The eschatology of fundamentalisms

"Market fundamentalism is no better than Marxist doctrine.
Both ideologies disguise themselves as sciences, in order to come out as acceptable,
but the theories they invoke do not hold to the reality test."
George Sõrõs

The present global economic crisis – maybe the first to have radical consequences on the relevance of theories – questions the paradigms of a modernity obsessed with efficiency. All in all, through the fact that it depletes the arsenal of techniques for the reproducing of financial speculation, the crisis pulls the curtains over an economic cycle in which legitimizing the new has the exclusive function of the immediate financial gain.

Altering the sense of modernity first through mass industrialism and then through self-centered financialism constitutes the very essence of the global economic crisis. Mass industrialism has built its triumphant image on the favoring of material factors over the work factor, while self-centered financialism – neo-monetary fundamentalism and fundamentalism of financial markets as well – only increased the ocean of milk of the "electronic herds".

In a dramatic way, the crisis signals the waning of quantitative industrialism and the death of self-sufficient monetarism.

The cycle taking shape after the passing of the crisis gives up on economic growth centered on the disequilibrium of function – an objective which sees profit mostly linked to capital and proliferates financial speculation based on the bold assumption that there is no place for rules in the game of winning.

Side effects of the unchallenged liberalism, economic growth without social objectives and the absolute deregulation of markets constitute the cause of the global crisis which threatens ever more violence.

The referentials of the understanding can change in spite of the overestimated conservatism. At least with regard to solutions to the overbearing problems of overthrowing the comfortablenesses.

Self-sufficient monetarism has retreated in shame behind the opportunity of interventionist measures. The whims of deregulation have disappeared in the urgency of reinventing the power of the sanctioning arbiter. Central banks in the epicenter of neo-monetarism gratuitously refinance the system. The Japanese example of zero interest becomes the benchmark.

The trends, though, are under the pressure of the fear of failure. But the methodological nature of the adopted solutions cannot be eluded. They are in no way extracted from sufficiencies of pure theories, officialized for decades. Simply said, neo-monetarism as market fundamentalism is in no position to mend the things it has broken.

The economic crisis is the final and definitive product of a theory which has expanded into a global non-alterity ideology.

It was not just a wandering temptation of a group excited by the access to power; it was the natural end of an exaggeration. In the same way that all epistemic intolerances and totalitarian ideologies have ended.

The cycle closed by this crisis reminds of a spiral because it bestows citizenship rights to theories which had been expelled due to political preferences.

The crisis which surprised America and taxed Europe is the price paid for the loose interpretation of the rule of common sense. This one is the only which helps solve the problem without withering in the dilemma of choosing between guilty ideologies.

Fundamentalisms create not only costly adversities, but devastating economical crises.

Illicit interventionism is practiced by the high and mighty with feverishness and hope. The redistribution fairly divides the contaminating failure in the form of public debt and of inflation. The spending on debt blows apart the goals of the contracting parts. The consumer gets bulimia, while the banker sacrifices accounts. They all have one single chance: to resume themselves to the measure between needs and possibilities.

The present crisis, even covered by the fireworks display of politics, reveals the cause of causes: the passion of politics for spectacular solutions - meaning for the extremes, and the haughtiness of theorizers of always proposing for the experimentation of the hypothesis of the big-bang.

Marin Dinu

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

Text revision: Gabriela Ochiană
Computerized drawing up: Nicoleta Bobocea
Cover: Alexandru Ion
Subscriptions distribution: Viorela Petrici (021/312.22.48 – int. 24)

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The Influence of R&D Policy on Performance of the Companies Listed with Bucharest Stock Exchange (through Intangible Assets)

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Abstract. *In the new economy, R&D potential of the companies (reflected by intangible assets) tends to make the difference between competing enterprises. Although investing in tangible assets is still viewed as important, the researchers have discovered that investors on capital market tend to buy stocks of the high-tech companies promoting a policy of increasing R&D expenditures.*

The results of the present study on the Romanian economy reveals the correlation between the variation of intangible assets of the chemicals and pharmaceuticals companies (high-tech) and their performance – reflected by EPS and PER coefficients.

Key words: financial markets; investing policy of the firm; firm's assets evaluation; statistic and econometric methods: assessments, tests; simple linear regression.

JEL Codes: E44, G11.
REL Codes: 9B, 9C, 11B, 11D, 11F.

1. Defining performance

Measuring company's performance is considered to be a very attractive research area taking into account the results acquired by investing shareholders' or creditors' equity into companies assets.

Performance is viewed three different ways:

- first, it is given by return on invested capitals in firm's assets;
- secondly, it is a reflection of the risks undertaken by shareholders;
- thirdly, performance is given by the value of the whole business vs. the advantage/disadvantage of placing the capital in other market opportunities.

Recent international studies (Jensen, 2001, pp. 8-21) revealed that firm's management should proceed according to a basic criterion which stands for the major objective in finance: maximizing the value of the invested capital.

The above mentioned research concluded that companies that didn't succeed in adding value for their shareholders also failed in accomplishing the needs of the other stakeholders (Wallace, 2003, pp. 120-127).

In his paper published in 2001, Jensen states that a company maximizes its value provided that it takes into account the needs of all stakeholders (stakeholder theory). Therefore, reconciliation between shareholders and other stakeholders is required and companies' managers should adopt a more responsible behavior in order to increase the welfare of all stakeholders.

In relation to firm's performance a range of indexes have been promoted recently measuring the value created for shareholders (Stern, 1999, pp. 1-8). It's all about the value of capital the shareholders have invested, represented by the return they hope to gain, mandatory covering and exceeding the costs of other opportunities.

Researchers state that value exists when company rewards investors for their choice (also taking into account the supplementary risk) (Christopher, Ryals, 1999, pp. 1-10).

The same theory – the maximization of invested capitals – is developed by other researchers (Simms, 2001, pp. 34-35, Jensen, 2001, pp. 8-21).

They also have adopted the management of value and have considered that the main objective in finance should be represented by a measurement of the value created, as well as the economic value added EVA and cash flow return on investment – CFROI.

Economic value added (EVA) is given by the surplus value created by an investment of an investment portfolio: (return on capital minus cost of capital) multiplied to the capital invested.

Cash flow return on investment (CFROI) represents the internal rate of return (IRR) on an investment, meaning the discount rate making the future cash flows discounted back to the present, including the residual value, equal to the value of investment.

Romanian researchers reckon that net present value (NPV) is an adequate measurement of performance. Considering

company as an investment placed by firms' shareholders it can be asserted that it is performant provided that usage of assets leads to a maximum NPV (Stancu, 2006, pp. 8-12).

A recent research on a group of Romanian companies using financial and non-financial indexes has revealed that performance of national companies is rather reflected by the standard value of the financial indexes than their absolute value (Ciobanu, 2006, pp. 181-184). Building up an unitary system of management value based on indexes reflecting the enterprise performance in relation to the capital invested by the shareholders has proven to be difficult at this stage of research.

2. Creating value through R&D (intangible assets)

At world economy level, one of the most important changes in the past decades is represented by the replacement of equipment with intangible assets. R&D expenditures – viewed through intangible assets have grown quickly in the new knowledge economy. Intangible assets of a company include: development expenditure, claims, patents, licenses, trade marks and other similar values.

Many international studies have brought into light the liaisons between R&D expenditures and market performance of the companies. In the United States the researchers have discovered that capital market rewards companies investing in R&D (Chan, et al., 1992, pp. 59-66, Narayan et al., 2000, pp. 707-722).

Looking at the UK capital market, an assessment over the London Stock Exchange divided listed companies into three categories: (1) high-tech companies, (2) food manufacturers, building materials, textile, print, paper and packaging and (3) health care and conglomerates (Stern, 1999, pp. 3-14). While for companies in the first category an increase in R&D expenditures determines higher market price for their stocks, for the firms in the second and third categories increase in R&D expenditures apparently causes decrease of the market price.

The few studies carried out for the Romanian capital market reveal the need for continuous investigations on the influence of change in intangible assets/ R&D expenditures over companies' performance.

In the present research we've focused upon a group of representative companies listed with Bucharest Stock Exchange (BSE), from various operating areas. In order to asses their performance, we considered: annual average market price (AAMP), coefficients PER (price/earnings ratio) and EPS (earnings per share).

3. Assumptions of the model designed for BSE

With the intend of determining the existence/non-existence of the relationship between change in intangible assets and variation of AAMP, EPS and PER, we made usage of econometrics models and a soft of statistic analysis – E-views.

The assumptions of the model are as follows:

1) A sample of 18 companies listed at BSE. The inconvenience in selecting these companies was due to the fact that many of companies on BSE have been listed recently and they are inobservant of regulations of the Romanian National Securities Commission;

2) Time of analysis: 2005 – 2006;

3) Independent variable: variation of intangible assets (IA)/R&D expenditures (2006 opposite 2005);

4) Dependant variables (consecutively): variation of AAMP, EPS and PER.

A) The first phase of research included 18 companies from various operating areas listed with BSE.

Using linear regression it has been noticed that the values of the coefficients (R-squared) and (Adjusted R-squared) for each regression using change in IA - as independent variable and AAMP, EPS and PER – as dependant variables for the period 2005-2006 are 0.019897; 0.025829; 0.027864 and, respectively, -0.041359; -0.035057; -0.032894.

The values below 0.6 lead to the conclusion that the models haven't been well specified. Therefore, no correlation between variation of IN and change in AAMP, EPS and PER has been discovered in the case of the 18 companies listed with the BSE.

The same conclusions are reached by using the exponential, logarithm and power regression analysis.

B) Considering these results, at the second phase of research, the 18 companies were divided into:

- equipments sector (7 companies);
- materials (3 companies);
- chemicals and pharmaceuticals (5 companies);
- others (3 companies).

In the equipments and materials sector as well as in the others, the assessment using E-viwes has reveled that no significant correlation exists between the variation of IA and the subsequent change in AAMP, EPS and PER (2006 opposite 2005).

In the case of the sample consisting in chemicals and pharmaceuticals companies, the results obtained using the linear, exponential, logarithm and power analysis led to three linear regressions (the most significant):

$$AAMPi = 0.16332 + 0.657703 \times IAi$$

$$EPSi = -0.633761 + 0.9418 \times IAi$$

$$PERi = 2.079332 - 2.32856 \times IAi$$

where:

$AAMP_i$ = annual average market price;

IA_i = variation of intangible assets (R&D expenditures);

EPS_i = variation of EPS coefficient/ earnings per share;

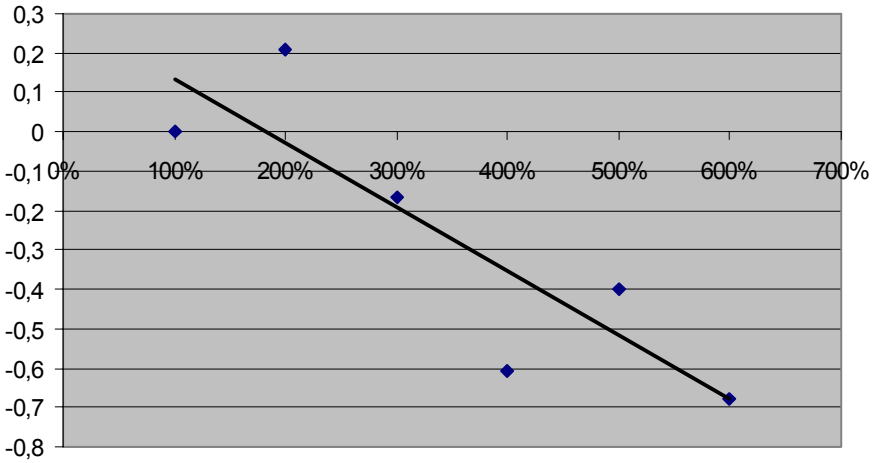
PER_i = variation of PER coefficient/ price – earnings ratio;

i = 2006/2005.

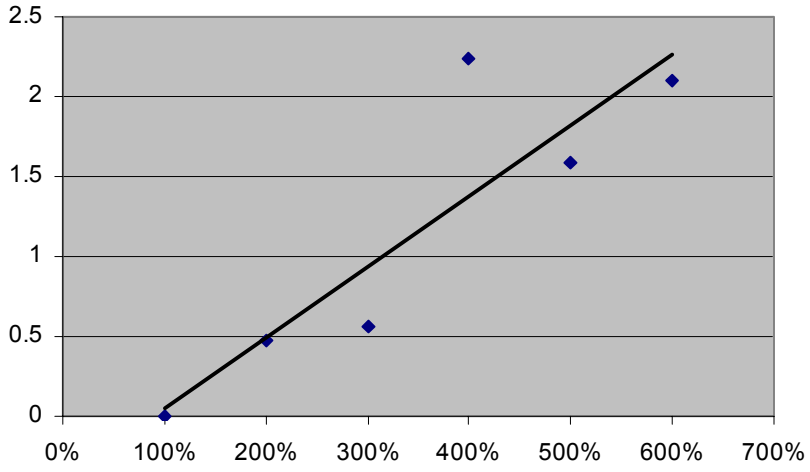
In the case of chemicals and pharmaceuticals companies, the analysis hasn't reached any conclusion regarding the specification of the model.

The simple linear regressions regarding variation of PER, EPS and IN are plotted as follows:

Correlation between variation of IA (X) and variation of PER (Y)



Correlation between variation of IA (X) and variation of EPS (Y)



4. Econometric analysis for the linear regression between of EPS and PER and change of IA for the chemicals and pharmaceuticals companies

Using the least square method incorporated in E-views, we got the following results:

Dependent Variable: EPSI
Method: Least Squares
Date: 10/23/07 Time: 12:48
Sample: 1 5
Included observations: 5

Variable	Coef.	Std. Error	t-Statistic	Prob.
C	-0.633761	0.090537	-7.000038	0.0060
INI	0.941800	0.198271	4.750057	0.0177
R-squared	0.882643	Mean dependent var		-0.329398
Adjusted R-squared	0.843524	S.D. dependent var		0.361566
S.E. of regression	0.143025	Akaike info criterion		-0.762421
Sum squared resid	0.061368	Schwarz criterion		-0.918646
Log likelihood	3.906052	F-statistic		22.56304
Durbin-Watson stat	1.639220	Prob(F-statistic)		0.017705

Dependent Variable: PERI
Method: Least Squares
Date: 10/23/07 Time: 12:48
Sample: 1 5
Included observations: 5

Variable	Coef.	Std. Error	t-Statistic	Prob.
C	2.079332	0.238098	8.733080	0.0032
INI	-2.132856	0.521424	-4.090443	0.0264
R-squared	0.847961	Mean dependent var		1.390054
Adjusted R-squared	0.797281	S.D. dependent var		0.835403
S.E. of regression	0.376135	Akaike info criterion		1.171435
Sum squared resid	0.424432	Schwarz criterion		1.015210
Log likelihood	-0.928588	F-statistic		16.73172
Durbin-Watson stat	1.753233	Prob(F-statistic)		0.026412

a) R – squared and *Adjusted R – squared* are 0.882643 and 0.843524 for the first regression and 0.847961 and 0.797281 for the second regression. Those values are above limit of 0.6 and therefore we tend to state that the models are adequate. Yet the values aren't too adjacent to 1 and for a better specification of the models we need to include more observations in the analysis. At the time of research this couldn't be performed as BSE has been established recently (1995) and the listed companies sheet has changed a lot since then.

b) t-statistic and the related probability

Using *t-Student* test for each coefficient of the models it came out that the probability is of no great size (0.0060 and 0.0177 for the first regression) and 0.0032 and 0.0032 for the second regression) which led to the rejection of the hypothesis regarding the zero value of the coefficients of the models. Their values are -0.633761 and 2.079332 (for the intercept – for the first and, respectively, second regression – and 0.941800 and -2.132856 for the slope for the first and, respectively, second regression).

c) F-statistic and Prob (F-statistic) provide essential information regarding the validation of the models as a whole. Important pieces of information are acquired related to *F-statistic* and the error of rejecting the models.

The validation rule for *F-statistic* and *Prob (F-statistic)* led to the conclusion of accepting the models.

5. Economic analysis of the two regressions

In the past decades growth, development and survival of the enterprises as well as human welfare are increasingly depending on technology an innovation. Investments in R&D, including human capital, are the prime sources of innovation, leading to progress.

The results of the studies on BSE stress the selectiveness of the stock exchange when it comes to R&D.

Using regression analysis for the sample of the 18 companies, no significant correlation between the variation of AAMP, EPS and PER (reflecting the companies' performance) and the change in IA (representing R&D policy of the companies) was discovered.

Taking the assessment to a deeper level, in the second phase the 18 companies were divided into operating areas/sectors.

The econometric tests have revealed that there is no significant correlation between the variables of the models.

For the chemicals and pharmaceuticals companies, the results of the investigation suggest that R&D led to a profit and market prestige (reflected also by increase of the market price).

6. Conclusions and recommendations

By carrying out this study, we've tried to answer some questions related to the way the variation of IA (reflected by R&D) in the case of companies listed with BSE influences companies' performance.

The conclusions haven't put things straight when it came to the Romanian capital market.

Nevertheless, for some operating areas – such as chemicals and pharmaceuticals, considered high-tech industries, the analysis on a two-year horizon identified the relation between the variation of IA and the subsequent change in EPS and PER – integrated in two linear regressions.

It can be asserted that the Romanian capital market tends to grow towards the market with semi-strong efficiency judging by the way the investors that bought stocks of the companies investing in R&D benefit from an increase of the earnings per share.

On the other hand, it's worth of note that an increase in IA for these companies led to a decrease of ratio price-earning. This is reflected by PER coefficient.

We can make use of these results when it comes to estimating the future evolution for a range of economic indexes – essential both to companies' managers as well as to investors.

The importance of the scientific results according to the real economic perspective is given by the fact that Romanian capital market is still developing and the need for information is sustained by the few national researches in this area, far from answering the questions related to the determination and validation of the companies' performance.

In future, we need to improve the analysis by including more observations for a better specification of the models.

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Controversies on the Central Bank Main Objective of Price Stability

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Abstract. *In the present study we propose a critical approach to the concept of price stability. In the beginning we have considered a literature review regarding price stability issues. After that we have discussed about its implications in central banking and economy. Also, according to the statutes of 128 countries, we have done a statistical study of central banks in the light of the chosen statutory objective.*

Key words: price stability; central bank; final objective; implications; monetary policy.

JEL Codes: E42, E52, E58, E61.
REL Codes: 6B, 8J.

Introduction

A major concern in the activity of central banks represents the choice and implementation of monetary policy strategies. The *final objectives* of monetary policy pursued by the central bank may be: price stability, employment, economic growth, external balance. These objectives cannot be controlled directly and are practically general objectives for economic policy.

The objectives of monetary policy should be linked with other components of general economic policy of the country, the performance of each category of policy depending on the success of the entire package of measures.

Usually, the final objective of monetary policy which a central bank assumes is expressly stated in the statutes of the central bank, therefore final objectives are known as *statutory objectives*.

In recent years, it has become increasingly popular and pursued by the central bank the objective of *price stability*, rather than ones of stimulating production and reducing unemployment.

In the present study we propose a critical approach to the concept of price stability. Also, according to the statutes of 128 countries, we will perform a statistical study the central banks in light of the chosen statutory objective.

Approaches to the concept of price stability

There are many approaches to defining price stability, since this is a controversial concept. Price stability can be interpreted as representing a situation when the price level remains unchanged, there is no movement of prices, and the inflation rate is zero. But, this isn't the meaning of the final objective of price stability.

In the economic literature there is consensus regarding the definition of this term in connection with three elements (Isărescu, 2006, p. 2): price stability refers to the aggregate level of prices measured by the index; price stability is achieved when the money retains value over time or the speed erosion of the purchasing power is very slow; concept of monetary stability is the overlap of price stability.

A number of practitioners and academics link the notion of price stability with *inflation expectations*, giving it a *quantitative approach*. Thus, Paul Volcker considers price stability as a "situation in which expectations of generally rising (or falling) prices over a considerable period are not a pervasive influence on economic and financial behavior" (Volcker, 1983, p. 5).

In the same vein, Greenspan believes the objective of price stability is a situation in which "economic agents no longer take account of the prospective change in the general price level in their economic decision making" (Greenspan, 1996, p. 1).

Alan Blinder, also, sees price stability "when ordinary people in their ordinary course of business stop thinking and worrying about inflation" (Blinder, 1994, p. 7).

In the vision of the Bank of Japan price stability means "an environment where economic agents, including households and firms, can make decisions regarding economic activity such as consumption and

investment without being concerned about the fluctuation of the general price level" (Castelnuovo et al., 2003, p. 9).

The vision of the European Central Bank (ECB) tends to a quantitative approach to the concept of price stability. An explicit definition given by the Council in October 1998, price stability is an inflation rate, calculated on the basis of harmonized index of consumer prices in the Euro area, up to 2%.

Lucas Papademos, vice president of the ECB defines price stability as "a state in which the general price level is literally stable or the inflation rate is sufficiently low and stable, so that considerations concerning the nominal dimension of transactions cease to be a pertinent factor for economic decisions" (Papademos, 2006, p. 1).

Charles Freedman, a former member of the Board of the Bank of Canada, has also a quantitative approach: "aiming at the achievement of price stability by setting an explicit target for prices (whether stated in terms of a level or a rate of increase)". (Freedman, 1996, p. 243).

While these approaches regarding qualitative nature definitions converge, there are more points of view regarding the *expression of quantitative objective of price stability*. Thus, the dilemma is whether it can be considered the definition of price stability as price level stability or low inflation. Also, there are different opinions regarding the price index taken into account in the transposition of price stability objective (Svensson, 1999, p. 198). There are approaches that consider price stability in *numerical terms*. Thus, ECB considers price stability as an increase in prices of less than 2%. In other opinions, price stability means an inflation of 0%.

Fischer believes that from an operational stand point this goal must represent an inflation rate between 0% - 3% (Fischer, 1996, pp. 37-45).

Meltzer combines quantitative aspects with qualitative ones: price stability implies an inflation rate so close to zero, that it ceases to be a significant factor in long-term planning, considering that a 3% inflation is too high for this goal (Meltzer, 1997, pp. 3-8).

Other views see sufficient expression of this objective in an inflation rate of a single digit (Dornbusch, Fischer, 1993, pp. 1-44).

The views of many practitioners and academics are against the quantitative approach in terms of the concept of price stability, because the price indices used can not be precise enough for this purpose (Greenspan, 2002, p. 6). Even the explicit definition given by the ECB was criticized in the following three reasons (Issing, 2002): the definition is asymmetric, focusing only on the upper limit of price increase, without a minimum limit; the definition is quite ambitious, without room in flexibility for monetary policy, implying deflationary risk; it does not leave sufficient margin of fluctuation of prices, particularly between countries with different economic structures.

In many cases, *quantitative definitions practically explain the concept of price stability citing operational targets, which can lead to confusion with regard to the objectives of monetary policy strategies.*

Targets of inflation or definition of price stability for some industrialized countries

Table 1

Country	Indicator	Numeric value Definition/goal
Euro Zone	The Harmonized Index of Consumer Prices	Under 2% (1999) Definition of price stability
Norway	Consumer price index	2.5% fluctuation of ± 1% Target
Sweden	Consumer price index	2% with a margin of fluctuation of ± 1% in January 1995 Target
Switzerland	Consumer price index	Under 2% Definition of price stability
Great Britain	Retail price index excluding interest payments on mortgages	1% -4% (October 1992 - June 1997) 2.5% (June 1997) Target
Australia	Consumer price index	2-3% (since January 1993) Target
Canada	Consumer price index (excluding food, energy and the effects of indirect taxes)	2-4% (February 1991 - the end of 1992) 1,5-3,5% (end of 1992 - half of 1994) 1-3% (December 1993 (revised) - February 2001, then renewed and valid until end of 2006 Target
Japan	Consumer price index	There are no numerical values Qualitative definition of price stability
New Zeeland	Consumer price index (excluding credit services)	3-5% (March 1990 - December 1990) 2,5-4,5% (December 1990 - December 1991) 1,5-3,5% (December 1991 - December 1992) 0-2% (December 1992 - December 1996) 0-3% (December 1996 - November 2002) 1-3% (since November 2002) Target
United States	Not specified	There are no numerical values Qualitative definition of price stability

Source: Castelnuovo, E., Nicoletti-Altimari, S., Rodriguez-Palenzuela, D. - Definition of Price Stability, Range and Point Inflation Targets: The Anchoring of Long-term Inflation Expectations, ECB Working Paper no. 273, September 2003, p. 11.

We believe that in the definition of the concept of price stability there must be taken into account both visions, with qualitative emphasis. The quantitative approach needs to be defined depending on the situation of each country at different moments. Sometimes, the quantitative approach can lead to confusion in regards to the delimitation of hierarchical objectives of monetary policy. Also, the qualitative approach confers importance to inflation expectations, which have consistent implications for future developments of prices.

Price stability implications in central banking and economy

Mishkin and Posen have *four arguments that enhance the effectiveness of price stability as final objective of monetary policy, rather than those concerning economic growth or employment* (Mishkin, Posen, 1997, pp. 9-110). One of them is based on considerations of Milton Friedman and Anna Schwartz, after which monetary policy has effects that appear after a certain period, which may be variable. Uncertainty regarding forecasting and measuring the effects of monetary policy make the attempt

to stabilize fluctuations in production through monetary policy measures to fail to deliver the expected results.

A second prerequisite is that there is no precise correlation between long-term inflation and unemployment. According to Phillips' curve, in the short term, empirically, a low unemployment rate can be achieved through an expansionary monetary policy, which causes a high inflation.

Following the increase in prices, both consumers and companies will produce more because nominal wages and profits increase. But in the long-term, this relationship can not be valid because inflation in the economy will persist even after increase in production and drop in unemployment, because the expectations regarding inflation will be incorporated into pricing. Thus, the favorable effects regarding unemployment and production obtained in the first phase will be wiped out by the harmful consequences of a high inflation.

Another argument brought against an active monetary policy, channeled to increase production and employment, is time inconsistency phenomenon of monetary policy. It is based on the behavior of determining prices and incomes, which take into account expectations regarding future monetary policy.

The expectations of private sector are determined on the basis of monetary policy decisions set at a time. In this case, the central bank will be tempted to conduct a monetary policy more expansive than it has initially proposed. Reasons for undertaking such measures are mixed.

The most frequently encountered concerns are: the desire of the monetary authority (or pressures in this regard from the government) to increase the level of employment and, in a more general perspective, production, the possibility of obtaining revenue through senioraj together with erosion of the real value of public debt in case of inflationary surprises; inflationary consequences of devaluation undertaken in order to improve the current account; the use of monetary policy in order to safeguard the stability of the financial system.

However, the private sector will recognize the central bank's intentions regarding monetary policy and will adjust expectations according to new situations. This will lead to an increase in inflation. Private sector will never be mislead by such expansionary strategies of uncertain monetary policy, and production will not be higher than the level established, because in turn inflation would be much higher. In this case the central bank will need to avoid situations in which the private sector will form expectation regarding revenue and prices on the basis of an expansive uncertain monetary policy.

A final argument is that currency stability and prices lead to the formation of an economic system that works much more efficiently and with a much higher standard of living. A policy that contributes to stability and stabilization of prices can contribute to redirecting resources to productive areas (Dănilă, 1999, p. 88).

Nevertheless, *it can not be denied the role of the central bank in regards to economic growth.* Through monetary policy, the central bank influences aggregate demand. We believe that the role of the central bank in economic growth should be

delimited in the way that it can not participate actively, by issuing inflationary money, but by *ensuring proper economic framework, through economic variables that it controls, for a sustainable economic growth without inflationary perpetuation of tensions*.

Thus, *the quantity and price effects of the instruments of monetary policy may render mechanisms conducive to economic growth*, which, in fact, *may help avoid situations of overheating of the economy*. For example, by using interest rate policy, the central bank can stimulate healthy growth.

The monetarists confer central bank the task of increasing the monetary mass in circulation, the pace of economic growth to sustain the amount of currency in circulation, according to the needs of the economy.

Also, it is known that deflation effects are as harmful to the economy as those of inflation, with profound implications in slowing the economic growth.

At the same time, we believe that this approach can bring into question *a concern in the hierarchy of objectives of central banks and a clearer delimitation of the role of each institution involved in the conduct of economic policies of the state*. The current economic environment requires a further concern for the central bank in the direction of control of the inflationary phenomenon. As stated by Mishkin and Posen in the arguments made in favor of promoting the objective of price stability, a stable economy from the perspective of increasing prices represents a propitious framework from the standpoint of sustainable economic growth.

Papademos sees the following advantages of price stability as the final objective: it protects the real purchasing power of money and households' real disposable income; it enhances the proper functioning of markets and eliminates uncertainty created by high and volatile inflation rates. Also, price stability facilitates long-term planning and contracting as people can safely rely on money as a measure of value (Papademos, 2006, p. 3).

In the case of high inflation there are a number of costs[1]. Studies show that, on average, an increase of 1% in inflation, may cost the economy of a country a decrease of 0.1% - 0.5% in rate of GDP growth (Fischer, 1993, pp. 485-512).

Although there are views regarding the overlap between the concept of price stability and monetary stability or currency, we believe that there is still some clear distinctions.

Lately, *the use of the concept of price stability is the preferred over monetary stability for several reasons.* First, it is more anchored in inflation expectations, as a more transparent and objective meaning of the general public. It is more credible, but involves more responsibility from the central bank and requires the central bank to hold credibility.

However, *it is improper to say that the central bank can control prices in the economy*. They are formed freely on specialized markets, where the central bank can not intervene, especially administratively. We must take into account that *the final objective of the central bank is also the general objective for economic policy, involving collaboration and contribution of more decision makers, primarily the government*. The central bank, through use of monetary measures and

instruments, can intervene in ensuring the framework of price stability, by means of psychological nature, or by influencing inflation expectation.

Price stability of the economy depends on several factors, which may or not be related to monetary phenomenon. Moreover, in times of monetary instability we can see a stabilization of prices, gained arbitrarily, under the impact of other factors that have acted to the contrary, attenuating destabilizing effects of monetary policy.

Therefore we believe that *the fundamental objective of price stability can lead to the risk of assigning responsibilities that the central bank can not achieve by its nature and its specific functions*, even though if it can have some *clemency clauses*. *Public perception can be at a given moment that the central bank is guilty of missing inflation targets. Moreover, this idea could even be fed by other authorities participating in fulfilling this objective, based on populist grounds*.

To avoid such a situation the *central bank must be very active from the perspective of communication policy, precisely and accurately inform the public regarding the premises which are the basis for its decisions and to explain the results*. Also, it must be concerned about *education of the public* so that its messages can be understood by the vast majority.

In essence, *the central bank actions are aimed at monetary stability, with important implications in achieving the objectives of price stability in the economy*.

The notion of monetary stability is used in particular for developing countries or those that have recently acquired national identity. In the Euro area, the ECB provides the notion of price stability, giving it, as I mentioned, an explicit definition.

Many of the former communist countries that joined the European Union or are about to become member states have harmonized legislation and have abandoned the objective of monetary stability in favor of price stability, including the National Bank of Romania.

Often, there is a connection between central bank independence and monetary policy objective of price stability (Cukierman, 2002, p. 15), the argument being *the inversely proportional ratio between inflation and central bank independence proved in practice*, Bundesbank as one of these examples.

In a study undertaken in 1992, there have been examined the statutory objectives of central banks from 72 countries, classifying them depending on the degree of independence (Isărescu, 2001, p. 177).

According to this classification, *a bank is more independent as long as it has as the main (only) objective price stability and has full discretion in the use of specific instruments to achieve this desideratum*, if necessary even against the wishes of the government.

The data are included for the ’80s, and then a series of central banks (from France, Mexico, New Zeeland, Canada, Sweden, Great Britain) have revised statutes, climbing in ranking . Taking into account the statute of Bundesbank, it specifies that the mandate for price stability is more important than the obligation to support governmental economic policies. This makes Germany have the most independent central bank of the sample of 72 countries.

The objectives of central banks, as resulting from their statutes for the '80s

Table 2

Objective's description	Value	No. of developed countries	No. of countries from sample	Total percentage
Price stability only (it can deny governmental wishes)	1	1 (Germany)	2	3
Price stability only	0.8	4 (Finland, Greece, Ireland, Holland)	6	8
Price stability and a compatible objective	0.5	4 (Austria, Denmark, Luxemburg, Spain)	17	23
Price stability and compatible objectives	0.4	4 (Australia, Iceland, New Zeeland, USA)	22	31
Without objectives	0.2	4 (Canada, Italy, Great Britain, Sweden)	10	14
Other objectives than price stability	0.0	4 (Belgium, France, Japan, Norway)	15	21
TOTAL		21	72	100

Sources: Isărescu, Mugur (2001). Reflecții economice – Piețe, bani, bănci, Ed. Expert, București, p. 177.

Starting from the central bank statutes of 128 countries, we have achieved the following statistics regarding statutory objectives of central banks in question:

The objectives of central banks, as resulting from their statutes in August 2007

Table 3

Objective's description	No. of developed countries	Weight from total (%)	No. of former communist countries	Weight from total (%)	No. of developing countries	Weight from total (%)	No. of countries from sample	Weight from total (%)
Price stability only	15	53.5	15	51.7	8	11.2	38	29.6
Price stability and one other objective	1	3.5	1	3.4	10	14.0	12	9.4
Price stability and other objectives	3	10.7	3	10.3	4	5.6	10	7.8
Monetary stability	5	17.8	8	27.5	44	62.0	57	44.5
Economic growth or "for the purpose of economic growth"	8	28.5	1	3.4	29	40.8	38	29.6
Full employment	3	10.7	0	0	1	1.4	4	3.1
Other objectives	3	10.7	1	3.4	2	2.8	7	5.4
No stated objective	1	3.5	1	3.4	1	1.4	3	2.3
TOTAL	28	-	29	-	71	-	128	-

Sources: Statistics conducted by consulting the statutes of central banks, using their web pages, accessed in August 2007.

From presented data, it can be concluded that the final objective of price stability has the highest weight. Thus, 46.8% of the countries surveyed have as stated final objective *price stability*, and countries with *monetary stability* as stated final objective take up 44.5%.

Among the countries that have adopted price stability as final objective of monetary policy, developing countries and former communist countries are those which have adopted the most this objective (some of them adopted more than one final objective) with a ratio of 67.7% and 65.4% respectively,

and price stability only, 53.5% and 51.7% respectively[2].

Developing countries, instead, prefer monetary stability as the final objective, in a proportion of 62%, only 30.8% taking as final objective price stability, and price stability only 11.2%.

Three of the central banks surveyed - Georgia, the Philippines, Venezuela, have both goals of price and monetary stability.

These arguments strengthen the idea according to which there are fine distinctions regarding the objective of price and monetary stability, as discussed above.

In regard to the objective of *economic growth* or the existence of the expression: "*for the purpose of economic growth*" in formulating the objective, these are found in 29.6% of the stated objectives in the sample, Libya being considered the only country which has the single objective economic growth: the developed countries – 8 cases, the ex-communist – 1 case (Tajikistan), the most frequently being met in developing countries – 29 cases.

The objective of *full employment* is very little met, only 4 cases: 3 developed countries – Australia, UK, USA and a developing country – Malawi.

Among the 128 central banks surveyed, only 7 have objectives other than price stability, monetary stability, economic growth and full employment, and 3 central banks having no stated objective: Canada, Montenegro and Thailand.

Conclusion

The clarity in the definition of statutory or final objective of monetary policy represents an indispensable element in the establishment and implementation of a strategy of monetary policy. This also brings *extra credibility*, especially in moments in which the central bank wants to radically alter monetary policy strategy.

A good definition of the objectives of monetary policy (final, interim, operational) contributes decisively to the success of central bank's activity. This argument is strengthened by the central banks of countries which have a reputation already well established.

Nevertheless, it is not enough for a central bank to clearly define its objectives; it must be also *motivated to reach them*. This is possible through both an adequate legislative support, and by a high-capacity communication and transparency of monetary authorities, the public being the most capable to punish its lack of efficiency.

A better communication with the public would make much more effective monetary policy measures taken through the expectation that they form depending on monetary policy makers' commitments. In this respect we can meet an application of the Sörös reflexivity principle – a relationship of feed-back (Soros, 1999, p. 29).

Notes

(1) The cost of over investing in the financial sector - cost occurred as a result of interaction between the system of taxation and inflation, producing distortion of the market with advantages that determine employment decisions in unproductive activities.

(2) The weight calculations were made as a number of countries that have adopted the objective/objectives of the number of countries in the sample specified: developed countries, former communist countries, developing countries.

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Management of Portfolio Investment Held by Pension Funds

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Abstract. *As a result of the fact that pension funds are financial intermediaries, the value of their assets and liabilities is influenced by changing conditions in financial markets. The market image of a pension fund (and hence its perceived value) are closely tied to the "financial health" of the fund. Setting up and managing complex investment portfolios requires that pension administrators use scientific models of portfolio selection and optimization based on the risk-expected return relationship. Most investment portfolios are modified in time as result of changing stock prices and investment policy objectives. Having established investment policy guidelines, the administrators of pension funds have to determine the structure of their portfolios so that the latter meet legal requirements.*

Key words: pension funds; return; risk; optimization; portfolio; financial assets; profitability; capital market; investments.

JEL Codes: G11, G23.
REL Codes: 11B, 11D.

Private pensions are all about investing the contributions of adherents. The second-pillar and third-pillar pensions legal framework (Law No. 411/2006 and Law No. 204/2006) that all pension funds administrators invest the contributions in an adequate manner and in the sole interest of adherents and beneficiaries such that the investment portfolio is secure, qualitative, liquid and profitable. At the same time, assets destined to the guarantee fund and to technical provisions must be invested in correlation with the rights of adherents and beneficiaries. At the same time, administrators should invest most of the contributions in instruments traded on supervised markets and should limit investments in assets traded on unsupervised markets.

According to the law, pension funds administrators are allowed to invest in:

- money market instruments such as bank deposits and certificates of deposit (20% or less of the pension fund's total assets);
- debt securities issued by the Romanian government (such as government bonds etc.) or by governments of EU/EES member states (70% or less of the fund's total assets);
- debt securities issued by local public authorities in Romania or in other EU/EES member states (30% or less of the fund's total assets);
- securities (shares/bonds) traded in supervised markets in Romania and/ or EU/EES member states (50% or less of the fund's total assets)
- securities issued by governments of third party countries[1] (15% or less of the fund's total assets);
- securities issued by local public authorities in third party countries (10% or less of the fund's total assets), under the condition that the respective securities are traded in supervised markets;
- securities issued by non-governmental foreign organizations provided they are traded in supervised markets and they meet the necessary rating requirements (5% or less of the fund's total assets);
- securities issued by OPCVM from Romania or other states (5% or less of the fund's total assets);
- financial derivatives (futures, options, swaps etc.), but only for risk management purposes. Derivatives should only be used in hedging transactions and not for profit-making purposes.

Administrators are not allowed to invest contributions in assets that cannot be sold afterwards or that cannot be correctly valued. It is also forbidden to invest the assets of a pension fund in art objects, vehicles, real estates or securities issued by the administrators themselves. At the same time, a pension fund administrator is not allowed to invest more than 5% of the fund's assets in securities issued by a sole company, nor it can invest more than 10% of the fund's assets in a

group of companies and other businesses affiliated to them.

Given the legal restrictions mentioned previously the only way of setting up a two-asset investment portfolio consists of buying government bonds (in a proportion of up to 70% of the fund's total assets) and listed shares (in a proportion of up to 50% of the fund's assets). In the case of any other combination of two eligible assets the sum of the legal investment limits is below one and therefore such portfolios are ruled out.

Let x_1 and x_2 be the proportions of government bonds and listed shares respectively, R_1 and R_2 the expected return on the two assets, σ_1 and σ_2 their volatilities and σ_{12} the covariance between the expected returns on the two assets. These variables have the following values:

$$R_1 = 0{,}065 \quad \sigma_1 = 0 \quad \sigma_{12} = 0$$
$$R_2 = 0{,}2203 \quad \sigma_2 = 0{,}2231.$$

The parameters' values for listed shares correspond to the minimum variance portfolio (MVP) that can be set up using shares traded in the Bucharest Stock Exchange.

The expected return on the portfolio and the associated risk can be written as follows:

$$R_P = x_1 \times R_1 + x_2 \times R_2$$
$$\sigma_P^2 = x_1^2 \times \sigma_1^2 + x_2^2 \times \sigma_2^2 +$$
$$+ 2 \times x_1 \times x_2 \times \sigma_{12} = x_2^2 \times \sigma_2^2$$

Differentiating the risk function with respect to x_1 and taking into account that $x_2 = 1 - x_1$ we get the following results:

$$x_1 = 1$$
$$x_2 = 0.$$

The absolute minimum variance portfolio requires that the fund's assets are invested solely in government bonds. As such, the portfolio is risk-free. However, it is impossible to set up the portfolio described above because legal investment restrictions are not satisfied.

The maximum expected return on the portfolio is attained when the pension fund administrator invests as much as legally possible in the asset with the greatest return. Hence the structure of the most profitable portfolio ($\overline{R_P}$) is $x_1 = 0.5$ and $x_2 = 0.5$:

$$\overline{R_P} = 0.5 \times 0.065 + 0.5 \times 0.2203 =$$
$$= 0.1427 = 14.27\%.$$

Symmetrically, the minimum possible return on the portfolio ($\underline{R_P}$) is achieved when the fund's assets are mostly placed (up to the legal limit) in government bonds:

$$\underline{R_P} = 0.7 \times 0.065 + 0.3 \times 0.2203 =$$
$$= 0.1116 = 11.16\%.$$

We now face the problem of determining efficient portfolios, that is, portfolios with the lowest possible risk at a

given level of expected return R_P^* ($0.1116 \le R_P^* \le 0.1427$). In order to fulfill this task we have to solve the following optimization problem:

$$\begin{cases} \min \sigma_P^2 = 0.04977361 \times x_2^2 \\ \text{provided that} \begin{cases} 0.065 \times x_1 + 0.2203 \times x_2 = R_P^* \\ x_1 + x_2 = 1 \end{cases} \\ \text{subject to} \begin{cases} x_1 \le 0.7 \\ x_2 \le 0.5 \end{cases} \end{cases}$$

Since the system above contains two equations and two variables it is possible to write the proportion of each asset as function of the expected return on the portfolio. Performing the necessary calculations, we get:

$$x_1 = 1.418545 - 6.439150 \times R_P^*$$
$$x_2 = 6.439150 \times R_P^* - 0.418545$$

The table below illustrates the structure and risk of efficient portfolios corresponding to different values of the expected return:

Expected return R_P^*	x_1	x_2	σ_P^2	σ_P
0.11159	0.7000	0.3000	0.004479625	0.06693
0.112	0.6974	0.3026	0.004558815	0.067518995
0.113	0.6909	0.3091	0.004754871	0.06895557
0.114	0.6845	0.3155	0.004955054	0.070392144
0.115	0.6780	0.3220	0.005159365	0.071828719
0.116	0.6716	0.3284	0.005367803	0.073265293
0.117	0.6652	0.3348	0.005580369	0.074701867
0.118	0.6587	0.3413	0.005797062	0.076138442
0.119	0.6523	0.3477	0.006017883	0.077575016
0.12	0.6458	0.3542	0.006242831	0.07901159
0.121	0.6394	0.3606	0.006471907	0.080448165
0.122	0.6330	0.3670	0.006705111	0.081884739
0.123	0.6265	0.3735	0.006942441	0.083321314
0.124	0.6201	0.3799	0.0071839	0.084757888
0.125	0.6137	0.3863	0.007429485	0.086194462
0.126	0.6072	0.3928	0.007679199	0.087631037
0.127	0.6008	0.3992	0.007933039	0.089067611
0.128	0.5943	0.4057	0.008191008	0.090504185
0.129	0.5879	0.4121	0.008453103	0.09194076
0.13	0.5815	0.4185	0.008719327	0.093377334
0.131	0.5750	0.4250	0.008989677	0.094813909
0.132	0.5686	0.4314	0.009264155	0.096250483
0.133	0.5621	0.4379	0.009542761	0.097687057
0.134	0.5557	0.4443	0.009825494	0.099123632
0.135	0.5493	0.4507	0.010112355	0.100560206
0.136	0.5428	0.4572	0.010403343	0.10199678
0.137	0.5364	0.4636	0.010698459	0.103433355
0.138	0.5299	0.4701	0.010997702	0.104869929
0.139	0.5235	0.4765	0.011301073	0.106306504
0.14	0.5171	0.4829	0.011608571	0.107743078
0.141	0.5106	0.4894	0.011920196	0.109179652
0.142	0.5042	0.4958	0.01223595	0.110616227
0.14265	0.5000	0.5000	0.012443403	0.11155

The expected return is a linear function of the portfolio risk and it can be written as follows:

$$R_P = 0.065 + 0.6961 \sigma_P$$

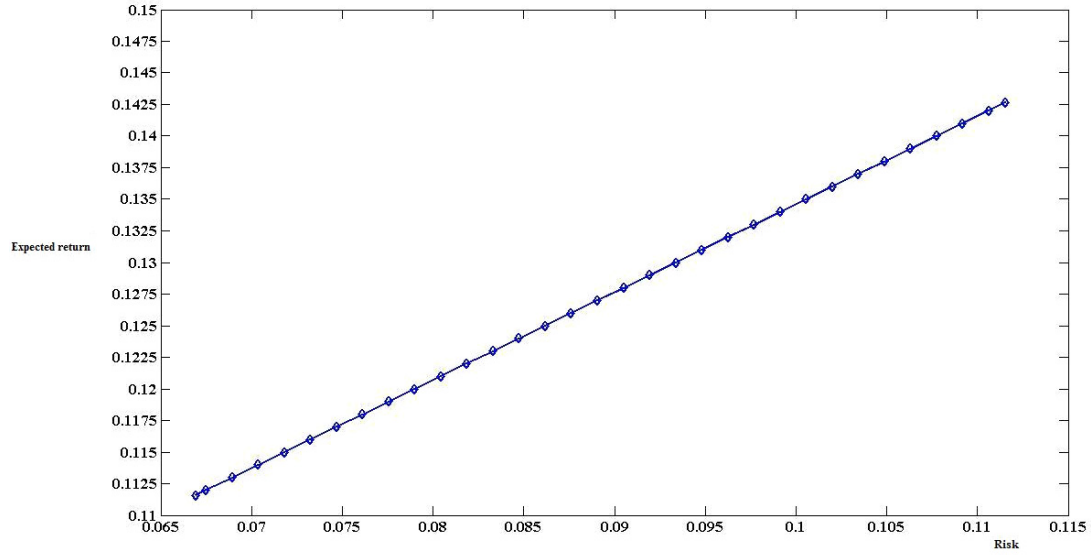

Figure 1. *The relationship between portfolio risk and expected return on the investment portfolio*

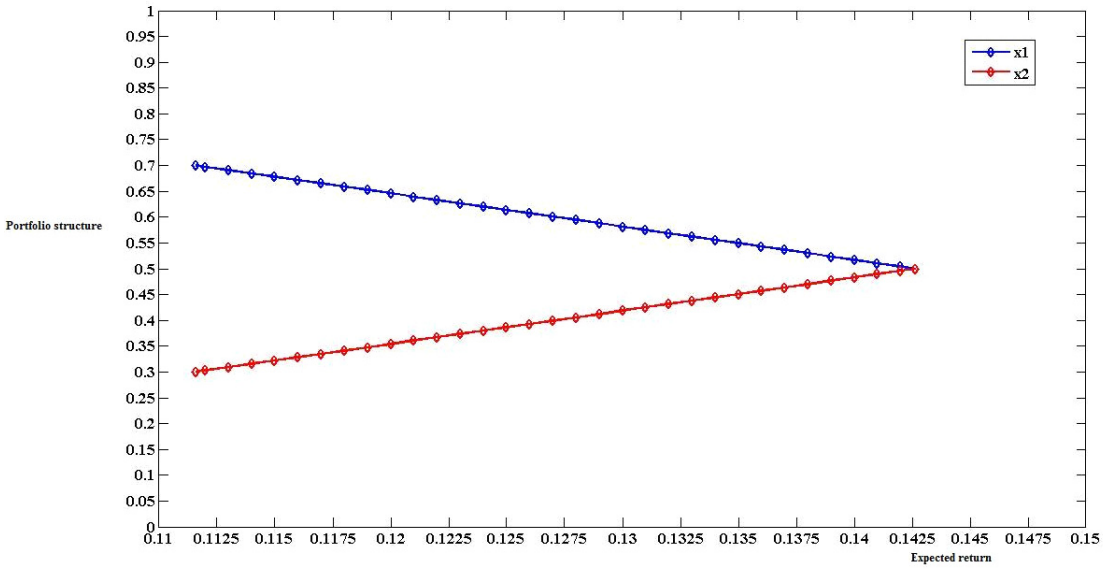

Figure 2. *The portfolio structure modification*

A thorough analysis of the above charts yields the following conclusions:

- the minimum risk portfolio (σ_P = 6.69%) consists of 70% debt securities issued by the government and 30% listed shares because government bonds are risk-free assets. The expected return on this portfolio is 11.16%;
- portfolio risk increases as the expected return increases. The maximum risk portfolio comprises 50% government bonds and 50% listed shares. The expected return is 14.27% and the corresponding risk is 11.16%;
- the proportion of government bonds in the investment portfolio decreases

as the expected return increases and at the same time the proportion of shares increases because the return on the latter is higher than the risk-free rate.

This section of our study focuses on the setting up of a three-asset portfolio comprising government debts, listed shares and bank deposits. We introduce the following notations:

- x_3 = the proportion of bank deposits in the investment portfolio;
- R_3 = the expected return on bank deposits;
- σ_3 = the volatility of bank deposits;
- σ_{13} = the covariance between the returns on government bonds and bank deposits;
- σ_{23} = the covariance between the returns on shares and bank deposits.

We have:

$$R_1 = 0.065 \quad \sigma_1 = 0 \quad \sigma_{12} = 0$$
$$R_2 = 0.2203 \quad \sigma_2 = 0.2231 \quad \sigma_{13} = 0$$
$$R_3 = 0.0974 \quad \sigma_3 = 0.0103 \quad \sigma_{23} = 0$$

The expected return on the portfolio and the associated risk are:

$$R_P^* = x_1 \times R_1 + x_2 \times R_2 + x_3 \times R_3 =$$
$$= 0.065 \times x_1 + 0.2203 \times x_2 + 0.0974 \times x_3$$
$$\sigma_P^2 = x_1^2 \times \sigma_1^2 + x_2^2 \times \sigma_2^2 + x_3^2 \times \sigma_3^2 +$$
$$= 2 \times x_1 \times x_2 \times \sigma_{12} + 2 \times x_2 \times x_3 \times \sigma_{23} +$$
$$= 2 \times x_1 \times x_3 \times \sigma_{13} = x_2^2 \times \sigma_2^2 + x_3^2 \times \sigma_3^2$$
$$\sigma_P^2 = 0.04977361 \times x_2^2 + 0.00010591 \times x_3^2$$

In order to determine the minimum absolute variance portfolio we need to solve the following system:

$$\begin{cases} x_1\left(\sigma_1^2 - 2 \times \sigma_{13} + \sigma_3^2\right) + \\ + x_2\left(\sigma_{12} - \sigma_{13} - \sigma_{23} + \sigma_3^2\right) + \left(\sigma_{13} - \sigma_3^2\right) = 0 \\ x_2\left(\sigma_2^2 - 2 \times \sigma_{23} + \sigma_3^2\right) + \\ + x_1\left(\sigma_{12} - \sigma_{13} - \sigma_{23} + \sigma_3^2\right) + \left(\sigma_{23} - \sigma_3^2\right) = 0 \end{cases}$$

Taking into account that government bonds are risk-free and that the three covariances are all equal to zero we have:

$$\begin{cases} x_1 \times \sigma_3^2 + x_2 \times \sigma_3^2 = \sigma_3^2 \\ x_2\left(\sigma_2^2 + \sigma_3^2\right) + x_1 \times \sigma_3^2 = \sigma_3^2 \end{cases}$$

It follows immediately that the minimum absolute risk portfolio has the following structure: $x_1 = 1$, $x_2 = 0$ and $x_3 = 0$, that is, the pension fund's assets are invested only in government bonds. Such a portfolio cannot be set up due to the following legal limitations:

$$x_1 \le 0.7$$
$$x_2 \le 0.5$$
$$x_3 \le 0.2$$

The minimum risk portfolio that satisfies the former conditions is $x_1 = 0.7$, $x_2 = 0.1$ and $x_3 = 0.2$, which means that the pension administrator invests mostly in less risky assets (government bonds, bank deposits) and buys a relatively low amount of listed shares. The expected return on this portfolio ($\underline{R_P}$) is:

$$\underline{R_P} = 0.7 \times 0.065 + 0.1 \times 0.2203 +$$
$$+ 0.2 \times 0.0974 = 0.087 = 8.7\% \quad ,$$

and the portfolio risk ($\underline{\sigma_P}$) is:

$$\underline{\sigma_P} = 0.04977361 \times 0.1^2 + 0.00010591 \times 0.2^2 =$$
$$= 0.00050197 \Rightarrow \sigma_P = 0.0224 = 2.24\% \quad .$$

The most profitable investment portfolio consists of 50% shares, 20% bank deposits and 30% public debt securities. The expected return ($\overline{R_P}$) and the corresponding risk ($\overline{\sigma_P}$) are determined as follows:

$$\overline{R_P} = 0.3\times 0.065 + 0.5\times 0.2203 + \\ + 0.2\times 0.0974 = 0.1491 = 14.91\%$$

$$\overline{\sigma_P} = 0.04977361\times 0.5^2 + 0.00010591\times 0.2^2 = \\ = 0.01244764 \Rightarrow \sigma_P = 0.1116 = 11.16\%$$

In order to determine the efficient frontier we must solve the following optimization problem:

$$\begin{cases} \min \sigma_P^2 = 0.04977361\times x_2^2 + 0.00010591\times x_3^2 \\ \text{provided that} \begin{cases} R_P^* = 0.065\times x_1 + 0.2203\times x_2 + 0.0974\times x_3 \\ x_1 + x_2 + x_3 = 1 \end{cases} \\ \text{subject to} \begin{cases} x_1 \le 0.7 \\ x_2 \le 0.5 \\ x_3 \le 0.2 \end{cases} \end{cases}$$

Introducing the following expression of x_1:

$$x_1 = 1 - x_2 - x_3$$

in the formula of the expected return on the portfolio, we get:

$$R_P^* = 0.065\times(1 - x_2 - x_3) + 0.2203\times x_2 + \\ + 0.0974\times x_3 = 0.065 + 0.1553\times x_2 + \\ + 0.0324\times x_3$$

It follows that

$$x_2 = \frac{R_P^* - 0.065 - 0.0324\times x_3}{0.1553}$$

and

$$\sigma_P^2 = 2.06374593\times \\ \times\left(R_P^* - 0.065 - 0.0324\times x_3\right)^2 + \\ + 0.00010591\times x_3^2$$

Differentiating w.r.t. x_3 and requiring that:

$$\frac{\partial x_P^2}{\partial x_3} = 0 \Rightarrow \text{ we get:}$$

$$x_3 = 29.42564746\times R_P^* - 1.91266703$$

Substituting this relationship in the formula of x_2 yields:

$$x_2 = 0.30012249\times R_P^* - 0.01950797$$

The proportion of government bonds in the optimum portfolio is:

$$x_1 = 1 - x_2 - x_3 = 2.932175 - \\ - 29.72576995\times R_P^*$$

The expected return on the three-asset investment portfolio varies in an interval that can be determined by requiring x_1, x_2 and x_3 to satisfy the legal limitations:

$$0 \le x_1 \Rightarrow R_P^* \le 0.09864084$$
$$x_2 \le 0.5 \Rightarrow R_P^* \le 1.73098647$$
$$x_3 \le 0.2 \Rightarrow R_P^* \le 0.07179679$$

We now face a contradiction because the minimum possible expected return on the investment portfolio ($\underline{R_P}$) is 8.7%. The flaw of the optimization problem lies in the fact that the legal restriction of investments in bank deposits is too low. In order to derive the efficient frontier we must determine how the legal restriction of investments in bank deposits should be modified. Recall that

$$x_3 = 29.42564746\times R_P^* - 1.91266703$$

Requiring that $R_P^* \ge \underline{R_P}$, we get:

$$\frac{x_3 + 1.91266703}{29.42564746} \ge 0.087 \Rightarrow x_3 \ge 0.6473643,$$

which means that the proportion of bank deposits should be at least 64.74%.

Assuming that the pension fund administrator invests 20% of the fund's assets in bank deposits, we will try to optimize the investment portfolio. The optimization problem we now face is:

$$\begin{cases} \min \sigma_P^2 = 0.04977361 \times x_2^2 + 0.00000424 \\ \text{provided that} \begin{cases} R_P^* = 0.065 \times x_1 + 0.2203 \times x_2 + 0.01948 \\ x_1 + x_2 = 0.8 \end{cases} \\ \text{subject to} \begin{cases} x_1 \le 0.7 \\ x_2 \le 0.5 \end{cases} \end{cases}$$

The following relationships between x_1, x_2 and the expected return on the portfolio can be derived:

$$x_1 = 1.26027044 - 6.43915003 \times R_P^*$$

$$x_2 = 6.43915003 \times R_P^* - 0.46027044$$

Considering several values of the expected return on the portfolio (in the interval $\left[\underline{R_P}, \overline{R_P}\right]$) we get the following values for x_1, x_2 and x_3, as well as for the portfolio risk:

Expected return R_P^*	x_1	x_2	x_3	σ_P^2	σ_P
0.08701	0.7000	0.1000	0.2000	0.0005	0.0224
0.088	0.6936	0.1064	0.2000	0.00057	0.02382
0.089	0.6872	0.1128	0.2000	0.00064	0.02525
0.09	0.6807	0.1193	0.2000	0.00071	0.02668
0.091	0.6743	0.1257	0.2000	0.00079	0.02812
0.092	0.6679	0.1321	0.2000	0.00087	0.02955
0.093	0.6614	0.1386	0.2000	0.00096	0.03098
0.094	0.6550	0.1450	0.2000	0.00105	0.03242
0.095	0.6486	0.1514	0.2000	0.00115	0.03385
0.096	0.6421	0.1579	0.2000	0.00125	0.03528
0.097	0.6357	0.1643	0.2000	0.00135	0.03672
0.098	0.6292	0.1708	0.2000	0.00146	0.03815
0.099	0.6228	0.1772	0.2000	0.00157	0.03959
0.1	0.6164	0.1836	0.2000	0.00168	0.04102
0.101	0.6099	0.1901	0.2000	0.0018	0.04246
0.102	0.6035	0.1965	0.2000	0.00193	0.04389
0.103	0.5970	0.2030	0.2000	0.00205	0.04533
0.104	0.5906	0.2094	0.2000	0.00219	0.04676
0.105	0.5842	0.2158	0.2000	0.00232	0.0482
0.106	0.5777	0.2223	0.2000	0.00246	0.04963
0.107	0.5713	0.2287	0.2000	0.00261	0.05107
0.108	0.5648	0.2352	0.2000	0.00276	0.0525
0.109	0.5584	0.2416	0.2000	0.00291	0.05394
0.11	0.5520	0.2480	0.2000	0.00307	0.05538
0.111	0.5455	0.2545	0.2000	0.00323	0.05681
0.112	0.5391	0.2609	0.2000	0.00339	0.05825
0.113	0.5326	0.2674	0.2000	0.00356	0.05968
0.114	0.5262	0.2738	0.2000	0.00374	0.06112
0.115	0.5198	0.2802	0.2000	0.00391	0.06255
0.116	0.5133	0.2867	0.2000	0.00409	0.06399
0.117	0.5069	0.2931	0.2000	0.00428	0.06543
0.118	0.5005	0.2995	0.2000	0.00447	0.06686
0.119	0.4940	0.3060	0.2000	0.00466	0.0683
0.12	0.4876	0.3124	0.2000	0.00486	0.06973
0.121	0.4811	0.3189	0.2000	0.00507	0.07117
0.122	0.4747	0.3253	0.2000	0.00527	0.0726
0.123	0.4683	0.3317	0.2000	0.00548	0.07404
0.124	0.4618	0.3382	0.2000	0.0057	0.07548
0.125	0.4554	0.3446	0.2000	0.00592	0.07691
0.126	0.4489	0.3511	0.2000	0.00614	0.07835
0.127	0.4425	0.3575	0.2000	0.00637	0.07979
0.128	0.4361	0.3639	0.2000	0.0066	0.08122
0.129	0.4296	0.3704	0.2000	0.00683	0.08266
0.13	0.4232	0.3768	0.2000	0.00707	0.08409
0.131	0.4167	0.3833	0.2000	0.00732	0.08553
0.132	0.4103	0.3897	0.2000	0.00756	0.08697
0.133	0.4039	0.3961	0.2000	0.00781	0.0884
0.134	0.3974	0.4026	0.2000	0.00807	0.08984
0.135	0.3910	0.4090	0.2000	0.00833	0.09127
0.136	0.3845	0.4155	0.2000	0.0086	0.09271
0.137	0.3781	0.4219	0.2000	0.00886	0.09415

Expected return R_P^*	x1	x2	x3	σ_P^2	σ_P
0.138	0.3717	0.4283	0.2000	0.00914	0.09558
0.139	0.3652	0.4348	0.2000	0.00941	0.09702
0.14	0.3588	0.4412	0.2000	0.00969	0.09846
0.141	0.3524	0.4476	0.2000	0.00998	0.09989
0.142	0.3459	0.4541	0.2000	0.01027	0.10133
0.143	0.3395	0.4605	0.2000	0.01056	0.10276
0.144	0.3330	0.4670	0.2000	0.01086	0.1042
0.145	0.3266	0.4734	0.2000	0.01116	0.10564
0.146	0.3202	0.4798	0.2000	0.01146	0.10707
0.147	0.3137	0.4863	0.2000	0.01177	0.10851
0.148	0.3073	0.4927	0.2000	0.01209	0.10995
0.149	0.3008	0.4992	0.2000	0.01241	0.11138
0.1491	0.3000	0.5000	0.2000	0.01245	0.11157

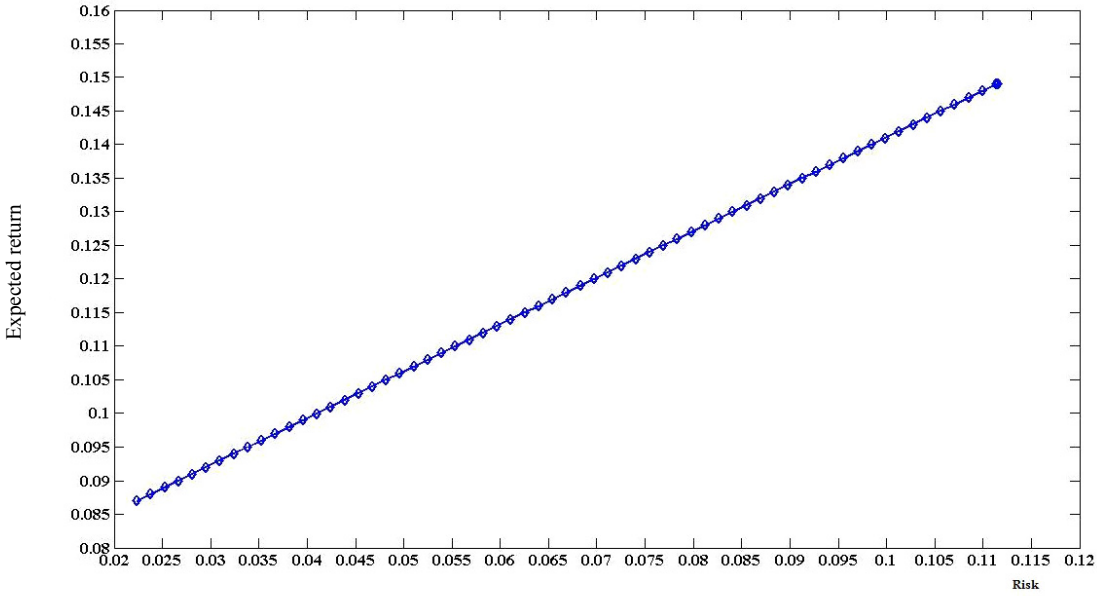

Figure 3. *The linear relationship between the portfolio risk and the expected return on the investment portfolio*

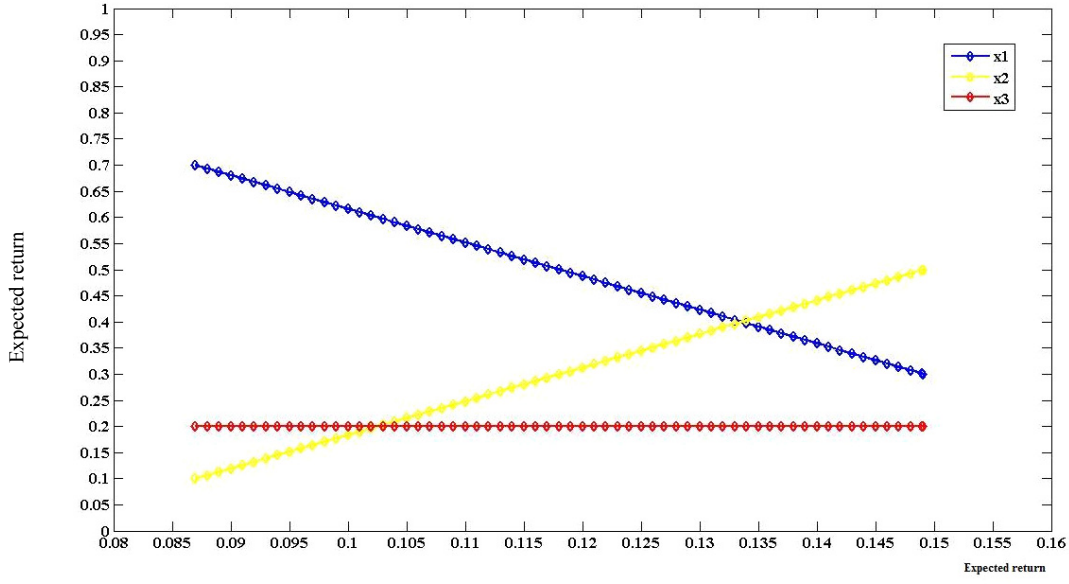

Figure 4. *The portfolio structure change*

The analysis of the above charts leads us to the following conclusions:

- the minimum variance portfolio contains 70% government bonds, 20% bank deposits and 10% listed shares. This is due to the fact that public debt securities and bank deposits are virtually riskless assets;
- the portfolio volatility increases as the expected return increases. The maximum expected return of 14.91% is attained at the expense of a 11.16% portfolio volatility;
- the proportion of bank deposits in any efficient portfolio is constant ($x_3 = 20\%$). Bank deposits are financial assets that provide lucrative investment opportunities at minimal risk exposure. As the expected return on the portfolio grows, the proportion of listed shares grows and the proportion of government bonds decreases.

To sum up, we have shown in our study that the setting up of efficient investment portfolios and effective risk management require the use of modern financial theory. Portfolio optimization also requires modern techniques of linear and non-linear programming. Portfolio diversification, as stated by the Markowitz and CAPM models, is of utmost importance because it reduces the risk of the investment portfolio to the lowest bound possible. This bound is the market risk. As a rule of thumb, all financial securities are affected by the market (or systemic risk) and this risk cannot be avoided. If there were no market risk, it would be possible to set up portfolios that are virtually riskless.

Note

(1) Non-EU/Non-EES members.

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The State – between Crisis and Reform

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Abstract. *By the end of the 20th century, the world had become increasingly interconnected. On one hand, the globalization level of the market economy had amplified, which called for understanding the interactions between the local and global action levels, as well as the effects of world interdependencies over the states' force and capacity. On the other hand, we are facing an increased fragmentation of the world economy in effect to the development of regional economic blocks. In other words, the world economy is dominated by two contradicting tendencies: the accentuation of interdependencies and the acceleration of the fragmentation process, in result of the economic integration process.*

The political and economic processes of globalization have called for the need of re-evaluating and re-defining the state's role in the national and world economy, of the traditional vision over its capacity of acting as a general manager in the economy and as autonomous actor in the highly instable international system.

Key words: globalization; nation-state; managerial state; post-suzerain state; legitimacy.

JEL Codes: H11, H41.
REL Codes: 13C, 13K.

Innovation and flexibility

The profound transformation in the state's role is due to the ideology orientations that occurred at the end of last century and is emphasized by the direct analysis of the relations with the market and globalization.

A significant role was played by the modification of the realistic paradigm having asserted that states represented primordial players in the international system and that the study of international relations mainly referred to the relations between states.

The collapse of Keynesianism, at least in its capacity as governmental policy, has called for a new orientation, concretized in a project that supported the diminishment in the state's role, cutting down public expenses and increasing the services' efficiency. The ideological reorientation of the 80s significantly contributed to the limitation of the state's governing capacity and was grounded on the neo-liberal triumvirate of commerce privatization and drastic reduction of governmental expenses (Klein, 2007, p. 355). The counter-revolution of the School of Chicago was manifested by Milton Friedman's opposition to the "welfare state" and "big government".

The occurrence of the welfare state's crisis imposed a change in the philosophy regarding social programs. The austerity imperatives characterizing economic management have determined not only the tendency of reducing the state's role, but also the re-evaluation of its direct and coercive role.

There are also significant the reforms performed in many Western countries in the field of public sector, with particular implications over the de-centralization of the public authority's transfer and increased fragmentation of the politic system. The central government's functions were de-centralized upon lower levels, and in certain areas political authority has been slightly transferred towards trans-national organizations. Increased fragmentation of the political system has lead to the manifestation of the plurality of players and organizations involved in achieving common objectives, as well as to the attenuation of the differences between "public" and "private".

Given the globalization, major economic governing institutions have increased their power and influence, while the state's control was significantly reduced. Considering the de-territorializing of the economic activity, the tendency has occurred for the actors involved in international coordinated debates to proliferate. New and important forces, as well as non-governmental organizations or international instances are progressively manifesting themselves. Besides public governing authorities, new "private" instances and associations occur. Along with the players' multiplication, the world society is registering a dualist composition: on one hand, the world of states, formed of recognized players, with a regulated activity, and on the other hand, a "multi-centers" world, consisting of international players that are autonomous from the states.

Along with the increase in the number and influence of the new actors and governing partners, the focal center of the world politics has shifted from the states' public agents towards private entities. The transfer of some important decisions from the public to the private area has contributed to increasing the influence of "non-public" players, and a part of the markets regulation is ensured by non-state entities. Under such circumstances, the number and complexity of economic governing bodies is increasing, which induces new characteristics to the market regulation process. In the same time, new and important forces are manifested, such as non-state, para-state, public, private and associative players, new categories of law giving, executing and evaluating players.

Economic de-regulation and liberalization have had a profound impact over the state's role and impact in many countries. The state-nation traditional model is becoming inadequate; it manifests its limits in achieving reforms and is registering multiple transformations in view of the interdependencies and competition, as well as of the dissemination of the new theories regarding policies design and public management. The major change in the organization of political power is regarded as a shift from "government" to "governance". The creation of new types of authority comes along with the introduction of new governing models based on market and "networks". The transformation of the public sector has imposed "less government" and "more governance".

The success of the New Right at the end of the 70s was decisive for the process of re-thinking the state's economic role, as well as in orienting policies towards anti-state and in favor of the free market. The introduction of public management principles in the private sector has been characterized as managerialism. The anti-state nature of the new ideology (rolling back the state) also reflects the opposition against the welfare state, the crisis of which lays at the intersection between economics and politics. The Keynesian welfare state (KWS) is distinguished from the Schumpeterian workfare state (SWS), characterized by the stimulation of innovation, flexibility and economic competitiveness, as well as by the subordination of social policies to economic objectives. Market forms are being promoted, and the welfare agenda is subordinated to the capital's interests.

The reconstruction of the state was achieved at the intersection of the New Right with managerialism. A new spirit is reflected by the re-inventing of government, characterized by flexibility and contrasting to the negative image having characterizing the previous state bureaucracy. Thus, the transformations specific to that period have determined the shift towards a "managerial state". Welfare and the state have been placed in a new relation, which does not call for an institutionally integrated form (Clarke, Neman, 1977, p. 140). A strong component of the state's restructuring is the tentative of transforming decisions into non-political ones, by the dispersion of power towards

managerial control organizations, equally in the public and private area. "Managerial policies" are suggested, which although they directly refer to the institutions' efficiency, they also comprise the managerializing of the policy itself.

The redefining of the macro-economic management principles has favored the introduction in the theoretic circuit of the "K-Mart State" and monetarist state concepts, the essential role of which consists in ensuring a favorable commercial environment. Given the new rules, the states' power of administering their own economies is diminishing.

The accentuated tendency towards globalization has changed the nature of the competition and has weakened the states' suzerainty. A new type of state is suggested, with particular institutional forms. Called the post-national or post-suzerain state, it is defined by two features: a weak national economy, because the country's welfare is of external nature, as it is determined by the export and performance of the commercial blocks; a significant reduction in the state's ability of getting involved in the management of the internal economy (Boyer, Drache, 1997, p. 51)

One of the consequences of globalization is the beginning of the end of the "national" aspect. Although for world economy and finances some consider the national economy concept to be an outdated one (Paquin, 2005, p. 62), or a "statistic fiction", the "national" aspect continues to remain relevant.

Indeed, the increasing economy globalization is eroding one of the nation-state's fundaments, the national market. This does not mean that its role and power are facing absolute decline, or that its attributions have been taken over by trans-national, as it is sometimes asserted.

Besides the general rhetoric claiming "less state and more market", national capitalism is no longer the only concrete form of social organization. The history of capitalism is no longer defined and limited by national borders, and its shift from the era of nations to the era of mankind welfare has become increasingly obvious (Boyer, Drache, 1997, p. 68).

The new post-war wave of globalization has had a particular impact over national policies. In view of many observers, globalization seems to define a new stage in the world economy and it represents the end of the nation-state as manager of national economic policies. Given the internationalization of the state's policies, the analyses are becoming interesting regarding the possibility for markets to govern the modern society, as well as the opinions supporting the need for institutional innovations and of new governing objectives and tools.

On a theoretical level, nations have to choose between market and supra-national state. Multiple options support both options. The markets' dominant position can be due to the fact that no supra-national authority has the power of enforcing discipline on trans-national markets, which will gradually erode the legitimacy of the nation-state. The presence and complexity of economic and financial instability forms also emphasizes the limits of the governing outside the

state's intervention. Although the post-war state's efficacy is contested, its intervention is not automatically doomed to failure.

On the contrary, the market is only viable in the context of considerable social and political order. If the actual triumph of the market represents a problem, economy globalization does not represent the promotion of the market's logic, but the result of the interaction between markets and states. On a global level, economic and politics are interconnected, and globalization needs to be directed in a geo-political context, and not only as an economically ruled process. The market tends to expand over national borders, while states contribute to territorial fragmentation. Although their origins as modern social institutions date back in approximately the same period, they are based on different logics: market is grounded on an economic logic, aiming profit and efficacy, while the state is grounded on power and legitimacy. They are interactive, sometimes they collaborate, other times they are conflicting, but they are always influencing each other. The attempt of counter-posing them and of substituting to each other could lead to perverse results for the society (Nayar, 2005, p. 16). Neither the solutions of the market or those of the state have proven optimal. Many of the analyses dealing with the state's relation with the market are focused rather on ideological than on scientific aspects. A pertinent research grounded on the current realities has to let aside stereotype based models and to eliminate clichés and preconceptions. Thus, for the liberals the solution to the state's failures is "more market", while the adepts of the intervention for fight against market failure suggest "more state". A zero sum perception seems to prevail, in which more state means more market and vice-versa. However, considering the increased complexity of the society, the networks have stumped the distinction between state and market, public and private. Also, achieving real stability of the economy in close connection with increasing such calls for re-balancing the state and the market, as opposed to the tendency of diminishing the state's role in the economy (Serra, Stiglitz, 2008, p.12).

State reconfiguration

The different assessment and interpretation of the tendencies arising from the modifications in the nature, the content and area of politics and economics have made it possible for various prospectus and estimations to be made, some dark, and some optimist regarding the reactions and marriages in the state's maneuver, as well as its ability of coping with major breakups.

The critical analysis of the dominant theories aiming to analyze the state's rapports with the economy in view of globalization and integration should be based on the need of reassessing and redefining the state's role as general manager of the economy and of its permanent adapting to the new market constrains.

The state's regulating forces evolve strongly connected to the political fundaments of the economy, with the forms

of political authority, the need of political authority and legitimacy and are closely following the mangerializing and removing the politics from the state's structures, as well as the evolutions on a geopolitical and geo-economical level. Also, the states' aptitudes and reaction time are closely correlated to the crisis of thinking and practically acting and with the institutional and political disequilibrium.

In the Anglo-Saxon literature, political debate is government focuses, although the state represents a more comprising reality than the governing forms. The central theme of the 20th century history was the very increasing of the government's contribution in the development of economic activities. The expansion of the government's functions and of the economic policy objectives reflects the attitude of the political authority towards economic problems.

The state authority's persuasive power and the change in the perception over the state's specific role in the economic life define the characteristics of a peaceful revolution in the relations of the state with the society, in which the economic role of the government has been of essential significance.

Numerous controversies and debate themes have existed over the concepts used in order to explain the state's actions and its action means, to establish the government's optimal sizes, the allocation of duties to the government and private sector, the use of public budget and the ensuring of macro-economical equilibrium, the limits of public duties and so on.

The size and complexity of the state's activity, as well as the sizes of its consequences arise from the state's double role, that of political subject creator of political and social processes and that of economic player.

The evolutions characteristic to the political and economic authority and power are the consequence of a double impact. On one hand, we assist to deliberate renunciation under the impulse of the action of economic and doctrine related factors and conditions from the state, in exercising some of its attributions and competencies, considering the expansion of the de-regulation, privatization and liberalization measures' expanding. On the other hand, the tendency of diminishing the state's authority and power comes along with consistent responses to more and more obvious external phenomena.

Thus, the rethinking of the perception over the state should be made in line with the existence of this contradictory tendency, manifested by the reduction of the public powers' role and of an increased need for authority and legitimacy. Their consequences over the state's force and authority should be regarded in view of an inedited situation, emphasizing new manifestation forms of the relations between politics and economics on an international level.

The accentuation of the international economic integration occurs due to the continuous fragmentation on a political level into independent states. Due to such circumstances, a certain discrepancy occurs

between the national economy area and the national territorial limits, which make the state borders cease to coincide with the expansion of the political authority exercised over the economy.

The manifestation of the gap between the state's power and its territory has suggested the idea of abandoning the conception regarding the nation-state, present especially in the French tradition (Michalet, 2002, p. 175).

The economic and political processes of globalization and integration have affected the state's authority and aptitude of supporting economic and social regulation.

The assessment of the power perspectives and of the states' margins of maneuver is achieved in less and less trenchant terms. Most opinions converge towards an undeniable regression of the economic, political and juridical power of the state, concretized in the diminishment of the capacity of designing and implementing economic policies and the relative and progressive decline of its economic functions (Auby, 2003, p. 95). Actually, the hostility towards political authority has accentuated along with the state's development.

Taking the economic power from the sate and its gradually loosing its authority generates profound implications over its intervention capacity and force for managing political and economic equilibriums.

The transfer of some decisions from the public to the private sphere, the increase in the capital and markets' authority, the partial transfer of functions from the central state to the local authorities, the emergency and expansion in the role of the globalization specific players, the competition from other un-state powers and so on are considered as essential causes for the permanent deterioration of the state's capacity as effective manager of the economy and of its possibility of managing world interdependencies.

Considering these evolutions, the idea is supported of diminishing down to disappearing of the states' role in certain areas. However, real difficulties call for such tendencies to be evaluated. The above asserted thesis does not lack ambiguities. Thus, it is not entirely clear if the claimed decline of the state is a irreversible secular tendency or if this thesis rather serves as an ideological procedure for supporting certain interests. In other words, it is essential to answer to the question if the states' decline is the result of structural logic of the economic system (Brailean, 2005, p. 93).

There are increasingly present opinions considering that only a powerful state can interfere in the economic and social life, such truth being also supported by the fact that anti-state rhetoric maintains a reduced resonance considering contemporary realities.

The adepts of reconsidering, and in the same time of a active presence of the state are inspired by the very thesis supported by the liberal economy and by the national and international economy realities. Nonetheless, there are essential the evaluations regarding the pertinence of the nation-state traditional concept and of its future.

There is particularly renowned the idea of a potential increase in the state's authority and control capacity, after a long period of de-regulations and liberalization measures. Moreover, it is not excluded the possibility of giving up the thesis of the market's fundamentalists and the return to the directing state (Martin, Schumann, 1999, p. 355).

The concern for the states' construction reduces the echo of the call for limiting or reducing the role of the public power and authority.

The dominant theme of the reconstruction and reform policy considering the neo-liberalism dominance was the reduction of the state's intervention in business. The theoretical understanding over such need was accompanied by inadequate practical actions, which have contributed to the very compromising of defining processes in the economic liberalization. Conceptual errors have concretized in measures for reducing the state's role on all levels, without dissociating the various dimensions of stability and understanding their role in the economic development.

In order to avoid such confusions, a distinction has been suggested between the size of the state's activity, referring to the functions undertaken by the government and the strength of the state's power or the state's possibility of planning and designing public policies (Fukuyama, 2004, p. 14). Often, the referrals to the state's force refer to both its sizes and its power or capacity. Nonetheless, the achievement of the economic reform processes calls for a nuanced approach of the state's role, concretized in its withdrawing from certain areas and invigorating its position in others.

Therefore, the agenda of states construction is considered as important as the reduction of their share. Based on the distinction between the state's size and capacity, it becomes possible for the state's intervention levels existent in different countries to be established. From a development standpoint, it is considered as optimal combination the one between the limited amplitude of the state's functions with a strong institutional efficiency.

Admitting the priority of force over the state's amplitude is of important consequences over the transition process, as well as over the economic efficiency. The tendency of shifting the governing functions and of progressive escaping of the state and nation-state autonomy, concretized in the term the "dusk" of suzerainty, calls for the need of having strong and efficient states.

An important factor in increasing the need for authority is the excessive power of the financial markets, considered as an essential dimension in the economic globalization.

The considerable amplitude of financial circulation national and international wide, as well as the essential role of the financial industry has led to the enhancement of the economy's financing tendencies and to the disconnection between the real and the financial economy, while the chaotic development in the field of finances and the difficulty of delivering rigorous control in this area represent potential sources of shock.

The limits of financial markets and the correction of their excesses call for the institution of an adequate framework and

prudential rules, as well as for adequate macro-economic adjustments. Therefore, the increased role of the financial industry needs a careful and increased involvement from the public power for the purpose of diminishing risks and uncertainties.

Thus, the market triumph and the expansion of capital do not automatically generate the state's withdrawing. On the contrary, the ascendant evolution of the economy, protected from convulsions and infrequencies needs adequate rules and institutions that impose specific features to the national capitalism.

Although the adepts of laissez-faire accuse public intervention of being immobile and inefficacy, the affluence and massive presence of capitals is achieved considering the existence of a strong state and of regulations that could favor their expansion.

Consequently, the need for authority and for increased regulation should lead to firm actions for permanent renovation and adapting of the institutions integrating the capitalism's development and "more politics regarding the markets".

Conclusions

Controversial opinions exist regarding the impact of increased interdependencies and globalization over the state's autonomy, force and capacity. The common place of many studies and analyses is represented by the admission of its being undermined from the inside and from the outside. A significant theme is represented by the crisis and implosion of the national state, by the decline and erosion of the suzerainty. Other globalization theoreticians admit the exacerbation of the effects over the state's internal and external prerogatives. The role of the state in the 21st century is undeniably changing. Significant modifications are made in the mechanisms and tools by which the current state manages society. There are aimed not only the state's internal organizational forms, but also its relations with the economy.

The state is transformed by globalization, but it will continue to play an important role in the regulation of economic and social processes. Globalization does not mean the end of the sate, yet it calls for the reconstruction and re-thinking of the intervention modalities and capacity to act. The arguments in favor of the state's transformation should not be confounded with those regarding its decline. In the same time, globalization is only one of the regress factors and it does not imply only a list of constraints, but also of opportunities.

Although the state continues to have an important margin of maneuver, it is confronting the most profound legitimacy crisis in its history.

Far from being viewed as an accident of the history, national state will continue to represent the only alternative as a source of public power for the economic governing. Throughout this century, not only the state will survive, but it will also continue to play an important part. This does not exclude the persistency of a number of unknown variables regarding the dimension and limits of its involvement, the form and conditions in which suzerainty will be reinstated and so on.

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Building a New Econometric Model of Determination of the Prices Dynamics Impact over the National Economy and over its Main Vulnerable Sectors in Connection with the Romanian National Economy Specificity

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Abstract. *In economics, a model represents an abstract, formal image of a phenomenon, process or economic system. It is built by symbolically reproducing the economic theory and by getting new information regarding the behavior of the objective being investigated. In economic theory there are several integrated econometric models meant to underline the interdependency between the branches of a national economy by the public utilities services, especially those connected to energy. The present article presents the first results of our efforts of building an econometric model adapted to the specificity of the Romanian economy, that would underline the impact of the prices modification for public utilities on the Romanian economy as a hole, on the competitiveness of Romanian companies and on the inflation.*

Key words: econometric model; prices; utilities; economic sectors; competitiveness.

■

JEL Codes: C51, E31.
REL Codes: 3B, 10B, 8F.

The rise of the prices for utilities is motivated by the need of profitability of the public utilities sector. The research has followed the effect of this measure on some of the Romanian economic sectors, on the other prices in the economy, on the competitiveness of the Romanian companies, respectively on the inflation rate. In this purpose, two different methodological approaches have been used, in order to get answers to each one of the problems, respectively:

- the input-output analysis, the input-output data, the technical coefficients and the prices equations for the national economy, approached on 7 branches aggregations and, wider, on 34 branches, in order to determine the impact over the competitiveness of Romanian companies;
- the calculation, on the basis of the prices index published by INSSE, of the impact on the products and services prices of the consumption basket others than utilities, in order to determine this way the impact over the inflation rate.

1. Calculation premises for the econometric model

The adhesion to the European Union placed the Romanian companies in front of a special challenge. The present context is full of opportunities but also a very risky one. Among these risks we can mention: the appreciation tendency of the national currency, which affects exporters; the limitation of the state aids only for exceptional and unrepeated situations, and only with the agreement of the European Commission; the rise of utilities prices; the free competition on the single European market. Among the opportunities we can quote: the interest reduction in the same time with the deflationist process, implying the easier access to credits; the reduction of the corporate income taxes; the diversification of the investment portfolio by the liberalization of the capital account; the participation to European trade organizations, that would defend better the Romanian trade organizations interests; the opportunity of accessing increasing communitarian funds.

The model aims to analyze the utilities prices increase from their impact on the Romanian companies' competitiveness. The utilities prices increase is a process that takes places for several years now, with certain regularity. In the model construction only the prices increase announced in February 2005 have been taken into account, respectively those which were to take place starting with the 1st of April 2005 and during the following period. Thus, the prices increases taken into account, agreed at that moment by the International Monetary Fund, were:

- 35% for natural gas;
- 5% for electric energy;
- 20% for thermal energy.

The utilities prices were among the regulated prices at that time. It was nevertheless considered that, with the liberalization of the specific utilities markets, the rates of these services could also raise in a first stage. The fundamental ratio in the approach of this subject was:

Utilities prices = Production cost for utilities + Cost of adaptation to the new environmental conditions.

The cost of production for utilities was and still is very high from several reasons, among which: the old, physically and morally worn; the defective management; the salary expenses that had an increase rhythm that usually surpassed that of the work productivity. To all these we must add the environmental expenses that Romania adopted during the EU negotiations, which started to be included in the prices, in the same time with the investment process for pollution reduction. The utilities prices increases must cover all the above-mentioned costs. Romania was forced to cease the distribution of financial aids for the utilities sector, being thus forced to let these prices free, determining, from the above-mentioned reasons, but also given the international conditions of the energy market, an unprecedented increase.

The model tended to offer the frame for an impact analysis on the utilities prices increase, in an economy where the ex-ante impact analysis is rare and where the legislative, administrative or fiscal measures are often taken under the momentary pressure, without any analysis of the effects they could have on the economy as a hole and on the companies in particular.

2. Presentation of the methodology used in building the new econometric model

The general balance models (CGE) are *general* measurable relationships models that help us describe the ensemble of the economy, at a high conceptualization and aggregation degree, aiming to different markets that interact with each other. The model we realized allows a *static* analysis of the different macroeconomic policies influence on a large number of indicators such as production and internal consumption, imports and exports, workforce occupancy, level of salaries, budgetary revenues and expenses, operational cash flow, polluting emissions reductions, etc.

In order to accomplish the objectives of the study the model was run in the Generalized Algebraic Modeling System (GAMS), using the available statistic data from the Romanian National Accounts.

The basis of the statistical information used in the modeling process is made of the Input-Output table, the conception of which belongs to Wassily Leontief.

For the analysis of the environmental policy on the industrial competitiveness by running the CGE model, the elaboration of the Social Accounting Matrix was necessary, which, actually, is an extinguished form of the Input-Output table (U.N., 1999). The statistical information presented under the aspect of a matrix will constitute the input data indispensable for obtaining the results of the modeling process.

The Social Accounting Matrix (SAM), built upon the data existing in the National Accounts 1997 – 1999 and published in 2002 by the National Statistics Institute, is divided into three large blocks. The first represents the internal production of the different activity sectors. The 34 activities that are present in the National Accounts have been aggregated on seven domains: *agriculture; mining; processing industry; energy, gas, water; constructions; transportation; services.* In consequence,

the first block of the SAM includes seven columns. The first section of this block, a square matrix made of seven lines and seven columns, reflects the Input-Output classical table. Completing this block, there are some additional lines, such as "Households"(1) and "Operational cash flow"(2). The utility of these additional lines is that they allow the visualization of the fact that revenues, weather they come from "Salaries", from the profits of the "Non-financial societies and quasi-societies – SQS"(3) or from the "Public administration"(4) transfers are allocated to the population, economic agents abroad ("Rest of the world"(5)) or again to "Public administration". In SAM, as in the Input-Output table, the lines describe outputs, and the columns – inputs.

The second block of SAM is made of the following seven columns. The values presented in the diagonal matrix reflect the internal production (resulting from the first block) out of which we have subtracted the exports. These values represent, in fact, the internal production of the different sectors of activity, allocated to the internal consumption. At this we add the imports for which rates of duty are being paid reflected in the line "Public administration". The sum of the values from the columns of the second block represent internal consumption, at sector level, which include the intermediary consumptions, the final demand of the households, public administration and the gross formation of the fixed capital(6).

The third block of SAM includes, among others, "The row formation of the fixed capital" and the "Salaries". The values presented in the column named "Rest of the world" reflect exportation. The fidelity of the elaboration approach of SAM can be verified using the balance condition. So, the values presented in the line containing the total values must be equal with those existing in the column corresponding to the total values.

In order to accomplish the objectives of the modeling, we have inscribed, also as input data, the values of the emission of CO_2, CO, CH_4, N_2O, NO_x, SO_2 and of volatile organic compounds (VOC) generated by the seven activity sectors.

We have noticed that, in the case of the "agriculture" sector, which also includes forestry resources, statistic data have reflected the carbon sequestration effect (over 50 millions tons per year) that the energy sector generated.

As these were, mainly, the input data necessary to our cognitive process, we continued by briefly describing the structure of the Computable General Equilibrium model.

We started by assigning indexes for the seven sectors of the national economy:

i = (AGR, MIN, MAN, EGW, CON, TRA, SER)

The j index was assigned to those sectors with goods or services that could make the object of international trade (in our case all the sectors; if, for instance, the water resources sector was independent in the statistic data, it made the object of a separate category, the one of non-merchantable goods).

j = (AGR, MIN, MAN, EGW, CON, TRA, SER)

Equations used within the CGE model

CIF prices, used on the internal market, of the important products are defined this way: $DP_j = \overline{WP}_j \times ER \times (1 + t_j)$.

The net prices are given by the equation:

$$NP_i = P_i - \sum_j a_{j,i} \times CP_j - \sum_l a_{l,i} \times P_l$$

We can notice the distinction between CP_j and P_l, in order to underline the difference between intermediary goods within the category of the merchantable goods, respectively of the non-merchantable goods on international markets.

The Armington first degree condition for the merchantable products on international markets is the following:

$$\frac{IM_j}{D_j} = \left(\frac{DP_j}{P_j}\right)^{\sigma_j} \times \left(\frac{\delta_j}{1-\delta_j}\right)^{\sigma_j}$$

Giving up the indexes, for simplification, the Armington condition results from the minimization of the following conditioned Lagrange function:

$$£ = DP \times IM + P \times D + \lambda \times$$
$$\times \left[X - \left(\delta \times IM^{-\rho} + (1-\delta) \times D^{-\rho}\right)^{-\frac{1}{\rho}} \right]$$

By the difference of the Lagrange function depending on IM, respectively D, we obtain:

$$\frac{\partial £}{\partial \mathrm{IM}} = \mathrm{DP} - \lambda \times \left(-\frac{1}{\rho}\right) \times$$
$$\times \left(\delta \times \mathrm{IM}^{-\rho} + (1-\delta) \times \mathrm{D}^{-\rho}\right)^{-\frac{1}{\rho}-1} \times (-\rho) \times$$
$$\times \delta \times \mathrm{IM}^{-\rho-1} = 0$$

$$\frac{\partial £}{\partial \mathrm{D}} = \mathrm{P} - \lambda \times \left(-\frac{1}{\rho}\right) \times$$
$$\times \left(\delta \times \mathrm{IM}^{-\rho} + (1-\delta) \times \mathrm{D}^{-\rho}\right)^{-\frac{1}{\rho}-1} \times (-\rho) \times$$
$$\times (1-\delta) \times \mathrm{D}^{-\rho-1} = 0$$

Making the report and simplifying, we obtain:

$$\frac{IM_j}{D_j} = \left(\frac{DP_j}{P_j}\right)^{\sigma_j} \times \left(\frac{\delta_j}{1-\delta_j}\right)^{\sigma_j}$$

The Armington function needs an equation of the compound price:

$$CP_j \times (IM_j + D_j) = DP_j \times IM_j + P_j \times D_j$$

The internal consumption is given by:

$$D_k = X_k - E_k$$

The production function is the following:

$$X_i = \left(\alpha_i \times L_i^{-\rho_i} + (1-\alpha_i) \times \overline{K}_i^{-\rho_i}\right)^{-\frac{1}{\rho_i}}$$

The capital being fixed, CGE is a short-term model.

The labor demand is:

$$L_i = \left(\frac{NP_i}{W}\right)^{\theta_i} \times \alpha_i^{\theta_i} \times X_i$$

Giving up again indexes, for simplification, the previous equation is deducted from the maximization of the conditioned Lagrange function, as it follows:

$$£ = NP \times X - W \times L + \lambda \times$$
$$\times \left[X - \left(\alpha \times L^{-\rho} + (1-\alpha) \times \overline{K}^{-\rho}\right)^{-\frac{1}{\rho}} \right]$$

By differentiating the Lagrange function by L, respectively X, we obtain:

$$\frac{\partial £}{\partial \mathrm{L}} = -\mathrm{W} - \lambda \times \left(-\frac{1}{\rho}\right) \times$$
$$\times \left(\alpha \times \mathrm{L}^{-\rho} + (1-\alpha) \times \overline{\mathrm{K}}^{-\rho}\right)^{-\frac{1}{\rho}-1} \times (-\rho) \times$$
$$\times \alpha \times \mathrm{L}^{-\rho-1} = 0$$

$$\frac{\partial £}{\partial X} = NP + \lambda = 0 .$$

Finally we obtain:

$$L = \left(\frac{NP}{W}\right)^{\sigma} \times \alpha^{\sigma} \times X \text{ , unde } \sigma = 1/(1+\rho)$$

The profits obtained by the different sectors (operational cash flow) are defined as it follows:

$$\Pi_i = NP_i \times X_i - W \times L_i$$

The exportation demand is given by the following equation:

$$\frac{E_k}{D_k}=\left(\frac{WP_k}{P_k}\right)^{\varepsilon_k}\times\left(\frac{1-\gamma_k}{\gamma_k}\right)^{\varepsilon_k}$$

Giving up indexes, the condition of the constant elasticity coefficient is obtained from the following maximization problem of the conditioned Lagrange type function:

$$\pounds = WP\times E + P\times E + \lambda\times$$
$$\times\left[Q - \left(\gamma\times E^{\rho} + (1-\gamma)\times D^{\rho}\right)^{\frac{1}{\rho}}\right]$$

By the differentiation of the Lagrange function we obtain:

$$\frac{\partial \pounds}{\partial E} = \mathrm{WP} - \lambda\times\left(\frac{1}{\rho}\right)\times$$
$$\times\left(\gamma\times \mathrm{E}^{\rho} + (1-\gamma)\times \mathrm{D}^{\rho}\right)^{\frac{1}{\rho}-1}\times(\rho)\times\gamma\times \mathrm{E}^{\rho-1} = 0$$

$$\frac{\partial \pounds}{\partial D} = P - \lambda\times\left(\frac{1}{\rho}\right)\times$$
$$\times\left(\gamma\times E^{\rho} + (1-\gamma)\times D^{\rho}\right)^{\frac{1}{\rho}-1}\times D^{\rho-1} = 0$$

By reporting the two equations and simplification, we obtain:

$$\frac{E_k}{D_k}=\left(\frac{WP_k}{P_k}\right)^{\varepsilon_k}\times\left(\frac{1-\gamma_k}{\gamma_k}\right)^{\varepsilon_k}$$

The row revenues of the household sector are defined as follows:

$$Y = W\times\sum_i L_i + (1-c)\times\sum_i \prod_i + \overline{TRA}\,\overline{NS}$$

The net revenues of the households are described by the following equation:

$$NY = (1-sav)\times(1-inc)\times Y\,.$$

The households' consumption of merchantable goods on international market is defined as: $CP_j\times C_j = \eta_j\times NY$.

The households' consumption of non-merchantable goods is given by:

$$P_l\times C_l = \eta_l\times NY\,.$$

The previous equations are deducted by the maximization of the Cobb-Douglas utility function submitted to a budgetary restriction:

$$\pounds = \prod_i Q_i^{s_i} + \lambda\times\left(NY - \sum_i P_i\times Q_i\right)$$

where Q_i represents the households' consumption of "*i*" goods, *NY* the revenues of the households and P_i the price of the good *i*. We mention that $\sum_i s_i = 1$. By differentiating the Lagrange type function by Q_I and λ and the simultaneous resolution of the system of equations obtained, it results a demand function for every good or service "i": $Q_i = \frac{s_i\times NY}{P_i}$.

The equations describing the row formation of fixed capital follow the same way. For the sectors that commercialize goods and services on the international market the equations are: $CP_j\times K_k = \varpi_j\times TOTSAV$, and for the rest of the sectors: $P_l\times K_l = \varpi_l\times TOTSAV$.

The sum of the parameters ϖ equals the unit.

The savings, at national level, are given by:

$$TOTSAV = sav\times Y\times(1-inc) + GSAV + DEF.$$

The state budget revenues, which come from indirect taxes, profit taxes and custom taxes, taxes applied to companies (non-financial societies and quasi-societies) result from the equation:

$$GOVREV = \sum_i ind_i\times P_i\times X_i + inc\times Y +$$
$$+\sum_j t_j\times DP_j\times IM_j + TAXCOR$$

The budgetary expenses, which represent the sum of the expenses made for the acquisition of goods and services by the

state and for the governmental transfers to the "rest of the world", are given by the relation: $GOVEX = CP_{SER} \times \overline{G}_{SER} + \overline{GWORL}$.

The revenues resulted from the taxation of the companies result from the application of the tax rate on the operational cash flow:

$$TAXCOR = c \times \sum_i \prod_i$$

Obviously, the budgetary savings (or the deficit) are equal with the difference between revenues and expenses made from the state budget: $GSAV = GOVREV - GOVEX$.

The trade balance is reflected by the difference between the values of export and import: $BAL = \overline{WP}_k \times E_k - DP_k \times IM_k$.

The balance condition on the labor market is given by the relation: $\overline{L} = \sum_i L_i$.

The balance condition on the merchantable goods and services markets is synthesized by:

$$D_j + IM_j = \sum_i a_{j,i} \times X_j + C_j + E_j + K_j + G_j .$$

For the rest of the goods and services, the balance condition is:

$$X_l = \sum_i a_{l,j} \times X_i + C_1 + E_l + K_l + G_l$$

Finally, the general prices index is given in the shape of a Cobb-Douglas type relation, as it follows:

$$NUM = \prod_j \left(\frac{CP_j}{\eta_j} \right)^{\eta_j} \times \prod_k \left(\frac{P_k}{\eta_k} \right)^{\eta_k}$$

3. The results of the research

Four case studies have been made, as it follows:

- The Base Case – the application of different environmental taxes: 2 \$/tCO$_2$, 3 \$/tCO$_2$, 5 \$/tCO$_2$, 10 \$/tCO$_2$, 20 \$/tCO$_2$;
- Sensitivity Analysis – model sensitivity analysis;
- Efficiency gain in the energy sector: improving the efficiency in the energy sector by the modification of the Input-Output coefficients;
- Agriculture Support – reinforcement of the agricultural sector by directing the revenues resulted from the carbon tax to this sector.

As we have previously mentioned, the model we used allows, among others, the analysis of the carbon taxes influence, in the four cases, on the leu/dollar exchange rate (figure 1). The increase of the energy prices, without any compensatory measures, will lead to the depreciation of the national currency. If, on the contrary, this measure will be accompanied by efficiency increases in the energy sector, weather by supporting the agricultural sector, an appreciation of the national currency will register. We should remember that if the efficiency increase measures are, starting with a value 5\$/t CO$_2$, annihilated by the taxes burden, the currency starting to depreciate, the flux of revenues to the agriculture will lead to the national currency reinforcement.

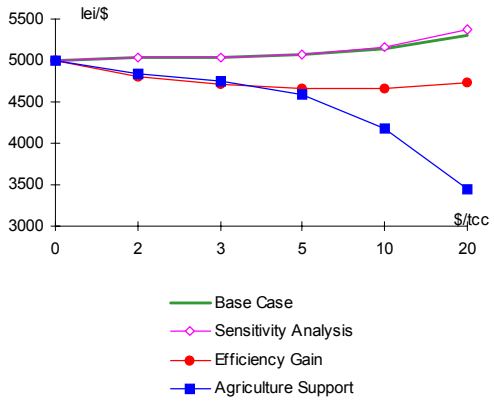

Figure 1. *Influences of the energy prices on the leu/dollar exchange rate, in the four case studies*

We have also considered interesting the presentation of the implications of the energy prices increase on the population revenues (figure 2). We notice that only an increase of the efficiency of energy industry can annihilate (but only up to a value of maximum 5$/t CO_2) the burden of some carbon taxes. In this scenario, we initially register an increase of the population's revenues.

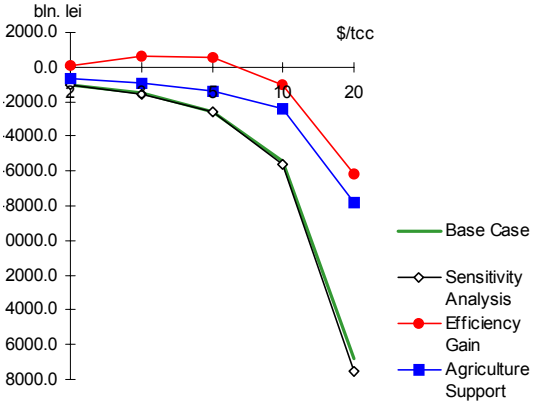

Figure 2. *Influences of the energy prices on the population's revenues, in the four case studies*

The results of the research allow the analysis of the reaction of the different economy sectors to different levels of taxes on pollution (appendix). For instance, in the case of the application of an environmental tax, if the energy sector seems to be the most affected (as it was expected, being the biggest pollution producer), there are sectors that will register significant increases of the operational cash flow, such as constructions (figure 3). We can thus anticipate the structural modifications of the economy caused by a certain energy prices policy.

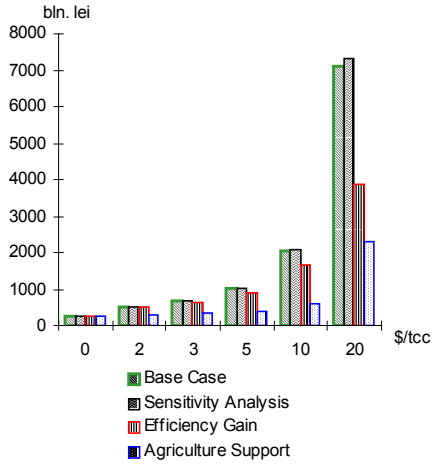

Figure 3. *Influences of the energy prices on the operational cash flow in the Constructions sector, in the four case studies*

The CGE model also allows the quantification of the level of reduction of polluting emissions corresponding to each level of the taxes (figure 4). We can identify, also, the energy policies mix that must accompany the fiscal decision in order to realize the environment protection objectives, as well as those of increase of the population's welfare.

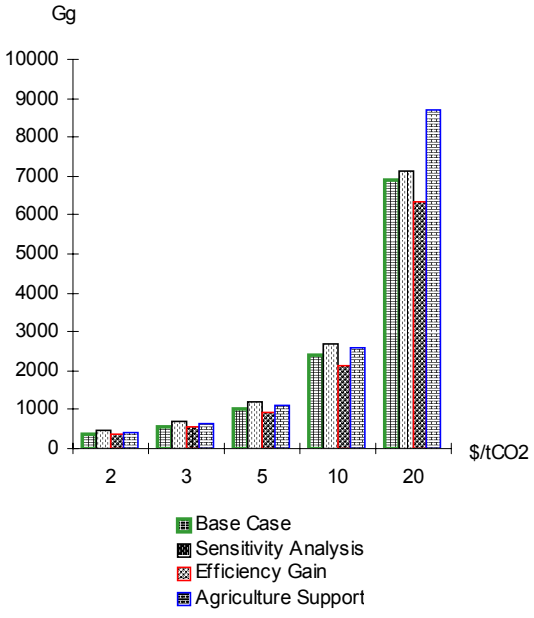

Figure 4. *Reductions of the CO_2 emissions corresponding to the different tax levels, in the four case studies*

Considering the carbon dioxide emissions generated by the National Electro-energetic System (of about 50 millions tons every year), at a level of the tax of 2 $/ton of CO_2 will result a total amount of 100 million dollars that should be found in the prices auctioned by the thermal-electric plants at the electricity stock market, with all the implied consequences on their competitiveness.

Also, if the annual specific CO_2 emission in the thermal plants using fossil fuels rises to about 1ton/MWh (for instance, in 1998, the specific carbon dioxide emission reported at the production of electrical energy obtained from the thermal plants on fossil fuels was of 1112 g/kWh), it results an increase of the electric energy price by 2$/ MWh, which is the equivalent of an increase of about 4%.

In conclusion, we state that by extending the number of variables and of interdependency relations used, an econometric model can be built that would evaluate the impact and the influences that the row material end energy prices have on the Romanian industrial products competitiveness, approach that will constitute an essential coordinate of our future research and publishing activity.

Notes

(1) Households represent the sector which includes the residential institutional units which main function is consumption or, eventually, production, if this is realized by individual entrepreneurs or family associations. The main resources of these units come from salaries, property revenues, transfers from other sectors or from sales of goods and services (INS, 2002).

(2) Operational cash flow is the balance of the cash flow account and it shows what remains from the newly created value during the production process after paying the salaries and the production taxes (CNS, BNR, 1998, p. 166).

(3) Non-financial societies and quasi-societies include the non-financial institutional units that must produce non-financial goods and services for the market the resources of which come from selling their production. In this sector we also include the activity of the public corporations and of the non-financial commercial societies (INS, 2002).

(4) Public administration includes the institutional units with the main function of producing services that are not meant for the collectivity and to undertake operations of redistribution of the state's revenues. The financing source of the units included in this sector is the public budget, extra budgetary funds, proper funds (INS, 2002).

(5) The rest of the world is an ensemble of accounts that reflect operations that take place among resident and non-resident units (INS, 2002).

(6) The gross formation of the fixed capital represent the value of the lasting goods (created for purposes other than military) acquired by the resident production units in order to be used for at least one year in the production process, ans the value of the services integrated in the fixed capital goods (INS, 2002).

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The Municipal Bonds – the Cause and the Effect of the Local Financial Decentralisation Growth. Romanian Case

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Abstract. *This paper work analyses the connection between local financial decentralization and the potential of local public administration to sustain the local economic and social development by its own forces by taking part to the capital market. Next to the ordinary financial sources, which are the local taxes, the local collectivities resorted last years more and more to the loans, by issuing municipal bonds. As an effect and then as a cause of the local autonomy and financial independence growth, these kinds of financial instruments gave the chance to the local public administrations to answer all community needs in efficiency and efficacy terms.*

Key words: local autonomy; financial decentralization; local public revenues; municipal bonds; local public administration; Hunter's index.

JEL Codes: H61, H74.
REL Codes: 11B, 13G.

The financial decentralization in Romania

The Romanian Constitution from 1991 recognizes the distinct existence of local collectivities as a part of the sovereign state, with particular interests and needs. These ones are organized as cities, municipalities and villages and are leaded by local public administrations(1) whose principal task is to answer the citizens' demands (both social and politic ones) by specific public services, in accordance with the principles stipulated in law(2). Each of their actions is supervised by the central public administration authorities(3).

Local financial resources(4) have a special role in local development, because they represent the base for a prompt replay, in optimal conditions, to the community needs. Banking on these kind of resources, it may be initiated every kind of plan in the community' interest, but with the condition to consult first the citizens, who have the right to debate the public problems and to suggest solutions(5).

Local administrative autonomy is conditioned by the financial autonomy, which assures the material support of first one's service (Văcărel et al., 2003) and offers the possibility to submit the local and national public services to the local specific demands and needs, in terms of efficiency and efficacy. This way, the specific problems which the members of the communities confront with may be better identified, especially the economic and social ones, and the appropriate solutions may be adopted.

Starting the financial decentralization expansion, the responsibilities of the local public administrations increased proportionally with the taxes/benefits ratio, the level of external effects and the scale economies for the public assets (Moșteanu, Iacob, 2007). To increase efficiency for local public expenses, these should be orientated to those programs with a few external effects and low scale economies, that meaning to consider only particular communities' objectives. This way, the social welfare reaches maximum, only if the public services are managed at the closer administration level to the citizen (Dascălu, 2006) and it's evident that "financial decentralization begins to work beyond the limit that suppose the area of using national public services and goods start to stint and the comparative cost of making decisions at the central level becomes very high" (Văcărel et al., 2003).

Financial decentralization refers to the right of the local public administration to collect its own revenues, in proportion to its needs, both from local taxes and complementary sources, like loans, only if the first category of incomes is not sufficient. In the same time, the financial decentralization supposes the freedom to select to which objectives to allocate the local finance (the ordinary ones, the borrowed ones and also the ones obtained by the public sources balancing process). The local autonomy gives the right to the authorities to decide the appropriate level of the local revenues but also the opportunity and necessity of the public expenditure from these sources.

Analyzing the financial decentralization level in Romania

The public revenues of the local administrations registered an exponential growth between 1991 and 2007[6]. After the oscillation of the proper revenues in the period 1991-2001, these ones established at 20% from all finance. Seeing the continuous and sustained growth of total incomes, we may conclude that even the percent of own revenues is almost the same every year, it augment period by period, as a sign of local autonomy and financial decentralization development. We had the same conclusion by reporting the local budget revenue to GDP, from 3% in 1991, to 6.8% in 2005, on the background of an exponential growth of GDP[7]. Also, public revenues per capita enhanced continuously[8], even more starting the year 1998, when the local tax law improved. This moment marks the apparition of financial decentralization in Romania, being also cause and effect of the economic development of some regions.

For the time period 1999-2007, the biggest local revenues were registered by villages and municipalities[9]. For the villages, most of the finance (over 70% in the period we focused on) represents transfers from other public budgets. That suggests a high level of financial dependence and also the concern of the public authorities to sustain rural development because of the inferior financial capacity of the population (given by the smallest medium income per capita as against the municipalities and cities) and the low tax collection level. For the municipalities, the situation is explained by the better economical and financial situation of the tax payers (because of the bigger tax basis) but also superior tax pursue and collection. This fact becomes relevant when we are comparing the high percentage (over 50%) of proper public local revenues in total local ones, that meaning a good financial decentralization level which offers independence in allocating the founds and flexibility seeing the financial sources for the local investment projects.

Globally, there is used a specifically index to measure the level of local financial decentralization, the Hunter's index.

$$H = 1 - \frac{Rnc}{Rt}$$

where:

H – Hunter's index;

Rnc – revenues not controlled by local public administration;

Rt – total revenues of the local public administration.

As the index result is higher, to 1, as the financial autonomy level is higher[10].

Practically, this index shows how much from the local public expenditure is based on revenues the destination absolutely free (Boloş, 2006).

The way this formula is presented in financial literature reflects only the percentage of the incomes which are

controlled by the local public administrations, in whole public local incomes. This is happening because, theoretically, an equilibrated budget suppose incomes equal with expenditure. This is not always possible. From example, in Romanian case, the last years, the local budgets registered excedent. That means an opportunity cost of extra liquidities. So, the Hunter's index reflects, in fact, the volume of local expenditure banked on own revenues or transfered from other budgets, amounts of money which may be consumed in the way local administration decides on.

Analyzing the local incomes and expenditures for the whole districts, towns, municipalities and villages of Romania, we may observe that the local public budgets are all dependent of the state public budget, because the computed indexes are very small. We may notice also the big dependence of the poorest districts which confirms our expectance (the poor districts have a population with small incomes, so taxation basis is as inexistent)[11].

We have to remark that the Hunters index is oscilating year by year, whith a growing tendency, and the best results are at the municipal level.

Even the results of analyzing local budget incomes are optimistically, it's imposibile not to conclude unfavourable seeing this oscilation. The causes generating this situation may be: problems in collecting own incomes because of the violation of the tax law or the absence of the supervising, especially in the rural areas (and the need of big equilibration amounts), a low financial capacity of the population of the community, which is relied with the level of local development, the level of medium incomes, of the tax policy (we still are the country which applies the lowest taxes in whole European Union!!!).

Even the last years the legislation improved, the main problems are still economical and it needs o long period of time the local financial situation to register progress.

Municipal bonds issue – an alternative source for financial local investment projects

The local public administrations authorities have a legal right to complete their financial sources with other kind of incomes because the ordinary ones, from taxes, may be some times insufficient. One of these extraordinary revenues is the internal or external loans, used to sustain local public investments or to refinance the local public debt[12]. The law of public debt[13] imposes some restrictions (for example, the maximum level of the amount borrowed along with the interest and the commissions has to limit to 20% of current revenues of the local public administration) to prevent the insolvency. These loans may take forms as bank credits or bonds issues.

If until 1995 the local collectivities did not borrow money, after this year, the amount of loans registered a high percentage from entire local financial sources, with a top period in 1996, 1999

and 2004[14]. Staring the year of 2001, on the development of the capital market context, the local authorities identified a new source of financing in bonds. First issue was realized from Predeal city, having like objective the arrangement of a ski track[15]. Till nowadays there were listed 42 municipal bonds at Bucharest Stock Exchange. From all these, 16 did not reached their maturity yet. Many municipalities appealed to more than one bond issue (as Bacău, Alba-Iulia, Lugoj, Timișoara, Oradea, Deva, Predeal, Sebeș), as a sign of their success and opportunity. The objectives of the municipal bonds issues are looking to modernize some principal roads in towns, cleaning water systems, way of access to touristic areas, extensions of water nets, sewerage, natural gas nets, modernizing districts etc.

The revenues and expenditures of the municipalities which issued municipal bonds reveal a decentralization level higher than the average level. We have to notice Predeal, Bacău, Alba Iulia, Timișoara, Oradea, Cluj-Napoca, and Năvodari, which decentralisation level passes over 60% for all the period of research. From these ones, the municipality of Predeal got the top level, with a 90% decentralisation.

The bonds of Predeal municipality got the best rating BB+ from Bucharest Equity Research Group (BERG), a financial consultancy firm which initiated first rating service in Romanian financial market. The good marks which Predeal obtained bank on the fact that the proper revenues are highest than the ones received from the state budget and the city tries to get the financial independence[16]. On the other side we find Zalău bonds that got a 2C rating which shows the vulnerability in managing revenues and puts question mark on its capacity of assuming financial independence.

The marks are based on the information published by local authorities. The relevant indexes of the financial component of the rating were obtained by analyzing the local budgets' execution accounts, the financial data of local employers registered from the Romanian Ministry of Economy and Finance and the debts of the tax payer to the local budget. The economical component of the rating includes social–demographic data (like salaries, the population's aging, education and unemployment), their evolution and the structure of the economic activities and of the unpropitious or mono industrial area risk. Also, the economic component gives importance to the stability and the political structure of local public administration and its capacity to increase the proper income percentage in entire revenues.

For the other municipalities we remarked in our study, the rating was as follows: Bacău B+, Cluj-Napoca B+, Târgu Mureș B+, Alba Iulia B. This rating completes our conclusions seeing the level of local decentralization. Many from these cities issued more than one time bonds and they assumed a higher maturity of the loan (until the year 2025 or even 2026). This fact suppose a risk increasing, both for

investors (who will have to wait more to receive back the loan and maybe will register opportunity costs) and for municipalities, because the market medium rate of interest keeps growing up as a result of the Romanian National Bank's actions to stop the increment of inflation rate. The growth of the market rate of interest's level generates a supplementary financial effort to pay the variable coupon, lied to the rate of interest evolution[17]. To be able to take this risk, it supposes to be solvent and that is reach information about the local capacity and potential in finance area.

After we analysed step by step every municipal bond issue from Romania, our conclusion was that as the maturity is longer, as the extra remuneration up to the medium rate of interest decreases. That is a sign that local administrations try to prevent assuming debts bigger than their potential, because in the future may happen everything.

We computed the level of decentralisation for the cities which issued municipal bonds using Hunter's index. Generally, we discovered values up to the average level[18] (excepting Campulung, Zalău, Medgidia, Bistrița). That ones which registered a high level for this index (closer to one), so they are more independent financially, realized by now more than one issue on market. We have examples as Predeal (90%), Bacău (over 60%), Alba Iulia (between 50% and 60%), Timișoara (60%), Targu Mureș (60%), Lugoj (about 50%), Sebeș (over 55%). Their financial independence sustains and explains them as actors on the Romanian capital market.

We have to underline the importance of a municipal bond market in this moment for the Romanian capital market, in a moment of a high volatility at Bucharest Stock Exchange, reached in the context of international financial crisis. The Stock Indexes loosed by now over 50%[19], this year, and this is a sign of a real crack-up for mutual funds. These registered loss over 55 billion lei[20] and the investors see very clearly they have to change investment policy. They should choose the assets with fix incomes, as bonds, deposits or alternative assets as gold, stones, properties as buildings or lands.

Conclusions

Starting with the increasing transparency of the allocation and the use of budgetary state sources at the local level, set by the Local Public Finance Law from 2006, but the changes in tax law brought by the Taxation Code, the level of the public local administrations' independence sensitively increased. These means bigger possibilities to collect local revenues and to use it both with equilibration revenues received from other budgets the way they want to, according the real and particular needs. The increment of decentralization sustained the local development. Local revenues, the equilibration revenues and the possibility to earn new sources from the capital market which to be managed

by themselves gives endorsement to the local investments, which may be seen as a platform of a sustainable economical and financial growth. As the decentralization level increased, as the local investments initiatives took place. So, because of the finance needs, the local authorities asked for it using the capital market. Their demand is guaranteed by their solvency. The rate of interest is attractive and variable, fallowing the same tendency as the rate of interest of banks but in lower risk conditions (the municipalities' loans have only bankruptcy risk, and that in cases there are not guarantees from the state, and the market risk, much of it being canceled because of the sensitivity of the coupons at the market level of the rate of interest).

So we may conclude about the tendency of financial decentralization of the local public administration, fact sustained by their frequent appeal to the capital market, which comes to consolidate the local autonomy. The growth of decentralization level made possible the maturity of the loan to increase in terms of financial security. The investors are encouraged by the extra rate of interest given over the average rate of interest on market. The apparition of the municipal bonds on Romanian capital market offered a new instrument which may be used to diminish the portfolio risk, a viable alternative to the bank deposits, in lower risk conditions and much attractive as remuneration rate. The municipal bonds do play a double role, as well in Romanian capital market development as in the financial local autonomy growth.

The municipal bonds issuing means an extra step to the local financial independence and their success, mostly on the principal market, gave a lot of impulse to the local authorities. The facts these kinds of loans are exclusively reimbursed from local resources increased the attention of the local public administration seeing the way the revenues are collected, their amount and how reasonably are the expenses. It's true that some municipalities had some troubles and could not manage the payments and they sold some of their assets. These kind of events are signaling about how important is to be efficient in estimating and in making the local expenditures. It is also necessary to equilibrate, as volume and temporally, the revenues with the expenses. So, the municipal bonds issuing represents also a cause of the local decentralization, not only an effect, as first. They are sustained from a sufficient local decentralization level and force, by the financial responsibilities which suppose, to additional effort. This way, the local authorities are more prudent and extremely responsible with the resources they are managing, and all these have a very good impact on the financial decentralization growth.

Notes

(1) The Romanian Constitution from 1991, the article no. 120.

(2) The Law no. 273/2006 of local public finance, stipulates principles as fallows: the local autonomy, the decentralization of public services, the eligibility of local public authorities, the legality and the citizens consultancy in solving local problems, all of that above the power of the national, unitary and indivisible state of Romania.

(3) The Romanian Constitution from 1991, the article no. 122.

(4) The Local Autonomy Book stipulates that the local public authorities, in the national economy politics context, have the right to possess proper financial sources, sufficiently and proportionally with their competences established by the law, which to dispose free to exert their attributions.

(5) The Law no. 215/2001 of local public administration.

(6) The data we used have been obtained by processing the local budgets execution accounts, from the public informations offerd by the Romanian Ministry of Economy and Finance on its official website, www.mfinante.ro.

(7) Idem 6.

(8) Idem 6.

(9) Idem 6.

(10) The Institute for Public Politics, Bugetele locale-intre teorie și practica, Bucharest, 2001.

(11) The data we used have been obtained by processing the local budgets execution accounts, from the public informations offerd by the Romanian Ministry of Economy and Finance on its official website, www.mfinante.ro.

(12) See Mosteanu Tatina, Buget si trezorerie publica, Universitara Publishing House, Bucharest, 2004.

(13) The law of public debt no. 313, Monitorul Oficial no. 577/2004.

(14) Idem 6.

(15) Informations from www.kmarket ro.

(16) Bursa Review, 12.05.2003.

(17) The formula used for computation, the generally one, is: (ROBID+ROBOR)/2 + X%.

(18) Idem 6.

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Romanian Insurance Market Facing Globalization Process

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Abstract. *The Romanian insurance market has passed through a permanent process of growth which ended up in 2004 to exceed the threshold of 1 billion Euros, in the frame of a small awareness and confidence of the population towards insurance, even now after 15 years. The globalization process of the financial markets affected also the Romanian market even before Romania became member of the European Union. The globalization brought about benefits (especially under the form of increase in the quality of the services provided to clients) but also disadvantages for local companies (significant costs in logistics and training in order to cope with the international groups).*

Key words: globalization; mergers; solvency; capitalization.

JEL Codes: F01, G22.
REL Codes: 11C, 10J.

Introduction

Although the insurance activity is well known to the Romanian market ever since the 14th century, when insurance was all about mutual help, this activity evolved rapidly in the period before the First World War and in the period between the World Wars, and it manifested itself as the entrance on the market of insurance companies representatives from countries as Austria, Italy, Great Britain.

The offered insurance services related to cargo insurance, fire insurance and life insurance. The protection against natural calamities (especially hail) was offered at a smaller scale and for a limited period.

In 1952, at the same time when nationalization started, the insurance industry was transformed into a state monopoly, thus only one company was active on the Romanian market, dealing mainly with the population involved in agriculture with the sole purpose of reassuring the authorities.

No foreign company had access to the Romanian market or had the right to bring capital in Romania, and the computations regarding the insurance premium or the insured amount were considered to be top secrets, known only by a small group of people that had succeeded in understanding these insurance secrets through training sessions outside the country.

ADMINISTRATIA ASIGURARILOR DE STAT (National Insurance Administration) – ADAS continued its activity under the management of the Ministry of Finance and offered mainly insurance services, reinsurance services and claims settlement services.

ADAS's object of activity was compulsory insurance (imposed by law) and facultative insurance. The *insurance imposed by law* offered by ADAS referred to general insurance for the assets that were the property of agricultural co-operatives and inter-co-operative associations (including their economic units), insurance of goods that were the property of natural persons, travel insurance against accidents, general liability insurance for damages from motor accidents. The *facultative insurances* offered by ADAS (in lei or foreign currencies) came to supplement the insurances imposed by law, and were insurance of property against average, destruction, theft or others; personal insurance for disabilities, death, survival or others; liability insurance for bodily harm, death, goods average or destruction and other damages for which liability was demanded by the law in force at that time.

The interesting fact is that the compulsory insurance share had a growing trend towards the end of the 80's, on the basis of a accommodation of the population to insure their assets (household, car) through facultative insurance, emphasized also by the increase rate of the insurance market which was grater than the growth rate of the general economy. Between 1955 and 1989, the volume of insurance premiums recorded by ADAS increased 14.4 times, whilst the national income grew 10.2 times.

In 1989 the change in the political system came about with significant changes in the insurance industry. Certain types of insurance which previously were compulsory became facultative (for example the household insurance became facultative – a decision that is still debatable if we think

about the exposures that Romania has to natural calamities and also about the large amount paid to cover the damages of the uninsured persons, from the state budget as emergency funds) (Badea, 2008a).

From the point of view of the insurance market's offer, the year 1989 meant also the end of state monopoly, ADAS seized its activity and its portfolio was taken over by three companies that later on were privatized – ASIGURAREA ROMANEASCA SA (that took over the fixed assets of the former company, its main products – life insurance, compulsory insurance etc.), ASTRA SA (took over the external contracts), and CAROM SA (became responsible for the claims settlement, establishing the paid claims for averages generated in Romania), being set up through law in 1990.

The year 1991 represented a turning point, thus starting with this year the first insurance company with entirely private capital was founded, UNITA SRL, followed by a multitude of other organizational entities (with local or foreign capital).

The beginning of "the new era" for the Romanian market represents the year 2000 when the law concerning the supervision of the insurance market was implemented, and the Insurance Supervisory Commission was set up; better improvements have been registered.

Since then, the Romanian insurance market recorded a constant growth that could be summarized as follows: in 1997 there were 47 insurance companies that cashed in a total volume of premiums of 167.7 million Euros, in 2000, there were 73 insurers that recorded a total volume of 337.79 million Euros and in 2007 there were 42 insurers that succeeded in a total volume of written premiums of 2.15 billion Euros. The continuous improvement in terms of total volume of premiums, of insurance density and insurance penetration (as amount of euro paid, per capita, on average/year) come to support the idea of growing importance of this activity sector.

The continuous trend of increase of the Romanian market may be summarized in the following table:

Insurance market ratios

Table 1

		2000	2001	2002	2003	2004	2005	2006	2007
Number of insurers		70	47	45	40	40	39	41	42
Volume of subscribed premiums	Mil USD	311	344	500	610	1051	1508	1970	2630
Penetration degree	% GDP	0,85	0,87	1,09	1,06	1,44	1,55	1,67	1,84
Insurance weight	USD/capita	13,85	15,38	22,95	37,51	47,01	68,4	91,27	122,3

Concerning the last three years...

In 2006, the total volume of insurance premiums reached 1.62 billion Euros, a nominal increase of 23.68% compared to 2005, when the volume of premiums recorded 1.21 billion Euros, being the second year in which the threshold of 1 billion Euros was exceeded.

The 41 insurance companies active on the market brought about an average growth of the insurance market of 23.68%, more than in 2005, when the growth was only of 17.01%.

In 2006, the insurance density reached the level of 74.63 Euros/inhabitant as compared to 56.10 Euros/inhabitant in 2005. Of course, the biggest density was recorded in Bucharest, where, on average, a person spent 394.19 Euros (as compared to 281.23 Euros in 2005) (Rosca, 2008). The average density computed without taking into consideration Bucharest area reached a "staggering" level of 39 Euros/inhabitant.

The weight of general insurance represented 80.1% in total volume of insurance premiums (after 75.6% in 2005), stressing the trend of the Romanian population to be focused less on the life insurance and more on the insurance of their property.

In 2007, 42 insurance companies centralized a total volume of gross written premiums of 2.15 billion Euros with a nominal increase of 25.07% compared to the level of 2006. As structure, 79.9% of the total premiums was generated by the general insurance (an increase of 24.73% in the volume of premiums subscribed compared to 2006), whereas the life insurance brought about only 20.1% (a more accentuated increase – related to the increase in the general insurance – of 26.46% compared to 2006).

The insurance penetration for 2007 was of 1.84% (insurance premiums compared to the GDP), an improvement as compared to the 1.67% registered in 2006. As far as the average insurance premium paid by a Romanian is concerned, this ratio (the insurance density) recorded a level of 333 lei/inhabitant (compared to 266 lei/inhabitant in 2006).

Analyzing the distribution of subscribed premiums over the Romanian territory, in 2007, 44.76% of the total was generated by Bucharest, followed by Northern-West area (9.74%), South-East area (9.08%) and South area (8.62%). The insurance density in Bucharest reached in 2007 the level of 1440 lei (432.3 Euros)/inhabitant, all the other regions being under the national average, showing the development potential of the regions (between 140 lei/ inhabitant and 255 lei/ inhabitant) (Rosca, 2008).

The main types of general insurance required by the market in 2007 were the motor insurance (including the third party liability) – 72.1% and property insurance (11.3%) (Rosca, 2008).

The insurance companies *paid claims* that amounted more than 1 billion Euros during 2007. Thus, after the insurance industry overcame a turnover level of 2 billion Euros also the paid claims level exceeded 1 billion Euros, rising with about 35%, in comparison with the value of the same indicator recorded in 2006.

About 95% from the total amount of paid claims came from non-life insurance, meaning an absolute value about 950 million Euros, figure that represents more than 55% from the gross premiums written for non-life insurance. In a matter of fact, the insurance companies paid during 2006 more than half they had written.

The most significant share in the total amount of paid claims is owned by motor insurance for which the insurers paid about 726 million Euros, amount that represents 59% from the gross premiums written for the mentioned insurance class.

The total amount of claims paid for motor insurance exceeded 500 million Euros in 2007,

rising with more than 32% as compared with the value of the similar indicator in 2006. The total amount of gross written premium from motor insurance reached approximately 800 million Euros rising with more than 42% than the results of 2006. In fact, the motor insurance owns about 37% from the insurance market and is causing more than 50% from the claims paid for the entire market (Hodorog, 2008).

The Romanian industry recorded in 2007, for the second consecutive year, a *negative financial result*, a net loss of about 253 million lei (approximately 75.8 million Euros), which reported to the total subscribed premium, of 7.17 million lei (2.15 million Euros), represents 3.5%.

This net loss was due to the fact that in 2007 the life insurance activity shrunk its net technical profit to 66 million lei (as compared to 106 million lei in 2006), and the general insurance activity recorded a net technical loss of approximately 324 million lei. Reported to the volume of subscriptions on the general insurance segment, the net technical loss recorder in 2007 in general insurance represented 5.7%, as compared with 3.7% in 2006.

At the level of European Union, the Romanian insurance market had in 2007 the fastest growth in the entire Europe, overcoming other significant markets in the region, such as Poland. With a growth rate of 33% in Euros, the local insurance market had the greatest dynamics among the 33 member states of CEA – Comite Europeen des Assurances.

In the last 15 years, the insurance market increased 30 times in terms of gross insurance premiums subscribed and even though the motor insurance continue to have a significant weight, it can be noticed an accelerated increase of other property insurance, credit insurance and health insurance.

The continuous improvement of the insurance premiums, the insurance density and the insurance penetration rate (annual amount of Euros paid on average by an inhabitant) support the importance of this sector of activity in the total economy of Romania.

The accession to EU brought about both benefits and costs for the insurance market. As the market became more sophisticated (the consumers became more informed and demanding), the offer became more stable, and the concentration of the market began to reduce itself as a response to the European insurers that entered our market.

New products were launched on the national market, supported by similar products offered on the European market; new services occurred for the consumers (risk consultancy, claims adjusting etc.); better transparency was recorded, due to supplementary requirements of the supervisory authority, as the insurance companies offered more information about their financial position for the consumers.

Other benefits refer to an improvement of the underwriting conditions and even the contractual relations with the international market (the reinsures) that resulted in smaller levels of the insurance premiums (Badea, 2008b).

The Romanian insurance market and globalization

Once the Central and East European insurance market was open in 1990 due to changes that emerged, there was a development on this market especially through the appearance of mixed companies

or the opening of subsidiaries that belonged to international insurance companies.

The globalization of the insurance field is an already established fact due to the reinsurance relation that is mainly practiced at international level, completing the world level attraction that insurances have due to the establishment of large insurance groups with offices and subsidiaries in many countries.

The financial markets were linked even more tightly due to the globalization process. There are advantages but also disadvantages that accompany this process. A plus is that there is a better capital resource allotment. There are no more frontiers between markets. There is a need to establish an optimum mix between risks and results. These facts aid the convergence process. But there are side effects also, which are less desired. The exposure of players on an increasing globalized market brings about the appearance of a more complex risk system which is even harder to manage. Even more complex financial products are launched which present a level of opacity that makes more difficult the understanding of ever so complex risks, especially in periods of irrational effusiveness.

The Romanian insurance market cannot stay outside the globalization process.

Until 1989, in Romania, insurance was a state monopoly, Administrația Asigurărilor de Stat – ADAS being the sole institution in Romania to deal with insurance/reinsurance. After 1990, major legislative changes led to the disappearance of state monopoly and to the establishment of the competitional atmosphere on the Romanian insurance market.

Later on, companies with private, Romanian or mixed capital emerged (taking into account the fact that the Law did not allow the establishment of companies with 100% foreign capital).

The Romanian insurance market is going through a continuous globalization process. This process accelerated with the accession of Romania to the European Union. The Romanian insurance market is now part of the European insurance market, which is in itself going through a globalization process.

Since January 1, 2007, any insurer or authorized insurance intermediary from any other member state of the European Economic Space (EES) can conduct its activity in Romania, either directly or through a branch established in our country, without the need of further authorization from the Insurance Supervisory Commission. They must send a notice to the regulatory authority in Romania through which they must express their intention to extend their activity in our country.

Another method of entering on local market for foreign companies emerged within the framework of developing the activity of *bancassurance* (Bunea, 2002). Important banks with foreign capital, within the system, also established insurance companies: CR Asigurări de Viață SA and BCR Asigurări SA, ATE Insurance Romania SA, Carpatica Asig SA, OTP Garancia Asigurări SA, Societatea de Asigurare și Reasigurare City Insurance SA, Credit Europe Asigurări-Reasigurări SA.

As a result, the globalization process on the Romanian market is expected to accelerate.

The Romanian market could be dominated by a small number of insurers, as a result of offer *concentration* trends, due to the globalization process that is happening in Central and Eastern Europe, as a GfK

România market research shows (Ciuncan, 2008). The number of large insurers has decreased as a result of mergers and acquisitions at Central and Eastern European level – phenomenom that is just begining in countries such as Poland and Bulgaria.

The GfK România study used as benchmark the economic aspects from Austria, a country in which, starting with 1995, a market quota phenomenon was observed, as a result of big insurance companies mergers.

Over the years, the entrance of foreign insurance companies on the market was achieved with the establishment of companies in our country, through acquisitions and mergers.

In 2006, the weigh of the foreign capital on the Romanian insurance market was 62% and the local players were a rare sight, at least in the Top 10 (Ciuncan 2008); this weight is expected to increase even more, based on the large set of acquisitions and mergers.

2007 continued the process of acquisitions and mergers started in 2005, with big European insurance groups taking over local players – eg. the Czech investment group PPF Investments took over shares of RAI and ARDAF; the Austrian group VIENNA Insurance Group enhanced its participation on the Romanian market with ASIROM and AGRAS (alongside Omniasig, Omniasig Asigurari de Viata); EUROHOLD financial group took over ASITRANS company; UNIQUA strengthened its participation in ASTRA, becoming main shareholder; the Greek company Ethniki decided to merge by absorption two Romanian companies GARANTA and NBG Insurance; GROUP AMA took over BT Asigurari, OTP Garantia and ASIBAN (the latest two in 2008).

After the year 2007 was considered to be "The Monopoly Year", it is expected that the concentration trend of the insurance field will remain constant. In March 2008, the market was taken by surprise by the announcement of ERSTE Bank, which intends to renounce to its investments in insurance in the favor of Vienna Insurance Group (VIG). The number one in the top of volume of subscribed premiums, on the first trimester of 2008, with a market share of 30.4% (665 mil. Euros) wishes to give up UNITA in favor of the group UNIQA which will reach 11.8%, 4th place on the Insurers' top (Plăcintă, 2008), after only Allianz (17.3%) and GROUPAMA (12.9%).

This entrance on the European market came with major increases for the operators on the insurance market – foreign groups that entered on our market, in only 5 years, recorded 5 to 7 times increases (for example, VIG's market share recorded the biggest growth ever, 7 times the value it had in 2002 when it has 4.8%).

One of the important conditions imposed on the Romanian insurance industry regarding the basic requirements for the solvency criteria referred to the increase of the social capitals of the insurers (Novac 2008). As a result of these conditions imposed by the Insurance Supervisory Commission the social capital was increased by all the existing insurance companies, less 6 companies that were unable to succeeded in this endeavor and thus, their activities were terminated (ABG Insurance SA; Mediterranea Assicurazioni SA; Mondial Assurances SA; Nationala Companie de Asigurari si Reasigurari SA; Omniasig Addenda SA; Provitas SA). In 2007, half of the 42 insurance companies

on the local market increased their capital with a total value equal to 153.5 mil. Euros – the largest increases were recorded at Omniasig (approximately 30 mil. Euros), Generali (22 mil. Euros) or Ardaf (approximately 7 mil. Euros) used for the development of the companies or to cover the losses caused mainly by the large damages from motor insurances.

Another important fact generated by the inclusion of the Romanian market into the European market refers to unitary evaluation norms of insurers. This is why we will mention the new *solvency system* Solvency II which imposes major capital increases. The Solvency II System represents the establishment of reserves for each risk category, in other words a correlation between assumed risks and the insurers' capital. More than this, since Solvency I is focusing on liabilities, which are represented by insured risks, the Solvency II System will focus on assets. Thus we will take into account risks such as credit or operational risks, which are not taken into account by the current system. Insurers have as deadline 2012 in order to implement this new system.

Conclusions

Globalization has linked the financial markets more and more in the last period. There are advantages, but disadvantages also. There can be sideslips, and there is only so little till a crisis is reached. Romanian insurers have reported major increases in the volume of assets but also relative weak increases for the net profit in 2007. The good results announced by the Romanian insurers did not have the strength to fight with globalization.

Both for our country and for other emergent countries, the national authorities together with the international community have to make possible a very assorted report between the economic adjustment and the economic development, between the costs and advantages of globalization. Thus the last resort for Romania is its integration in the globalization process (Crețu, 2005).

Through a careful regulation of the insurance market, Romanian market can reduce the globalization risks and can defend itself from the negative effects of this process. The affiliation to the European Union insurance market can aid to the accomplishment of this objective.

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Tax Implication of Structuring and Financing Mergers and Acquisitions

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Abstract. *The structuring and financing of mergers and acquisitions has substantial tax consequences. The decision to acquire the assets or the shares of the target company should take into consideration, on one hand, the capital gains taxation at the transaction time and, on the other hand, the tax planning opportunities for the future. The tax burden can also be minimized by an optimum selection of the acquisition vehicle. The choice of a financing alternative should take into account the interest deductibility and the specific tax regulations of each jurisdiction concerned.*

Key words: acquisition; merger; taxation strategy; transaction structuring; transaction vehicle.

JEL Codes: G32, G34, H32.
REL Codes: 11E, 11G.

Introduction

Tax issues have a major impact in carrying out mergers and acquisitions successfully. Analyzing them in the initial stage of a transaction and establishing an adequate tax structure for the transaction can improve the expected results significantly. The purpose of the tax analysis is not only to identify and manage the tax risks, but also to discover and exploit potential tax planning opportunities.

The tax strategy should be established before sending formal offers or letters of intent and before proceeding to a detailed analysis of the target company. The strategy should identify the transaction structuring alternatives and the potential risks and opportunities for tax planning.

The detailed analysis of the target company must include a tax assessment: tax position, tax compliance, prudent or aggressive approach of tax issues, risk areas and tax planning opportunities. Regarding the transaction itself, the analysis should be focused on the structuring of the acquisition price and on the various stipulations in the agreement which might have tax implications.

The transaction structuring in order to exploit the opportunities and facilitate the business integration can add value and maximize synergies. The structuring is made based on the parties' specific objectives and is different from case to case. It can be focused on achieving a creative financing structure, on minimizing the group's tax burden, on the allocation of the acquisition price, on deferring the taxation of the capital gains or on exit strategies.

1. Transaction structuring

1.1. Acquisition of assets or shares

The first important decision on the transaction structure to be made by the company which is considering the acquisition of an existing business is the choice between the acquisition of shares in the target company and the acquisition of assets owned by the target company(1).

From a taxation perspective, the main considerations will generally be the *capital gains tax* consequences to the vendor, and the capital gains tax planning opportunities available to the acquirer (Rohatgi, 2002, p. 461). The purchase of assets rather than shares may also result in a *step up in the tax value* with regard to the assets acquired. The increased cost basis can be used for capital gains tax planning or for depreciation purposes.

It is common to incorporate a *special-purpose company* to execute the acquisition because the sale of shares in the special-purpose company may not give rise to capital gains tax liability. This may, however, be a deferral technique only since an eventual sale of the assets by the special-purpose company may have capital gains tax implications. Any purchase of shares in the special-purpose company may therefore require a discount to allow for this latent tax liability.

In certain jurisdictions, the *goodwill* paid for a business as a going concern may be deducted or amortized. If this is not the case the purchaser may wish to have the purchase and sale agreement worded so that the purchase price is payable for the tangible assets to be acquired, thus reducing or eliminating any element of the purchase price assigned to goodwill. This provides that there are no specific income tax rules as to how the purchase price is to be allocated amongst the various assets purchased. In order to establish the cost bases of all assets acquired in the event of future sales, it is recommended that the sale and purchase agreement record those matters comprehensively, and that all incidental costs associated with the purchase are also recorded.

Example 1: Acquisition of assets or shares in France

In France, the tax treatment of capital gains derived from the disposal of participations has been improved significantly (Etienne, 2006). These gains (excluding those from the sale of participations in real estate companies, participations corresponding to a stake of less than 5% of the share capital or participations held for less than two years) are 95% tax exempt from 2007 in the case of rezident companies. Foreign investors are generally fully sheltered against capital gains tax by the double tax treaties entered into by France. The taxation of individual shareholders is also going to be progressively reduced.

Capital gains from the sale of assets in contrast are fully subjected to tax at the normal rate of 34.4%, while the corresponding benefit of additional step-up depreciations for the purchaser only crystallizes over time. In France, no tax deduction is allowed for the depreciation of most intangible assets (for example, clientele list, goodwill, trade marks). Only patents, because they have a limited useful life, may be depreciated for tax purposes. The step-up in basis therefore only concerns fixed tangible assets.

Therefore, most of the transactions in France take the form of a share deal.

1.2. Selection of the acquisition vehicle

After the choice between the purchase of shares or assets has been made, the second important decision concerns the vehicle to be used to make the acquisition and, as a consequence, the position of the acquired operations in the overall group structure.

The main issues considered in selecting the acquisition vehicle are (White, 2006):

- the choice between a branch or a subsidiary structure for the acquired operations;
- whether there are in the circumstances advantages in interposing intermediary companies (the head office for the branch, or the holding company for the subsidiary).

The choice between a branch and a subsidiary. Forming a branch may not seem to be an option where shares, rather than assets, are acquired, because in this case the foreign entity has, in effect, acquired a subsidiary. However, if the branch structure is desired, but the direct acquisition of assets is not possible, the assets of the newly acquired company may be transferred to the foreign company post-acquisition, effectively creating a branch. Local tax laws usually provide that the assets may be transferred within a company group without crystallizing an immediate capital gains tax liability.

The usual *advantages* of a branch are:

- there are no capital taxes on the introduction of new capital;
- there is no withholding tax on the remittance of taxed branch profits to head office;
- where a foreign branch is likely to incur losses, those may in some countries be able to be offset against the domestic profits of the parent company.

A disadvantage of the branch, against the subsidiary, is that deductions for both royalties and interest paid from branches to the foreign head office, and for foreign exchange gains and losses on transactions between the branch and head office, are usually not allowed, except when it can be identified that the payments are effectively being made to third parties.

Example 2: The choice between a branch and a subsidiary in United Kingdom

In UK (Eyre, Newsome, 2004, Edge, Luder, 2006), branches are subject to UK tax only on their trading income. This means that a branch that carries on only investment activities in the UK may not be subject to tax here at all. This also applies to a branch set up to act as a group finance function. The rate of corporate tax applicable to trading income is 30%. There is no special branch profits tax. Therefore, multinationals pay the same amount of tax whether they trade through a subsidiary or through a branch. There is also no withholding tax on remitting branch profits back to head office. Branches are only subject to tax on capital gains on assets that are held or used for the purposes of the branches' trading activities in the UK. Capital gains are taxed at the 30% rate, though the capital gains regime contains more exemptions and there is an inflation-linked basis adjustment which means that the effective rate of tax can be less.

UK subsidiaries have some special characteristics as well. UK resident corporations pay tax on their worldwide income, including their foreign income. A credit system rather than an exemption system is applicable to foreign dividends. The relevant rate of corporate tax for subsidiaries is again 30%. There is no dividend withholding tax, a factor that levels the playing field between branches and subsidiaries. Tax consolidation is allowed and relatively easy.

It is to be noted that the European Union has adopted directives meant to eliminate any tax on dividends, interest and royalties transferred between affiliated companies in member states (Van den Hurk, 2003, Persoff, 2004). Regarding the distribution of profits, the regulations[2] eliminate any withholding tax on dividends and any double taxation of parent companies on the profit of their subsidiaries. Regarding the interest and royalties, the regulations[3] eliminate the witholding tax in the case of affiliated companies.

Intermediary companies. Various vehicles may be used to acquire the shares or the assets of the target company:

- the foreign parent company;
- a local branch of the foreign parent company;
- a special-purpose subsidiary in the country of the foreign parent company;
- a double tax treaty country intermediary company;
- a local holding company;
- a partnership;
- other special purpose vehicle.

Special-purpose subsidiary in the country of the foreign parent company. The use of a special-purpose subsidiary in the parent company's foreign country as the head office of the branch, or as the holding company of the foreign subsidiary may have a future tax advantage. The sale by the foreign company of its shares in this special-purpose company may not generate a local capital gains tax liability, whereas the sale of local assets directly will probably generate such a liability.

Double tax treaty country intermediary company. If the foreign country itself imposes tax on capital gains, locating the subsidiary in a third country may be preferred. It is usually preferred a country that has an advantageous double tax treaty concluded with the country of the target company. The third country subsidiary may also sometimes achieve a withholding tax advantage where the foreign country does not have a double tax treaty with the target's country. To be noted, however, that anti-treaty-shopping rules may apply. Also, many treaties stipulate that the company receiving royalties or dividends should be the beneficial owner of these revenues and not just an intermediary in the money circuit.

Local holding company. It is common to interpose a local holding company between a foreign company or a third country subsidiary and the target. The main reason for this is that if the foreign company wishes to acquire another local subsidiary at a later date. This will enable the foreign company to inject funds into the future acquisitions in a higher degree, since it can use the capital of the holding company for the observance of the local thin capitalization rules. Another advantage of the local holding company is that it can be used to receive dividends free of further local tax and reinvest these funds in other group-wide operations.

Partnership. When the acquisition is to be made in conjunction with another party, the question arises as to which is the most appropriate vehicle for this joint venture. In most cases a corporation will be the preferred choice, as it offers the advantages of incorporation and limited liability.

Where the foreign company has or proposes to have other local operations, its shareholding in the joint venture company will usually be held by a separate wholly owned local subsidiary, which can be grouped with the other operations. This grouping may have advantages both in terms of the possibility of transferring tax losses and capital losses between group companies, and compliance with the thin capitalization rules.

Other special purpose vehicles. The use of other special-purpose vehicles such as trust or other partnerships may be appropriate in special circumstances, but specialist advice on the local implications is essential.

Example 3: Societas Europaea

European Union has legiferated the possibility of establishing a European Company (Societas Europaea)[4].

The EU objective was to create a company type with its own legal framework, in order to allow companies registered in the member states to merge, establish holding companies or common subsidiaries, avoiding the legal and practical constraints of the different jurisdictions (Wiese, Lay, 2004).

There are four diffrent ways to create a European Company (SE): through merge, establisment of a holding company, creation of a common subsidiary or transformation of a national joint stock company. The merge is restricted to joint stock companies from different member states.

The establishment of a holding company is permitted only to joint stock companies and limited liability companies with an international activity, having either registered offices in different member states or subsidiaries or branches in countries other than their registration place. The creation of a SE in the form of a common subsidiary is allowed to any public or private entity with the observance of the above mentioned condions.

SE place of registration is established in its by-laws and must coincide with the central administration offices.

In other words, the registered office is statutory and must be real. SE can easily transfer its registered office within EU, without the dissolution of the current company in a member state and set-up of a new company in another member state.

From a tax perspective, SE is treated similar to any other multinational, beeing subjected to the national tax jurisdicions of its registration place and of its subsidiaries. SE continues to taxed in every EU member state where it has permanent establishments.

2. Transaction financing

The main decisions to be made refering to the financing of mergers and aquisions are:

- to what extent to use debt versus equity;
- whether to fund the acquisition internally or externally;
- whether to borrow locally in the foreign acquirer's own country, or whether to borrow in another country.

2.1. Debt versus equity

From a tax perspective, the most important decision is to be made whether to fund the transacition by debt or equity (Klingberg, Lawall, Schmidt, 2004).

Interest payable on debt finance will generally be deductible locally provided that the borrowed funds are used in the income producing activities of the borrower. The major exceptions to this general rule are:

- when the thin capitalization rules are breached, a portion of the interest is not deductible (Rohatgi, 2002, p. 395, Powell et al., 2005);
- interest expenses incurred in respect of acquisitions from related companies may result in debt creation rules being breached, and a deduction being disallowed;
- interest expenses incurred in the production of tax exempt income may be non-deductible.

The deductibility of interest will generally mean that debt is, in principle, a more tax efficient form of finance than equity. When the funds are provided by a related company, debt facilitates the movement of profits from the target's country to the lender's country. If the tax rates in the lender's country are lower than those in the target's country, such a movement in profits will reduce taxes overall. On the other hand, if the tax rates of the target's country are lower than those in the lender's country, equity finance may produce the most favourable overall result.

In the common structure of a local holding company as acquisition vehicle (incurring interest expenses) and a local operating company (earning profits), the flow of dividends to the holding company, and ultimately to the foreign parent, may present a problem. An eventual dividend rebate may be wasted in the holding company, as the dividends may extinguish tax losses.

The solution may be to interpose a further local company between the foreign parent (or lowest immediate foreign holding company) and the local holding company. This new company could have either a dividend access share to the local operating company, or inject preference share capital into the local operating company with a preferential right to dividends. Another solution would be a post-acquisition merger between the holding and the operationg companies, which may allow an offset of the finance cost against the operating profits generated by the target.

Hybrid instruments can be used for the tax planning of the acquisitions (Rohatgi, 2002, p. 562, de Roos and Broers, 2002). Hybrid instruments are for tax purposes either deemed to be shares and treated as equity, or deemed to be debt according to the regulations of the respective jursidiction. The main types of hybrid instruments are the followings: Convertible notes; Preference shares; Perpetual debt; Subordinated debt; Floating rates debentures; Profit participating loans; Index linked debt.

Example 4: Debt financing in the United Kingdom

UK has been among the first countries to introduce restrictions on interest deductibility. The current regulations are sofisticated and require that UK subsidiaries of foreign multinationals prove they are funded in a similar way to as they would be funded if they were independent companies. In order to avoid an agressive aproach of the tax authorities, it is posssible to agee with them in advance on a debt/ equity ratio for the respective company.

Recently, new rules have been introduced to adress hybrid financing. These prevail on the thin capitalization rules and apply when the financing is made using hybrid instruments or entities, with the purpose of avoiding the taxation of interest in another jurisdicion or to deduct the financing expenses both in UK and another jurisdicion (Edge, Luder, 2006).

2.2. Internal versus external financing

The choise between internal financing within the group and external financing from third parties will generally be made on purely commercial terms, based on the overall cash resources of the multinational. The decision to use external funding if borrowed directly by the local entity rather than by the foreign parent will ensure that thin capitalization rules have no application. For this reason, the tax regulations very often contain anti-avoidance provisions which do not allow back-to-back loan arrangements between the foreign parent and an "external lender".

From a taxation perspective, the choice between internal and external financing and of borrowing entities will be governed by the rule that interest should be paid in the highest taxing jurisdiction, and received in the lowest. In the larger context of mergers and acquisitions, however, it will be important to ensure that the chosen borrowing entity has the capacity to absorb the interest deduction, or can transfer it to entities which do have such a capacity.

Example 5: Interest deductibility in France

In France, for example, the thin capitalization rules do not apply to borrowings from third parties like non-affiliated banks, even if the debt is guaranteed by an affiliated company. Therefore, the interest is fully deductible, even if the company has a high debt/equity

ratio. In contrast, the deductibility of intrest on borrowings received from affiliated companies has a double limitation to:

- *the level of interest on a debt of maximium 1.5 of equity*
- *25% of earnings before interest, tax, depreciation and amortization.*

The interest over these limits is not deductible, but can be carried forward for tax purposes in the next year (Etienne, 2006).

Notes

(1) See "Turkey – Mergers and Acquisitions", PricewaterhouseCoopers, December 2004

(2) See Directive 90/435/EEC, known as the "Parent-Subsidiary Directive"

(3) See Directive 2003/49/EC, known as the "Interest and Royalty Directive"

(4) According to Regulation no. 2157/2001 on the statute for a European company; Directive no. 2001/86/EC supplementing the Statute for a European company with regard to the involvement of employees.

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