisions.

Formal representation of a single-period game between the central bank and the economic subjects

Table 4

		Central Bank	
		$P^e = 0$	$P^e = 1$
Economic Subjects	$P^e = 0$	0,0	-1,1
	$P^e = 1$	-1,-2	0,-1

In the analyzed of single-period game, it could be supposed that every player knows exactly the structure of the game and the resulted disutility level

for each part⁽²⁾ and react in a "rational" way to this information (that leads to "mirrored decisions"). In these conditions, the concept of *Nash equilibrium* (defined as representing a combination of strategies that are optimal responses adopted by each player as a reaction to the other player moves) is the most useful in order to describe the game evolution.

The *Nash equilibrium* for this game, for $[P^e P]$ will be given by the pair $[1,1]$ but the game is paretian dominated by the pair of strategies represented by $[0,0]$. From here it could be considered that if the monetary policy has a discretionary character, an anti-inflationist monetary policy program will be temporal inconsistent. If, initially, the central bank affirmed, in a credible way, that it follows such a program (so that $P^e = 0$), and then intended to change the nature of this program in such a manner to obtain a higher utility (equal to "1" and not to "0" – that is if it tried to choose for a solution defined by $[-1,1]$), so that the expected price level to become $P^e = 1$, then this will force the central bank to redefine completely its objectives. This implies that the central bank accepts a inflationist monetary policy as the best available solution (it accepts a solution defined by the pair $[0,-1]$, which implies the acceptance of a superior disutility, equal to "-1").

This line of thought could be synthesized as follows: *any discretionary monetary policy ends by undermining the central bank's credibility because its actions are counteracted by the economic subjects' capacity to correctly anticipate them, so that, finally, the central bank is forced to adopt strategies that lead to an increase in its disutility.*

In conclusion, the monetary policy leads to optimal results only in the condition in which this does not have a discretionary character, keeping in this way unchanged the credibility of the central bank measures.

This aspect of monetary policy credibility presents a significant importance for the analysis of the multi-period decisions taken by the central bank. So, if this gets an anti-inflationist reputation in the long run, it could obtain a (paretian) superior result to that obtained in the condition of the absence of such a reputation. In other words, the optimal effect obtained in the long run could determine the central bank to renounce to a superior utility on the short run by producing a surprise current inflation.

In order to formally prove this thesis it should be made a distinction between the cases in which “the game” between the central bank and the economic subjects is repeated for a finite number of times or for an infinite number of times. In this last case, no matter how many times the game was played, there is always a non-zero probability that the game to be played once more and, by consequence, the comparison between the short run result and the long run result is fully plausible. In fact, in such a game appear “perfect” multiple equilibriums and some of them could produce a non-inflationary result (the concept of “perfect” equilibrium needs that all of the sub-games appeared in the repetitive sequence to generate a *Nash equilibrium*). This condition is imposed by the fact that, in an indefinitely repeated game every current strategy depends on the results obtained in the previous game, and the participants could adopt a variety of more complex strategies than in a single period game, when every participant has to choose only between two strategies.

In this framework, we consider that the economic subjects expect a null inflation so long as they do not experiment an inflationary situation and as soon as this kind of situation occurs, they will expect a non-zero inflation rate⁽³⁾.

In these conditions, the central bank will counterpart the superior utility of a surprise current inflation ($=”1”$) with the discounted present value of the difference between the output obtained in inflationary condition and the output obtained in non-inflationary conditions in all the subsequent sub-games ($\sum_i d^{i(-1)}$, where d synthesizes the discounting rate and the probability that the game to be repeated and is considered constant). When $d > \frac{1}{2}$, the central bank will choose an anti-inflationary policy because the disutility expected in the long run caused by an inflationary policy exceeds the short term gain induced by a unexpected current inflation.

If the game is repeated a finite number of times, d value is re-adjusted and it could lead to the situation in which this situation is less than $\frac{1}{2}$, case in which the central bank could choose an inflationary situation.

More precisely, in the situation in which the game is repeated a finite number of times, it could be recognized a deductive logical analysis which to explain the pro-inflation preference of the central

bank, so that is a last sub-game in which the central bank is not forced to support a disutility higher than the current one generated by an inflationary policy.

Consequently, this last sub-game is a version of a single-period game in which the central bank could choose an inflationary policy. In the last but one game, the economic subjects anticipate this aspect, so that in this game there will not be necessary that the central bank to obtain an anti-inflationary policy. This makes that, in the last but one game to be a version of a single-period game in which the central bank could choose an inflationary policy and so on. By consequence, the game is played “backwards”, from the last to the last but one game, the economic subjects anticipating all the way a non-zero rate of inflation.

This analysis could seem “naïve” relative to the way in which monetary policy is conceived and applied in real economic systems. But, in order to obtain a more realistic analysis, it is necessary to be taken into account the situations in which the economic subjects do not know precisely the incentives that rule the central bank behavior (that is, they do not know precisely the nature of its objective function).

Let’s consider that there is a certain probability q that the central bank to have a different objective function than the one presumed by the relation (14), in which the anti-inflationary stability to represent the main objective. We will consider such a central bank a “conservative” one (BCC). The disutility derived from central bank decisions in this case is presented in Table 5.

**Formal representation of a game
between a conservative central bank BCC
and the economic subjects**

Table 5

		Central Bank	
		P* = 0	P* = 1
Economic Subjects	P ^e = 0	0,0	-1,-1
	P ^e = 1	-1,0	0,-1

The results from the table 5 emphasizes the fact that even given the conditions that in the last sub-game $q \geq \frac{1}{2}$, there is no certitude that the economic subjects will expect a non-zero inflation rate.

In order to apply this idea it could be compared the result obtained by anticipating a null inflation

rate to the result obtained by anticipating a non-zero inflation rate. These result are identical when $q = \frac{1}{2}$. In these conditions, the previously described deductive process that generates non-zero inflationary expectations during the entire game will not appear certainly. In fact, there will be alternative equilibrium situations. In particular, if we consider that the economic subjects use a *Bayesian rule* in order to change their expectations, then a sequential equilibrium will appear in this game even if, initially, q will have values significant lower than $\frac{1}{2}$ ⁽⁴⁾. In this sequential equilibrium, it could appear an initial non-inflationary period followed by a period with an unexpected inflation and could end with a period in which the expected inflation rate is non-zero. So, it should be remarked an initial non-inflationary period which duration depends on the economic subjects uncertainty regarding the central bank objectives. It will follow a period of construction of a non-inflationary reputation (which could be accompanied by economic recession and it could end suddenly with inflation which, at its beginning, due to its unexpected character, could determine output expansion). When the central bank reputation was affected by the inflation, the rest of the game will be characterized by non-zero inflationary expectations from the part of economic subjects.

In this way, we could notice a monetary policy cycle determined after all by the fact that the achievement of the central bank's credibility takes a long time, and which is longer if an inflationary monetary policy was used frequently in the past. Apart from this, the credibility could be quickly lost even in the situations in which the central bank's abatements from the planned monetary policy are temporary.

Summarizing:

P_6 : *The changes that occur in the level of monetary policy instrument variables affect the level and volatility of the variables attached to the structuring of the current and expected economic subjects' wealth (this happens in the extent in which the expectation mechanisms have a self-adjusting component and/or the monetary authority benefit from a high degree of credibility).*

From this, it could be stated that:

P_7 : *The monetary authority's IM messages have implicitly a significant component PM in the extent in which the transmission of information regarding*

the changes in the monetary policy is able to affect the economic subjects' expectations and, by consequence, their decisions regarding their wealth structure.

The interpretation given to the sentence P_7 is that the instrument variables of the monetary policy are able to exercise not only a "direct" effect on some key macroeconomic variables through the "classical" transmission channels of the monetary impulses, but also an "indirect" effect *via* the economic subjects' expectations. In other words, there is a *signaling effect of the monetary policy* which is showed clearly when the monetary authority explicitly announces the adoption of some new monetary policy measure and/or this authority silently changes its operational instruments.

It is worth mentioning that the viability of the first part of the previous affirmation needs the accomplishment of some special conditions. So, in order that a *de facto* change of monetary policy to affect the expectations' mechanisms it is minimally necessary that:

- The economic subjects to know and to systematically watch the monetary policy instruments;
- This change should be visible in "real" time and the information asymmetry problem should not have a special relevance;
- The "acquiring speed" of the new information appeared in expectations formation should be high enough;
- The economic subjects should know the "transmission channels" of the monetary policy impulses and should be able to estimate their amplitude.

More, the concrete way of signaling effect manifestation depends on the interpretations given by the economic subjects to the changes in the level of monetary policy instruments. More precisely, these changes could indicate:

- The fact that the monetary authority tends to keep or to change the manner in which conceive and apply the monetary policy;
- The fact that the monetary authority finds out/ expects some changes in the economic conjuncture and that it reacts to these changes.

Or, in our opinion, there are not sufficient *ex-ante* proofs to consider that the two situations determine uniform reaction from the part of economic subjects. So, these:

- Could agree or disagree a change or a preservation of the monetary policy configuration

and could consider that these will generate an output superior/inferior to that assigned to the current status of the monetary policy;

- Could have the same opinion or a different opinion respective to the monetary authority one regarding the current/expected economic conjuncture.

One could notice that these conditions could appear quite restrictive. For instance, the absence of information asymmetry could appear as a “strong” condition which could be hardly noticed for a fact. So, in practice, the accuracy of this problem is different for different economic subjects’ categories. As an example, there are frequent situations in which the information asymmetry is more pronounced for the subjects from the “real” sector of the economy comparative to the ones from the “nominal” sector. So, it is possible that the viability of the previously presented thesis to be greater in the case of the decisions regarding the wealth structure of the economic subjects that carry on their activities in the financial field.

The formal treatment of the optimization problems formulated by these subjects could be realized on the basis of a version of the relation (10) in which the variables exclusively describe the elements which are specific to the financial assets. By consequence, a weaker version of P_7 it could be:

P_8 : *The monetary authority’s IM messages have implicitly a significant PM component in the extent in which the transmission of information regarding the changes in the monetary policy is able to affect the economic subjects’ expectations and, by consequence, their decisions regarding their wealth structure. This fact is valid especially in the case of economic subjects from the “nominal” sector and for their decisions regarding the shape of the financial component of their wealth.*

In other words, it is plausible that the signaling effect to be more evident if we consider its impact on the dynamic and volatility of the costs and returns associated to the acquisition and possession of non-monetary financial assets.

3. Methodology

The thesis that the changes in the monetary policy instruments as *signals* from the monetary authority affects the volatility of the financial markets dynamic is the main testable result of the

previous section. In order to find some empirical support for this thesis we took the following methodology:

1) *The estimation of the market index volatility by the involving of an Asymmetric Component ARCH Model.* The general representation of such a model is:

$$\begin{aligned}
 y_t &= x_t' \pi + \varepsilon_t \\
 q_t &= \omega + \rho(q_{t-1} - \omega) + \phi(\varepsilon_{t-1}^2 - \sigma_{t-1}^2) + \theta_1 z_{1t} \\
 \sigma_{t-1}^2 - q_t &= \alpha(\varepsilon_{t-1}^2 - q_{t-1}) + \gamma(\varepsilon_{t-1}^2 - q_{t-1}) d_{t-1} + \\
 &+ \beta(\sigma_{t-1}^2 - q_{t-1}) + \theta_2 z_{2t}
 \end{aligned}$$

where z are exogenous variables, d is a dummy variable indicating negative shocks and $\gamma > 0$ indicates the presence of transitory leverage effects in the conditional variance.

The second equation of the previous relationship describes “the long run” component q_t , which converges to ω with powers of ρ , while the third equation reflects the “short run” shocks in volatility $\sigma_{t-1}^2 - q_t$, which converges to zero with powers of $(\alpha + \beta)$, where α and β are empirical coefficients and ε is a random variable.

This type of *ARCH* models displays a greater flexibility by introducing asymmetric effects in the transitory equation and better capturing the unequal effects of different informational shocks.

The main output of the model appliance consists in the two volatility components, which are estimated, based on the empirical values of the parameters.

2) *The simulation of the impact exercised by the changes in monetary policy instrumental variables on the volatility’s components in a (Structural) VAR framework.*

The main purpose of this model estimation is to obtain non-recursive orthogonalization of the error terms for impulse response analysis. This alternative to the recursive Cholesky orthogonalization requires the user to impose enough restrictions to identify the orthogonal (*structural*) components of the error terms.

Let y_t be a k – element vector of the endogenous variables and let $\Sigma = E[e_t e_t']$ be the residual covariance matrix. Following Amisano and Giannini (1997), the class of *SVAR* models may be written as:

$$Ae_t = Bu_t$$

where e_t and u_t are vectors of length k , e_t is the *observed* (or “reduced” form) residuals, while u_t is the *unobserved structural* innovations.

A and B are $k \times k$ matrices to be estimated. The *structural* innovations u_t are assumed to be orthonormal, i.e. its covariance matrix is an identity matrix $E[e_t e_t'] = I$. The assumption of orthonormal innovations imposes the following identifying restrictions on A and B:

$$A \sum A' = BB'$$

It should be noticed the fact that the expressions on either side are symmetric and this imposes $\frac{k(k+1)}{2}$ restrictions on the $2k^2$ unknown elements in A and B. Therefore, in order to identify A and B

at least $2k^2 - \frac{k(k+1)}{2} = \frac{k(3k-1)}{2}$ additional restrictions should be provided.

Two types of supplementary restrictions could be distinguished: *short-run* and *long-run*.

In order to take into account the most general possible case we have specified the first type of restriction. Such a choice is based on the idea to let the changes in the monetary policy instruments to affect both components of the volatility.

In order to illustrate the application possibilities for this methodology, we take into consideration the case of European Central Bank/European System of Central Banks. In our opinion, the mandate could clearly be defined as a type „A” one.

The ECB/ECSB mandate's structure

Table 6

Fundamental objective	"...the primary objective of the ESCB shall be to maintain price stability. Without prejudice to the objective of price stability, it shall support the general economic policies in the Community" (Art. 2 of the Statute)
Relationships with fiscal authority	"In accordance with Article 101 of this Treaty, overdrafts or any other type of credit facility with the ECB or with the national central banks in favor of Community institutions or bodies, central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of Member States shall be prohibited, as shall the purchase directly from them by the ECB or national central banks of debt instruments" (Art. 21)
Relationships with other public authorities	"In accordance with Article 108 of this Treaty, when exercising the powers and carrying out the tasks and duties conferred upon them by this Treaty and this Statute, neither the ECB, nor a national central bank, nor any member of their decision-making bodies shall seek or take instructions from Community institutions or bodies, from any government of a Member State or from any other body. The Community institutions and bodies and the governments of the Member States undertake to respect this principle and not to seek to influence the members of the decision-making bodies of the ECB or of the national central banks in the performance of their tasks". (Art. 7)
Choice of monetary policies instruments	"The ECB shall establish general principles for open market and credit operations carried out by itself or the national central banks, including for the announcement of conditions under which they stand ready to enter into such transactions" (Art.18)
Penalty mechanisms for failure of fundamental objective	Not clearly specified

Consequently, it could be assessed that, for this case, the requests for P8 testing are significantly fulfilled.

As a variable-instrument of monetary policy is chosen *EONIA* (Euro OverNight Index Average), which is an effective overnight rate computed as a weighted average of all overnight unsecured lending transactions in the interbank market, initiated within the euro area by the contributing panel banks.

Certainly, it could be remarked that such a choice is only a reductionistic "work hypothesis" destined to facilitate described methodology application.

The chosen stock market indexes are:

ATX (*Austrian Traded Index*) comprises the blue chips of Wiener Börse and has been designed as underlying reference for futures and options. The ATX contains the most actively traded and highly capitalized stocks on the prime market segment.

BFX (*Euronext Bel-20*) is a real-time basket index reflecting the continuous price evolution of the 20 most liquid Belgian shares listed on Euronext Brussels and serves as Blue-chip index for Euronext Brussels. The weight of the index constituents is based on their market capitalization adjusted for free float by using the FTSE free float banding system.

OMX (Copenhagen 20) is the Copenhagen Stock Exchange's leading share index. The index consists of the 20 most actively traded shares on the Copenhagen Stock Exchange. The limited number of constituents guarantees that all the underlying shares of the index have excellent liquidity, which results in an index that is highly suitable as underlying for derivatives products.

DAX (Deutsche Aktien Xchange) measures the performance of the Prime Standard's 30 largest German companies in terms of order book volume and market capitalization. The index is based on prices generated in the electronic trading system Xetra®.

AEX (The Amsterdam Exchanges) is a stock market index composed of Dutch companies that trade on Euronext Amsterdam and it is composed of the 25 largest funds that trade on the exchange and its composition is adjusted annually on March 1 to keep it current.

OSE (Oslo Stock Exchange) consists of all shares listed on Oslo Børs. The index is adjusted for corporate actions daily and the current outstanding number of shares is applied in the index.

IGBM (The Madrid Stock Exchange General Index) is not made up of a fixed number of companies as its number varies. At each six-monthly meeting all those companies that fulfill all the requirements are admitted and those that no longer do so are excluded.

FTSE 100 (Financial Times Stock Exchange) comprises the 100 most highly capitalized blue chip companies, representing approximately 80% of the UK market. It is used extensively as a basis for investment products, such as derivatives and exchange-traded funds.

SMI (Swiss Market Index) is Switzerland's blue-chip index, which makes it the most important in the country. It contains around 90 % of the entire free float market capitalization of the Swiss equity market and is made up of a maximum of 30 of the largest and most liquid SPI large-and mid-cap stocks.

The analysis is made for the period between January 2003 - July 2006 and the sources for the data are www.euribor.org (computed with the help of The European Central Bank) and <http://finance.yahoo.com>. The results are reported in Annex 1.

The stability tests for the VAR models (the analysis of the unitary roots, the VAR Residual

Portmanteau Tests for Autocorrelations, the VAR Residual Serial Correlation LM Tests and VAR Residual Normality Tests) not presented here suggest that the output could be seen as „satisfactory” from an econometric point of view.

4. Comments and Limits

The results from Annex 1 tend to shape a *puzzle*. Thus, these results suggest that the global impact of a shock in EONIA, like a variable – instrument of monetary policy of ECB/ESCN, is materialized in:

- a. A “compression – expansion” cycle for the *short-term* component of volatility for ATX, BFX, DAX and OSE;
- b. An “expansionist” cycle for this *short-term* component for AEX, IGMB, FTSE, OMX and SMI;
- c. An “expansionist” cycle for the *long-term* component of volatility for ATX, AEX and BFX;
- d. A “decreasing” cycle for this component for DAX, IGMB, FTSE, OMX and SMI;
- e. A “stationary” cycle for the long-term volatility occurred for OSE.

Also, it could be remarked that the possible “inflection point” which occur within the mentioned cycles are placed at the end of 1-2 quarters and such points has a relatively low frequency, the cumulated dynamic of volatility distinguishing some quite clearly trends.

Supplementary, the *informational leverage* (the γ parameter) is statistically significant for all the indexes (with the exception of the *AEX*), „positive” for *ATX, BFX, DAX, IGMB, OSE* and „negative” for the others.

Several explanations could be advance here: (1) nonuniform structure of financial markets, whose evolution is depicted by analyzed indexes; (2) nonuniform mechanism for operators' predictions shaping on this markets; (3) „informational asymmetry” between these indexes.

Thus:

- (1) Financial markets from EU continue to report some divergences regarding to capitalization, liquidity, „deepness”, institutional and functional mechanisms, together with a certain national specificity despite to unification impact of EURO (see Laganá et al. 2006, Bindseil and Papadia, 2006, Bê Duc et. al., 2005, Schmiedel and Schönenberger, 2005, Berg et al., 2005). Consequently, monetary shocks can

generate separate effects depend on those markets architecture, modulating financial assets' demand and offer in a specific manner and, as a result, the dynamic of those assets' volatility and level price. A key factor here is represented by the *speed of implied adjustments*. Thus, this speed is susceptible to grow up together with markets liquidity degree growing, and the perturbation generated by the portfolios' structures changes adopted as a response to monetary policy's variables –instrument variations are susceptible to be faster absorbed in the case of a high liquidity. Therefore, it could be argued that a *short-term volatility's "expansionist" cycle correlated with a long-term component's "decreasing" cycle has a increasing manifestation's probability at the same time with growing of financial markets liquidity and "deepness"*. A complementary explanation could consist in different taxonomy of investors on these markets, more precisely in dominancy of the "active" investors (with a very short and short term horizon of transactions), with a less disposal to take into consideration changes in "basics" macroeconomic conditions synthesized by changes of monetary policy's instruments and more concerned by markets "current" conjunctures or of the "passive" investors whose decisions seem more isolated from momentary fluctuations and more dependent on long-term evolutions and, therefore, on monetary authorities estimations regarding these evolutions. Certainly, is debatable the degree in which this fact can explain the cross-differences between countries since for each particular market one could note the existence of a mix investor's typology.

(2) As it is argued in Section 2, the concrete way of economical subjects' anticipations' shaping, anticipations which influence their decisions on different time horizons, depends both on self-adaptive component weight and monetary authorities credibility. Therefore, it is possible that a part of obtaining differences of pulse – function's aspect might be explained accordingly both with existence of non-uniform prediction mechanisms and a different "bonus of credibility" afforded to ECB. It could be remarked that a supplementary „background" explanation could be build up by taking into account the impact of *cultural paradigm's* specificity. Thus: (a) *The Power Index Distance Index* is smaller, the participants to the financial markets'

transactions will take more strongly into consideration the monetary authority's implicit messages regarded on *signalization effect*, not only the explicit messages; (b) *The Uncertainty Avoidance* is higher, *the informational leverage effect* is more significant; in other words, the implicit statements of monetary authority which report about *unfavorable evolution* of financial stability will be much more taken into consideration; (c) *The Particularism* and *Specificity Disposal* are more important within the *paradigm*, the expectations adaptive movements will be more hieratic; (d) The dominant *paradigm* of operators on financial markets is more *internal orientation*, the changes of the level of their anticipations will be more "smooth". Of course, such type of explanations could stand in the best case for the *long-run* component of market indexes volatility.

(3) As is it mentioned in Section 2, in order to take into consideration the messages transmitted by the monetary authority through its architecture's and level's variables – the changes of instruments in the shaping of anticipations, it is necessary that messages become "visible" and the targeted economic subjects get the capacity to receive and interpret in a proper manner these messages. Or, in our opinion, there are not enough *ex-ante* reasons to claim that such a capacity is uniform for all markets participants.

The viability of these explanations must be judged both oneself and within the general analytic framework purposed in Section 2. Or, regarding on this second component, it could be formulated some objections. Thus:

a. The classification of mandates in three categories has a more or less arbitrary nature, especially in absence of a accurately definition of differentiation criteria among them;

b. The same type of observation could be repeated for messages' classification, especially for the fact that one of obtained result particularly consists in arguing of combined informative – persuasive message's existence, message which is considered as critical for signalization effect's manifestation. Or, acceptance of this message is equivalent to introducing a "mixed" classification for messages, with different weights for "informative", "order" and "persuasive" components.

c. An opened line within argumentation broaches the thesis by virtue off the cultural

paradigm's components affect obtaining results' volatility under direct impact of agency's messages. But the real channels for transmitting of such influence are only vaguely mentioned, without a strong proof of their existence.

d. A core part of argumentation resides in postulating the existence of some clear connections between the agency's status and its relative preferences for different kind of messages. Again, the argumentation isn't very adequately, no type of empirical evidence being provided for that.

e. The optimization problem of patrimonial structure described by relation (1) doesn't emphasize in a special way on the risk profile of different economic subject. Or, this fact is debatable if it takes into considerations the entire standard manner for treatment of financial assets portfolios' build-up and manage problem.

f. In respect of rational agent paradigm, the special conditions claimed as necessary for economic subjects' anticipations influencing by the registered variations on monetary policy's variable-instrument's level, and the variation shaping mechanism themselves, as they are described in relation (9), presume, in an *ex-ante* manner, that these anticipations are at the best case specific in a bounded rationality representation. Obviously, it is clear that a simple postulating of this existence of such mechanisms isn't sufficient and a more detailed analysis is required at this point.

g. The select case study's proof is based on the idea that the "informational asymmetry" favors those economic subjects who are located in the financial sector, without providing of consistent arguing in support of such a hypothesis.

Also, from the methodological point of view:

1. There are many alternative methods for market indexes' volatility's estimation, respectively for its two components (i.e. cyclic and seasonal factors or shocks decomposition through application of X12-ARIMA or TRAMO/SEATS procedures). Thus, the selection of GARCH model class hasn't a sufficient argumentation and don't show comparative results.

2. Analogous, excepting Component ARCH Model, aren't discriminating others ARCH Models on the informational criterion basis.

3. The same type of objections could be formulated for the chosen (Structural) VAR framework in absence of discrimination among different VAR/VEC models.

4. The choosing of EONIA as a descriptive variable for monetary policy's set of instruments is very debatable (although, it could be argued that it is significantly under ECB/ ESCB control; but this last claim isn't equivalent with its *de facto* using as direct instrument for monetary policy).

Despite of this limits, we consider that the proposal analysis suggests, with a certain consistency, the existence of some connections between the agency's mandates, the transmitted types of messages by the agency and the volatility of obtained results. And it seems that here is a point.

5. Open Conclusions

This paper proposes a theoretical framework based on two main sets of thesis: (1) the existence of a complex set of connections between the structure of the mandate entrusted to the *agency* and its relative preferences for messages whose receiving by the clients and non-clients leads to an output which gets a certain specific volatility and, respective (2) the capacity of an *agency* entrusted with a "strong" mandate to transmit "mixed" type messages (i.e. "informative-persuasive" ones) which, in special conditions, could influence the decisions of *certain* categories of clients and/or non-members.

Accepting this thesis, despite of the previously mentioned limits for considered case study, there still remains the following core question: "How sustainable could be the effects induced by the impact of different agency messages received by their various beneficiaries?" Or, this question leads to a fascinating field of research, somewhere at the boundaries between the Lewin's *frozen effect theory* and Kiesler's *psychology of commitment*. And here, the communication, both verbal and non-verbal, is a main determinant of the target-subjects' reactions.

And this is because, in the end, "The one who knows does not speak and the one who speaks does not know" (Lao Zi - *Dao De Jing*).

Notes

- (1) Any special hypothesis has been made regarding the form of the objective function or the values of its parameters.
- (2) In other words, it is considered that between the game participants does not appear any information asymmetry.
- (3) That is to assume a long run memory of the economic subjects, in sense that the information collected from the previous games are permanently used in any of the future games.
- (4) It is worth noticing that this sequential equilibrium will have the characteristics of a “business cycle”.

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The Asymmetric Component ARCH Model and The (Structural) VAR results - the EONIA impact on volatility's component (structural decomposition)

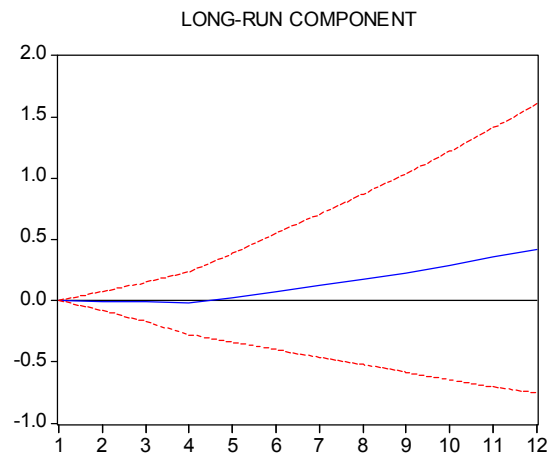
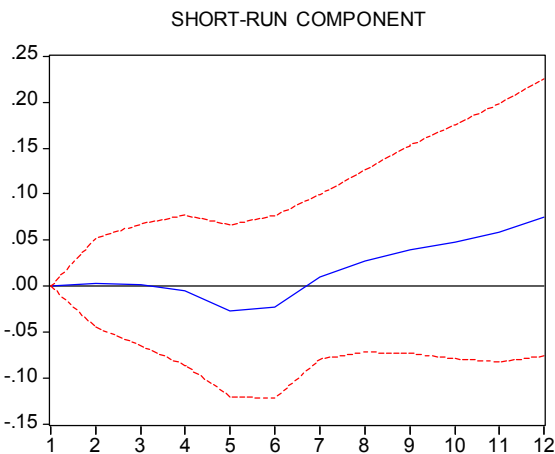
$$q = c_2 + c_3 * (q_{-1} - c_2) + c_4 * (\text{residuals}_{-1}^2 - \text{garch}_{-1})$$

$$\text{garch} = q + (c_5 + c_6 * (\text{residuals}_{-1} < 0)) * (\text{residuals}_{-1}^2 - q_{-1}) + c_7 * (\text{garch}_{-1} - q_{-1})$$

The Case of ATX (Austrian Traded Index)

	Coefficient	Std. Error	z-Statistic	Prob.
$\sqrt{\text{garch}}$	0.212606	0.032356	6.570864	0.0000
Variance Equation				
C(2)	0.874138	0.136119	6.421880	0.0000
C(3)	0.941907	0.024877	37.86200	0.0000
C(4)	0.107556	0.024148	4.453967	0.0000
C(5)	-0.140538	0.040043	-3.509671	0.0004
C(6)	0.214710	0.037455	5.732464	0.0000
C(7)	-0.084655	0.443292	-0.190968	0.8486
GED PARAMETER	1.427032	0.087084	16.38691	0.0000
R-squared	-0.012039	Mean dependent var		0.138017
Adjusted R-squared	-0.020238	S.D. dependent var		0.991729
S.E. of regression	1.001714	Akaike info criterion		2.581086
Sum squared resid	866.9645	Schwarz criterion		2.624855
Log likelihood	-1117.353	Durbin-Watson stat		1.872393

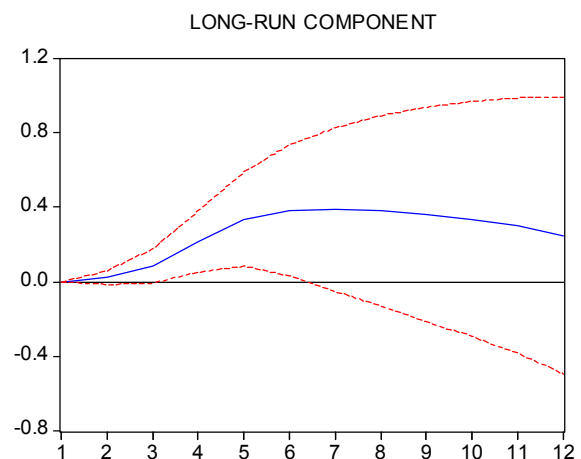
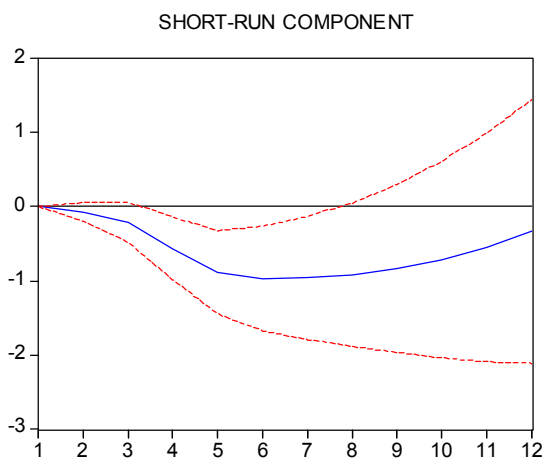
ATX



The Case of BFX (EURONEXT BEL-20)

	Coefficient	Std. Error	z-Statistic	Prob.
$\sqrt{\text{garch}}$	0.134601	0.030977	4.345252	0.0000
Variance Equation				
C(2)	0.476891	0.072755	6.554740	0.0000
C(3)	0.938005	0.031657	29.62999	0.0000
C(4)	-0.071932	0.140143	-0.513276	0.6078
C(5)	0.112013	0.142424	0.786476	0.4316
C(6)	0.072784	0.021695	3.354934	0.0008
C(7)	0.801997	0.144352	5.555826	0.0000
GED PARAMETER	1.631451	0.098042	16.64027	0.0000
R-squared	-0.001780	Mean dependent var	0.064525	
Adjusted R-squared	-0.009642	S.D. dependent var	0.992868	
S.E. of regression	0.997643	Akaike info criterion	2.336274	
Sum squared resid	887.8004	Schwarz criterion	2.378962	
Log likelihood	-1043.323	Durbin-Watson stat	1.870146	

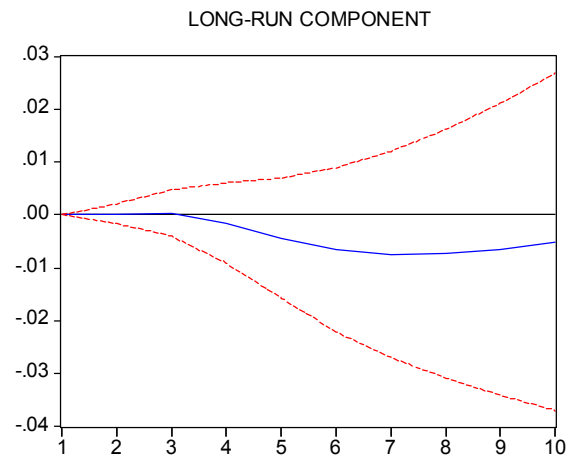
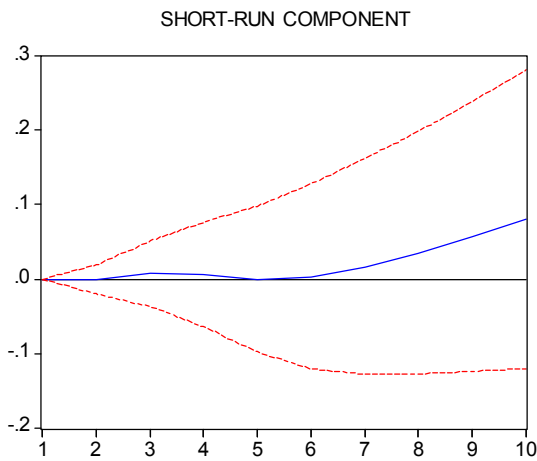
BFX



The Case of OMX (OMX COPENHAGEN 20)

	Coefficient	Std. Error	z-Statistic	Prob.
$\sqrt{\text{garch}}$	-0.162164	0.030725	-5.277846	0.0000
Variance Equation				
C(2)	0.595082	0.150985	3.941327	0.0001
C(3)	0.994264	0.004604	215.9339	0.0000
C(4)	0.011522	0.008478	1.359005	0.1741
C(5)	0.127708	0.026843	4.757528	0.0000
C(6)	-0.162042	0.011261	-14.38979	0.0000
C(7)	0.806190	0.055520	14.52065	0.0000
GED PARAMETER	1.347773	0.085033	15.84998	0.0000
R-squared	-0.005810	Mean dependent var	-0.079795	
Adjusted R-squared	-0.014064	S.D. dependent var	1.049019	
S.E. of regression	1.056370	Akaike info criterion	2.674223	
Sum squared resid	951.8777	Schwarz criterion	2.718433	
Log likelihood	-1143.253	Durbin-Watson stat	1.938935	

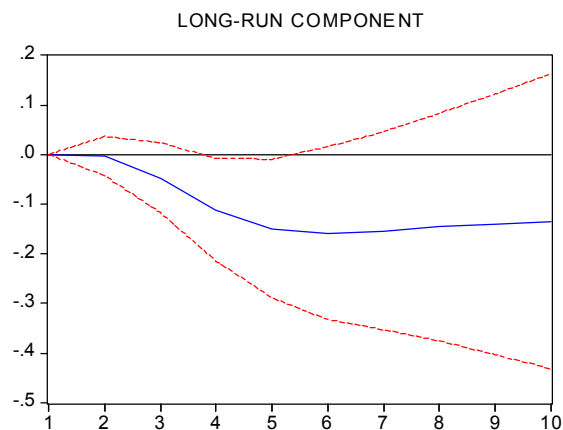
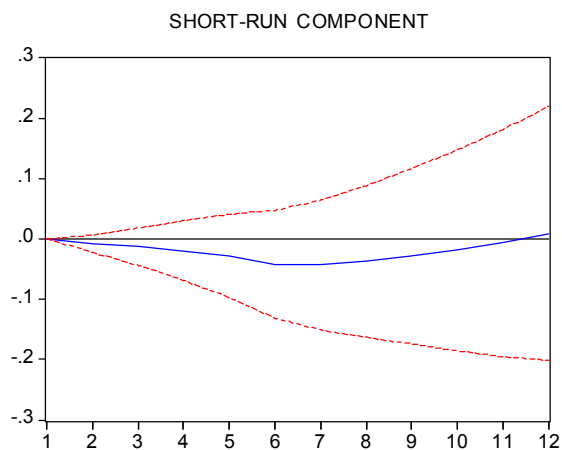
OMX



The Case of DAX (Deutsche Aktien Xchange)

	Coefficient	Std. Error	z-Statistic	Prob.
$\sqrt{\text{garch}}$	0.088815	0.028970	3.065708	0.0022
Variance Equation				
C(2)	3.581319	3.576939	1.001225	0.3167
C(3)	0.992887	0.006742	147.2716	0.0000
C(4)	0.171492	0.077173	2.222176	0.0263
C(5)	-0.141443	0.073253	-1.930876	0.0535
C(6)	0.094102	0.027747	3.391380	0.0007
C(7)	1.082719	0.076369	14.17743	0.0000
GED PARAMETER	1.444706	0.092123	15.68235	0.0000
R-squared	0.000203	Mean dependent var	0.071868	
Adjusted R-squared	-0.007634	S.D. dependent var	1.313106	
S.E. of regression	1.318109	Akaike info criterion	3.022086	
Sum squared resid	1551.508	Schwarz criterion	3.064736	
Log likelihood	-1353.450	Durbin-Watson stat	2.087684	

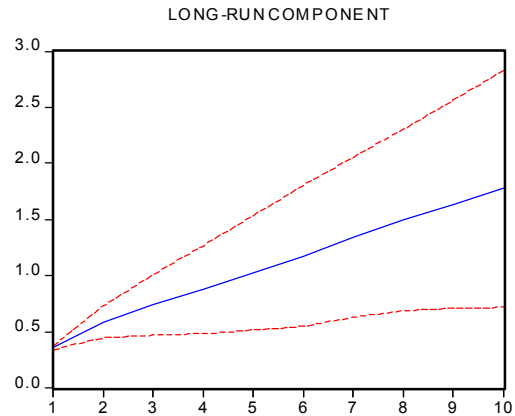
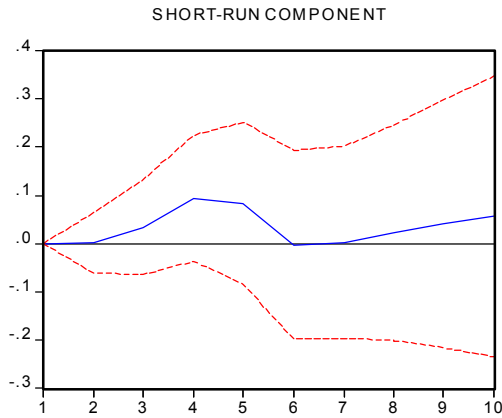
DAX



The Case of AEX (The Amsterdam Exchanges)

	Coefficient	Std. Error	z-Statistic	Prob.
$\sqrt{\text{garch}}$	0.094237	0.032220	2.924826	0.0034
Variance Equation				
C(2)	1.181826	0.545456	2.166676	0.0303
C(3)	0.986315	0.009709	101.5885	0.0000
C(4)	0.087962	0.017550	5.012185	0.0000
C(5)	-0.040193	0.074433	-0.539987	0.5892
C(6)	-0.050729	0.083916	-0.604516	0.5455
C(7)	0.024453	0.565893	0.043211	0.9655
GED PARAMETER	1.522064	0.104818	14.52097	0.0000
R-squared	-0.003341	Mean dependent variable	0.028157	
Adjusted R-squared	-0.011223	S.D. dependent variable	1.278208	
S.E. of regression	1.285361	Akaike info criterion	2.822076	
Sum squared residuals	1472.068	Schwarz criterion	2.864802	
Log likelihood	-1260.523	Durbin-Watson stat	2.045761	

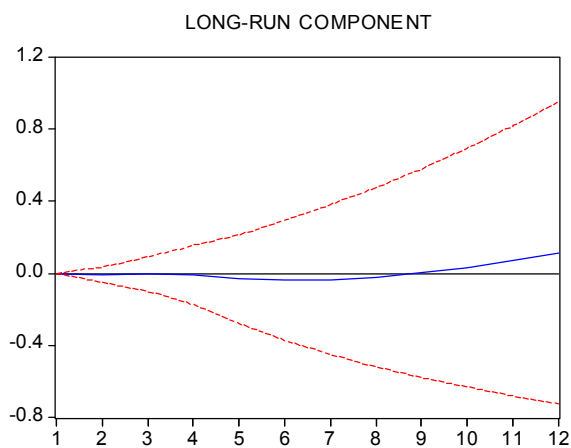
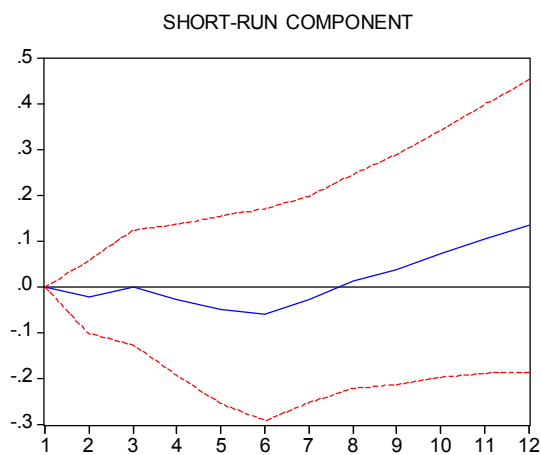
AEX



The Case of OSE (Oslo Stock Exchange)

	Coefficient	Std. Error	z-Statistic	Prob.
\sqrt{garch}	0.204385	0.033457	6.108924	0.0000
Variance Equation				
C(2)	1.078120	0.130922	8.234803	0.0000
C(3)	0.930807	0.034439	27.02735	0.0000
C(4)	0.073864	0.029334	2.517989	0.0118
C(5)	-0.063869	0.063949	-0.998749	0.3179
C(6)	0.175132	0.079329	2.207659	0.0273
C(7)	0.141616	0.267168	0.530065	0.5961
GED PARAMETER	1.551812	0.095634	16.22661	0.0000
R-squared	-0.011170	Mean dependent var		0.151908
Adjusted R-squared	-0.019497	S.D. dependent var		1.172814
S.E. of regression	1.184192	Akaike info criterion		2.938867
Sum squared resid	1191.964	Schwarz criterion		2.983199
Log likelihood	-1252.774	Durbin-Watson stat		1.988475

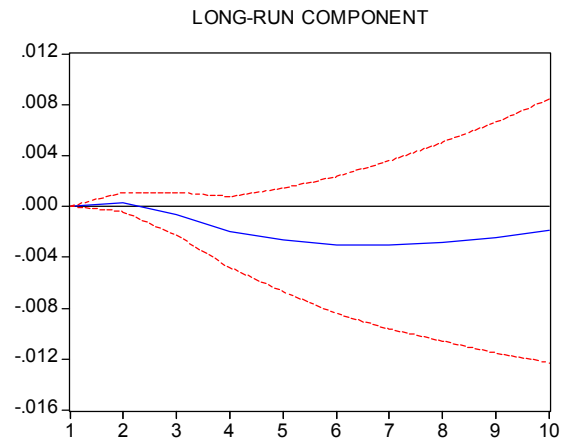
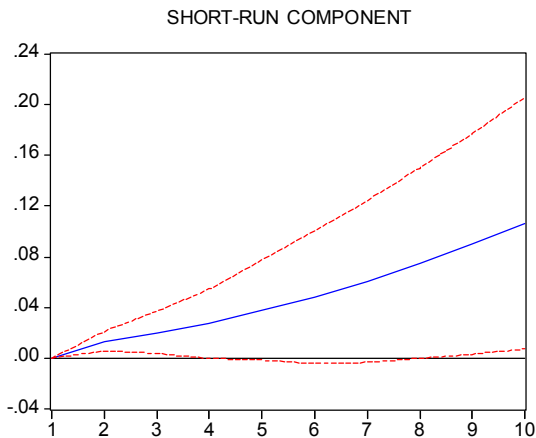
OSE



The Case of IGBM (The Madrid Stock Exchange General Index)

	Coefficient	Std. Error	z-Statistic	Prob.
\sqrt{garch}	0.141727	0.030902	4.586348	0.0000
Variance Equation				
C(2)	0.381207	0.074769	5.098433	0.0000
C(3)	0.992247	0.005364	184.9716	0.0000
C(4)	0.008047	0.009611	0.837212	0.4025
C(5)	-0.046608	0.016707	-2.789792	0.0053
C(6)	0.129983	0.019281	6.741686	0.0000
C(7)	0.932535	0.009567	97.47504	0.0000
GED PARAMETER	1.532995	0.097864	15.66448	0.0000
R-squared	-0.002886	Mean dependent var		0.070252
Adjusted R-squared	-0.010854	S.D. dependent var		0.851327
S.E. of regression	0.855935	Akaike info criterion		2.287896
Sum squared resid	645.4421	Schwarz criterion		2.331002
Log likelihood	-1008.970	Durbin-Watson stat		2.027025

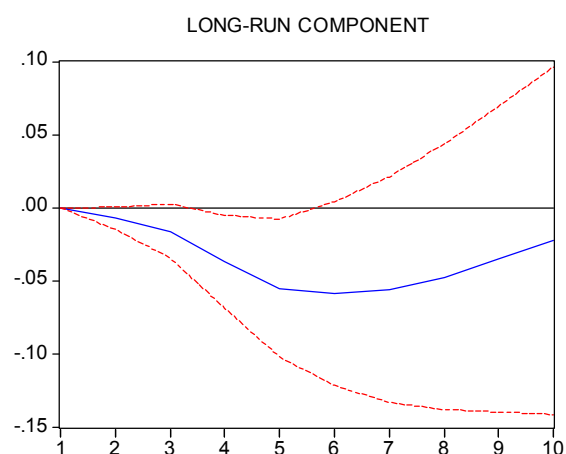
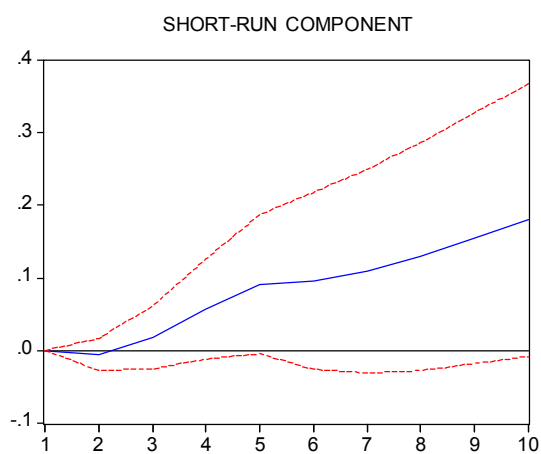
IGBM



The Case of FTSE 100 (Financial Times Stock Exchange)

	Coefficient	Std. Error	z-Statistic	Prob.
\sqrt{garch}	-0.096934	0.032318	-2.999391	0.0027
Variance Equation				
C(2)	0.501139	0.111541	4.492856	0.0000
C(3)	0.978090	0.005845	167.3477	0.0000
C(4)	0.069610	0.023143	3.007821	0.0026
C(5)	0.084744	0.045034	1.881786	0.0599
C(6)	-0.192435	0.043628	-4.410862	0.0000
C(7)	0.893319	0.067791	13.17754	0.0000
GED PARAMETER	1.761812	0.121420	14.51001	0.0000
R-squared	0.002098	Mean dependent var	-0.041497	
Adjusted R-squared	-0.005858	S.D. dependent var	0.869832	
S.E. of regression	0.872376	Akaike info criterion	2.232344	
Sum squared resid	668.1927	Schwarz criterion	2.275565	
Log likelihood	-980.9284	Durbin-Watson stat	2.241108	

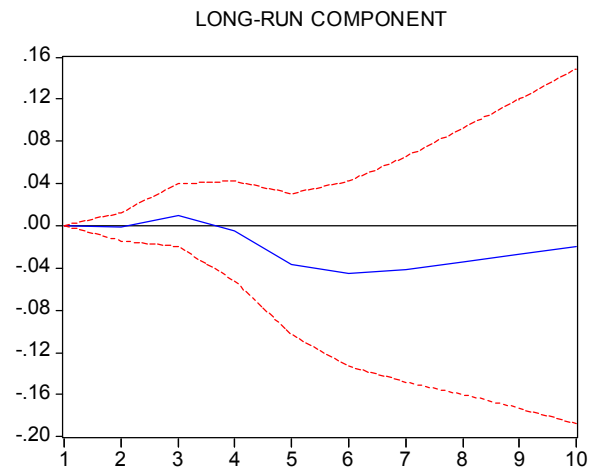
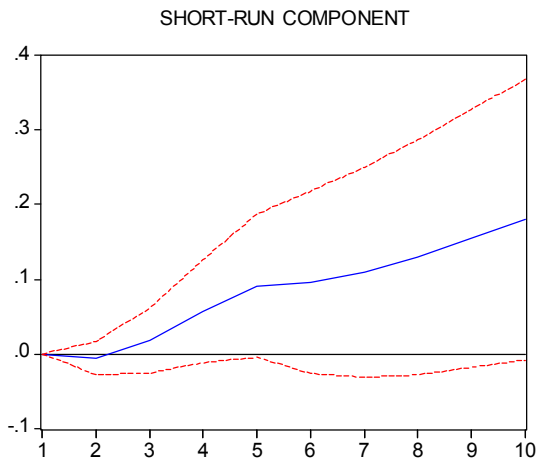
FTSE



The Case of SMI (Swiss Market Index)

	Coefficient	Std. Error	z-Statistic	Prob.
\sqrt{garch}	-0.102711	0.032047	-3.205064	0.0014
Variance Equation				
C(2)	0.709582	0.225842	3.141936	0.0017
C(3)	0.976278	0.015874	61.50352	0.0000
C(4)	0.101367	0.030905	3.279940	0.0010
C(5)	-0.000868	0.053733	-0.016147	0.9871
C(6)	-0.129170	0.046771	-2.761752	0.0057
C(7)	0.905367	0.099910	9.061846	0.0000
GED PARAMETER	1.554861	0.073217	21.23646	0.0000
R-squared	-0.003030	Mean dependent var	-0.055335	
Adjusted R-squared	-0.010999	S.D. dependent var	0.984761	
S.E. of regression	0.990162	Akaike info criterion	2.489503	
Sum squared resid	863.7512	Schwarz criterion	2.532608	
Log likelihood	-1098.584	Durbin-Watson stat	1.994511	

SMI



Statistical-Financial Valuation Methods of the Investment Projects

■

Marcel Bradu

Ph.D. Senior Lecturer

MAES Kishinev, Republic of Moldavia

***Abstract.** Investment projects are always connected with the risk and the criteria of selection of investment projects depend in the majority of cases on the level of risk. Therefore it is necessary to use the statistical and financial methods to evaluate the investment projects that imply the calculation and the analyses of some indicators that will allow to emphasize the size, structure, dynamics and the efficiency of using the investment resources. The specified methods should satisfy the informational needs of a wide range of users as well as supply relevant data to set a basis for polices and to take decisions at micro and macroeconomic level.*

Key words: the capital commitment; the investment pay-back; the net present value; the index of the investments profitability; the internal pay off.

■

The substantiation of the specific decisions concerning the investment activities is based, especially, on the valuation and comparison of the investment volume and of the future advantages offered by the investment project.

Because of the fact that the processes and the phenomena from the investment field are influenced by the implications of the time factor, it is necessary to valuate dynamically the parameters of the investment projects (the investment value, the project incomes and costs, the profit or the net cash flow etc.).

The dynamic valuation of the effort and effect indicators within the analysis of the economic efficiency provided by the investment projects has a significant relevance, when the value indicators defining the investment activity involve an unfolding, an evolution in time and consists in re-calculation of the investment parameters, their

presentation depending on the reference chosen moment, an operation that requires the use of the up-dating procedures. So, the up-dating is a specific method for the dynamic valuation of the investments economic efficiency.

The use of the up-dating technique gives the possibility to calculate certain adequate dynamic indicators that allow to express and estimate the economic efficiency of the investments.

1. The capital commitment

This indicator expresses the initial total costs of the investments for building the projected production capacities and the ulterior costs for commissioning, for their operation minus the redemption expressed in the present value for a certain reference moment, usually, at the moment of beginning the investment works (t_0). In the

practical activity, this indicator is named also *engaged capital*, and in the methodologies of valuating the investments efficiency used by certain financial-banking bodies it is named *up-dated total costs*. The time horizon for calculation of the engaged capital is (d+D), namely the duration of executing the investments works (d) and the duration of efficient operation for the investment objective (D). Therefore, the capital commitment is calculated according to the relationship (Stoian, Ene Nedea, 2002, p. 92):

$$K_t^l = I_t^l + C_t^l = \sum_{i=1}^{d+D} \frac{I_t + C_t}{(1+r)^i} \quad (1)$$

where:

K_t^l – the total capital commitment up-dated at the moment t_0 ;

I_t^l – the total investments up-dated at the moment t_0 ;

C_t^l – total operation costs up-dated at the moment t_0 ;

I_t – annual investments;

C_t – annual operation costs;

r – up-dating rate.

Generally, it is aimed to minimize the capital commitment at a given level of the production capacity, total incomes and total economic advantages. This indicators is recommended to be used as criterion for choosing the variants of the investment projects for fields of public interest financed by the State budget.

2. The Payback Period (PP)

The payback period of the investments is a segment of the useful life concerning the operation of the capacities provided through investments. The payback period of the investment represents the period of time that begins at the moment of commissioning the capacities, installations and production equipment, when the cumulated sum of the provided economic advantages equals the volume of the investments allocated in the project. In a dynamic approach one calculates the updated term of the investment payback, starting from the equality:

$$\sum_{t=1}^d \frac{I_t}{(1+r)^t} = \sum_{t=d+1}^{d+T} \frac{P_t}{(1+r)^t} \quad (2)$$

This one is the variant when the calculations are done from the beginning of the investment

works on the assumption that the annual profits P_t are generated only after commissioning the objective; therefore, during the execution period are partially put in exploitation certain production capacities that will generate certain advantages.

If the calculations are done at the moment of putting the objective into operation, then we have:

$$\sum_{t=1}^d I_t (1+r)^{d-t+1} = \sum_{t=1}^T \frac{P_t}{(1+r)^t} \quad (3)$$

where T – term of payback the investments.

If we accept a simplifying assumption such as the volume of the economic advantages expressed by the annual profit (P_t) is a *constant quantity*, i.e. it will the same for all the years of project operation:

$$\sum_{t=1}^d \frac{I_t}{(1+r)^t} = P_t * \frac{(1+r)^T - 1}{r(1+r)^T (1+r)^d}$$

$$r(1+r)^d * I_t^l * (1+r)^T = P_t (1+r)^T - P_t$$

and then by applying the logarithm we get:

$$T = \frac{\log P_t - \log(P_t - I_t^l (1+r)^d r)}{\log(1+r)} \quad (4)$$

If more variants of the investments projects are compared, then is preferable the project providing a minimum payback period.

The use of the payback term analysis in the economic and financial valuation of the investment decision is considered as a way to take into account the risk of the projected investments. By giving the priority to the more advantageous projects, characterized by short payback periods, it is accepted the conclusion that the future incomes and economic advantages will not be affected by incertitude and risk at the same scale as in case of variants with larger payback periods.

Another argument in the favor of this method is represented by the fact that the companies confronted with a cash shortage will give more importance to the rapid recovering of the invested funds and, respectively, to the possibility to satisfy other necessities.

Although this method gives, really, an indication concerning the level of the project liquidity, it has also certain deficiencies. It is known that the expansion project and those related to innovations and modernizing as well are implying a planning

on long term. And this method does not take into account the cash flows ulterior to the payback term and, therefore, can lead to selecting investment projects less profitable. In spite of the fact that the method of investment payback period is easy for use, knowing its disadvantages, it is recommended that, during the taking the decision about the investment, certain valuation criteria have to be used.

3. The net present value (VAN)

This indicator, being a fundamental criterion for the economic and financial valuation of the investment projects, characterizes, as absolute value, the advantage gain of an investment project, the investor's gain for the invested capital expressed as cash-flow in present value.

Defined in comparison with the cash-flow, the VAN provided the scale of comparison between the total present cash-flow generated during the life of the project (CF_t^I) and the total investment effort provided by that project, expressed in present value (I_t^I) (Stancu, 1997, p. 291).

VAN is an integral indicator of investment efficiency and strikes off the register the total surplus of cash-flow in comparison with the investment cost. The reference moment for the NPV calculation is that of the works start (Cistelecan, 2002, p. 319):

$$VAN = CF_t^I - I_t^I = \sum_{t=1}^{d+D} \frac{CF_t}{(1+r)^t} - \sum_{t=1}^d \frac{I_t}{(1+r)^t} \quad (5)$$

Defined by means of the net value, NPV expresses the algebraic sum of the present net value upon the horizon of time (d+D). By annual net value VN it is understood the difference between the annual volume of incomes (receipts) generated during the all operating period of time V_t and the volume of the total annual costs (investments and operation in the year t ($K_t=I_t+C_t$).

$$VN = V_t - (I_t + C_t) = V_t - K_t$$

and respectively:

$$VAN = \sum_{t=1}^{d+D} \frac{VN_t}{(1+r)^t} \quad (6)$$

According to the criterion VAN, must be accepted the projects and the project variants for which $VAN > 0$. This fact means that the corresponding project has the capacity to reimburse

during the economic life (D) the invested capital or, in other words, has the capacity to generate an income flow in excess, providing a certain volume of net value.

A project with $VAN < 0$ has to be rejected because its rentability will be smaller than the updating rate.

This indicator has, also, certain deficiencies:

- VAN allows us to see if the investment project is or is not profitable, but does not strike off the register the relative importance, that comparative one of the project advantage;
- VAN does not take into account the size of the payback term;
- VAN depends very much on the size of the updating rate (r) and in this case it is very important that this size must be fixed depending on its main components (the capital cost, the risk prime, the inflation prime).

Nevertheless, VAN remains one of the best criteria for selecting the investment projects. But, in order to exclude the risk of certain incorrect decisions it is recommended the analysis of this indicator together with other ones, namely the profitability index, the internal rate of return, the updated term of the investment collection.

4. The profitability index (PI)

Usually, the profitability index is used together with the VAN indicator. During the calculation and the analysis of the investment project one uses this index when the investment projects or the projects variants are differentiated between them through the necessary investment effort, because this index takes into account the size of the investments, i.e. the necessary investment costs, element that is not provided when we use the VAN indicator. The profitability index is calculated according to the relationship (Cistelecan, 2002, p. 333):

$$PI = \frac{CF_t^I}{I_t^I} = \frac{\sum_{t=d+1}^{d+D} \frac{CF_t}{(1+r)^t}}{\sum_{t=1}^d \frac{I_t}{(1+r)^t}} \quad (7)$$

An independent investment project must be accepted only if $PI > 1$ and has to be rejected if $PI < 1$. The project having $PI = 1$ (same as when $VAN = 0$) will provide the recovering of the investment expenditure only, without generating some profit. The more PI is the more profitable are the projects.

5. The internal rate of return (IRR)

This is defined as the updating rate that provided an equality between the updated value of the net cash-flow incomes and the updated value of the investment costs. It results that *RIR* represents that discounting rate for which the *VAN* value is equal with zero (Covalev, 2003, p. 59).

$$RIR = r, \text{ where } VAN = f(r) = 0$$

The internal rate of return is one of the most significant indicators for the efficiency of the investments project, because it expresses the investment capacity to generate profit during the all operating period of the objective by fixing its economic power.

The *RIR* value can be calculated through the *interpolating method* (Stoian, 2002, p. 98). The application of this method implies to find such two updating rates that for a rate r_{\min} results an updated positive net value (*VAN+*), and for r_{\max} an updated negative net value (*VAN-*). The values of the *VAN* level for these two updating rates are placed within a rectangular system of coordinates, expressing on X-axis various updating rates, and on Y-axis the progress of the updated net value.

The difference between r_{\max} and r_{\min} must not exceed 5 percentage points. Otherwise, by using a larger distance an error will be generated, i.e. *RIR* will be larger than the real value. Given the fact that the differences between r_{\max} and r_{\min} are small enough, we can take into consideration the existence of a linear dependence between *VAN* and the updating rate (*r*). Therefore, for finding with exactness the *RIR* one uses the relationship:

$$RIR = r_{\min} + (r_{\max} - r_{\min}) \frac{VAN(+)}{VAN(+) + VAN(-)} \quad (8)$$

When we compare alternatives of investment projects or project variants, characterized through *VAN* close values the priority is given to the project (variant) having a maxim *RIR* (Covalev, 2003, p. 60).

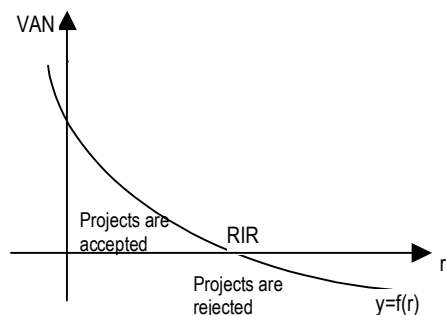


Figure 1. The updated net value in case of a classic investment project

The resulted *RIR* value is compared frequently with the interests rate of credits r' . Depending on the capital taken as an loan, *RIR* represents the maximum rate of the interest for which is possible the capital loan for financing the investment in conditions of profitability. For an interest rate $r' < RIR$, the project will have a $VAN > 0$ and, consequently, the project will be accepted. For an interest rate $> RIR$, the project will be unacceptable, because it will generate losses for a $VAN < 0$. In the case of $= RIR$ the capital taken as a loan does not bring any gain. As a conclusion, there are accepted only the projects characterized by a *RIR* larger than the cost of the capital.

Conclusions

In the analysis of the economic efficiency concerning the investment projects, a significant importance has the number of the analyzed projects, either a sole project or a set of investment portfolio when there are independent projects and projects that exclude themselves reciprocally is in discussion. The analysis of a sole project is a particular case of a portfolio of investment projects when the criteria *VAN*, *RIR* and *PI* leads to the same conclusion concerning the acceptance or the rejection of the investment project. This happens because between these indicators there are relationships of interdependence:

if $VAN > 0$ it is obvious that $RIR >$ and $PI > 1$

if $VAN < 0$ then also $RIR <$ and $PI < 1$

if $VAN = 0$ then also $RIR =$ and $PI = 1$

More frequently the manager has to make a selection between two or more competitive investment projects and in this case there are situations when the valuation methods used give contradictory results. Such cases happen when the distribution in time for the incomes flows and costs of the projects are different; the projects vary depending on the invested capitals; the life duration of the projects is different. In the analysis of identical project as size of the capital involved, it is recommended to take into account the rate of re-investing the annual flows of incomes and to use an identical rate of updating.

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The Consolidation of Banking Supervision in the Context of a Pan European Banking System

■

Teodora Barbu

Ph.D. Professor

Georgeta Vintilă

Ph.D. Professor

Academy of Economic Studies, Bucharest

Abstract. *The diversity of national banking systems in the European banking system and the absence of consolidated supervision creates the premises for a series of interrogations whose essence is the same: Is it possible to discuss about a Pan European Banking System? The starting point in answering this question was the efforts to create a single banking market, which took place in 1973-1999, and the impact of integration on the European Banking Industry. Among the most representative aspects, it must be emphasized the necessity of consolidating banking supervision at an European level, considering that the International Banking Community studies the problematic of banking regulations at a global level. The two dimensions of the prudential and European bank supervision device – the geographic and the institutional – demand the creation of a structural reform in order to ensure the functioning of a Pan European system of banking supervision and regulations.*

The considerations on the Consolidation of European Banking Supervision draws into discussion the Financial Supervision Authority which has generalized as an applicable model in numerous European countries and has been mentioned as an alternative of Pan European banking supervision.

In the process of the integration of the banking sector, the Basel II Accord represents an opportunity in reaching a convergence of national regulations and practices in matters of risk management, considering that these actions are in line with the preoccupations of realizing a Pan European banking system. Thus, the creation of Pan European banking system involves actions in more directions: legal, institutional, operational meant to ensure the consolidation of banking supervision.

Key words: consolidation; banking supervision; Pan European banking system; banking harmonization; Basel II Accord.

■

The European Financial Integration is a subject debated, emphasizing the component of capital mobility and integration of capital markets and less on the banking system component.

As opposed to the European capital markets which have an increased degree of integration and

registered favorable evolutions in the field of harmonization legislation, stock market products, capital market instruments, mergers between stock exchanges (EURONEXT 3 and EURONEXT 5), banking systems are in the paradox situation of presenting particularities at a national level, such

as consumer culture and the preferences of domestic customers, the costs of banking services and products, the national regulations, the institution typology. In consequence, the following interrogation is justified: “Is a Pan European banking system possible?” If the answer would be affirmative, then the next logical question would be: “Which will be the architecture of such a Pan European system?”

At the beginning of 2006 in the European Union there were approximately 8300 commercial banks and over 30,000 specialized credit institutions, quantitative aspects which may constitute an argument in the competition with USA’s banking system. What chances have these banking entities stand, considering that some of them own a market share of under 0,01%? What is going to be their option for banking universality or specializing, and how will *the intensely fragmented character of banking supervision* will be eliminated, how costs, interests rates practiced by banks shall be aligned are challenges for the European Banking.

A reality that can slow down the process of financial integration, the diversity of national banking systems and the lack of a consolidated supervision constitutes a preoccupation at the level of European authorities, considering that this national aspect of the European banking systems is in opposition with the unique monetary policy undertaken by European System of Central Banks.

Stages of harmonization of European banking systems

The process of integration of banking systems of member states of the European Union and the creation of a *Pan European banking system* needs to bring in discussion the efforts to create a unique banking market which can be highlighted through the following *legal and historical guide marks*:

- 1973: the directive regarding the abolishing of restrictions regarding the freedom of establishing and ensuring of services in the domain of banking activities and other financial institutions. These regulations were referring to the staff of financial-banking institutions;

- 1977: The First Banking Directive named “The Coordination of Legislating, Regulations and Relative Administrative Provisions at the Creating and Monitoring of Credit Institutions” gradually introduced the principle of control by the origin country. The document was about harmonizing

banks in Europe, without offering suggestions regarding the way this issue shall be done, which rendered the harmonization difficult in this moment;

- 1986 – “The Single European Act” acknowledged the harmonization of markets as being difficult and provisioned the elimination of control over capital;

- 1989 – As a response to the 1986 document the 2nd Banking Directive was adopted, through which specific recommendations were established in order to create a single banking market within the European Union. The directive has introduced the principle of mutual recognizing, which replaced the concept of harmonization with the one of “European business passport”. Thus, banks and financial institutions acknowledged in the member states are capable of operating and offering services in any other member state, without the need of a special authorization of the host country. The 2nd Banking Directive has also made possible the creation of banking conglomerates, respectively the orientation towards *universal banks*, as compared to specialized banks in the US.

Presently, the European economic climate is totally changed, thanks to globalization, deregulation, disintermediation, geographic diversity and advanced technology, which plays an important role in the process of mergers and acquisitions. The reasons for which in the European Union strategies of mergers and acquisitions were adopted were that of deteriorated performances, defensive managerial reasons as compared to the synergy effects traditionally envisioned through mergers.

The European Union needs more operations of this type, and although the banking system has reached a high degree of financial integration, additional progress is necessary. The difficulties in this field are manifested due to the differences between fiscal and legal regulations, as well as different standards for banking infrastructure and products. Despite these obstacles, European banking integration may cite the largest trans-border transaction, the taking over of HVB by Unicredit Bank Italy.

Regarding *the impact of European Integration on banking systems*, three main features of the *banking institutions* stand out, on which the integration didn’t have considerable effects:

- Manifestation of banking risks, and especially of the systematic one, which leads to an

emphasized regulation and supervision, but being strongly fragmented.

- Manifestation of asymmetry of information due to the traditional activities of banks of issuing credits.

- The Customers' commitment towards banking services and institutions, which demonstrates that the customer's commitment to banking institutions are manifested according to the easy access to banking services and less due to reasons of profitability and efficiency of banking activities.

These features favor the development of domestic banking markets in increasing the process of concentration through mergers and financial absorptions inside the country and less outside its borders. In this condition, a Pan European banking system is harder to design. This idea is sustained by the results of surveys undertaken by specialized institutions which proved that relationships between customers and banks are long term lasting, comparing to other services, and competition is less intense. Thus, if we ask that a Pan European banking system is possible, the answer is negative, as most of the customers are happy with services offered by the banks in their countries and they prefer the domestic banks, and they do not want to appreciate the emergence of Pan European banks.

A study conducted by KPMG, based on the opinions of 2300 bank customers from 10 countries (France, Germany, Italy, Spain, Netherlands, Sweden, United Kingdom, Czech Republic, Poland and Switzerland), highlighted the following situations:

- Most of the consumers don't want to create a Pan European banking system;

- Among the customers, there isn't a good knowledge of foreign banks (only half can name a foreign bank, Deutsche Bank being representative for Germany and HSBC for UK);

- 78% of the customers trust the services offered by their banks, being very satisfied;

- When asked which are the 3 main characteristics of domestic banks, the customers emphasized: low costs, good "internet banking", competitive interest rates.

The process of European integration has brought, ever since its debut, a new perspective for European Banking Industry, analysts expecting that banks and processes of financial intermediation to become more uniform and in the field of competition to register essential

modifications, as well as in banking supervision and regulation.

Regarding these expectations, the evolutions of banking systems in European countries highlighted a series of characteristics which differentiate European banking industry of that of the United States. Thus, while in the United States of America the process of local banking concentration is decreasing, in Europe, mergers and acquisitions between commercial banks are increasing, which configures a certain market structure, with effects on the mechanisms of transmitting the monetary policy. The tendency of domestic, national consolidation makes that those banks that own an insignificant market share to orient to an international consolidation. Referring to the activity of banking supervision, in a traditional way, this was oriented to the quality of balance assets, minimum capital requirements and portfolio structure. This approach, however, is no longer adequate when banks are active players on the capital market and losses incurred from transactions with portfolio owned titles can quickly lead them to insolvability situations.

In the European Monetary Union the survival of banks which face market risk depends on the capacity of central banks to provide liquidities to the financial system and the banking one in particular. From this point of view, the Central European Bank, as opposed to the Federal Reserve System, is more focused on the problem of risk and providing liquidities to banks.

European bank supervision must be centralized, because the actual decentralization of supervision brings about a series of risks. A series of events such as Pan European emergence of universal banks and the new competitive climate in the banking field could cause that the national survival be confronted with serious problems.

Such a consolidation is the more necessary as the international financial community studies the problematic of a *world wide banking regulations*, a paradox being that this doesn't happen in the European Union.

The consolidation of banking supervision

At the present time, the prudential device and European banking supervision has a strong decentralized character, as opposed to the unique monetary policy in the Euro area thanks to the 2 definitive dimensions: *geographic* and *institutional*.

From a geographical point of view, in the field of banking supervision the principle of *subsidizing* is functioning, which means that national authorities of banking supervision own the competencies in the field of banking control.

Geographic separation of the prudential control of banks resists and still resists the process of monetary integration, considering that the provisions of the Maastricht Treaty have only marginally approached this aspect, so that if the European deciders won't rule for decentralization of banking supervision, the state of things risks to go on for a long period of time. As an argument in favour of such a state, *the European market of services is not homogenous integrated* in regulations and accounting rules.

Another fundamental dimension of European banking supervision is represented by *institutional anchoring*, principle dating from the 1930's and reconfirmed after 1945. On the basis of this institutional segmentation, the supervision of credit institutions implies one or more authorities of national supervision.

In this way, the European prudential device is double segmented, at the institutional level and on the international level, which emphasizes *the profound dispersed character of banking supervision*. To confront such a reality, the solution is the way of the reform, on the basis of inter and intra-national cooperation.

The necessity of consolidation of banking supervision arises much more with the manifestation of a certain ambiguity which creates uncertainties in the systemic crisis in case of the European Monetary Union. Thus, in 2000 were formulated a series of opinions regarding the impact of an asymmetric shock in the European Monetary Union area. If a banking crisis would affect the entire Euro area or in the hypothetical situation that a national banking system would register major losses, which would be the margin for maneuver of member states? The action capacity of those states would remain limited, because The Stability Pact conditions the awarding of public aid considering several criteria, and on the other hand, the resort to a monetary policy based on the general decrease of the interest rate in the Euro area doesn't appear to be applicable. If a national central bank of a country affected by banking crisis awards additional liquidities to banks in the system, this assistance in liquidities is, according to regulations, incompatible with the

centralized monetary policy of the European Central Bank.

Facing this state of things, the obvious solution is undergoing a *structural reform*. The ones responsible with European banking regulation presents a multitude of arguments in favour of maintaining decentralized control, which creates a lot of shadow areas, amongst other things compromising European banking and financial security. In other words: What would be the price for ensuring European banking security? is a question whose answer would be to ensure the functioning of a Pan European supervision and banking regulation system. This solution seems to be more appropriate in the present conditions of financial systems dynamic, financial globalization and suppressing the frontiers between institutions and markets, which needs a ever increasing cooperation between control authorities.

Considerations on the accelerated consolidation of European banking supervision brought under discussion the model of the *Financial Supervision Authority*, as a regulating and supervision institution. Referring to this subject, it must be mentioned that there are three *models for organizing banking supervision*:

- a. the model of the Financial Supervision Authority or its equivalent;
- b. model of the Central Bank;
- c. model of the Ministry of Finance.

a. *The model of the Authority of Financial Supervision*. It is applicable in the Scandinavian countries (Denmark, Sweden, and Finland) but also in Belgium, France, Germany, Luxemburg and Great Britain, and it supposes that the prerogatives in the field of banking supervision to be drawn out of the jurisdiction of the Central Bank and to be handed out to an institution with the ability to conduct a consolidated supervision for the whole financial market. This first model presents considerable differences from one country to another, due to the competencies field, respectively to the area of containment in the supervision activity.

b. *Model of the Central Bank*, more homogenous than the previous, shows that banks have the complete responsibility in what concerns the supervision of banking system. Within this model two groups can be distinguished: the countries in Southern Europe and the Low Countries. In Spain, Portugal, Italy and Greece, the central bank plays an essential role in the

supervision of the banking system, and the prerogatives of this institution are complete. In the Low Countries, the prudential device has the merit of being simple; the central bank plays a role in supervising, solving bank crisis and administrating the mechanism of guaranteeing deposits.

c. *Model of the Ministry of Finance*. This institution fulfills an unequal and indirect role, excepting Austria, where the Ministry of Finance is the main authority engaged in supervising the banking system and solving crisis.

In consolidating banking supervision in Europe, what model should the institutions in the field should adopt? Regarding this subject, 4 scenarios were considered:

- *Scenario 1: The European Central Bank* may run for the position of supervising institution of the European banking sector. Such a solution would be valid in case the national banks wouldn't have direct and indirect attributions in the prudential control. The pro of the scenario is the high credibility of the European Central Bank in ensuring monetary stability, and the con is the possible erosion of credibility in case of manifestation of banking crisis.

- *Scenario 2: the distribution in the member states of the model of the Authority of Financial Supervision*, which means the withdrawal of the control prerogatives from the field of action of central banks.

- *Scenario 3: the adopting for the entire Euro area of the model of the Financial Supervision Authority*, respectively the creation of a *mega supervisor of European financial system*. This more effective solution wouldn't assume mergers between European regulating authorities but regrouping within the same field of different entities.

- *Scenario 4: the creation of an European Bank Commission* whose functioning depends on the institutional relationships with the European Central Bank and the European Commission (and as reality proves it, the solution adopted was the latter).

Although European banking supervision isn't consolidated, however, on an international level the activities carried on by some *Pan European professional organisms and associations*, of which we distinguish:

- The European Committee for Banking Standards;

- The European Commission for Banking Supervision;

- European Payments Council.

The European Committee for Banking Standards is a professional organism which represents the interests of European banks in member states of the European Union. It was created in 1992, through the association of three entities: The European Banking Federation, the European Association of Co-operative Banks, The European Savings Banks Group, with the mission of developing banking standards. Of the three organizations making up the European Committee for Banking Standards, The European Banking Federation stands out, representing the interests of over 4,500 banks from 27 countries and with an asset value of 20 billion Euros, and 2.3 million employees. From the moment of its creation, in 1960, till now, it has constantly maintained the dialogue with European institutions. In 2006 it had 29 members, with an additional 9, among them was Romania (together with Croatia, Monaco, Turkey, Russia, Andorra).

The European Commission for Banking Supervision has as main prerogative: the promotion of convergent supervision practices and the international implementation of the new framework of capital adequacy, as well as the intensifying of cooperation with supervision organisms from other sectors of the European Union and with banking supervision organisms outside the European Union.

European Payments Council has the task to coordinate European banking industry in the payments field. It promoted the creation of SEPA (Single Euro Payments Area), in 2002, to act as an internal unique market, in which citizens and economic players to do transactions easily and without costs.

An important aspect is the fact that in December 2005, *The European Committee has published the document "The Document of financial services for 2005-2010"*. The matters discussed in the document revolve around the following points of interests:

- The consolidation of progress registered in banking activity and ensuring the effective application of existent rules;

- The application of the principles of the "good law" project for all future initiatives;

- The reducing of convergence in the field of controlling;

- The enhancement of competition between service providers especially on the retail market;

- The increase of European influence on financial markets around the world.

With respect to these approaches, the French banks have presented a series of remarks, of which we mention the following:

- strategies which refer to retail markets should be active;
- fragmentation of banking supervision represents a significant obstacle in the field of European banking market integration, generating distortions in the competition, and the “Document” sets out to provide a real consolidated supervision;
- there are no references regarding the competitiveness of European banks as compared to foreign competitors;
- the problems regarding the techniques of organizing are totally eluded (for example the application of law from the origin or receiving country, mutual recognition etc.), even if it represents an essential aspect of integration in the unique banking market.

In 2006, the main concerns of the European Commission were:

- directives on the consumer credit, through establishing rules in order to eliminate competition distortions between creditors, encouraging trans border activity;
- the enforcement of dispositions in the crediting activity, such as: the reducing of the 14 days analysis interval of the file or excluding all non-guaranteed real estate credits from the field of Directive enforcement;
- the creation of a *European real estate credit market*. The French Bank Federation has issued the proposal for a European real estate market. Referring to this aspect, it is necessary for the service providers to undergo efforts to propose services outside the national space, in this framework being compulsory to harmonize calculus methods of the annual effective global tax and of its compounding elements, so that there is the possibility of anticipated reimbursements (in the European Union the real estate credit makes up more than 4,000 billion Euros).

On the 1st of December 2005 the European Commission has presented a proposal for *Directive on payment services* within the European market, so that a European payment area would be created. Numerous practices, already existing in France, were taken over and implemented in this directive: the information in advance on tariffs, the irrevocability of payments, the limiting of the responsibilities of card owners, the absence of expenses at the conclusion of the credit contract.

The banking concerns regarding this subject have in mind the maintaining of a satisfying security level for the customers and the existence of rules healthy competition between banking entities.

The European banking industry needs a homogenous and stable European juridical framework in order to constitute the SEPA payments means (Single Euro Payment Area). As a consequence, in 2006, banks started to develop informatics systems in order to propose Pan European payment means, for 2008-2010.

Considering that in the process of integrating the European banking sector, an important step was the Basel II Accord, and in the following some fundamentals of this important regulation will be presented. It has an impact on the leveling of banking approaches in matters of risk, of which operation risk has an important role.

The impact of Basel II Accord on banking harmonization

The Basel II Accord has a significant impact on the alignment of banking practices in the field of risk management in the European banking system, considering the challenges it has brought in banking activity. The considerable increase in operational risk in the financial-banking industry has brought special concerns at the level of supervision institutions, with the purpose of introducing a discipline which ensures a proper management of this type of risk. Such approaches constitute the content of the document published by Basel Committee in June 2004 “International Convergence of Capital Measurements and Capital Standards”. Through this document, the *Basel Committee* intended to fulfill the following *objectives*:

- the increase of responsibility level of financial intermediaries through adopting the principle according to: “The degree of freedom of banks is correlated with the quality of risk management and with the efficiency of control”;
- the development at the level of banking systems of the capacity to adequate the capital through a proper correlation with the actual profile of risk at the level of each institution;
- the reducing of the operation risk through the development of a mechanism of capital allocation to a single business unit and by identifying each one’s contribution to the risk.

These objectives are realized through the following three directions: the introduction of the

specific capital need relevant to the operation risk (1), the reconsidering of the role played by national authorities in the activity of supervising (2) and the use of the market discipline in a more effective way (3).

Through the 3rd direction, the reducing of the operation risk is intended, which from the Basel II Accord point of view can be done using 2 strategies:

a) the creation of methods for the calculus and measurement of operational risk, respectively the minimum capital requirement;

b) the creation of a set of demands and recommendations regarding organizing the activity within the bank.

The Accord also proposes to the bank two alternatives referring to the methods for determining the minimum capital requirement: standard top down methods (the standardized approach and the method of the primary indicator); advanced measurement approaches (AMA). Regarding to the methods proposed, the Basel Committee manifested the tendency to recommend to the banks the use of advanced methods.

The instruments regarding the creation of recommendations in the field of organizing control activities in banks are mainly the development of an internal control system of reporting. Through the set of formulated recommendations, the Basel Committee has intended the development, at the banking institutions level, of management techniques and functional structures specific to the operation risk.

In face of this challenging modifications for the activity of banking institutions, difficulties referring to methods of quantifying the risk have naturally appeared and difficulties regarding the application of activity restructuring rules and procedures. This is the reason why, in the specialty literature, a lot of interrogations were formulated having as main subject the operational risk.

The development of the general framework for measuring and quantification of operation risk needs a systematic effort from banking institutions, regarding collecting data, adopting an analytical framework which would allow the modification of risk data in exposure to operation risk, and the reporting of risk exposures. As institutions compute the minimum capital requirements for themselves on the basis of internal procedures, the necessity for analytical requirements and elements is obvious, in order to fundament the general framework.

For the Romanian banking system, the application of the Basel II Accord represents an undertaking initiated by the monetary authority ever since 2003. Thus, we have Norm no.17 of the National Bank of Romania, which regulates the organizing and the executing of internal audit activity of credit institutions, with the purpose of identifying risk profile, risk level and appropriate strategy. We can also mention Norm no. 5/2004 regarding the managing the capital of credit institutions, through the inclusion of market risk and credit risk in the demand for capital managing.

In the *efforts to implement the provisions of the New Accord in the Romanian banking system*, four stages have been established, as following:

a) the initiation by The National Bank of Romania of dialogue and information exchange in the banking system (May-November 2005);

b) the development of the means to create the supervision of the banking sector according to the standards imposed by Basel II Accord (December 2005- May 2006);

c) the validation by The National Bank of Romania of internal rating models of credit institutions (June-October 2006);

d) the application of the provisions of the Accord in the banking sector (January 2007).

The final objective envisaged through the four stages regarded the qualitative improvement in the quantification methodology of capital requirements provisioned by the Basel II Accord, according to the volume of activity and the risk profile of every credit institution.

As an argument of the impact that Basel II has on the harmonization of practices and laws in the European countries, we can mention the *National Bank's of Romania efforts in the following directions*: the modernization of the legislative and regulation framework in view of the implementation of the new capital requirements (Directives 2000/2/CE and 93/6/CE) comprising the provisions referring to all categories of credit institutions in a single normative act; the development of instruments necessary for prudential supervision of credit institutions; the creation of validation guides of internal rating models of credit institutions; the adopting of the prudential reporting system of credit institutions.

So, as a component of European banking system, the Romanian banking system proves the existence of concerns at the regulating and supervision authority level, in order to harmonize the legislation

and in the same time for improving the quality of banking products and services.

At a European level, about the Basel II Accord, it is said that it represents an opportunity without precedent to level the practices of supervision in the European Union (as the president of The European Committee for Banking Supervision, Daniele Nouy says). Through the implementation of the provisions of Basel II Accord in the European banking industry, the principle of proportionality shall be used in the purpose to determine the minimum capital requirements. Modifications in the accounting framework will also take place, and the International Accounting Standards will be adopted for the European supervisors, these requirements creating an opportunity in reaching a regulation and practice convergence, in the context of the new paradigm created by Basel II.

The implementation of Basel II states that the effect will be more ample on the actual credit portfolio, which will determine an important reduction in the need for own funds of large institutions and a significant distortion of competition conditions between the large banks. The main interrogation which was formulated is: if there is the risk of distortion, does it reflect the will of large institutions to obtain a competition advantage through Basel II? In this case, has Europe a reason to follow a way that could waken its banking system, as compared to the large institutions of the USA, which are already players on the world market?

The evolution of smaller size credit institutions in Europe must orientate through multiple actions, in view of avoiding the need of own funds. The large credit institutions in Europe apply complicated computing techniques in order to determine the necessary amount of own funds. Thus, this situates them in the same position as

their American counterparts.

A series of interrogations formulated by European bankers at the workshop entitled: "Will small credit Institutes Survive Basel II". We mention the following:

- how are the principles of ethical bank followed through the aims of Basel II?
- how will the depositors of credit cooperatives and Islamic banks, which present more likely the characteristics of mutual funds than banks, will be affected by Basel II provisions?

In face of these challenges brought about by Basel II, the European banking institutions recognize that the convergence of practices and techniques for risk management is needed, in order to handle the new paradigm.

The divergences and interrogations brought about by Basel II Accord were centralized in 2006 by the *European Banking Federation*, which transmitted to the European Commission some points of view regarding the reporting activity and the necessity of discretion in these reports, and also requested that regulations in USA, Switzerland and Japan to be equally considered with the ones in Europe. Of the subjects found in the Document transmitted by the European Banking Federation, the following stand out:

- in case the risk and capital are managed in a centralized manner, at the banking group level, than the current limitations must not be applied to the exposure within the consolidated group;
- the credit derivatives must be supervised on the basis of rules which the European Commission is to create.

As an answer, the European Commission has transmitted to the European Committee for Banking Supervision a series of information about actual practices and analysis techniques of risk, establishing as a term for applying the Basel II provisions the end of 2007.

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Evolution of FDI Flows in the Integration Context

■

Alexandru Ionescu

Ph.D. Lecturer

Romanian-American University, Bucharest

***Abstract.** The following paper tries to emphasize the role played by the European integration process in Romania's FDI flows. We analyze the new factors which may determine the FDI flows and the importance of FDI inflows in the balance of payment. The information is supplied by ARIS – the Romanian Agency for Foreign direct investments and UNCTAD – World Investment Report 2006.*

Key words: foreign direct investment (FDI); area integration.

■

1. Integration process – costs and advantages

The collapse of the communist regime in Central and Eastern Europe, shortly followed by the first steps of the integration process within the European Union and NATO have been, to a great extent, influenced by the geo-political background. The setting of a connection between Romania's economy and the European Union complies with the general flow, with the area orientation and direction, and last but not least, with economic and politic interests.

The European Union supports the transition process that has been developing in the Central and Eastern Europe countries, and monitors the fulfillment, by the candidate countries, of well defined criteria set on the occasion of the European Council from Copenhagen held back in 1993.

The European Union integration process implies, for Romania, not only a series of advantages, but also costs at the economic and political level.

As concerns the political aspects, the integration direct impact shall be visible at the legislative level

as a sequence of having adopted the community “acquis”, modifications of the Constitution and issues related to the representation and participation in the European decision-making process. However, the indirect impact shall consist in the re-orientation of the foreign affairs policy, mainly of the commercial policy, and last but not least, in the appearance of new government policies that are compatible with the European requests. All the same, the integration process shall confer Romania new perspectives at the international negotiation level with reference to national interest problems that are being debated both at the European and the worldwide level, too.

As far as the economy is concerned, it will be the investment flows, first and foremost, that shall have a direct impact and that shall register an unprecedented boom. The basis for this trend is mainly the increase of Romania's credibility at the international level further to having adhered to NATO and to the European Union.

Secondly, the foreign trade liberalization and the enforcement of community regulations with reference to the competition domain shall have visible consequences on the business environment and background. Let us not forget, however, that any such economic launching and “opening” might imply risks, as well, although both the classical and the neo-classical theories assert that a nation’s welfare shall increase further to a no boundary trade policy, basically due to the statistic and dynamic effects of the economic development.

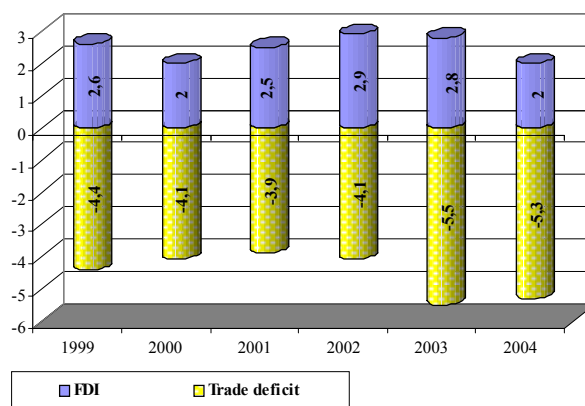
Thirdly, Romania’s economy shall benefit by access to European financing, so far materialized under the form of pre-adhering funds (PHARE, ISPA, SAPARD), financing that, effective the 1-st of January 2007, has acquired the form of structural funds. The agriculture domain shall also be supported and helped by implementing Community Agriculture Policy instruments.

As a conclusion, it can be freely asserted that any isolation scenario would cost Romania more than the so-called adhering approach.

The study achieved by the European Institute from Romania supports and is in favor, once again, of the necessity to adhere, mainly if the idea is approached from the point of view of the relationship between the foreign direct investments, on the one side, and the balance of payments, on the other side.

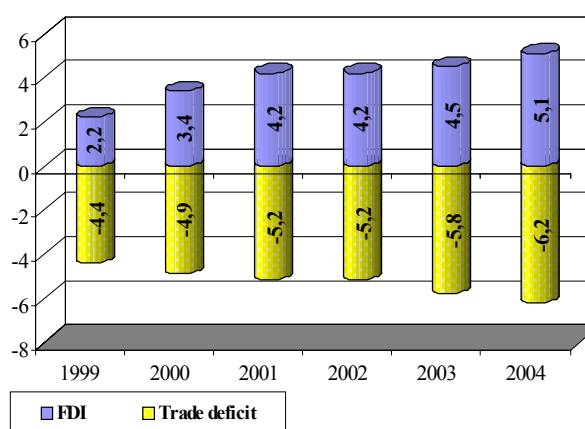
Foreign direct investments can play an extremely important part in the attempt to equilibrate the balance of payments by counteracting the trade balance deficit. The below charts introduce the two possible situations. The charts illustrate the isolation scenario case where the trade deficit financial degree further to foreign investments is more reduced than compared to the integrationist situation. Although as far as the integrationist scenario is concerned, a higher trade deficit shall be noticed, this one can be “covered” to a higher degree by perfectly sustainable means offered by the foreign direct investments and by the funds transferred from the European Union, whereas the net financing necessary fund, to be “covered” by loans, is much smaller in case of the integrationist scenario.

At a level of $-6,2\%$ for 2004 for the integrationist scenario, the current account deficit is still within sustainable limits. However, unlike the consolidated general budget deficit, the trade balance deficit came, at the end of 2005, near the upper limit of what can usually be considered as a sustainable level.



Source: European Institute from Romania.

Figure 1. Isolation scenario



Source: European Institute from Romania.

Figure 2. Integrationist scenario

As a conclusion, we can openly assert that, in case of Romania, the only viable solution that would grant it a durable economic development based on substantial in-comings from foreign direct investments would be the European Union integration. The integration would certainly assure all the premises that are necessary to attract foreign investment to Romania by adopting the community “acquis”.

Let us imagine a scenario in which Romania’s adhering process had been postponed; rest assured that Romania would have registered a dramatic decrease of any direct foreign investment in-coming.

1.1. Adhering process impact on investment flows

One of the implications of the process to adhere to the European Union is represented by the increase of the foreign direct investments as they represent a main problem around which gravitates the entire process to quantify the costs and benefits and advantages while taking into account the

present need of capital. Nevertheless, there should be underlined the enormous importance of foreign direct investments on sustaining and backing the technology international transfer by means of bringing in the necessary financing funds.

It is worth mentioning here that the investment flows coming from the European Union are presently 5 times higher they would have been if Romania had decided to remain outside the European Union. In case of the isolation scenario, the foreign direct investments would have registered much lower increase rates, if not even negative rates.

Several studies (Bevan et al., 2006) indicate that there has been a correlation between the notification related to the European Union expansion and the evolution of the direct foreign investment in-flow in the Central and East European countries. The announcement made by the Council from Essen in 1994 was followed by a significant increase of direct foreign investment in-flows in Hungary, the Czech Republic and Poland (Table 1). More than that, the decision reached by the European Union in 1997, namely to initiate negotiations with five of candidate countries, also led to increasing the direct foreign investment in-flows into these countries, thus stimulating and encouraging the economic development and the re-structuring process.

Table 1

	ISD in-flows (millions of USD)			ISD out-comings (millions of USD)		
	Hungary	The Czech Republic	Poland	Hungary	The Czech Republic	Poland
1990	2137	2101	4589	1644	206	305
2000	4654	4974	12873	1122	1014	794
2005	6699	10991	7724	1346	856	1455
Total	13490	18066	25186	4112	2076	2554

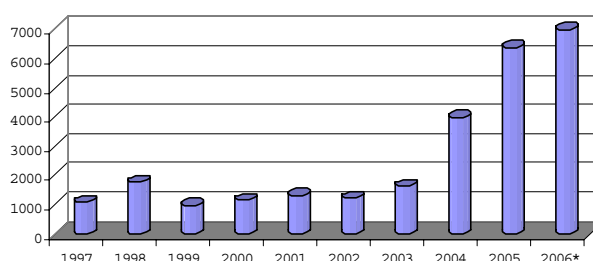
Source: World Investment Report 2006 – UNCTAD.

Experience has shown that, generally speaking, the adoption of the European norms has had benefic consequences on direct foreign investment in-flows, but, however, there existed negative situations, as well. Domains such as the market of financial bonds and the non-banking financial services have been proved not to have a positive impact, and, in case of the competition-related regulations, the impact has actually been negative.

Romania and Bulgaria are the main two destinations for foreign direct investments towards the South-East Europe in view of their integration into the European Union⁽¹⁾. The integration shall generate more and more favorable conditions for foreign investors. At the level of 2005, almost half

of the direct foreign investment in-flows made in the area were directed towards Romania.

Last year, the foreign investment flow for this area exceeded 8.6 billion Euros (figure 3), which is a new record as this represents around 5% of the area's Gross National Product. For the past five years, the investment flows marked a remarkable dynamics as the increase was almost 4 times and the total direct foreign investment volume for the area amounted almost 41 billion Euros. Were we to judge against the direct investment volume per inhabitant (in 2004 that was only 800 Euros/inhabitant), we could assert that the attracted investment volume continues to be rather low for the South-East of Europe.



Source: World Investment Report 2007 – UNCTAD.

Figure 3. FDI evolution in Romania (millions USD)

At the same time, the economic increase of 6.5% registered, in average, by the candidate countries proves to be superior to the increase registered by the new member countries.

The temporary information for the first three months of 2006 as it is offered by World Investment Report – 2006, indicates a total flow of the foreign direct investments of 6.3 billion Euros.

The direct foreign investment flows attracted by Romania can be placed at a satisfactory level, under the conditions in which the government party replacements have determined the foreign investors to act cautiously, especially during the first month of this year so as to allow them to analyze the macro-economic policy modifications.

At the same time, the foreign partners' abeyant approach has been obvious even previous to signing Romania's Adhering Treaty to the European Union, situation that has been registered with other countries that adhered to the European Union in 2004.

The Romanian Agency for Foreign Investments centralized the statistic data sent by the Area Development Agencies with reference to registering the significant impact investments on the economy, investments that benefit by the stipulations of Law No. 332/2001. During the

January – September 2006 period, there have been registered 616 projects, the value of the assumed investment amounting to 6.106 billion dollars, whereas the foreign contribution amounts to 4.290 billion dollars that means 70.25% of the general total. Till the month of August, there have been finalized 313 projects whose value amounts to 2.529 billion dollars.

According to the studies made by the Romanian Agency for Foreign Investments, the year 2006 was going to attract a direct foreign investment volume of more than 7.5 billion Euros. However, this information depends on a series of factors that are related to the risk factors of the investments to be made in Romania, factors that are presently at a re-evaluation stage such as the inflation rate and the economic development indices, and also the legislation stability. All these elements entail the long-term business environment predictability depending on the previously mentioned factors; thus the new economic and politic context has generated a series of other new factors that would be able to greatly influence the foreign investment in-flows from the area:

- dissipation of foreign direct investments by enlarging the European Union boundaries;
- credibility conferred by Romania's adhering to the European Union;
- under the integration conditions, the internal market dimensions do no longer represent an advantage/stimulating factor, which transfers the competition for ISD to the level of the work force costs and qualification, as well as to the level of corruption and fiscality.

The direct foreign investment in-flows shall register higher increase rates during 2007 – 2012. As a matter of fact, during the past years, the powerful economic development has been doubled by an unprecedented investment flow.

For the future, further to the integration, the direct foreign investment in-flows oriented towards the private domain might decrease, which shall

trigger massive imports towards the services domain based on the evolution registered on the labor market. The problems that have appeared to the balance of payment domain and to the trade balance domain shall be solved step by step further to the integration.

The cut-down of taxes, the stock account liberalization and the inflation target give birth to new monetary and fiscal problems. As for the present moment, these challenges are not supported by an adequate set of macro-economic policies. This triggers the increase of internal and external deficits, a state domain that dramatically lacks funds for major reforms in the social sector and for investments in infrastructure, and can generate a partial loss of the competition gains achieved along the past years.

To increase competition and to attract a higher volume of foreign direct investments which have become necessary to cover the current account increasing deficit, the authorities shall have to narrow down the set of economic policies, to make them credible and coherent, and, at the same time, to continue the structural reforms. But most of all, a main position within the agenda is taken by the reform related to the labor force market, to aligning the internal prices to the international ones, and last but not least, to the efforts to increase transparency and responsibility in the fight against corruption.

For the past few years, Romania has managed to attract significant amounts of funds and higher and higher foreign direct investments further to the political decision to limit the state's part in the economical domain and also further to registering relatively low costs with the labor force, so far.

Romania must strengthen the capacity to attract foreign direct investments for new projects which depend on a good background for investments and on the assurance of a quality and competitive labor force, within the restricted domain of the European Union's market regulations.

Note

- ⁽¹⁾ According to "World Investment Report 2006" - UNCTAD

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Foreign Exchange Risk in International Transactions



Florentina-Olivia Bălu

Candidate Ph.D. Assistant

Daniel Armeanu

Ph.D. Lecturer

Academy of Economic Studies, Bucharest

Abstract. *Every international business is affected by the ever-changing value of the currencies implied in contracts. While many of us consider this unpredictability a nuisance, the volatility of currencies around the world can mean the difference between success and failure for many exporters/importers. Exchange rates between one currency and another can change dramatically in a short period of time, leaving the unprepared business exposed to potentially crippling losses. The efficient management of this risk is essential for the survival of a company and any business that is exposed to such a risk should ensure that it is fully prepared to manage it. Old standbys and recent breakthroughs in the area of financial risk management can remove much of the risk from currency rate movements. The range of such products is huge, with increasingly sophisticated techniques constantly being added. Among the most modern methods for managing exchange risk there are four major classes of derivative products like: forwards, futures, options, and swaps. Beyond the four main types of risk management instruments, there are a number of other products including “swaptions” (options on swaps); avenging options; yield curve swaps; futures on spreads; and options on portfolios. Sophisticated mathematical tools and high-speed computers are needed to calculate the price of these instruments and to determine their overall effect on the company.*

In this article we will focus on forward and futures contracts for managing foreign exchange risk. A forward is a contract to buy or sell currency at an agreed upon exchange rate at a specific date in the future. Futures are similar to forwards except that they're traded on exchanges which specify settlement dates. Also we make some recommendations related to the foreign exchange risk-management practices that are useful for companies involved in international trade and for financial institutions interested in providing hedging products to these companies.

Key words: foreign exchange risk; hedging; international trade; risk management; forward and future contracts.



1. The foreign exchange risk in international transactions

The variety of the international transactions and the individuals engaged in their development determine the risk to be a permanent constancy that cannot be ignored at all. Under the conditions of passing to an economy based on liberal, self-regulation and competition principles, the matter of having knowledge,

calculating, preventing the risk and modeling it acquires a special importance and signification.

Generally, the economic phenomena and processes, and especially those referring to the foreign trade are aleatory processes, are subject to hazard and risks. It is what Nicolo Machiavelli once

ascertained: “hazard governs more than half of our actions and we lead the rest”. Indeed, the major themes of the beginning of the millenium, the risks are strongly anchored in modernity, expressing multiple aspects of the economic activities more striking in the business world and especially of the international economic relationships. Therefore, any activity presumes a risk. The risk is permanent and accompanies like an umbrella the business of a company and it occurs or not depending on the created conditions.

The evolution of the world economy at the beginning of this millenium and especially the present evolution of Romania determines a careful policy of risk measurement, in order to obtain acceptable profits in the future.

The participants to the international economic exchanges are confronted with a variety of risks that can negatively affect their activity. Among these, “two categories of more important risks can appear during the international financial transactions: on one side, the risk of the interest rate characteristic to the financial transactions and it becomes more accentuated at the same time with the increase of the rates volatility during the 80’s. On the other side, the foreign exchange risk, much more specific to the international financial relationships and which increased at the same time with the appearance of the floating rates in 1973” (Bouët, Dyoytm, 1993, p. 47).

The foreign exchange risk is the exposure in a certain currency, multiplied with the variation in time of the foreign exchange. One of the fundamental issue in this field is the imprecision of any measurement of risk, associated with a complex of possibilities and probabilities caused by the difficulties in predicting the evolution of the foreign exchange rates (Nițu, 2000, p. 55).

The foreign exchange risk for the exporters appears in the situation when, on the payment day, the transaction currency – the contract currency – has a buying power lower than in the moment of concluding the contract, therefore the contract currency has suffered a depreciation.

The foreign exchange risk for the importers appears in the situation when, on the payment day, the transaction currency has a buying power higher than in the moment of concluding the contract.

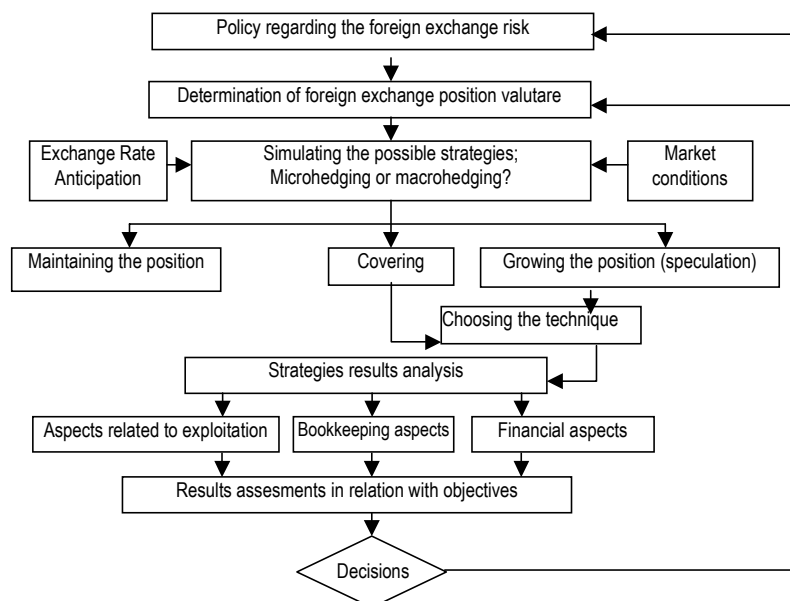
The internationalization of the economic life, the competition among nations for an increasing proportion in the international trade, the dramatic structural changes in the merchandise production and distribution systems and also in the management, on the background of turbulences in the financial markets, represent factors of risk and also managerial challenges.

The foreign exchange risk represents the possibilities of appearance of a loss as a result of the adverse evolution of the foreign exchange rate. On the microeconomic level, the foreign exchange rate has three forms:

- transaction risk related to the commercial or international financing activity of the company;
- balance sheet risk related to the conversion of the positions in the balance sheet into foreign currencies;
- competitiveness risk related to the relationship of the company with foreign competitor companies (Ion, 2001, p. 76).

2. Techniques regarding the foreign exchange management

The foreign exchange management involves a long decisional process which is synthetically presented below:



Covering the foreign exchange risk for each transaction can be made by two techniques: contractual and extra-contractual.

Contractual techniques - the international commercial contracts contain provisions that allow partial or total retrieving of loss caused by other party. These provisions refer mainly to the recalculation of the contract value on the payment day, in relation with the price, exchange rates or interest rates evolution. There can be included:

- the simple foreign exchange clause;
- the simple foreign exchange basket clause;
- the balanced foreign exchange basket clause;
- the DST clause.

Extra-contractual techniques represent modalities of covering the risks used after the conclusion of the import export contracts. Due to the fact that including the clauses in the commercial contracts are hardly accepted by the partners, the parties have two extra contractual modalities:

- a) *internal*;
- b) *external*.

a) *Internal extra contractual techniques* refer to the management of the risk at the company level and take into consideration:

- choosing the contract currency;
- adding an assuring margin to the price
- synchronization of the encashment and payment in the same currency;
- payment date game (anticipations and/or delays in payments or encashment) when the payment of the imports can be made within a time period.

b) *external extra contractual techniques* refer to the transfer of the risk to a commercial bank or to another intermediary which accepts to take it over. These modalities are:

- *forward contracts*;
- *futures contracts*;
- *swap contracts*;
- *options contracts*.

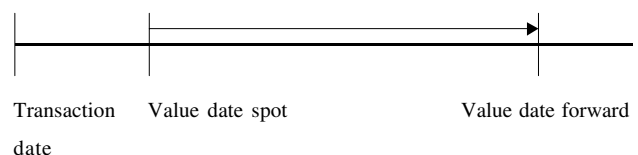
3. Using derivative products in foreign exchange hedging

Can the derivatives be used for the purpose of reducing the risk? While some people are intimidated by the complexity of the derivative products, others are enthusiastic because of the opportunities these products offer. We shall present hereinafter the advantages and possibilities regarding an efficient management of the foreign exchange risk through forward and futures transactions.

3.1. Forward transaction in foreign currency

“Forward transaction represents an obligation, undertaken within an un-organised market, to buy or sell a currency in the future, at a price established at present. In order to cover the foreign exchange risk, the importers can buy the currency forward and the exporters can sell forward the currency to be cashed. The success of the covering depends on the accurate anticipation of the future evolution of the foreign exchange rate, otherwise the gain shall be transformed into a loss and the loss into gain. The characteristic of the forward transactions is that they are firm contracts, being terminated only on the maturity date by exchanging the two currencies and they are standardized”. (Nițu, 2000, p. 235)

Unlike the spot transactions, where the execution of the contract is in two working days from the date of initiating the transaction, the maturity of the forward transactions is in period of three days to five years. (Ion, 2001)



The terms these transactions provide are in general: 1 week, 1,2,3,6 and 12 months. But such contracts can provide also un-standardized terms (e.g. 1 day, 9 days, 41 days etc.). The duration of these contracts starts from spot and in case the maturity day is a non-working day, it shall be taken into consideration the first working day after maturity day.

Usually the forward rate differs from spot rate, the forward rate not being a prognosis of the exchange rate on the maturity day.

The price of the forward contract (exchange rate) is determined according to *the principle of interests' parity*, adjusting the spot rate with the difference between the foreign currencies interest rates. This difference can be positive (premium) or negative (discount).

The quotation of a foreign currency, both spot and forward, includes two rates:

- the rate the bank buys the foreign currency (*BID rate*)
- the rate the bank sells the foreign currency (*ASKED or OFFERRED rate*).

The difference between these rates, the so-called spread, will be used by the bank in order to cover the expenses of the transaction. In case of a forward premium, the point BID forward is less than the

point ASK forward, and in case of a forward discount, the point BID forward is higher than the point forward ASK.

The forward points are calculated as follows:

$$FWD_c = S_c \times \frac{(RD_{mn} - R_{Ivb}) \times \frac{n}{360}}{1 + R_{Ivb} \times \frac{n}{360}}$$

$$FWD_v = S_v \times \frac{(R_{Imn} - RD_{vb}) \times \frac{n}{360}}{1 + RD_{vb} \times \frac{n}{360}}$$

Where:

S_c = spot rate for buying;

S_v = spot rate for selling;

RD_{mn} = time interest rate for deposits in local currency;

R_{Imn} = time interest rate for loans in local currency;

RD_{vb} = time interest rate for deposits in foreign currency;

R_{Ivb} = time interest rate for loans in foreign currency;

n = number of days taking into account when determining the forward rate.

The forward rate is calculated as follows:

$$F_c = S_c + S_c \times \frac{(RD_{mn} - R_{Ivb}) \times \frac{n}{360}}{1 + R_{Ivb} \times \frac{n}{360}}$$

$$F_v = S_v + S_v \times \frac{(R_{Imn} - RD_{vb}) \times \frac{n}{360}}{1 + RD_{vb} \times \frac{n}{360}}$$

It follows that:

- the premiums or the discount are proportional with the period for which the forward is made (a longer period of time means a higher premium or discount);

- the calculation of premium or discount does not depend on the effective level of the interest rates for both currencies, but on the interest rate differences;

- forward rate is mathematically calculated, the formula does not contain estimations.

The customer Export SA delivers goods in EU. He expects a payment of EUR 75.000 in one month. In order to avoid the foreign exchange rate, he decides to sell forward EUR 75.000 in one month.

On the date of transaction:

- spot rate EUR/RON.....3.40-3.45
- interest rate for one month for EUR3.25%-3.50%
- interest rate for one month for ROL.....8.25%-8.50%
- period (number of days).....30 days

Using the calculation formula mentioned above, the following forward (bid) rate will result:

$$F_v = S_v + S_v \times \frac{(R_{Imn} - RD_{vb}) \times \frac{n}{360}}{1 + RD_{vb} \times \frac{n}{360}}$$

$$F_c = 3.40 \text{ RON/EUR} + 0.0134 \text{ RON/EUR} = 3.4134 \text{ RON/EUR}$$

Consequently, the customer Export SA can sell dollars forward for one month at an exchange rate of 3.4134 RON/EUR. The effective transfer shall be made in one month when Export SA will pay to the bank EUR 75.000 and will receive for them RON 256.005.

Presuming that on the maturity the spot rate EUR/ RON = 3.3512/3.3705 RON/EUR, the customer Export SA will gain the difference of 0.0622 RON/ EUR. The total gain will be RON 4.665.

3.2. Foreign currencies futures transactions

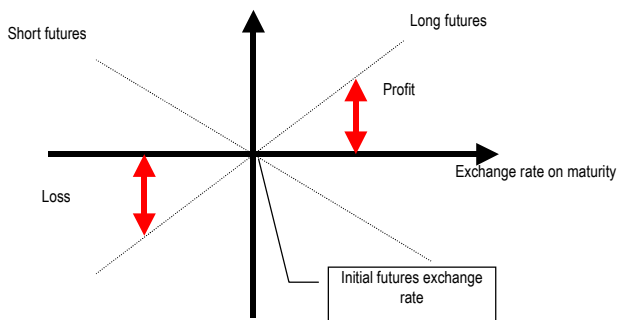
Futures contract is an agreement to buy or to sell an determined amount at a price established in the moment of concluding the contract but the transaction shall be executed on a future date.

Futures and forward contracts contain in general the same provisions. But the differences are notable and related to the transactions mechanism.

Diferrencies between the forward contract and the future contract

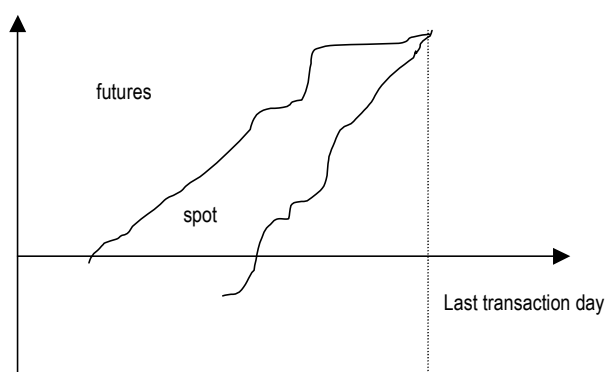
	Forward contract	Future contract
1.Contractual provisions	Negotiated directly by the parties.	Standardized, established by the stock exchange.
2. Transaction place	By phone, dealing or directly between the parties.	Stock exchange.
3. Negotiation	Directly, it is a quite complex process.	By specialized brokers.
4. Collaterals	Collaterals established by the bank.	Margin deposits.
5. Commissions	Are usually included in price and have fixed values.	Fixed commissions for small amounts and negociable for big amounts.
6.Cash flow	The payments is made on maturity day. Rarely, an advance is paid by the buyer.	Daily, the collaterals account registers profit or loss.
7. Liquidity	It is assured by the credit limits imposed by the bank.	It is assured by the margin deposit.
8. Termination	Difficult, only with the partner consent, usually by paying damages.	Extremely difficult, by concluding a contrary transaction.
9. Regulation	Commercial laws.	Specific laws.
10. Delivery frequency	Very high.	Very low.

On the foreign currencies futures contracts market that who has a buyer position (long) earns as long as the futures rate grows, being able to sell better what he initially bought cheaper. That who has a seller position (short) earns as long as the futures price decreases, being able to buy cheaper what he initially sold much.



Just like in the case of the forward contracts, with futures as well, losses and gains are unlimited when the futures price changes with time.

Apparently there is no direct link between the futures market and the currency market. The link between the two markets is determined by the fact that at the maturity date of the futures contracts in currency, they are cleared at the spot exchange rate of the day when the futures contract falls due. In this way, the two prices are developing in parallel and thus an importer who has to pay for the import in three months time and who is afraid that the exchange rate might go up, takes a buyer's position when anticipating its increase.



The more we approach the last transaction day, the more diminishes the distance between futures and spot.

Covering the currency risk by using the futures contracts in currency implies taking a stand on that market according to the position one had in the import-export contract and also according to the moment of payment:

Parties in contract	Moment of payment	Currency risk	Futures position
Exporter	Cashing in advance	exchange rate increase	Buyer
Exporter	Cashing in time	exchange rate decrease	Seller
Importer	Payment in advance	exchange rate decrease	Seller
Importer	Payment in time	exchange rate increase	Buyer

Those exporters who cash exports in advance fear an exchange rate increase (a decrease of the Leu) and take over a buyer's position on the futures market. If the cashing is made in time, the exporters fear an exchange rate decrease and adopt a seller's position on this market, hoping to sell at a higher price, the contracts they will subsequently buy cheaper from the market.

Those importers who have to make advance payments for an import fear a drop in the exchange rate (an increase in the Leu which, in the future, makes the imports to be cheaper in Lei) and take on the position of a seller of futures contracts while importers with payment in time, fear an increase of the exchange rate (a decrease of the Leu which entails that imports should become more expensive in the future) and take a position of futures contract buyers.

Conclusions

The development of derived financial instrument markets is the main characteristic of modern financial environment. Used for the first time in the USA at the mid 70's, *the new instruments*, through the offered advantages, allow for a limitation of financial risks which the companies with import-export activities encounter. The growing preference of foreign trade companies and for their banks is motivated by the following factors: efficiency of using derived financial instruments in managing financial-currency risks, low transaction costs, markets liquidity as well as the development of information and negotiation techniques.

In Romania, the currency risk is a problem for any company in this period characterized by a high fluctuation of the exchange rate. Many Romanian companies had very important drawbacks when, at the end of 2004, the exchange rate was left to vary freely, without being established by the central bank.

Under the circumstances of a highly volatile Leu, currency hedging was a necessary measure which had to be taken by companies, particularly by exporters (the tendency of increasing the national currency affecting primarily the latter, by reducing their profits). In Romania the transactions

with futures and options contract take place at the Monetary – Financial Stock Exchange and the Commodity Stock Exchange of Sibiu. The Sibiu Stock Exchange trades contracts of Leu/Euro, Leu/Dollars or Euro/Dollars with term or half-year maturity dates (March, June, September and December). Contracts can be concluded at any date included in the maturity period. In order to benefit from these hedging instruments, companies should resort to a Financial Investments Services Company (SSIF) authorized to market on the Sibiu Stock Exchange. After concluding the contract between the two parties, the most adequate hedging strategy can be defined to benefit the needs of the customer company. The costs adjacent to covering the currency risks are lower than in the case of forward contracts, the blocked sums being smaller.

Using the futures market, a businessman can establish ahead of time the exchange rate at which he will buy a certain currency, to pay for the

imports or the exchange rate at which he will sell a certain currency, resulting from the export activity he is undertaking. The hedging operation offers the possibility of “blocking the exchange rate” in exchange of immobilizing an amount of 10% of the sum which has to be immobilized on the currency market. In case in which the exchange rate drops massively, as it happens at present, exporters will be protected against risks, because they will get an equivalent profit on the futures market, which will compensate the losses on the currency market.

Essentially, hedging is an efficient manner of protection, either by concluding some forward contracts with a bank or by opening some positions on the futures market (at BMFMS). The decision of hedging depends on the risk degree which a corporation is willing to take, on its financial potential, on company policy, on its own vision about the developments of the market conditions.

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