

The natural foundation

“When understanding and constructing the concept of utility, as well as in the case of many other concepts – such as growth, for instance, there is seemingly treason in the flight from biology, psychology and anthropology, when in fact all that is needed by Economics is an immediate and definitive exit from the methodological and expressional territory of classical Physics.”

The major restriction in understanding rationality lies in the internalization of the fundamentals of economicity as elements of a prevalently human nature. Until now the cognitive experience seemed to overcome the limits because it used to split the profound meanings of the conceptualization into the objective guidelines of the human condition. Labour, work and action were eminently compatible with the sphere of meanings and knowledge created by the main cognitive sequence which is the study of matter, energy and information.

However, because it starts from the suggestions and acquisitions of the main cognitive sequence, without identifying within the fundamentals of economicity the natural foundation – which is inevitably placed in the human nature, Economics rather remains a technology for the phenomena of yield, to which the determinant cause for the components of the human condition is dispensable. Economics has theorized within the spectrum of concreteness, has operated with the dialectics of existential components suitable for rationalization, has provided the individual with guidelines in the material order – the ideal being the accumulation of wealth, has arranged for an energetical involvement into the action so as to appraise it with commensurable results. In these conditions the major restriction does indeed disappear, but this oddity occurs because of the vanishing of the very source of the contents of the human condition. This is not only inadmissible, but even wrong for the status of Economics as a socio-human science.

The phenomenology stemming from the exclusively materialistic conceptualization of the fundamentals of economicity was proven to serve the instrumental drive in regulating man's relationship with the natural environment. Thus, Economics has evolved towards the condition of a science of yield on the path defined by quantity. And so, the increase of wealth, in its various expressions, has the tendency to become its own purpose. The epistemic condition became accessible through a configuration of the object resembling the method of the natural sciences, with the substantiation of the action lending the senses with the basis for the founding of rational thinking. The ingredients for reinforcing this conceptual construct have been refined through fragmentarism, specialization or delocalization, as elements logically dependent on the super-centring of motivation on the individual when finding a solution to the problem of wealth.

On this path, however unusual, Economics has forgotten the determinants of its own object. The causes for the generation of wealth have been overturned, their place taken by the consequences – themselves identified as generic social values of performance. Prosperity, for instance, came to cover most of the meanings of rationality but without reasonably expressing the true nature of economicity. Connecting its potentiality with private ownership has generated an epistemic bubble ill fitted to the social purpose of the economic activity. The association of societal values further increased the deviant bubble in which Economics had been forced to structure itself by objectifying its territory of meaning.

Practically, Economics was coaxed into being interested exclusively by short-term-maximized material aspects, to limit itself to the combining of consumable factors, to base the evaluation of profit and loss only on the individual interest. The introduction of the concept of utility into the equation of cognition is the symptomatic result of the epistemological approximations preferred by Economics. Any stride toward fixing the concrete elements of utility leads in a direction contrary to the practice of materiality, with utility being left – deep down within itself – to alchemically combine the subjectual pleasure with the idealizing bliss; or, in other words, to sublimate the already fluid enough contents of the human nature. Utility not only atomizes Economics' object of study, but also sends it into the area of the errors of substituting the methods of knowledge and extracting its essence from the natural space of intersubjectivity.

If pleasure and/or happiness cover the content of utility, then economic cognition has an insoluble problem in positioning correctly into the coordinates of the science it pretends to be. Frankly, in the case of understanding and constructing the concept of utility, as well as many other concepts – such as

growth, for instance, there is seemingly treason in the flight from biology, psychology and anthropology, when in fact all that is needed by Economics is an immediate and definitive exit from the methodological and expressional territory of classical Physics. Surely, it could follow a path of corrections if it would take a detour of initiation into the territory of quantum Physics, especially in order to learn the habit of loading its object of study with the human mind and to cognitively operate in an ineffable space, suitable to the theoretical exercise of quantum mechanics. Economicity gains sense in contexts bestowed with intelligence, thought, memory and will.

The science of Economics being tethered by the knowledge of the randamental drives of the three alignments of the human condition – labour, work and action – has neglected the knowledge of the context in which these have sense, which is essentially the origin for the existence of the object of economicity. Almost invariably, the explanations of economic processes have been formulated in a mechanical manner, the fluctuations of volume and intensity of the results have been statistically conceptualized, the causes of crises have been explained in exogenous terms, and performance has been attributed to managerial skill. The economic evolution gives the measure of societal progress through global indicators, without releasing the full image with the diversity of details, with the statistical mediums levelling the sensitive differentials in the state of the economy.

The algorithm honed by the discourse of Economics is, as can be seen from the previous presentation, extremely diffuse. This embarrassing aspect is not due to – as frequently argued – the complexity of the object of Economics, but due to a cognitive conjecture in which it has been treated. The key for escaping this predicament lies in reinstating the equilibrium of the accents in the understanding of the fundamentals of Economics, because these are dually fixed in the determinants of the human condition (labour, work, action) and those of the human nature (thought, sentiments, emotions, motivations, goals).

The natural foundation of the object of study of Economics is the common sense, as a significant synthesis of the human nature, the placenta of the human condition.

Marin Dinu

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Early warning models of financial distress. Case study of the Romanian firms listed on RASDAQ

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Abstract. *In this paper we design an early warning model for Romanian distressed firms. The logit model was built based on financial ratios of 66 Romanian firms listed on RASDAQ that were facing financial difficulties in 2011. In addition, we identified the main principal components obtained with minimum loss of information after applying the principal component analysis and proposed a new estimation of the logit model by replacing the initial set of input data matrix with the main principal components of the financial observations. The results indicated an increase with 12 percentage points in the performance of the one year ahead prediction of financial distress of the new warning model.*

Keywords: distress prediction; financial crisis; logit model; principal component analysis.

JEL Codes: C53, G32.

REL Codes: 11B, 17B.

1. Introduction

The early warning models of unproductive firms that are confronted with financial difficulties and higher risk of bankruptcy bring a true decision support in the context of the current financial crisis, not only by offering warning signs of financial distress, but also by helping minimizing the computational time for determining a firm's risk of insolvency when requesting funding to a bank.

In this paper we aimed to build an efficient one-year-ahead prediction model of Romanian unproductive firms and to establish the main financial ratios that contribute to rapid screening of the firms with high financial distress risk. In order to do that we collected financial ratios of 66 Romanian firms listed on RASDAQ during 2009-2010, out of which half were facing penalties for late payments in 2011 and had an unproductive behavior.

In addition, we identified the main components obtained after applying the principal component analysis with minimal loss of information and proposed a new estimation of a logit model by replacing the initial set of input data with their main principal components and reached better prediction results.

The issue concerning the early warning models of financial distress or bankruptcy gained great interest since the late 1960s. The first step in this direction was made by Beaver (1966), who proposed a method to classify firms into two groups by using a t-test statistic. Beaver's study was continued by Altman (1968), who proposed a model of multivariate discriminant analysis, while Eisenbeis (1977), Ohlson (1980) and Jones (1987) identified some inconsistencies in the method and proposed new methods of financial distress prediction.

For instance, in 1980 Ohlson proposed a logit model for financial distress prediction and his results showed that size, financial structure, performance and current liquidity were important determinants of bankruptcy. Then in 1984 Zmijewski (1984) proposed the probit model in order to predict the bankruptcy risk of a firm, but the model had less applicability in the literature.

Instead Shumway (2001) proposed the hazard model for predicting bankruptcy, that was defined as a multi-period logit model. The main particularities of the hazard model consist in the fact that the explanatory variables vary during several time periods, leading to more efficient estimators. Moreover, the duration model uses a baseline hazard function that can be estimated directly through macroeconomic variables in order to reflect the economic changes (Nam, Kim, Park, Lee, 2008).

In recent years many types of heuristic algorithms such as neural networks and decision trees have also been applied to the bankruptcy prediction problem and several improvements in the financial distress prediction were noticed. For instance, the studies made by Tam and Kiang (1992), Salchenberger et al. (1992) and Jain and Nag (1998) concluded that neural networks outperform conventional statistical models of financial distress

prediction. Soon after that, hybrid Artificial Neural Network methods were proposed in some financial distress prediction studies such as Yim and Mitchell (2005) and Andreica (2009).

Instead, Zheng and Yanhui (2007) and Andreica (2012) used decision tree models for corporate financial distress prediction and presented the advantages of using CHAID decision trees in comparison to a neural network model, which is complicated to build up and to interpret or to a statistic model such as multivariate discriminate regression and logistic regression, where the patterns need to be linearly separable and samples are assumed to follow a multivariate normal distribution. In their study, Zheng and Yanhui (2007) noticed that it is not appropriate to use financial information to predict financial distress ahead of four years and the results showed that decision trees are a valid model to predict listed firms' financial distress in China, with a 80% probability of correct prediction.

As noticing from the literature review, the early warning models for distress companies have been intensively studied starting with 1960 and still play a huge role especially during financial crisis. In this context, early warning models could be of great help to prevent financial difficulties or bankruptcy of a firm and to protect the companies that are offering financing to any potential financial distressed firm.

2. Metodologies

In order to build predictive models of financial distress in Romania, some logit econometric models were estimated and then a principal component analysis was applied.

According to Shumway (2001) *the logit model* is a single-period classification model which uses maximum likelihood estimation to provide the conditional probability of a firm belonging to a certain category given the values of the independent variables for that firm. The logit model describes the relationship between a dichotomous variable Y , that takes values 1 or 0 for “distress” and “non-distress”, respectively, and k explanatory variables $x_1, x_2, \dots, x_k$, representing seven financial ratios. The logit regression model is defined as follows:

$$p_i = \frac{1}{1 + e^{-(\beta_0 + \sum_{j=1}^k \beta_j x_{i,j})}} \quad (1)$$

When applying the logit-transformation to the above equation, we get a linear relationship between $\text{logit}(p_i)$ and the explanatory variables:

$$\text{logit}(p_i) = \log\left(\frac{p_i}{1 - p_i}\right) = \beta_0 + \sum_{j=1}^k \beta_j x_{i,j} \quad (2)$$

This equation is also called the logit form of the model, where $\text{logit}(p_i)$ is the log odds of distress for the given values $x_{i,1}, x_{i,2}, \dots, x_{i,k}$ of the explanatory variables.

Regarding the threshold value to which we compare the predicted probabilities of a firm to become productive or unproductive we chose the level of 0.5. Thus, if the estimated probability is less than 0.5, the observation is classified as a productive firm, while the probability values above 0.5 indicate an unproductive firm.

The Principal component analysis (PCA) is a way of identifying patterns in data where graphical representation is not available, by reducing the number of dimensions, without much loss of information. PCA involves a mathematical procedure that reduces the dimensionality of the initial data space by transforming a number of possibly correlated variables into a smaller number of uncorrelated variables called *principal components*. These components are synthetic variables of maximum variance, computed as a linear combination of the original variables. The first principal component accounts for as much of the variability in the data as possible, and each succeeding component accounts for as much of the remaining variability as possible.

3. Building the early warning model

For this study, public financial information for the years 2009-2010 was collected for 66 Romanian listed companies on RASDAQ, corresponding to the same III-R market category with the purpose to predict financial distressed firms one year ahead. In order to have two equal sample groups of both financial distressed and non-distressed firms in the year 2011, 33 “distressed” firms with losses and outstanding payments were selected in the study together with 33 “non-distressed” companies, that were matched by assets size and activity field.

The selection of the main set of financial ratios for each company was conditioned by those variables that appeared in most empirical work, but also restricted to the availability of the financial data provided by the Bucharest Stock Exchange Market. Seven financial ratios were calculated for this study in order to reflect the company’s profitability, asset utilization and growth ability. They are presented in Table 1.

Table 1

Financial indicators			
CATEGORY	CODE	FINANCIAL RATIOS	DEFINITION
Profitability	I1	Profit Margin	$\text{Net Profit or Loss} / \text{Turnover} \times 100$
	I2	Return on Assets	$\text{Net Profit or Loss} / \text{Total Assets} \times 100$
	I3	Profit per employee	$\text{Net Profit or Loss} / \text{number of employees}$
	I4	Operating Revenue per employee	$\text{Ln}(\text{Operating revenue} / \text{number of employees})$
Asset utilization	I5	Working capital per employee	$\text{Working capital} / \text{number of employees}$
	I6	Total Assets per employee	$\text{Ln}(\text{Total Assets} / \text{number employees})$
Growth ability	I7	Growth rate on total assets	$(\text{Total Assets}_1 - \text{Total Assets}_0) / \text{Total Assets}_0$

The initial sample of 66 firms was divided into two groups: 76% of the initial observations were used in the learning process (in-sample), while the rest of 24% were used for prediction (out-of-sample). The prediction efficiency of the model was based on the 24% of the observations used for prediction and was calculated by comparing the forecasting results with the actual values.

After estimating the econometric model based on the financial indicators registered in 2010, it resulted the following unifactorial model, with the profit margin indicator (I1) as the explanatory variable and the following logit equation:

$$p_i = P(y_i = 1) = \frac{1}{1 + e^{-(0,372 - 0,0648 \times I_1)}}$$

Although the McFadden R-squared value is only 32.5%, the result of the *Expectation Predicted Test* suggests that the model brings a total gain of 34% in comparison to the simple constant model and the level of 0.2 of the *goodness of fit Test* (H-L Statistics) confirms the validity of the model. Moreover, the Akaike and Schwartz information criterion values are small and the coefficient sign of variable I1 is according to the economic theory, stating that a reduced level of the profit margin implies higher risks of financial distress.

The out-of-sample forecasting performance of the logit model built based on financial ratios of the year 2010 in order to predict financial distress of the Romanian firms one year ahead is only 69%, according to Table 2.

Table 2

The forecasting performance of the logit model

	IN SAMPLE			OUT-OF-SAMPLE		
	Healthy	Unhealthy	TOTAL	Unhealthy	Healthy	TOTAL
Total	25	25	50	8	8	16
incorrect	8	0	8	5	0	5
correct	17	25	42	3	8	11
% incorrect	32.0	0.0	16.0	62.5	0.0	31.3
% correct	68.0	100.0	84.0	37.5	100.0	68.8

4. Improving the efficiency of the early warning model

A principal component analysis was then performed in order to reduce the dimensionality of the original data space with minimum loss of information and in order to see to what extent are the variables used in the analysis relevant for obtaining classification rules for the two types of firms. The eigenvalues obtained from PCA application are shown in Table 3.

Table 3

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.548	36.400	36.400	2.548	36.400	36.400	2.056	29.371	29.371
2	1.640	23.426	59.827	1.640	23.426	59.827	1.998	28.547	57.918
3	1.306	18.663	78.490	1.306	18.663	78.490	1.440	20.572	78.490
4	.748	10.679	89.169						
5	.344	4.910	94.079						
6	.260	3.709	97.788						
7	.155	2.212	100.000						

Extraction Method: Principal Component Analysis.

The first three principal components that have values higher than 1 are the following: $\lambda_1 = 2.55$, $\lambda_2 = 1.64$ and $\lambda_3 = 1.31$, with a minimum loss of information of approximately 21.5%.

The first principal component is highly correlated to I1 and I7, being a profitability indicator. The second principal component is mostly correlated to I2, I3 and I5 and offers information about firms assets and working capital, while the third principal component describes the economic activity of a firm according to its employees, being strongly correlated to I4 and I6 (Table 4).

Table 4

	Rotated component matrix(a)		
	Component		
	1	2	3
I1	.874	.049	.014
I2	.565	.709	-.096
I3	.269	.782	.117
I4	.545	-.173	.758
I5	-.151	.902	-.072
I6	-.265	.098	.914
I7	.714	.170	-.039

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 5 iterations.

The graphical representation of the 66 firms on a three-dimensional principal component space is shown in Figure 1, where one can notice that, in general, the two types of firms tend to form two distinct groups.

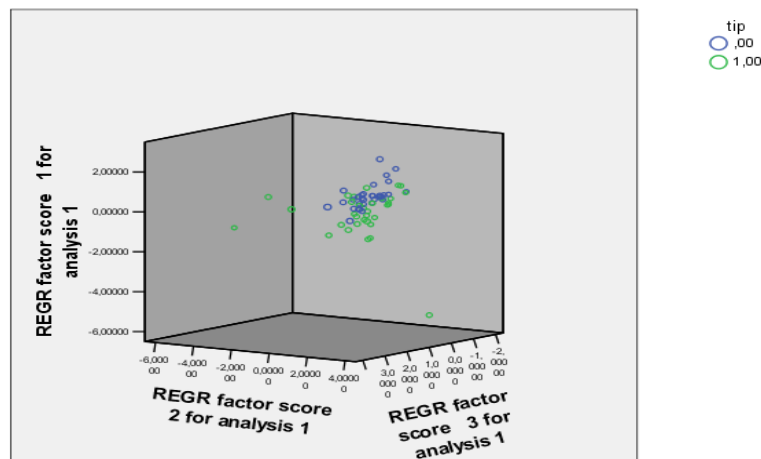


Figure 1. The firms on a three-dimensional space

The PCA allowed us to reduce the dimensionality of the initial data space with minimum loss of information so that the two types of firms could be easily identified.

In addition to that, we found that when replacing the financial indicators of the prediction model with the main principal components of the initial data matrix, the prediction performance of the new logit model built with the first two principal components improved and reached an accuracy of prediction of 81.3%. The new econometric model is described by the equation:

$$p_i = P(y_i = 1) = \frac{1}{1 + e^{-(0,354 - 3,043 \times fact_1 - 1,394 \times fact_2)}}$$

The R^2 McFadden value reaches 39.7%. Moreover, the new model brings a total gain of 28% in comparison to the simple constant model and the level of 0.21 of the *goodness of fit Test* (H-L Statistics) confirms the validity of the model

The out-of-sample forecasting performance of the new logit model built based on the first two principal components of the initial financial data of the year 2010 in order to predict financial distress of the Romanian firms one year ahead is improving by reaching 81.3%.

Table 5

The forecasting performance of the new logit model built on principal components

	IN SAMPLE			OUT-OF-SAMPLE		
	Healthy	Unhealthy	TOTAL	Unhealthy	Healthy	TOTAL
Total	25	25	50	8	8	16
incorrect	9	8	17	0	3	3
correct	16	17	33	8	5	13
% incorrect	36.0	32.0	34.0	0.0	37.5	18.8
% correct	64.0	68.0	66.0	100.0	62.5	81.3

5. Conclusions

In this paper we design an early warning model for Romanian distressed firms. The logit model was built based on financial ratios of 66 Romanian firms listed on RASDAQ that were facing financial difficulties in 2011. In addition, we identified the main principal components obtained with minimum loss of information after applying the principal component analysis and proposed a new estimation of the logit model by replacing the initial set of input data matrix with the main principal components of the financial observations.

The results indicated an increase with 12 percentage points in the performance of the one year ahead prediction of financial distress of the new warning model.

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Innovation: a path to competitiveness and economic growth. The case of CEE countries

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Abstract. *Innovation is often considered to be a typical activity of the developed countries. If we put behind the leading excellence research institutions and the high educated specialists we can tell that innovation is, in the end, the attempt to create new or improved products or processes.*

The aim of this study is to show the empirical evidence on the link between innovation and economic growth in the Central and Eastern European countries (CEE). Even if this part of Europe was highly affected by the economic crises, we consider that innovation can be the most important component of long-term economic growth. Our study considers a number of different proxies to measure innovation, such as R&D spending, patenting or the number of researchers as well as firms characteristics and mergers and acquisitions. Our findings are consistent with the existing literature that innovation makes significant contribution to national competitiveness and economic growth and the gap between the Western and Eastern economies can be reduced by investing in innovation.

Keywords: innovation; economic growth; competitiveness; CEE countries.

JEL Codes: O11, O30.

REL Codes: 8A, 8E, 16E.

1. Introduction

The current article aims to identify the right balance between resource allocation for developing innovation capacity and revenue generated by selling new products and services. Experience proved that new products and services on the market are those that generate the biggest revenue which encourages companies to invest in innovation. This explains the close relationship between the competitiveness and the need for innovation. Improving business model can be the formula that helps identify the equilibrium point. In some cases changing the business model can lead to a completely new one that succeeds to meet the needs of its customers, to conquer new market segments and thus to stand out from competitors. So, innovation is a key feature in the world from high developed economies to developing ones. Economic growth is directly influenced by companies' ability to innovate, and especially by the process result rather than its triggering.

The relationship between innovation and economic growth has been highlighted in numerous theoretical (Solow, 1956, pp. 65-94, Romer, 1986, pp. 1002-1037) and empirical studies (Mansfield, 1972, Nadir, 1993). A large part of these studies were conducted in developed economies (USA, Japan, Western Europe). This is because of the lack of data for developing economies or less developed, such as CEE states until 1989, but due to the political situation that put them in the category of countries with centrally planned economy. Once with the transition to the market economy, these countries have experienced large capital inflows from the developed countries.

In terms of innovation, for CEE countries, there were attempts to catch-up by importing capital and technology. However, the situation in CEE states differs from the one in developed countries and therefore the importance of innovation and technology must be adapted to the economy and culture of the concerned states.

Article includes in section II a summary of studies in this area, followed by an overview of the database and research methodology used in this study, section IV presents the achieved results, and the last part is devoted to conclusions.

2. Literature review

The literature review highlights how important is the innovation for competitiveness and the economic development. However, it is not easy to outline the direct link between innovation and firm sales. Difficulty of quantifying the effects of innovation occurs due to long time to convert

knowledge into economic value, substantial costs and uncertainty that characterize each stage of the innovation process (Coad, Rao, 2008, pp. 633-648).

Since 1939, Schumpeter identifies a link between innovation and economic cycles. The question arises how are they correlated? The two possible options are: reducing innovation activities in periods of recession, or otherwise, reverse evolving economic cycle - during periods of recession can be observed an innovation growth in firms (Filippetti and Achibugi, 2011, pp. 179-192). Firms can be influenced also by their strategy, by their development stage, by new technology rise on the market, but can we identify such a link in the case of countries? At the country level, this link is greatly influenced by the National Innovation System (NIS), which is composed of institutions and structures that influence the rate and direction of change process, such as the education system, research institutions, the financial system, the specialization of labor and the degree of industrialization (Filippetti, Achibugi, 2011, pp. 179-192). Although recession is characterized by a major decline in demand, which implies a low rate of success for an innovative product, NIS can be both a source of constraints or can generate opportunities for business innovation. Thus, it is unlikely that firms with access to public funding sources to interrupt investment in the innovation projects. This underlines the important role that NIS plays in stabilizing investments in innovation during recession periods (Paunovic, 2012, pp. 24-35). Countries less affected by economic shocks are those with a strong NIS, as the Western European countries, which had strong political cooperation and innovation at European level not only in good times but also in times of crisis. Technology has a natural development that occurs as a result of an experience and knowledge accumulation, and some jump points called radical evolution, or breakthrough, when it manage to change an old technology on the market. Another opinion about the optimal period is that an investment in the innovation process should be located at the zero moment, immediately before or after a revolutionary technological breakthrough, is (Hritonenko and Yatsenko, 2010, pp. 1064-1078).

More than 70% of companies in the Eastern Europe countries mentioned that the first impact of the crisis was a decline in demand for their products (Ramalho et al., 2009). In adverse economic situations, reducing investment is due to the low profit while in periods of economic expansion increases the chances of new products or technologies to appear on the market (Freeman et al., 1982). A different perspective is that a reduced income is both signal and stimulus for companies to introduce new products or processes regardless of the economic cycle (Filippetti, Achibugi, 2011, pp. 179-192).

The importance of innovation activities for companies varies according to their size, so it proved that the level of sales of medium firms are not as influenced by innovation while for the developed firms innovation activities are

more important on sales volume (Coad, Rao, 2008, pp. 633-648). Also, innovation contributes to the rapid development especially for small and relatively new ones on the market that are more active in product or process innovation than the long ones on the market (Mansfield, 1962, pp. 1023-1051, Cassia et al., 2009, pp. 211-220, Paunovic, 2012, pp. 24-35).

In Europe the percentage of firms that have increased their innovation expenses decreased significantly by approximately 30% during 2008-2009 period in comparison with 2006-2008. The most affected countries were those among the new members of the European Union, especially the countries from Central and Eastern Europe (Filippetti and Achibugi, 2011, pp. 179-192). During the crisis period 2008-2009, it was put more emphasis on process innovation than product innovation; this indicates that firms have focused on efficiency of the production process in order to deal with the global crisis (Paunovic, 2012, pp. 24-35). Private investments in innovation are cyclical and significantly lower during periods of economic recession (OECD, 2009).

Investments in innovation are different from other types of investments because they are characterized by a higher uncertainty rate of results, significant initial costs which cannot be easily recovered, often turns into knowledge of staff involved in research projects that can be lost with persons who hold them (Paunovic, 2012, pp. 24-35).

There were identified two methods of economic growth through innovation: technological competitiveness, which focuses on improving performance through new products and new markets access, and a second engine of growth generated by cost competitiveness based on innovation replacing human labour process and industrial technology, which presumes a more flexible and reduced costs production (Bogliacino, Pianta, 2011, pp. 41-53). Thinking that the CEE countries have a market economy with major investments during the recent years, national investment in innovation and the European funds had an effect on economic growth?

The neoclassical growth theory, as it was founded by Solow (1956, pp. 65-94) and Swan (1956, pp. 334-361), contains models that assume the existence of perfect competition, no externalities, constant returns to scale, positive and smooth elasticity of substitution between labour and capital (which can always be substituted) to produce the expected results. Given these assumptions, models predict an increase in productivity as amount of capital each worker brought in an economy. In these circumstances, additional investments can be an attractive option leading to economic development. Romer (1986, pp. 1002-1037) and Lucas (1988) have shown the need to introduce technology as endogenous factor affecting growth. From this perspective, endogenous growth theorists assume a macroeconomic growth as investments which lead to improvements in technology. Other studies show a

direct dependency relationship between innovation and economic growth (Jones, 1995, Howells, 2005, pp. 1220-1234). Most studies are based on the American economy and on the countries from Western Europe. Under these conditions the first hypothesis tested in this study is:

H1: Innovation has a direct and positive impact on economic growth in CEE.

Major changes have occurred in CEE in the period after 1989, once with the transition to a market economy, the shock was felt long after this time. Local investors, but also the foreign ones, felt the opportunity to invest in these economies, which became in time more and more efficient. The opportunity for some countries to join the European Union, but also the existence cohesion founded by the Maastricht treaty in 1992 and Amsterdam in 1996, led to the so-called economic and monetary union which raised the level of resources allocated for the development of these areas by introducing structural funds.

Rodríguez-Pose (1999, pp. 1002-1037) supports the existence of social factors in individual states or regions that affect their ability to assimilate and transform their own or foreign funds dedicated to innovation in a value-added economic activity. Considering this phenomenon, we take account of the developed model to quantify the effect of the economy on innovation and the fact that there are specific states differences that emphasize or may restrict this hypothesis.

The economic structure of the region may also have a significant effect on the assimilation process innovation (Rodríguez-Pose, 1999, pp. 1002-1037). A state where agriculture is the main activity is less likely to generate a large number of patents, these industry being characterized by a low degree of innovation. States based on technology sectors will report a large number of patents, innovation being an important factor in their economic development.

The literature shows the relationship between economic growth and innovation, the later being the driver. Few studies aimed at analyzing the dependence between the level of investment in research and development (R&D) (the economic development of a state) and the innovation level as the independent variable. Through this study we show that there is an inverse relationship between economic growth and how financial resources are allocated, which significantly influences innovation. Considering these elements, the second hypothesis will be:

H2: The state of the economy and the resources allocation affect innovation.

Next it will be presented the database particularities and some aspects regarding the research methodology.

3. Database and methodology

The aim of this paper is to show the existence of a circular dependency between the level of innovation and economic growth (and, implicitly, competitiveness). Analysis was performed in the countries of Central and Eastern Europe. This region was less analyzed, most studies being conducted in a state or a group of states from a developed region. A major concern was to find a complete database, for a long period of time so the findings can express the real economic situation. The main source was the database provided by the World Bank. We had the possibility that for the EU countries to take the database provided by the European Statistical Office, EUROSTAT, but because of the existence of CEE countries that are not part of the EU, especially for data consistency, the only source used was World Bank. For most countries the data provided for the last 20 years was complete. There were some exceptions, so we decided to exclude them from our study. These are: Albania, Bosnia Herzegovina, Kosovo and Montenegro. In addition we have included in the study the Republic of Moldova.

The study was conducted in 15 states (Estonia, Latvia, Lithuania, Poland, Germany, Czech Republic, Slovakia, Hungary, Romania, Moldova, Bulgaria, Croatia, Macedonia and Serbia), the data for each country covering the period 1996-2010. The year 2011 was not included in the analysis, because of the lack of data.

Investing in R&D can be seen as an effort by a state to create knowledge or to improve the existing one. R&D activities are considered the main driver of innovation and therefore required an analysis of how investments in R&D can affect innovation in CEE states. The variables analyzed in this study are presented in Table 1.

Table 1

The variables used in the models	
Indicator	Explanation
GDPgrowth	GDP growth from year to year for each of the CEE states
Education	The percent of education expenditure in GDP for each of CEE states
Research	The percent of research and development expenditure in GDP for each of CEE states
FDlongdp	The percent of Foreign Direct Investments in GDP F for each of CEE states
Unemployment	Unemployment for each CEE state
HDI	Human Development Index
GDPhab	The GDP per capita for each of the CEE state (\$)
Researchers	Number of researchers to 1,000,000 people
Patents	Number of patents for each of CEE states

To highlight the relation between economic growth and innovation we have conducted two models, where the dependent variable is first the number of patents and second the economic growth. The others variables were included in the analysis as independent variables.

GDP growth is the real growth rate of Gross Domestic Product from year to year. This is a good proxy for a state's economy at a given time. The amount of GDP per capita is a proxy for amount of financial resources of a state, and in many studies is seen as a proxy to quantify country's knowledge stock. Moreover, Stern, Porter and Furman (2000) say that GDP per capita is an estimate of the size of the technological development of a country. The same attribute can be agreed for the human development index. GDP per capita is a proxy for national competitiveness, as well.

The number of patent represents the number of applications registered by the national patent office for exclusive rights for an invention – a product or process that provides a new way of doing something or offers a new technical solution to a problem. A patent provides protection for the invention to the owner of the patent for a limited period, generally 20 years.

The size of R&D expenditure as a percentage of GDP is a proxy for the intensity of the R&D. A higher value of this indicator shows greater concern to state regarding the technological development. This indicator, in both cases should be significant and positive, as it is “an engine” of economic and innovation growth. Another indicator used in studies to quantify the degree of development and innovation of a state is the education expenditure. From the theoretical perspective, a higher level indicates that a larger capacity exists to transform R&D activities in innovation. Expectations are reserved for this indicator, because it is well known that CEE states, with some exceptions (Germany, Czech Republic, Poland) do not focus on this, education is often regarded not a priority in developing economies.

Unemployment is considered a control variable in this model, assumed to be significantly and inversely correlated with both economic growth and innovation. The level of the foreign direct investment in GDP is a proxy for the interest of foreign investors of a state. A high value indicates a stable economy that can provide a favourable business environment. We assume that this indicator is also significantly and directly correlated with the two dependent variables.

The number of researchers can be another proxy for the level of innovation, along with the number of patents. The number of persons employed working in research is considered to be the absolute number to 1,000,000 people.

The descriptive statistics of these variables for all the CEE countries for the period 1996-2010 can be founded in Table 2. The values are between the normal limits, highs were recorded mainly in Germany and lows in Moldova.

This table shows the descriptive statistics of the variables used in the models which show the relationship between economic growth and innovation. Statistics were performed on a sample of 15 countries of CEE over the period 1996-2010. Explicit description of each variable is presented in Section 3.

Table 2

Variables descriptive statistics					
	Mean	Median	Standard deviation	Max	Min
GDPgrowth ()	3.31	4.17	4.58	12.23	-17.95
Unemployment ()	12.35	10.00	7.28	37.30	3.90
Education (GDP)	4.79	4.64	1.09	9.90	2.40
R&D (GDP)	0.85	0.67	0.56	2.82	0.17
FDI (GDP)	5.21	3.99	6.33	52.05	-29.23
HDI	0.750	0.749	0.072	0.903	0.559
Researchers (/1.000.000)	1661.97	1499.61	799.04	3807.09	471.61
Patents	3655.55	297.00	11858.10	51736.00	12.00
GDP/hab (\$)	8642.32	5577.96	8253.50	44132.04	321.03

According to this database to achieve the proposed models we used panel data regression models. The analysis show the situation in all countries in CEE, so a pooled regression model was considered and then we tested whether specific effects are found in each country that can influence the results. We managed this by using a panel regression with fixed effects variable both within among cross section and time series. Models were restricted to present the results of all situations with only cross-section fixed effects or period fixed effects, but also where it meets both the cross-section and period fixed effects. In all these cases the results were the same as in the initial regression. This was expected because the economies of these states had the same evolution in the analyzed period, a recovery period until 1999, then a sharp growth till 2008 and a period of decline from 2009, the economic crisis that affected the global economy.

Also we tested for random effects with both cross-section and period data. To see if these models are valid Hausmann test was used, but the result for p-value statistics for most regressions tested was below 10%, which makes the models more inconclusive. Finally, we used the simple pooled time regression especially since our interest was to show the relationship between economic growth and innovation in the CEE countries and the specific effects of this relationship at the country level can be a research question of our further studies.

In the analysis we used logarithmic specifications for variable that were not determined as percent of GDP of in index form. These was useful in order to reduce the data size and for an easier analysis. Our aim was to find the

correlations between them and not the size of their coefficients. The regressions have the following form:

$$L_PATENTS = C(1) + C(2) \times L_GDPHAB + C(3) \times EDUCATION + C(4) \times FDIONGDP + C(5) \times UNEMPLOY + C(6) \times RESEARCH + C(7) \times HDI + \varepsilon$$

$$GDPGROWTH = C(1) + C(2) \times L_PATENTS + C(3) \times HDI + C(4) \times FDIONGDP + C(5) \times EDUCATION + C(6) \times RESEARCH + C(7) \times UNEMPLOY + \varepsilon$$

We have tested for identifying multi-collinearity. The correlation matrix for the model variables is presented in Table 3. We did not consider in the same regression the variables correlated at a higher level than 0.3

Table 3

The correlation matrix

	GDPgrowth	Unemploy	Education	Research	FDlongdp	HDI	Resear- chers	Patents	GDP/hab
GDPgrowth	1.00								
Unemploy	-0.05	1.00							
Education	-0.01	-0.19	1.00						
Research	-0.18	-0.38	0.04	1.00					
FDlongdp	0.13	-0.09	-0.02	-0.15	1.00				
HDI	-0.07	-0.39	-0.10	0.66	-0.01	1.00			
Researchers	-0.08	-0.42	0.10	0.77	-0.11	0.79	1.00		
Patents	-0.12	-0.14	-0.04	0.78	-0.14	0.41	0.54	1.00	
GDP/Hab	-0.15	-0.33	0.01	0.86	-0.11	0.80	0.82	0.74	1.00

4. Results

To test the hypotheses outlined in section two we used the models presented in the methodology section. In support with our hypothesis is Table 4 which presents the regression results performed in the CEE countries during 1996-2010. Given that the number of researchers is strictly correlated to the number of patents we had not considered appropriate to test this variable also.

As we suggested, a state economic development (proxy: GDP/capita) is a determinant for the degree of innovation of a country (proxy: the number of patents registered). We found a positive correlation so, as the state has a stronger economy, it will invest more in research. R&D intensity, as the percent of the R&D activities funds in GDP, resulted to be significantly and positively correlated, so a greater allocation of funds in this direction will bring an increase in CEE countries innovation. The same result is reflected by the human development index. These results are conclusive with the literature (Freeman et al., 1982, Coad, Rao, 2008, pp. 633-648).

Model 1. Dependent variable: The number of patents registered

Model 1 is a pooled data regression between the degree of innovation and its determinants in the CEE countries. The regression uses 225 observations for 15 countries in 15 years. We did not consider in the same regression the variables correlated at a higher level than 0.3. The symbols *, **, *** represent significance levels of 10%, 5% and 1%.

Table 4

The estimation of the dependent variables

Variable	(1)	(2)	(3)	(4)
C	1.32 (1.24)	9.00*** (16.01)	0.22 (0.17)	5.51*** (13.23)
L_GDPHAB	0.66*** (6.19)			
EDUCATION	-19.61** (-2.00)	-34.82*** (-3.51)	-17.01* (-1.72)	-26.87*** (-3.38)
FDIONGDP	-3.25* (-1.94)	-4.75*** (-2.71)	-3.41** (-2.03)	-0.91 (-0.65)
UNEMPLOY		-9.50*** (-6.40)		
RESEARCH				204.17 (13.15)
HDI			8.23*** (6.04)	
R-squared	17.87%	18.69%	17.28%	45.93%
Adjusted R-squared	16.76%	17.59%	16.16%	45.19%

Unemployment has a negative correlation with the level of innovation, an increase in this rate means a decrease of the number of potential employees of the R&D sector and this implies a decrease in the number of patents applications. A surprising result is recorded by the education expenses. It is significant but negatively correlated with innovation. In most CEE countries, as in the case of Romania, the research is not always seen as a component of education and therefore a higher resource allocation in education will lead to a decrease in research funding. Foreign funds negatively affect the level of innovation, because often foreign investors are uninterested in CEE countries research, focusing on production with the existing technologies mostly imported from the Western Europe.

Model 2. Dependent variable: The economic growth

Model 2 is a pooled data regression between the economic growth and its determinants in the CEE countries. The regression uses 225 observations for 15 countries in 15 years. We did not consider in the same regression the variables correlated at a higher level than 0.3. The symbols *, **, *** represent significance levels of 10%, 5% and 1%.

Variable	(1)	(2)	(3)
C	0.08*** (3.55)	0.09** (2.12)	0.05*** (3.30)
L_PATENTS	-0.05*** (-2.85)		
EDUCATION	-0.25 (-0.87)	-0.14 (-1.41)	-0.09 (-0.34)
FDIONGDP	0.06 (1.43)	0.09** (1.86)	0.06 (1.34)
UNEMPLOY	-0.07* (-1.66)		-0.08* (-1.75)
RESEARCH			-1.78** (-3.02)
HDI		-0.06 (-1.41)	
R-squared	6.34%	2.87%	12.34%
Adjusted R-squared	5.89%	2.56%	11.56%

In this case we presented the innovation related determinants of economic growth. The fact is that the human development index and level of education resources are not significant with the economic growth. R&D spending level and the number of patents are significant but have a negative coefficient. This suggests the existence of a catch-up process, which is typical for the neoclassical growth theory. The CEE countries, with the exception of Germany, have a relatively low number of patents given to the high economic growth. Many innovations were imported from more developed countries and so the interest of domestic research was reduced. The average annual increase in the number of patents in these countries was approximately 2%, showing that they are able to increase their innovation potential for further economic growth.

5. Conclusions

Development level of a country is the engine of innovation, allocating funds to research and development is the main source of support offered in this respect. Welfare, seen with the help of the human development index, has a key role in enhancing the innovation in a country. Regarding innovation factors that influence growth, they fail to make a significant contribution in the case of the ECE countries. These countries had a rapid economic growth, but a growth not based on the innovation process. Innovation is in a catch-up process, related to the growth rate.

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Monetary autonomy under different exchange rate regimes in the long-run: the case of seven new EU countries

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Abstract. *This paper finds that except for Poland, the other six countries possess moderate or significant monetary autonomy in the long run as their interest rates make partial or small adjustments to a change in the Euro area interest rate. Except for the Czech Republic and Poland, the findings support the hypothesis that countries under more flexible exchange rate regimes possess more monetary autonomy than countries under less flexible exchange rate regimes because local interest rates under more flexible exchange rate regimes are less sensitive to a change in the euro area interest rate.*

Keywords: exchange rate regimes; monetary autonomy; global transformation of interest rates; Fisher hypothesis.

JEL Codes: E52, F31.

REL Code: 8N.

1. Introduction

Monetary autonomy, exchange rate stability, and free capital mobility are ideal goals for many countries to consider in order to conduct effective monetary policy, maintain price stability, promote economic growth, and increase exports and foreign investments. However, the impossible trinity suggests that only two of the three above policies can be achieved simultaneously (Mundell, 1963). Therefore, if a country has chosen free capital mobility, the country needs to determine whether monetary autonomy or exchange rate stability would be selected.

This paper examines the sensitivity of interest rates in Bulgaria, the Czech Republic, Hungary, Latvia, Lithuania, Poland and Romania outside the Euro zone to a change in the Euro area interest rate under four different exchange rate regimes (International Monetary Fund, 2009). Theoretically, we expect that countries with more (less) flexible exchange rates would be less (more) sensitive to a change in the Euro interest rate and possess greater (lesser) monetary autonomy. A country pursuing a flexible exchange rate allows exchange rates to fluctuate freely based on market forces, does not have to change the domestic interest rate in response to a change in the world interest rate, and maintains significant monetary autonomy. On the other hand, a country pursuing a fixed exchange rate would like to make a full adjustment to a change in the world interest rate so that the demand for and the supply of the own currency would not change much due to any interest rate differential between the domestic interest rate and the world interest rate. Hence, there is little monetary autonomy under a fixed exchange rate regime.

Several seminal articles have examined the subject. Frankel, Schmukler and Servén (2004) show that several large advanced countries can select their own rates in the long run whereas most other countries with flexible exchange rates react fully to international interest rates in the long-run. In the short-run, countries with flexible exchange rates respond to international interest rates with slower speed, suggesting that they possess some degree of monetary autonomy. Shambaugh (2004) examines whether different exchange rate arrangements would affect the degree of monetary autonomy. He finds that domestic interest rates in countries with pegged exchange rates are more sensitive to international interest rates than countries with non-pegged exchange rates. Obstfeld, Shambaugh and Taylor (2005) indicate that without capital controls, countries not pegging exchange rates are expected to retain sufficient monetary autonomy whereas countries pegging exchange rates would lose significant monetary autonomy. Cheung, Tam and Yiu (2008) find that countries with fixed or hard peg exchange rates and controls on free capital mobility such as China do not react much to a change in the US interest rate and have greater monetary autonomy.

A number of recent studies have investigated the sensitivity of domestic interest rates to the international interest rate and the degree of monetary autonomy for selected Central and Eastern European (CEE) or new EU

countries. Scheicher (2000) reveals that short-term interest rates in the Czech Republic, Hungary and Poland under different exchange rate systems were correlated with the German interest rate during 1997-1998. Habib (2002) examines the response of interest rates in the Czech Republic, Hungary and Poland under different exchange rate regimes and shows that interest rates in these three countries are not affected by the short-term interest rate in Germany.

Crespo Cuaresma and Wojcik (2006) find that the behavior of the interest rate in the Czech Republic supports the monetary independence hypothesis whereas the behaviors of the interest rates in Hungary and Poland do not validate the monetary independence hypothesis. Examining the relationship between exchange rate regimes and monetary autonomy for eight new EU countries, Căpraru and Ihnatov (2011) show that interest rates in countries with fixed or intermediate exchange rate arrangements are less sensitive to ECB's interest rate than countries with floating exchange rate arrangements and that intermediate exchange rate arrangements can better preserve monetary autonomy. In view of these different or conflicting empirical results, a further study of the subject for these countries is appropriate.

2. The model

Extending Scheicher (2000), Habib (2002), Frankel, Schmukler and Servén (2004), Shambaugh (2004), Obstfeld, Shambaugh and Taylor (2005), Crespo Cuaresma and Wojcik (2006), Cheung, Tam and Yiu (2008), Căpraru and Ihnatov (2011), and other previous studies, we can express the local interest rate as a function of the international interest rate and the inflation rate:

$$R_t = \alpha_1 + \alpha_2 IR_t + \alpha_3 \pi_t + \varepsilon_t, \quad (1)$$

where

- R = the local interest rate,
- IR = the international interest rate,
- π = the inflation rate, and
- ε = the error term.

We expect that the impact of an increase in the international interest rate on the local interest rate is positive and that the effect of a higher inflation rate on the local interest rate is also positive. The Fisher hypothesis suggests that the local interest rate and the inflation rate have a one-for-one relationship. If the Fisher hypothesis holds, the coefficient of the inflation rate will be equal to one. Note that α_2 or α_3 measures the long-run effect of a change in IR or π on the local interest rate.

Another methodology which may be considered is the autoregressive distributed lag model (ARDL). Initial empirical work based on the ARDL model shows that the sign of the current international interest rate is negative for three of the seven countries due to a high degree of multicollinearity between the current and lagged international interest rates. Hence, the ARDL model is not used.

The GARCH (Nelson, 1991, Engle, 2001) or ARCH (Engle, 1982, 2001) model will be applied in empirical work. The GARCH model specifies that conditional variance is a function of the past variances and past squared error terms:

$$\sigma_t^2 = \phi + \sum_{i=1}^p \alpha_i \sigma_{t-i}^2 + \sum_{j=1}^q \beta_j \varepsilon_{t-j}^2 \quad (2)$$

where

σ^2 is the conditional variance and ε is the error term. The ARCH model stipulates that conditional variance is a function of the past squared error terms:

$$\sigma_t^2 = \delta + \sum_{i=1}^n \beta_i \varepsilon_{t-i}^2 \quad (3)$$

3. Data and empirical results

The data came from the *International Financial Statistics* published by the International Monetary Fund. The local interest rate is represented by the money market rate except that the discount rate is used for Hungary due to lack of data. The international interest rate is represented by the money market rate in the Euro area. The sample begins in 1999.M1 and ends in 2011.M12. The ADF test on the residuals shows that time series variables in equation (1) for each of the countries are cointegrated and have a long-term stable relationship.

Table 1

Estimated regressions of global transmission of interest rates

	IR_t	π_t	INT	$\bar{R}^2$	$H_0: \alpha_2 = 1$
Currency board					
Bulgaria	0.889a (56.229)	0.076a (15.162)	-0.224a (-6.016)	0.485	Rejected
Lithuania	0.819a (60.426)	0.118a (14.113)	-0.178a (-4.903)	0.414	Rejected
Other conventional fixed peg					
Latvia	0.574a (14.810)	0.088a (8.776)	0.914a (8.075)	0.128	Rejected
Managed floating					
Romania	0.465a (2.949)	1.037a (71.576)	1.801a (3.599)	0.607	Rejected
Independently floating					
Czech Republic	0.721a (31.376)	0.082a (7.498)	0.591a (12.348)	0.375	Rejected
Hungary	0.145b (2.096)	0.644a (13.010)	3.488a (17.611)	0.279	Rejected
Poland	2.467a (31.606)	0.635a (26.449)	-0.844a (-5.345)	0.641	Rejected

Notes: Letter a or b indicates that the coefficient is significant at the 1% or 5% level. INT is the intercept.

Table 1 presents empirical results. Figures in the parenthesis are z-statistics. The GARCH or ARCH model is employed in empirical work if both autocorrelation and heteroskedasticity are detected based on the LM test. The effect of a change in the Euro area interest rate on the local interest rate ranges from a low of 0.145 for Hungary to a high of 2.467 for Poland. According to the Wald test, the null hypothesis that the long-run effect is equal to one can be rejected at the 5% level for all the countries. In the long-run, Latvia, Romania and Hungary make relatively small adjustments whereas Bulgaria, Lithuania, and the Czech Republic make moderate adjustments and Poland makes more than full adjustments, suggesting that except for Poland, the other six countries possess some degrees of monetary autonomy in the long run.

The coefficient of the inflation rate is significant for all the seven countries at the 1% level and ranges from a low of 0.076 for Bulgaria to a high of 1.037 for Romania. Local interest rates in Bulgaria, Lithuania, Latvia and the Czech Republic are less responsive to a change in the inflation rate whereas local interest rates in Romania, Hungary and Poland are more responsive to a change in the inflation rate. According to the Wald test, the null hypothesis that the coefficient of the inflation rate equals to one cannot be rejected for Hungary and can be rejected for the rest of the countries. These results suggest that the Fisher hypothesis holds only for Romania and does not apply to the other six countries.

Except for the Czech Republic and Poland, coefficients of the Euro area interest rate continue to decline as exchange rate regimes become more flexible. Hence, except for the Czech Republic and Poland, countries adopting less flexible exchange rate regimes have greater monetary autonomy than the countries adopting more flexible exchange rate regimes in the long run.

4. Summary and conclusions

This paper has examined monetary autonomy under different exchange rate regimes for seven new EU countries outside the Euro zone in order to determine whether interest rates in countries with more flexible exchange rate regimes may be less sensitive to a change in the Euro area interest rate in the long-run. The local interest rate is specified as a function of the Euro area interest rate and the inflation rate. The GARCH or ARCH model is applied in empirical work.

Major findings are summarized as follows. The positive coefficients of the Euro area interest rate and the inflation rate are significant at the 1% or 5% level for all the countries. Latvia, Romania, and Hungary are less sensitive to a change in the Euro area interest rate whereas Bulgaria, Lithuania, and the Czech Republic are more sensitive to a change in the Euro area interest rate. Poland makes more than full adjustments. The Fisher hypothesis applies to Hungary and does not hold for the remaining six countries. Except for the Czech Republic and Poland, empirical

results confirm the hypothesis that countries with more flexible exchange rate arrangements have greater monetary autonomy than countries with less flexible exchange rate arrangements in the long-run.

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The future of marketing: an appropriate response to the environment changes

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Abstract. *The future landscape of the business worldwide will have the marketing evolutions as a driver. These evolutions will be the response to the changes of business and marketing environment.*

The paper aims to analyze both the key trends that are shaping the macro environment, markets and consumers and their impact on the marketing at business level. First, these issues are presented as they result of both theoretical and applied various researches performed by numerous international and national organizations, universities, consulting and global companies, scholars and authors. These researches are read from the author's scientific point of view, on the other hand, and some own considerations are revealed. They could be found mainly in the systematic approach by using the marketing paradigm and practices around the world, in order to keep successful the organizations. These organizations should give the proper skillful response to each of main futures challenges of marketing.

Keywords: environment changes; innovative marketing; social marketing; sustainable marketing; new consumer technologies; virtual supply chain.

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1. Introduction

The present and the future changes of global landscape are unprecedented and very difficult to solve. They will drive to a new state of affairs that calls for an essential shift in the perspectives and world views as well as a new paradigm to guide the actions. Furthermore, they ask for coordinated and flexible strategic responses as solutions from the “actors” involved in domestic and international business.

The changes have and will keep having numerous dimensions and trends. The continuous increase of the levels of connectedness from local to global scales is a key trend. It is pushed forward by the use of multiple devices and platforms that help the users to communicate more rapid and easier. Thus, more rapid interactions dynamics will be possible between people, businesses and industries and will permit a better adaptation to the expansion of globalization and to the fragmentation of markets. These trends accelerate the change process; make it non-linear, abrupt and irreversible. They will keep pushing toward a clever development, based on knowledge and innovation. The consumers and the authorities will be more careful to the corporate social responsibility, ethics and sustainability. In their turn, the marketers will need to have new business models, commercialization methods and a better marketing paradigm as part of the business strategy. The fast innovation keeps remaining a key requirement for the clever development. This type of innovation must comprise not only the technological innovation but the social innovation, organizational innovation, marketing innovation and business with new business plans.

The marketing should take into account these requirements and finds innovative solutions. These marketing solutions will get a strong support to use multiple devices and platforms as smart phones, tablet computers, internet. They help the access to data bases and the interactive communications. In this way, the new technical environment permits the rise of social networks that have a strong impact on marketing. The marketing becomes more social and can use a model of product and communication that contains the consumer's contribution. Furthermore, the marketing has to have a sustainable dimension which is a prerequisite for achieving the sustainable development.

The significance of these issues is validated by numerous and various researches performed by structures of international organizations such as the Department of Economic and Social Affairs and the Environmental Programme of the United Nations, Centre of European Commission, national organizations like US National Council and The Rockefeller Foundation, universities, consulting and global companies. Many scholars and authors also are exposing their theoretical approaches and the results of some researches on all issues connected with the development, environment protection trends and probable changes in the marketing in the future.

2. Future trends in marketing environment

2.1. Future changes in economic environment

The recent events have revealed the countries are increasingly faced with the dilemma of having to boost or having to reduce debt. Making substantial saving and generating substantial growth remains an extremely difficult challenge. The experience tells that cuts in expenditures are quicker to implement than structural reforms to encourage growth. This issue has to be worked out by both developed and emerging countries. Many researchers and organizations analyze and debate the subject and suggest solutions. Reports and studies of United Nations (2008, 2010, 2012), of national bodies (US National Intelligence Council, 2008) and opinions of individuals such as Kjaer (2010), Grzegosz (2012) and Pacek (2012) support the idea that the crisis has accelerated the shift in economic power. While the economies of Europe and the United States have suffered major downturns in growth and are still suffering from the consequences of their stabilization measures today, the effects of the crisis in China and India have been relatively harmless, for example.

The emerging markets will be as large as the developed world, in the future. They already buy half of the world exports and half of the world's oil and have accumulated more than 70 percent of global foreign exchange reserves. For the last fifteen years, the emerging countries outperformed the developed world in terms of growth by a margin of 3 to 1. This margin is likely to gradually expand over the next decade (Pacek, 2012, p. 2). The emerging economies will also continue to have increase in wealth. By 2025 already, the eight largest economies will be the United States, China, India, Japan, Germany, the United Kingdom, France and Russia and, by 2040-2050, the BRIC countries, namely Brazil, Russia, India, and China will collectively matching the original G-7's share of Gross Domestic Product (GDP) (Grzegosz, 2012, p. 7). The largest economies of the world will be the BRIC countries plus the USA by 2050, as data of Table 1 show.

Table 1
Gross Domestic Product, population and per capita income for important regions in 2050

Region	GDP (Billion USD)	Population (Million)	Per – capita income (USD)
China	44.5	1.415	31,357
USA	35.2	420	83,710
India	27.8	1.601	17,344
Europe	18.8	391	45,521
Russia	5.9	118	49,646

Source: Grzegosz, 2012, p. 7.

The next eleven countries, comprising Mexico, Korea, Indonesia, Turkey, Iran, Egypt, Nigeria, Bangladesh, Pakistan, the Philippines and Vietnam will then jointly generate a higher GDP as the USA and their combined GDP will actually be twice the size of that of Europe (Grzegosz, 2012, p. 7).

2.2. Future trends of socio-demographic environment

The world population will increase from currently seven billion to far in excess of nine billion by 2050. While the population figures will remain virtually steady in the developed countries, the number of people in the poorer developing countries will increase by over 40 percent, from currently 5.6 billion to 7.9 billion. This evolution entails challenges as environment, food, migration and innovation dynamics (Grzegosz, 2012, pp. 8-10). The globally growth population will be accompanied by a mass urbanization. Authors as Muhtar (2012) and national and international organizations as World Bank, United Nations (2010, 2011), World Economic Forum (2012) and US National Council (2008) are for-sighting an increasing urbanization. In 2010, the urban areas were home to 3.5 billion people or 50.5 percent of the world population. If the current trends persist, by 2025 about 57 percent and some 70 percent by 2050 of the population will live in urban areas. In the next four decades, all of the world's population growth is expected to take place in urban areas and most expected urban growth will take place in the developing countries where the urban population is expected to double.

The population ageing is another demographic trend. By 2047, people over 60 years will outnumber those under 15. In many developed countries the most rapid growth in the ratio of seniors (>60 years old) to the working aged population will occur during the 2010s and 2020s. Japan will remain at the top, but in some West-European countries the fertility probably will stay below 1.5 children per woman, below the replacement level of 2.1 children per woman. As a whole, Europe is expected to lose more than 60 billion people by 2050. China and Europe face a rapidly ageing population, while India will remain disproportionately young when roughly half the population is younger than 25 years. Within the next few years, India will have a young "task force" and, therefore, a future of many customers with rising disposable income (Deloitte, Consumer 2020, 2012, p.10). This trend will open new opportunities for some industries as more mature consumers tend to have greater disposable income. But the trend of ageing population, even in countries as Pakistan and Mexico, will make it harder 20 years from now for companies to find, incentive, and motivate talent. Over the next several decades, the middle class will become bigger. The percentage of people considered to be in the "global middle class" is projected to swell from 7.5 percent of the world population to 16.1 percent,

according to the World Bank. By 2030, more than 90 percent of the world's middle class will live in emerging markets, up from 50 percent today. Most of new entrants in the middle class will come from China and India. This new wealth represents a huge growth opportunity for manufacturers and marketers, but it could create new resource stress and cost pressures on some commodities (Global Trends 2025, 2008, Muhtar, 2012).

The rising complexity of the socio-demographic landscape will go on with cultural contrast and diversity. These essential dimensions will meet with the two principles of the society which are the quest for efficiency and success and the ideal of happiness and quality of life (Kjaer, 2012, p. 2).

2.3. The future shift of technological environment

The technology will play a particular role in the evolution of marketing. The new technologies will sustain the marketing, and the marketing in turn will play a major part in what technologies are developed and to whom those technologies are intended. In the future, the success relay on relentless innovation. In this respect, the ongoing digitization that completes the globalization with an advanced infrastructure is the most significant trend. The digital technology has changed everything and the organizations and people now have abilities they never had before (Grzegosz, 2012, Mengerink, 2011). The boom of information and communication technologies is based on Internet that is democratizing the business (Czinkota and Ronkainen, 2007, p. 607). These technologies will make much easier for both consumers and marketers to solve the major issues in their relationships. In this way, starting a new business will be much easier, the ability to reach a worldwide audience economically will improve, a vast amount of data will be worldwide available. The high technology becomes one of the drivers of the future trends in marketing. The new technological solutions must contain the convenience technology and the smart technology as well. When necessary, the technology should be reconsidered in order to provide advantages. All these technologies have massive economic benefits. The rapidly decreasing costs and the new value chain means that the Internet based technologies, for example, can be used to achieve enormous gains in productivity. The same applies to industrial software and control technology which already allow companies to operate with minimal physic effort (Grzegosz, 2012, p. 15). The potential value of the technology and its use keep playing an active role in the marketing story going forward. The changing nature of the technology and the pace of innovation will shape the characteristics of the marketing strategy.

2.4. A more important role of the political and legal environment

One significant trend is the increasing role of the governments from the legal and political point of view. They keep having the propensity to more frequently making domestic policy but to intervene in international marketing. The governments will permit an open market orientation if it helps to fulfill the needs of domestic policy. Such a behavior will make the governments attempting to coordinate the policies that exercise an influence on the marketing environment, but they will find it more difficult to achieve a consensus (Czinkota, Ronkainen, 2004, p. 609). These trends help the marketing only if the policy makers understand the international repercussions of the domestic legislation. The financial and economic crisis has already brought about a bigger role for the government in many countries, with increased oversight and regulations (Avi, 2012). The current attempt of the European Union member states aimed to the consolidation of their economies and Euro are examples of some trends that will go on.

An increased collaboration between the governments and the corporations will probably become part of the political behavior of the governments due to the impossibility of the companies to solve alone emerging problems such as global warming, pollution and sustainability. The debate on the national sovereignty becomes a major issue of the future of environment. Will the nations and their citizens willing to abrogate some of their sovereignty even during difficult times? This subject will stay in the future as is today on the agenda of the national governments and international organizations as UE and WTO. The results of the negotiations on the matter will be reflected in more free international trade or protectionism.

3. The future consumers and markets

3.1. The consumers will sit in the driving seat

The future evolution of the global population with more powerful trends toward an increasing in the developing and emerging countries and the growing middleclass in these markets will produce many more customers. New segments of consumers will claim a prominent part in global demand. These segments will be built up from younger generations of consumers. Derrick and VanAuken (2008) think that these future generations are those of “Me Selling Proposition (MSP)”, a broadcaster generation and on-the-edge marketing. The MSP generation is a generation which takes on personal ownership between consumer and business on its head. These consumers demand their own input, even customization in products. The MSP generation is the generation which is

once recipients and transmitters of the marketing message. The marketing of tomorrow needs to be distinctive and push the envelopes of acceptability across a spectrum of social-economic and political tolerances. The challenge of realizing and growing a successful marketing is becoming greater. This particular market segmentation and the uncertain future could create changes in the lifestyle and behavior patterns, no matter the evolution of the consumers.

The future consumer behavior will be shaped by trends that will allow them sitting in the driving seat (Muhtar, 2012, Deloitte, Consumer 2020, 2012, Kjaer, 2012, Rettekya, Hetesi, 2010). The Internet and technologies such as mobile devices are revolutionizing the consumer-focus industries, companies and consumers. But the true revolution becomes the utilization of the Internet to reach out and connect with one another in new, and endless increasing ways. The social media technologies like Face book, Twitter and blog provide the consumer with a massive platform for interacting and socializing. The mobile communication will allow the consumers increasing their access to information about companies, products, pricing and availability and will be instantly aware of problems, recalls and scandals. The trust will continue to be an important term of buying decision. With higher education and better Internet connectivity due to the growing affluence, more consumers will scrutinize products, services and companies. They expect and demand transparency in product and service quality, pricing, and businesses policies and procedures. The younger consumers' loyalty which is more distractible short term and influenced by the networks of "friends" than by the official campaigns of the companies is another characteristic of the consumer's behavior in the next decades. The businesses will become more dependent on these younger segments. Therefore, they risk losing loyalty and brand equity overnight if they misstep. The above trend is complemented by the claim of an increasing number of customers to play an active role in creating content about products and services experiences, given that they have more time and more tech saving. In addition, the consumers will increasingly expect to have input into the development of new products and services, particularly with companies to which they feel loyal. At the same time, the consumers will demand that the companies shift from broadcasting and selling to listening, servicing and collaborating with them. The selfempowering will be accompanied by social responsibility and transparency and sustainability.

3.2. New configuration, demands and opportunities of the markets

The configuration, the demands, and the opportunities of the market remain important drivers for the marketing future. A wider global market is a change for more and better opportunities. This greater market will be the result

of at least three group of factors impact: the population growth, the geographic extension and a bigger value. In all respects, the most important shift is toward East and South, as Avi (2012), Pacek (2012) and Global Trends 2025 (2008) suggest. In addition to China in the East and India in the South-East is worth mentioning the Germany-Poland-Russia cluster. The Southern axes of opportunity point at Latin America and Brazil. Other significant areas will be the Middle-East and Africa. The sales will largely grow in the emerging markets as a result of better economic performance, and also of difficulties of finding growth in the developed world and better opportunities to find them in a number of emerging markets (Pacek, 2012).

The competitive landscape of the markets around the world will be tighter than ever. A first major force that will shape the competition is the higher and better focus and systematic regard on the emerging markets of the traditional multinationals from the developed world. The growing number of companies that have regional and global ambitions is the second driver of competition. These companies should not be underestimated, because the business history is full of skeletons of US and European businesses which underestimated Japanese, Taiwanese and South Korean competition in the past. The success of these new competitors remains possible if they preserve the competitive advantages like a better ratio quality/price, lower margins, and superior speed. This means that the multinational and global companies will face sales, margins, and market share pressures on an unprecedented level (Pacek, 2012, p. 3).

In order to overcome the competitive challenges, the companies should have a relentless innovation process. They should be able to outperform their competitors if they want to grow faster in terms of sales and profits. Deloitte, Consumer 2020 (2012, p. 14) pointed out once again that the global middle class will be joined by almost two billion new consumers in the next decades. With more purchasing power, this population will contribute to the increase of the global consumption and will lead to a greater strain on the resources. Therefore, without sustainable consumption, it will be increasingly difficult to meet the expectations and aspirations of the world's consumers. In the next decade, the consumers will live more sustainable whether they want or not. These trends will be stressed by a variety of factors like the cost of resources, awareness and education, self-interest, sense of citizenship, habit, lack of options. For that reasons and many others, the innovation effort must be sustainable, too. This is the outcome of many pressures as the growth potential, competitive pressures from the multinationals, development of products and services for multiple segments (Pacek, 2012, p. 3). A better focus on sustainability is now at the heart of corporate and marketing strategy. More consumers will be concerned about sustainability. The demand for food and energy will boost by 40-50 percent and for fresh water by 30 to 40 percent

(Muhtar, 2012, Sustainable Consumption, 2012). The capacity of adapting of all emerging economies, developing countries, and developed countries must rise. In this light, the sustainability is simply smart business.

4. Marketing mix, the response to the impact of environmental changes

4.1. The product strategy

The changes and the trends in the environment will put pressures upon permanent and progressive adjustments and innovations of the marketing at business level. One of the characteristic changes is the dramatic shrinkage of the product life cycle (PLC). The shorter PLC suggests that the long term products “cash cow” is becoming a thing of the past and the worldwide introduction of the products will occur more rapidly. As an example, Horn (2012) suggests that 50 percent of annual company revenues across a range of industries are derived from new products launched within the past three years. Furthermore, the product launching will grow more complex, more expensive and more risky. The company that is not quick to introduce a product to market risks launching goods that have already been superseded by competitors. Therefore, the rhythm of innovations becomes more alert and fast innovation is a crucial condition for the successfully model of business. Another issue remains the need for balance between the product standardization and its customization. The early incorporation of the global dimension into product planning and development does not point toward increased standardization. The increased number of the middle class customers in emerging markets is supposing to bring new pressures on mass customization.

The customers are and will be no longer satisfied with simply having a product. They feel like acquiring more utility and satisfaction if the product is tailored on their expectations and exigencies. As a result, the market diversification will become a real challenge for the businesses that must compete in more segments at the same time. The diversification of the product portfolio is the main response to this exigency. Another constitutive part of the successful strategy keeps remaining the brand. More than ever, the brand will facilitate to communicate and to prove to the consumer that the product performs all the promises it makes. In the next years, the brands will offer diversity in what they do with the consumers, making them more central to the people’s life. Today, the most valuable brand corporations are originated in USA and other few developed countries. The top ten included USA names only in 2012, as Table 2 shows.

Table 2

Global top ten of most valuable brand corporations

Ranking 2012	Brand	Industry	Country	Brand Value (Million Euro)	Percentage Change (2012/2011)
1. Apple	Apple	IT&T	USA	100.24	43.9
2. The Coca-Cola Company	Coca-Cola	Consumer goods	USA	59.98	8.9
3. Microsoft	Microsoft	IT&T	USA	53.97	5.1
4. IBM	IBM	IT&T	USA	52.64	13.8
5. Google	Google	IT&T	USA	50.60	5.0
6. PM	Philip Morris	Consumer goods	USA	48.31	12.4
7. P&G	Procter & Gamble	Consumer goods	USA	47.14	6.6
8. Mc Donald's	Mc Donald's	Consumer goods	USA	45.85	2.0
9. Johnson & Johnson	Johnson & Johnson	Consumer goods	USA	45.67	5.5
10. AT&T	AT&T	Telecom	USA	44.49	- 0.1

Source: Eurobank, September, 2012.

In the future, the most successful companies will have a strong grasp of shortening the product life cycle; continue innovation, better brand image, and higher effectiveness in the value chain. The use of sustainability concept and its integration into all constituent parts of the business strategy add new pillars to the marketing success. The approach of sustainability is “the end-to-end approach” that considers a wider range of activities and makes the cross-functional cooperation compulsory from the supply to the disposal of the product. Many and strong impacts has the use of sustainability on the PLC. While the traditional approach of the PLC aims at capturing quick wins, easy implementation and has a control scope, the sustainable life cycle approach comprise all the links of the supply chain and measures the company’s total environmental impact (Kearny, 2010). Therefore, the scarcity of natural resources and the government regulations around producer’s responsibility on environment protection have an impact on all the links of the supply chain that means supply, manufacturing, distribution, use and disposal. The company continues its sustainability pledges into business targets. This way, the sustainability becomes a transformation driver aligning the company behind a single high moralizing goal and it can address its total impact on the environment.

4.2. The communication strategy

The consumers’ expectations are growing while their tastes and preferences change at a dizzying pace. Much of these trends are driving by consumer technologies. More than two billion mobile users globally make probably a purchase via their handsets in 2013 (Muhtar, 2012). The communication becomes more a two way dialogue and the interactivity becomes its main characteristic. The interactive marketing communication

assumes that it is less tied to the location of the company or of the market. In their turn, the customers are in control of their selection, choosing what they wish to see or hear and when they want to.

The interactive marketing communication is a pull communication which is attracting the customers to the company's brand, product or service. The consumers are proactive in the selection of the message through actively seeking out a web site. The new media are creating a dialogue meaning that the software on the web server that hosts the web content which mediates the communication provides the opportunity for two way interaction with the customer. The web site, the interactive digital TV or a mobile phone enable the marketers to short-term or long-term dialogue with customers. These interactions can enhance the customer service, deepen the relationships and trust and so build the loyalty. Furthermore, the interactive communication allows changes from one-to-many communication which is a push communication to one-to-some communication which focuses on niches and to one-to-one communication or even to many-to-many communication. The new one-to-some media can afford the company to tailor and target its message to different segments through providing different site content or e-mail for different audiences through mass customization. One company can even move to one-to-one communication where personalized messages can be delivered according to the customer preferences. The new media also enable many-to-many communication where the customers can interact with other customers via the company web site or in independent communities as discussion groups. This new interactive communication makes the translation from "lean-back" to "lean-forward". The new digital media are intense media that means they are leaning forward media in which the web site or other platforms as Face book, Twitter usually has the visitor's non-divided attention. This intensity means that the customers want to be in control and want to experience flow and responsiveness to their needs. The digital media should be combined and integrated with the traditional media of communication according to their strengths, in order to achieve synergy. Their integration is evident result of the user generated content where the customers recombine elements of the company or brand content into their creations or respond to calls from the competition to make commercials for the company to air on television.

The digital revolution enables the diversification of the devices for interactive communication. From laptops and mobile phones the communication devices are translating to smart phones, tablets and others. All these make the marketing communication easier, more rapid and more interactive. The advertising becomes more interactive in all media. The ads on interactive TV, for example, will let the customers select more information to set reminders, get free samples or purchase directly, and brands will need to create completely different kinds of assets to engage with customers this way.

The trend for advertisers will probably be for booking integrated campaigns that work equally well on different devices (Elkington, 2012, in Future Trends Volume 1: The living room for 2015, 2012).

The interactive communication mutually benefits the consumers as well as the products, brands or the companies. In this communication partnership, the co-creation of information provides value to customers about the product, the brand or the company and provides the products, the brands or companies with information about the customers. The customers have an expectation to participate in communication exchanges with products, brands or companies in the same way they are participating in the co-creation with products, brands or companies. The digital media present the customers with opportunities to interact with marketing communication through user generated content which may take the form of text comments or multi-media content hosted on platforms like video sites, blogs or forums. Furthermore, the digital media allows for the cost efficient distribution of the customized communication that can be personalized to suit the individual customer, possibly by using database information.

One key of the marketer success could be picking the right ways to interact with online customers, manage the interactions appropriately and make the best use of digital consumer data. The success depends on the enhanced transparency and more collaborative interactions with the customers.

4.3. The distribution and the price strategy

The distribution is known as being one of stable constituent part of the marketing mix where the changes are slow. In the future, the new technologies, the high pressures on distribution costs and prices, the fierce competition and the demands of the customers for new and better services will work for a revolutionary transformation of the distribution. A better co-ordination of the distribution activities with other links of the supply chain could be the result of a new system approach. The system of organizations, people, technology, activities, information and resources involved in moving a product or a service from supplier to consumer has the distribution as a subsystem. This supply chain has two segments that are the supply and the demand chains. The demand chains are parts of the system by which the business manages the sales and the distribution of goods and services to the end users. The various demand chains are forming a network which is known as the distribution network. The improvement of the effectiveness of the distribution network as part of the supply chain will depend on the information flows inside and the outside it, in the first place. The new technologies could help by improving not only the information flows, but by shortening the distribution channels and by lowering the distribution costs (Czinkota, Ronkainen, 2004). The virtual supply chains offer new uses of the information which help for more visibility of the physical

operations and a better co-ordination of the distribution activities, a mirroring capability when the virtual activities are substituted for physical ones. In such a way, a parallel supply chain and distribution chain is created. Furthermore, a new customer relationship is allowed because the business can draw on the flow of information into a virtual supply chain to deliver value to the customer in new ways. The new mobile devices allow a greater mobility to the consumers. The markets, the retailers in particular, must be able to develop ways which support the access of customers to information about points of sale, available products on points of sale and their prices and so on.

These trends help the disintermediation process. The direct sales through the e-commerce will increase if it succeeds to eliminate the traditional “physical” distribution. All rapidly emerging innovations deliver the possibility of various devices as smart phones to use the product bar codes to access product-related information, for example and many other uses. These evolutions will probably have as a side effect the translation from e-commerce toward m-commerce (in English, mobile commerce). The evolution of m-marketing and of m-commerce in the future depends on the development of the capabilities in a much more diverse of the technical context, albeit within the single framework of mobility. The m-marketing could bring a series of benefits to consumers such as comparison shopping, services permitting users to examine the merchandise in a store and still shop electronically for the best price and better interactive relationships (Hollensen, 2008, p. 366).

In the next decades, the contribution of the Internet, the e-commerce and the m-commerce to the distribution change becomes better if such services are improved. A consumer survey to examine the attitudes toward online shopping across the United Kingdom, Germany, Spain, France, Belgium, Netherlands, and Luxembourg has revealed differences among the customers in the countries surveyed and pointed out to a need for service improvement (Europe Consumers Views of E-Commerce, 2011). The satisfaction rates vary from “satisfactory” as described of a quarter of Europeans to “good” and “very good” for 86 percent of German, Belgium, Netherlands and Luxembourg subjects. The online spending is relatively poor in the surveyed countries as 53 percent of those European said they would not participate with more than 50 Euro at a time online. The rates of response are in the favor of comparison, speed and efficiency of online shopping and peer reviews and comment as features having impact on the distribution activities.

Both the disintermediation and the new technologies effects will lead toward fewer but larger-scale retailers. These retailers are supposed to face a tough competitive environment in the future but they are likely to lean harder on manufacturers, especially on Consumer Packaged Goods companies (Avi, 2012). Some companies will continue to elect building their own distribution networks to take advantage of the Internet audience and to fulfill more cheaply the orders

generated by the web sites. The transactions and the information they provide will also allow more customization (Czinkota, Ronkainen, 2004, p. 531).

The price competition continues to be a fierce one in the future. The marketer which introduces a product will be not able to justify higher prices for long, due to the increased dissemination of the technology, as the quality of products will find other sources of price differentials. The exchange rates movements, the use of small price differentials per unit throughout the markets and even the engagement in forward pricing for new products technologies are some of such sources (Czinkota, Ronkainen, 2004). New perspectives on the price mechanism offer a much closer interaction on prices between the producer and the consumer as a result of the improved technologies with a significant impact on the marketing.

5. More social and sustainable marketing mix

The study “Global Outlook on Sustainable Consumption and Production Policy” (2012) performed by United Nations Environment Programme stresses the need of more emphasis on the promotion of the sustainable life-styles. This recommendation is fully justified by the reality that the policies aimed at changing consumption behavior to a sustainable direction are less common and generally more poorly implemented. In order to effectively direct that change toward a sustainable consumption, enhancing responsibly the marketing and the media policies and the strategies and mixes becomes a must. The study found out that is an urgent need to work with the marketing if someone wants to encourage people toward more sustainable behaviors, in addition or in co-ordination with the public and civil society information campaigns. The consumption may become sustainable as a result of the implementation of the sustainable concept.

The sustainable marketing must be an appropriate response that supports and encourages the reduction of the direct environmental burden of producing, trading, using and disposing goods and services, consuming goods and services that contribute positively to the health and well-being, increasing the development and the adoption of energy and water efficient appliances and transport, the production and the sale of new goods and services adapted to the global environmental and resources constraints, the life-styles that place greater value on the social cohesion, the local traditions, and the non-material values (Rettekyye, Hetesi, 2010, p. 182). The benefactors of the sustainable marketing are the consumers which benefit from the knowledge that helps to lower the climate change and the use of non-renewable resources, the products that will get characteristics having a positive impact on the climate change, the air, water and soil conservation and the resources conservation. All these improve the environmental quality and increase the customer satisfaction.

The sustainable marketing controls the supply chain to eliminate waste, to analyze loading and to write planning in the delivery process (Bahr, 2012). The businesses improve their image in the view of the consumers, employees, investors and the green public. The strategy and the marketing mix must meet these developments and evolutions and include the social dimension. In order to adequately respond to these requirements, the companies should learn to embrace the social media in the future, not only for external marketing and for brand- building but also for internal marketing as well, a report from Gartner (2010) suggests. In the near future, the social software will probably have some leading evolutions according to this report. By 2014, the social networking services will replace e-mail as primary vehicle for interpersonal communications for 20 percent of the business users and by 2015, 70 percent of the collaboration and communication applications designed on PCs will be modeled after user experience lessons from smart phones applications and only 25 percent of the enterprises will routinely utilize the social networks analysis to improve the performance and the productivity.

6. Conclusions

6.1. The future marketing, a responsible and flexible response to the key changes

The marketing of the future is mainly a specific reaction at many pressures the forces that are shaping the global landscape keep generating. The US National Intelligence Council (2008) has identified some “relative certainties” as macro trends and Deloitte (2012) has completed them with trends that describe the consumer behavior and the marketing of the businesses as response to these future evolutions. The key trends that are shaping the landscape of tomorrow were identified as being globalization versus glocalization, new economies, connecting smart technologies, convenience technology, global sustainers, and middle class contribution to be bigger, ageing population, female empowering, health, and wellness.

The global environment will be shaped more by change than continuity. The first “certainty” is the emergence of a global multi-polar system with the rise of emerging countries, like China, India and others. The unprecedented shift in relative health and economic power roughly from West to East will continue. The continued economic growth even moderate, coupled with a rise of the population keep putting pressure on energy, food, and water resources. In its turn, the climate change is likely to exacerbate the resource scarcities. The pace of technological innovation will be the key to the outcomes. The consumers’ values, needs, expectations, and behavior continue to evolve. In the future, they will keep hunting for better value and shape their decisions and

consumption based on values and beliefs. Concepts as environmental protection and sustainability keep playing an increased role in the consumers' decisions. They will mainly drive the changes in marketing all over the world.

The marketing of the future will be global and local more than ever. By leveraging inventory sharing and local and global mapping, buyers can not only find out the offers that are located in the neighborhood but access real-time offers data, browse through sales and deals tailored to their individual preferences and even get suggestions. "Think global act local" should become the read thread of the marketing strategy. The marketing becomes global marketing including the globalization and the customization at the same time. This philosophy has the best chances to create a new model of marketing, the future changes considering. The different types of media and platforms have quickly merged together. Some estimates suggest there will be up to 50 billion connected devices, beyond just smart phones, by 2020 and each consumer will have approximately seven devices connected to Internet (Mengerink, 2012, Scot, 2012). The businesses that don't have a mobile marketing strategy will lose out on significant market share and revenue. All these trends press for a convergence if the company wishes to remain profitable and successful when everyone is spending less, cutting costs and looking for greater, lasting impact. At the same time, the future trends will allow the fragmentation which becomes the new norm that acts for the rising of social marketing.

6.2. The rising importance of the social and sustainable marketing practices

Today and even more in the future, the customer can try on the item, snap foto wearing, sharing it on the social network of choice and get a "thumbs down" within minutes for multiple friends, in various locations. The explosion of the consumer interest in social networks has spawned the so-called social marketing opportunity. In fact, transacting within social networks is predicted to go from a 5 billion USD in 2011 to a 30 billion USD opportunity by 2015 (Mengerink, 2012). The goal of the social marketing is to influence the consumption and to promote a change for sustainability. In this way, the marketing paradigm gets a sustainable dimension. That could act as a driver for reducing consumption and supporting the sustainable development. But the pricing mechanism is not efficient enough to optimize economic processes with the ecological and sustainability necessities. That is the way the marketing of the future should play more attention to the researches of sustainable consumption. These researches could show the current situation and suggest future actions for social and sustainable marketing. We have the Enviromental Performance Index (EPI) as an example that was calculated by researchers from Yale and Columbia Universities, World Economic Forum, Geneve, and Joint Research Centre of the European Commission, Ispra, Italy (EPI, 2012, p. 12).

EPI 2012 shows that the rank of different countries depends little on their development level. Latvia, Slovakia, Azerbaijan, Albania, Egypt, Romania and Thailand are included in Top 10 trends of EPI performers in the future. They could out space the future environmental performances of many developed countries such as Norway, France, Austria, United Kingdom, Sweden, Germany, New Zealand, Japan or United States. Other countries can not improve their environmental performances. The lowest decliners in the future will probably be Estonia, Bolivia, Saudi Arabia, Russia, and Kuwait.

These issues could have serious impact on the social and sustainable marketing practices at company level. In the next decades, every business succeeds practicing successful marketing if it is able to harmonize, co-ordinate and give proper responses to apparently divergent requirements. The businesses must have the marketing that helps not only maximizing the revenues but also minimizing its impact on the world (Nassar, 2012). In order to achieve all marketing goals, the businesses must have good brand management, improved customer experience, and differentiation from competitors in a key of sustainability. Many companies will shift development priorities overseas to take advantage of the rapid and significant growth of emerging markets middle class. Those companies will therefore need to adapt and develop new products and services to fit lifestyles and consumer's expectations and preferences. The consumers in emerging markets will therefore drive the changes in global consumption and product innovation.

The consumers need to be helped making sustainable choices, no matter the market. The companies have a crucial and central role to play in pro-actively influencing the customers to lead more sustainable life styles and choose sustainable goods and services. They must assist consumers, make the purchase as convenient as possible and make green and sustainable products that cost no more that conventional ones (Nassar, 2012).

6.3. A more devoted and flexible marketing

All changes and trends become not only advantages but they mean also challenges and risks related to marketing. The diversity and in some cases opposite cultural values might affect individual and group perceptions and preferences over products. If global products are possible, global people are not. The economic, social and cultural diversity requires focus on the different important factors which greatly influence the thinking of the customers. Every business should learn that it must adapt to the key trends that are shaping tomorrow and find the appropriate marketing solutions. First of all, that means better understanding tomorrow's people and create marketing strategies that can fulfill the needs of all categories of customers. The marketing should be customized every time and every market if needed. The customization could

require two different approaches: first, a multi-segment marketing that means diversification and then a multi-segment marketing focused on niche strategy. Both approaches affect the global marketing strategy, plan and action which incorporate some of local touch or local factors in order to create a local feel. If the business takes into account these factors it must create relevant products offering for customers. At the same time, the best solutions must be found for offering, preparing, and delivering. These solutions must be smart solutions based on use of intelligent technologies, solution facilitating, educating and emotionally connecting with customers. The same goals could be helped by creating and use the interactive platforms of communication. A better marketing could be obtained also by encouraging and incorporating meaningfully values as social responsibility, sustainability and ethics. Last but not least, is important that the businesses keep in mind that the markets make empathic exchanges that shape the future business and product development opportunities.

6.4. The future marketing asks for new solutions

The analysis we perform in this paper highlights the most significant changes and trends of the environment in the future and their impact on the marketing paradigm and practices at business level. On the other hand, the results of this analysis allow sketching the key characteristics of the future marketing. In the next decades, the businesses must try what is called the multi-dimensional marketing which is scientific, social, emotional, spiritual, and sustainable at the same time (Kjaer, 2012).

First of all, the businesses must be socially responsible and sustainable more than ever. The companies that treat customers well will be seen as light of islands of enlightenment during an era of massive layoffs and cuts. In marketing terms, the company must translate the corporate social response themes that are important to the customers to concrete event options, and offer further ideas to make the event even more sustainable. The customers or the employee events must be organized in a sustainable way.

Secondly, the businesses must pay attention to social networks as a powerful tool of communication. The sustainable consumers like better touting products in the digital space. Therefore, the company must master the digital space, starting Twittering, developing a Facebook fan database, keeping a two-ways conversation going with its core consumers, making its own web site.

Third, the businesses must grow their sustainable goods and services and make them the majority in the portfolio. They should take pride in their sustainable brands. If the company has a “core” brand with true sustainability credit it will permit it to outperform the market at large. But if the company were just a green-washing, then now would be a good time to stop. The company will take all these actions as a result of its knowledge about the

existence of a strong core of people which is rising in the emerging markets which care about sustainability and will continue to care.

Fourth, the businesses should analyze their pricing strategy and look at ways to make their sustainable options similarly priced.

Finally, the marketing solutions of the future will become successful if they succeed to give the proper skilled responses to each of main characteristic of the future marketing paradigm.

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Education for sustainability – a prerequisite for post-crisis economic competitiveness with possible inference for Romania

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Abstract. *The need to integrate sustainability among the skills of specialists in economics and its accreditation for the university curricula was recognized in academic literature for over twenty years. Using the literature review and documentation, the present paper identifies the key factors in the assessment of the current state of the scientific research and the practice of European universities. The prime responsibility is for economic universities to adjust curricula to meet these demands. In this sense, the paper constructs a debate on the organisation and the projection of a strategy in developing the economic education towards sustainability in higher economic education in Romania.*

Keywords: education; sustainability; economic competitiveness; accounting profession; university.

JEL Codes: I25, M21, M40.

REL Code: 4C.

Introduction

Ethical, social, and environmental incidents are more and more serious and publicly exposed, requiring costly repairs to damaged corporate reputations. The change is, therefore, driven by international and not just national, circumstances. Exchange indices such as the FTSE4Good and Dow Jones Sustainability Indices are influencing investors, as are the *Principles for Responsible Investment* issued by the United Nations Environment Programme (UNEP) Finance Initiative (ICA, 2008, p. 7).

In this respect, concerns were expressed at a number of different policy levels and by industry groups about the ability of the education system to enrich students with vocational competencies needed for a fast-changing world. “World economies need to be able to turn to systems of regulation and security that require businesses to be more open and accountable for their actions, and to provide timely and comprehensive disclosure of matters of relevance to a wider range of stakeholders on a broader range of issues” (Martin, Steele, 2010, p. 11).

Scientific research in this area has not had a significant impact on economic reality, because of the lack of dialogue on integrating sustainability, which led to differences between the views of stakeholders from industry and those from higher education. This reality has led us to question the possibility that institutional barriers or gaps in communication may have limited the consideration for a change towards sustainability.

International partnerships, non-profit organisations and governmental agencies, as the Global Reporting Initiative (GRI), World Business Council for Sustainable Development (WBCSD), United Nations Commission for Sustainable Development (UNCSD) or Organisation for Economic Cooperation and Development (OECD), helped to increase awareness of sustainable development of the world economy by addressing issues such as: triple bottom line reporting, ecological footprint, social and environmental auditing, sustainable balanced scorecard, sustainability assessment models and so on.

In an unpredictable and extremely competitive global market, where companies put a great pressure on and the role of the accountants expanded beyond narrow regulatory knowledge to include vision, adaptability and ability to address sustainability issues.

The overarching research proposition for this study referred to the *reliability of integrating sustainability into the accounting education that could have an impact on post-crisis economic competitiveness.*

Based on literature review the study outlines the idea that although there is significant interest in the concept of sustainability for economic education, particularly for the accounting domain, as demonstrated by the wide range of topics dealt with in a number of high quality journals, the dispersion is

extremely high, the subjects are not treated consistently and the research impact is not reflected in practice. The paper presents then a documentary based research on the deepening the subjects included in the curricula of master's programs in a number of European universities central or collateral dealing with aspects of sustainability. In the last part of the article a study is depicted in order to present a picture of the possible involvement of Romanian students, graduated of economic studies, regarding the aspects of sustainability (environment, society and corporate responsibility), impacting the future evolution of the Romanian economy.

A great deal is potentially at stake, as the importance of accountants within the business sector, and the importance of the business sector for the development of a sustainable economy, have both been noted by academics, profession and businesses. This paper could be considered as a step in a larger research effort to integrate sustainability into the accounting education. The article is useful for the accounting profession, for business and industry organisations, universities and governments which are interested in responding to the present need of embedding sustainability in accounting education and training.

The results of this research regarding the integration of sustainability in education support the conclusion that much remains to be done for the improvement on the perception of sustainability skills so that courses aimed at developing such skills to be perceived as providing a competitive advantage both for students and universities and not as an option rather trendy, and not necessarily required.

Research methodology

The study focuses on fundamental research. It leads to new insights into the essence of economic and accounting education, its stakeholders and the concept of sustainability projected at microeconomic level. The complex actions between these elements must emerge in starting points, innovations, new developments and solutions to old educational approaches.

This qualitative research investigates why and how education promoters' behaviour can change in responding to societal pressures of ensuring a sustainable development. Then, an archival research is performed to outline the history and the present of education for sustainability by analyzing the studies published in accounting education journals during the time (from 1990 to nowadays). The research refers also to the deepening of the subjects included in the curricula of master's programs in a number of European universities, central or collateral dealing with aspects of sustainability.

Another step in the research process has been taken then, by developing a pilot questionnaire for shaping curricular content of master programs to include possible knowledge on sustainability. This questionnaire-based pilot was used in order to test a series of research propositions in order to design possible debate on the opinions and choices of master students in Romanian economic education.

1. The history of addressing education for sustainability within accounting research

The need for integrating sustainability into professional qualifications and university degree accreditation has been recognised in high ranked academic literature for at least twenty years. Accounting researchers supported those ideas by developing studies addressing multiple aspects of sustainability in accounting education. Gordon's (1998) reports on how social responsibility/sustainable development accounting and reporting (SR/SD) were included as a module in an accounting theory course. Basing his comments on a questionnaires research, he suggests that the readings and discussion did sensitize students to the SR/SD topic. Hill et al. (1998) suggest that students perceive themselves to be very motivated and persistent, possessing confidence, committed to life-long learning, and sensitive to social responsibility. Fleischman and Schuele (2006) provide collateral reading assignment for a principles or intermediate accounting courses, and explore the current state and future issues of environmental accounting and reporting. Accounting professors and students' views on environmental accounting and reporting are included. Results indicate that the reading assignment and related class discussion increase the accounting students' self-reported awareness of and concern for the importance of environmental/sustainable action. Apostolou et al. (2010) conduct an accounting education literature review for the 2006-2009 period, addressing indirectly the aspect of sustainability and corporate social responsibility. The conclusion of this study, supported also by Merino (2006), is that the discourse of accounting now permeates higher education and deserves the attention of accounting educators who could critically examine the use of accounting measures to assess public goods.

As researchers (Martin, Steele, 2010) from Australian Research Institute in Education for Sustainability (ARIES) observed, there has been little change towards embedding sustainability in accounting curricula in the majority of business schools, for the last ten years. Consequently, they questioned institutional barriers or gaps in communication were inhibiting implementation of change towards sustainability.

The achievement in this regard refers to literature review, based on archival study that analyzes the inclusion of sustainability concept in accounting education. The study is designed on seven journals that mainly address to the accounting education: *Accounting Education: An International Journal*, *Australian Journal of Accounting Education*, *Global Perspectives on Accounting Education*, *Issues in Accounting Education*, *Journal of Accounting Education*, *Journal of Education for Business* and *The Accounting Educators' Journal*. The content analysis of the articles published in these journals allows us to tell the history of debating sustainability for accounting education. Related subjects are tracked, discussed and debated in regard to three directions of this research: accounting profession, business and academia. The summary of results (Table 1) shows the publications' low interest for the change and development of accounting curriculum by reference to various aspects of sustainability.

Accounting Education: An International Journal published the most representative researches addressing different approaches of sustainability and the option of their incorporation into accounting courses curriculum. Debates on this subject referred to case studies (Coulson, Thomson, 2006), to national accounting qualifications (Lange de, Watty, 2011, Hussain, 2011, Stevenson, 2002), and to conceptual problem solving (Hazelton, Haigh, 2010, Mathews, 2001, Boyce et al., 2012).

Table 1

**Addressing sustainability concepts in accounting education journals:
history and content**

Journal	Number of articles	Before 2000	2000-2009	2010-present	Subject
Accounting Education: An International Journal	16	1	9	6	Academic education: ethical impact Business: case study
Australian Journal of Accounting Education	No electronic archive for this journal				
Global Perspectives on Accounting Education	1	-	1	-	Education for business: general aspects of ethics in corporate governance
Issues in Accounting Education	25	5	18	2	Academic education: ethical impact
Journal of Accounting Education	4	-	2	2	Academic education: methods and content Profession: ethics Business: case study
Journal of Education for Business	5	-	4	1	Academic education Profession and Business: case study
The Accounting Educators' Journal	1	-	1	-	Academic education: general aspects of corporate ethics

Journal of Accounting Education published four articles (two in 2006 and two in 2010) that promoted directly or indirectly the sustainability aspects to be included in accounting curricula. Academic, Business and professionals aspects of accounting education are addressed, with little implication on future results. Thus, Wynder (2010) contributes with a case study on the performance evaluation, including environmental performance, using the Balanced Scorecard, Burns (2006) discusses about the design of a graduate accounting course comprising ethics and professional behaviours in accounting, while Fleischman and Schuele (2006) refer to methods for teaching environmental accounting.

Although it published the most articles on the subject of sustainability and accounting education, the journal *Issues in Accounting Education* contains the least relevant studies for our research. Gordon (1998) is the only one who directly addressed introducing the concepts of corporate responsibility in students' accounting education, while Patten and Williams (1990) and Sefcik et al. (1997) dedicated their researches to environmental accounting education. Other articles referred indirectly to the concepts of sustainability and social responsibility, by reference to business ethics, profession and higher education, exclusively.

Global Perspectives on Accounting Education and *The Accounting Educators' Journal* are the least representatives for approaching sustainability concept in accounting education and mainly address business cases. *Journal of Education for Business* includes five articles on sustainability accounting and education curricula detailing business cases and practice (Nicholson, DeMoss, 2009, Tschopp, 2004) and incorporation in high education courses (Persons, 2012).

Based on the approaches presented in this section we conclude that although there is major interest in addressing the concept of sustainability into accounting education, demonstrated by the wide range of topics treated in a number of high quality magazines, their dispersion is extremely high, the subjects aren't consistently considered and the research impact is not reflected in the practice of accounting education.

2. Archival research on environment/sustainability oriented disciplines promoted by european universities

The literature review examining the businesses, profession and academic drivers for sustainability suggested that a range of factors work strongly in favour of integrating sustainability in accounting education. These include: governmental policies promoting sustainable industry, industries' drivers for corporate social responsibility, support for change from professional accounting associations with accreditation exams including sustainability items regarding

accounting policies and concepts, and academic awareness of sustainability issues within economic-oriented universities. A limited inclusion of sustainability in accounting education may be explained by the lack of knowledge about how to direct established content toward sustainability outcomes, the impacts of student demand for established forms of accountancy accreditation, the absence of accreditation criteria that would enable specialised skills associated with sustainability to be given priority in higher education courses (Martin, Steele, 2010).

We focused this part of the research on deepening the documentation for the disciplines dealing with central or collateral issues of sustainability included in the curricula of universities master's programs. To meet the research objectives at this level we performed an archival study of disciplines oriented towards environment and sustainability in a number of European universities listed in top 100 published by ASPEN Institute (2012).

The top 100 universities included in this classification are sorted by relevant courses, exposure that students have in relation to the impact on business and research activity at faculty level. Courses relevance criterion has a weight of 20% and refers to the number of courses containing elements of curricula related to social, environmental or ethical aspects. Exposure of courses in relation to the students' availability has a share of 25% and is measured according to a formula that gives more weight to longer courses, to courses dedicated to sustainability issues and those with a high frequency. Relevance to business matters at the rate of 30% and reflects the number of courses addressing the impact on oriented profit organizations by including discussions on how the companies can be a force for social and environmental improvement. Finally, the research component is assigned a weight of 25% and includes the number of articles that address social, environmental or ethical factors and are published in high ranked journals, weighted by the impact factor as the qualitative item. The fact that this ranking includes only universities that have developed curricula by integrating sustainability issues ensures relevance and substance for the data and for the outlined conclusions.

For this research, data issued by the Aspen Institute were used, and the information, elements and features have been selected to meet the research objectives.

Thus, out of a number of 100 universities included in the Beyond Grey Pinstripes Global 100 ranking for the year 2011-2012, only research universities in the European Union were selected, reaching a total of 16 universities. The European university ranking based on ASPEN methodology comprises the following countries: Denmark, Finland, France, Germany, UK, Norway, Netherlands and Spain. Representativeness is the largest UK with five universities, followed by Spain, with three universities and France and Germany, with two universities (Table 2).

Table 2

**European university ranking based on ASPEN methodology,
for the year 2011/2012 –UE countries**

Position in Top 100	University	Country	Ranking in relation to			
			Course	Impact on students	Impact on business	Research activity
3	IE University	Spain	9	1	7	46
19	Erasmus University (RSM)	Netherlands	34	68	37	2
40	INSEAD	France	44	123	23	12
29	ESMT	Germany	51	17	14	71
41	University of Jyväskylä, School of Business and Economics	Finland	51	33	46	50
45	Nottingham University Business School	United Kingdom	63	39	60	23
79	Norwegian University of Life Sciences (UMB)	Norway	83	70	46	119
43	Copenhagen Business School	Denmark	92	52	52	9

Regarding the importance of courses, universities in Spain have the most relevant master courses addressing business oriented aspects of sustainability (social, environmental, ethical), two of the three universities being ranked in the top 10 for this criterion. The universities in the Netherlands and France follow, situated in top 50. The next table shows how the courses are available in relation to identified departments.

Table 3

**Departments in which universities have integrated sustainability elements
in the disciplines of master/MBA**

Crt. No.	University department	Number of universities	Number of disciplines	Average no of disciplines
1.	Management	15	76	5.1
2.	Strategy	13	57	4.4
3.	Corporate social responsibility/Business ethics	11	45	4.1
4.	Marketing	14	56	4.0
5.	Finance	14	42	3.0
6.	Human resources management	10	26	2.6
7.	Economics	15	37	2.5
8.	Accounting	11	25	2.3
9.	Organisational behaviour	10	18	1.8
10.	Business law	6	10	1.7
11.	Governance and business	6	7	1.2
12.	Management of public and non-profit organizations	2	2	1.0

Courses are related to a specific department depending on their overall content. Thus, an accounting course that includes some aspects of environmental impact is considered accounting course. Most universities are organized in comprehensive departments such as Economics, Management,

Marketing, Finance, and Accounting, while specialized departments such as Management of public and non-profit organizations, Environmental management and Quantitative methods are rarely included in university organizational structure.

Table 4

**Distribution universities and departments of accounting courses
that include sustainability issues - extracted EU countries**

Position in Top 100	University	Country	Accounting courses including sustainability aspects	Affiliated department
3	IE University	Spain	Balance Scorecard Management Accounting Financial Accounting Financial Reporting And Analysis: An International Perspective Management Control Systems	Accounting
19	Erasmus University, Rotterdam School of Management (RSM)	Nederland	Insurance services	Accounting
29	European School of Management and Technology (ESMT)	Germany	Management Accounting	Accounting
40	INSEAD	France	Applied corporate reporting Business Law and Government Regulations	Accounting
41	University of Jyväskylä, School of Business and Economics	Finland	Accounting Theory and Research Advanced Audit Financial Accounting Financial Statements Analysis And Evaluation of Financial Investments Introduction to Accounting Professional Ethics in Management and Accounting Social and Environmental Accounting	Accounting
43	Copenhagen Business School	Denmark	Financial Accounting Management Accounting	Accounting
45	Nottingham University, Business School	United Kingdom	Accounting and Finance Analysis of Financial Statements	Accounting
79	Norwegian University of Life Sciences (UMB)	Norway	Accounting and environmental management Resource and environmental economics	Economics Environmental Management

In the following, the discussion on the objectives and the content of accounting courses organized by the 16 universities are addressed, providing sustainability oriented skills. Table 4 shows that two universities (from UK and

Germany) have no accounting department, and don't offer educational program accounting disciplines that include sustainability issues. Instead, a number of 11 universities have an accounting department and include in their educational offer at least one subject related to sustainability accounting. Other universities, although not having accounting department, does however provide disciplines referring to accounting-based concepts but primarily intended to strategy and corporate management. A diversity of accounting disciplines is presented, such as financial accounting, managerial accounting and reporting or business strategy.

3. Proposal for adapting to economic academic content of Romania disciplines to address issues of sustainability - pilot study

This paragraph studies and presents a picture of the intentions of Romanian students, graduated economic universities that had been involved in sustainability aspects (environment, society and corporate responsibility), having an impact on the future evolution of country's economy. Based on the literature review, on practical studies of various researchers and organizations/associations, on our previous studies, another step has been taken in the research by developing a questionnaire for designing the curricular content of master programs to include knowledge about sustainability. Thus, we aimed to using a pilot-questionnaire to test a number of research propositions, in order to advance the debate on potential opinions and choices expressed by master students.

Qualitative study based on the questionnaire forms the scientific research that aims to debate proposals to deepen the knowledge of future accounting professionals through integration into university curricula of sustainable development issues. A pilot questionnaire was addressed to graduate students, as future practitioners. The reason of completion for this research lies in the increasing interest in diversity which international corporations manifest in terms of sustainability reporting issues. Based on the research objective, as to test economic higher education students on the possibility of introducing sustainability issues in the master curriculum, using general or specialized courses, the study sample have been formed. It included students of professional master program organised by the Faculty of Accounting and Management Information Systems from the Academy of Economic Studies in Bucharest.

To determine representativeness we asked a number of general questions on program curricula, age and current occupation. Because at this level of research extrapolations based on their responses weren't intended, the respondents' anonymity will ensure a high reliability for answers.

3.1. Questionnaire design and identification of research propositions

Designing the questionnaire and enunciating the questions are fulfilled by in connection to the objective of the paper and aims to impact the inclusion of adapted and modernized courses that address concepts, practices for measuring, reporting and auditing the sustainable development information to ensure a complete overview of economic entities, and the role they play in the context of sustainable development.

This exploratory study aims to linking information on social and environmental impact of conventional financial reporting of companies, subject on adapting and extending skills and abilities of future specialists to meet the sustainable development of society, in relation to a number of general and specialized issues.

Based on a total of 12 questions, having both single and multiple answers, the results were used to debate and to formulate benchmarks for identified students needs, expressed either by report their personal experience, or to their own initiatives induced by employing companies. The aim is to formulate coherent proposals for integration in the curricula of sustainability issues.

As a research technique, the questionnaire was constructed using GoogleDocs portal, which enables quick and user-friendly interface for the respondent. Responses are automatically recorded in a database and individually identified by temporal elements and their analysis allowed open debate for all those concerned, whether they belong to academic educational environment, or to the business.

3.2. Summary of responses to the questionnaire and discussion

The respondents to the online questionnaire, titled *Educational prospects of sustainable development in economic sciences* are specialized master students of the Faculty of Accounting and Management Information Systems, but graduated of various faculties of the Academy of Economic Studies (Accounting and Management Information Systems, Public Administration, Commerce, Finance, Insurance, Banking and Stock Exchange, and Economics). They are aged between 22 and 34 years, and most of them declared an economist or accountant occupation.

To answer the first research question, *Does the current university curriculum provides premises for training specialists with skills to meet the demands of sustainable development?*, four questions were asked about studies on sustainability issues during the bachelor or master programs, with focus both on general and on specific elements required by an effective management of business activities. The pilot study results show that most master respondents

included in the studied population hadn't studied sustainability, neither macroeconomic issues related to sustainable development nor specific issues on CSR policy of corporate reporting, social and/or environmental costs or audit.

From detailed analysis of the responses received it was noticed that the majority of students that indicated a general but also specialised approach on sustainable development issues graduated economic/business faculties, but other than Accounting and Management Information Systems. They studied these issues in various courses, but primarily aimed at management or economics rather than accounting disciplines (Table 5).

To answer the second research question: *Does the master students manifest openness to the sustainability problems?*, two questions were addressed, concerning extra-curricular specialization chosen by the student and volunteer work related to green economy.

General and specific addressing sustainability in the curricula

Table 5

Sustainability aspects	Curriculum approach				Not approach in curriculum
	Bachelor	Master	Accounting faculty	Other faculties	
1. Macroeconomic sustainable development	27	14	27	46	64
2. Corporate social responsibility policy	14	14	9	46	73
3. Recognising corporate social and environmental costs	14	18	9	55	68
4. Recognising corporate social and environmental information	5	14	-	36	82
5. Auditing corporate social and environmental information	9	5	18	9	86

The extremely high percentage (over 90%) of students who were not involved in a sustainability action is worrying and leads us, once again, to support the fact that the modernization of curricula should support an education oriented towards sustainability.

Answers to the control question related to the need for sustainability knowledge in different contexts (at work/for employment interviews/other professional situations) shows an opening, although incipient (27% were placed in a position to use the knowledge of sustainability), to a growing awareness.

The third question of the research is: *Is there willingness of choice from the graduate students for professional enrichment culture courses (Masters or postgraduate training) to integrate sustainability issues?* It aims to outline possible future trends on modernization the curriculum of economic and business master programs by integrating sustainability aspects.

Table 6

Availability for professional enrichment culture

(%)

Sustainability aspects	Benefits for the carrier	Studied through master programs	Studied through specialized post-graduate programs
1. Macroeconomic sustainable development	50	50	45
2. Corporate social responsibility policy	50	55	50
3. Recognising corporate social and environmental costs	64	64	50
4. Recognising corporate social and environmental information	64	59	50
5. Auditing corporate social and environmental information	55	64	41

Responses show openness and readiness for graduate students to choose the form of education that will empower them to concepts and content knowledge of sustainable development and their application to the companies (prospective or current employers). Thus, over 50% of respondents believe that economic culture enriched with features to meet the requirements of sustainable development would benefit their careers, and believe they can get this knowledge either through master programs or through specialized post-graduate programs.

4. Discussions: the sustainability mirage for university's research and curricula

Now, what should we do with all this information and depiction about accounting profession, academics and businesses' involvement in addressing sustainability? Promoting sustainability oriented curricula for accounting disciplines in universities and for professional accreditation is it just a fashion, or a justified necessity?

Significant problems in regard to accounting education for sustainability have been identified, but the attention of the profession has been drawn to a general shortage of accountants (Bedford et al., 1986, Birrell, 2006). The needs and drivers in regard to accounting skills (Ullmann, 1976) and a long history of attempts to introduce more material on sustainability issues into accounting curricula (Bebbington, 1997) have been recognised since 1970. The work of the universities involved in the Accounting for the Future Report provides a useful bibliography of the recent literature on the topic (Hancock, 2009). Results suggest that accounting academics saw no major impediments to introduce sustainability issues, and recognise that this concept had grown in importance but was not seen as crucial.

Recent studies (Sibbel, 2009, Hazelton, Haigh, 2008) suggest more should be done to explain the significance of sustainability education to accounting students both by offering opportunities to understand the relevance of sustainability concept to the professional practice and business strategy and by recognising their importance and role in empowering employers with knowledge and skills to address problems which threaten future wellbeing. To meet these challenges universities must promote strategies to develop self-efficacy and advocacy skills in students and redesign the curriculum to lead to a greater awareness of social and moral responsibilities.

The debates in this section refer to particularizing the idea advanced by Pitman and Broomhall (2009, p. 454) which declare that: “University mission statements and learning theory texts have particularly highlighted the social and community, as well as economic, benefits of the lifelong learning they enable”. Accounting faculties, through their master and doctoral programs, have the ability of managing sustainability pressures by adapting the institutionalised professional norms. It must be the key business strategy for high education representatives in an increasingly competitive market. Also, the national education system for accountancy has the potential to influence how sustainable development is put into practice in other parts of the world. The appeal of accountancy as part of the global education economy also influences the needs and priorities of educators in the profession. The scarcity of the subject within academic research is closely linked to the little information available to provide (except US, Australia and UK) an appropriate ranking of accounting schools in a national scale, in terms of their ability to deliver education for sustainability.

The accounting literature and profession’s concerns suggest that not only are efforts at incorporating sustainability relevant skills declining rapidly, but also that there is a shortage of requisite skills, awareness and future demand for those skills. Rama (1998) connects lifelong learning, reinforcement of technical knowledge, communication and interpersonal skills, ethical and moral development, and social responsibility and community involvement to the utilization of service-learning in accounting curriculum. The extensive study of Albrecht and Sack (2000, p. 35) mentions that “accounting education was perceived as being too narrow and backward-looking and too costly for the benefits received”. A solution is expressed by Blazey et al. (2008, p. 2) which support the “need for a curriculum change whereby the development of generic skills is given a higher profile within traditionally business based learning”. Thomas and Benn’s research results (2009) identified the importance of embedding sustainability as an explicit learning objective throughout the core and elective courses, and suggested that accreditation may be a key.

Following the same idea, Aspen Institute (2009) conducted a study about the extent to which sustainability skills and content are currently included in

accounting courses in higher education institutions. As depicted from their results, accounting schools research and educational programs sought to address multiple drivers to incorporate issues about and for sustainability throughout curriculum and teaching practice, and develop the specific skills of master and doctorate graduates to assist businesses to improve their competitive advantage.

The university approach showed that the disciplines of economics and accounting had a significant reluctance to educate about and for sustainability. This is not about the lack of necessity (as proved by currently social responsible oriented companies) but it is about financing. It is a reality that any university revenue, for more than 60%, consists in governmental grants and students' fee. Linking it with professional constraints (there is not yet a standard for sustainability accounting) the priorities of business schools can't freely respond to industry needs without projection of an efficient communication. Periodic consulting and dialogic communication between academics, businesses and professionals enhance the university's ability to transfer knowledge and the researcher's ability to research, all in benefit of the community.

Conclusions

In our opinion, researchers have an important role in promoting the concept of sustainability in the economic/accounting curriculum, as the main drivers of change in accounting education at university level. The means of expressing for the researchers are the academic and professional journals that promote new ideas and give the purpose and utility of research. This argues that the barriers and gaps in implementation of change in accounting to meet the global trend of sustainable development may be explained through the reticent endorsement of this subject in accounting education journals.

Improving communication between the accounting researchers, the professional associations and regulators, the universities and business in regard to the development of specialized skills addressing sustainability for accountants is the most significant contribution of this study. All those actors have a role in providing economic and, especially, accounting students with a support for vocational experience and professional judgment. The universities and the professional associations need to work more closely with business sector to provide students opportunities to explore interdisciplinary concepts and policies incorporating sustainability requirements as they are relevant to their future practical skills.

Sustainability requires an ongoing process of learning (UNESCO, 2004) which supports adaptive governance and leadership for sustainability thinking in organisations. An action learning methodology will respond to key challenges for universities if address: envisioning alternative futures,

participation and partnership, critically reflective thinking, systemic practice and iterative learning through social interactions. Based on such learning methodology, accounting schools are able to provide a basis for continual learning and adaptive management to respond more effectively to emerging issues of sustainability. Supported by professional accreditation, universities contribute more effectively to the development of sustainable corporations by transferring knowledge in feedback loops, by using faster signals, evidence, reflection and learning that allows change businesses to revise their plans and activities in line with the impacts.

The research serves to highlight that all participants to the sustainable development must be brought together to provide a valuable platform for dialogue, sharing and stimulating sustainability practice in order to ensure premises for developing economic competitiveness.

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A regional model for labour demand in Romania

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Abstract. *In this paper we analyze the labour market from the point of view of the labour force demand. We develop a model that describes the connection between the employment rate of labour resources and other socio-economic indicators involved in the functioning mechanisms of the labour market. The model is empirically estimated using time series data taken from the labour force section from the Romanian National Institute of Statistics.*

The results of this analysis indicate and confirm the positive impact of the household income on employment and also the negative influence of labour productivity on the labour force demand.

Keywords: labour force demand; econometric model; regional labour market; employment rate; time series.

JEL Codes: C5, J2, R1.

REL Code: 12I.

Introduction

In the current context, the Romanian economy is influenced by the effects of a continuous and dynamic process of change generated by both the transition to the market economy and globalisation.

The state of uncertainty which developed since 2009, as a result of the economic crisis, was characterized by significant decreases of investments and consumption, leading to the stagnation or even the decline of the demand of goods and services and therefore blocked the making of new jobs. Moreover, dismissals were registered in many fields, increasing the unemployment rate.

Furthermore, this change also influenced the main features of the labour market, with important implications on both economic and social terms.

The effects of these changes have been differently felt in our country, at a regional level, depending on the development degree, the North-East region being one of the most affected ones.

This study aims both to identify the main factors which influence the regional labour force demand in Romania and to provide an analysis concerning the impact of these factors on employment.

The research focuses on the North-East region, which has recently registered significant decreases on the employment rate.

Theoretical aspects regarding the labour demand

Generally, the labour demand is expressed by the amount of the wage labour needed to produce material goods and services. This is structured on professions, qualifications and training levels.

The labour demand is a derived demand from the investments made as a consequence of the demand for products and services. In other words, the labour demand is determined by the production of the consumer goods.

From a statistical point of view, the labour force demand may be quantified by the number of employed people or vacancy, the statistical indicator corresponding to the number of employed population.

In some studies (Schneider, Hofreither, Neck, 1989, Schneider, 2011), the employment labour demand is highly correlated with changes in the real unit labour cost.

Within the model developed by Belot and van Ours (2001), the labour force demand is regarded as the real wage (the difference between the gross

wage and the price level) and by other institutional factors such as the payroll taxes, the employment protection and the active market policies.

Dobrescu (2005) studied the functioning mechanisms of the labour market by analyzing the dependencies between the participation in the labour force, the unemployment and the rate of labour income per employed person.

By algebraic transformations, some relations were obtained describing the connection between the employment and the labour income per employed person.

Data and methodology

In order to develop a model for describing the influence of the variance of some socio-economic indicators on the labour force demand from the Romanian North-Eastern region, we took into consideration time series containing regional level data for 1995-2011 period. The data was taken from the Tempo Online Databases of National Institute of Statistics.

In our case the labour force demand was quantified through the dependent variable *Employment rate of labour resources (E)* defined as *the civil employed population/labour resources $\times 100$* . The independent variables taken into account in the analysis are:

$E(-1)$ – first lag of employment rate;

I – monthly averages of total income per household;

P – labour productivity perceived as GDP/employed population;

D – dummy variable.

The analysis of the existing connections between these variables was done by estimating the following regression equation:

$$E = a + b_1E(-1) + b_2P + b_3I + b_4D + \varepsilon$$

where

$b_1, \dots, b_k, k = 1, \dots, 4$, are the regression coefficient, a regression constant and ε is the residual.

The variables E , I and P , were employed in the analysis as growth indexes determined using the following formula $X_i' = X_i / X_i(-1)$, where $i = 1, \dots, 3$.

All the series obtained were stationary. The Augmented Dickey Fuller and Phillips Perron were used for testing the existence of unit root.

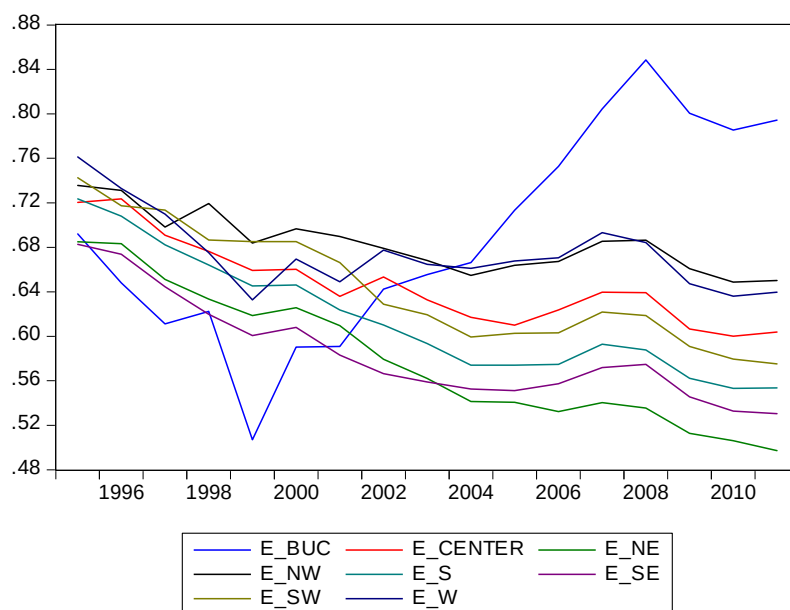
The dummy variable is used for highlighting structural breaks occurred in the evolution of some indicators (Gujarati, 2003).

Regarding the empirical study, before computing the data, the following transformation were done: the GDP was deflated using the GDP deflator and the household income was deflated using the consumer price index (CPI).

The statistical software used for the analysis was E-Views 7.2.

Empirical results

Figure 1 offers a detailed image regarding the evolution of the employment rates recorded for the eight development regions in Romania, in accordance with NUTS II level.

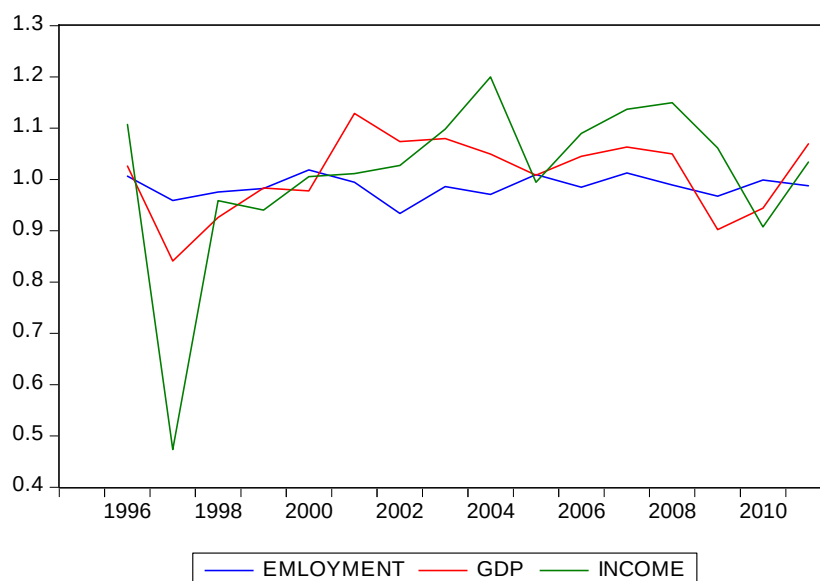


Source: Authors' computing based on the database of the National Institute for Statistics.

Figure 1. The evolution of the employment rate in Romania, per regions, from 1995 to 2011

As one can see starting from 2003-2004 the North-Eastern region started to register the lowest values for the employment rate compared to the other regions of the country. Also, between 2008 and 2009 a decrease of the employment rate was registered for all the Romanian regions, as an effect of the world economic crisis.

The next step is to present the comparative evolution of the variables' growth indexes: employment rate of the labour force, GDP and income, recorded for the North-Eastern region from 1995 to 2011.



Source: Authors' computing based on the database of the National Institute for Statistics.

Figure 2. *The evolution of the main indicators of the labour force demand in the North-Eastern region*

Applying the multiple regression analysis the following results were obtained (Tables 1a and 1b):

Table 1a

Regression results (dependent variable: E)			
Variab.	Coeff.	Std. Error	t-Stat.
C	0.776687*	0.191267	4.060752
E(-1)	0.379290**	0.212618	1.783902
P	-0.292259*	0.088757	-3.292813
I	0.133174*	0.035978	3.701536
D	-0.055413*	0.017232	-3.215639

Source: Own processing in E-Views.

Note:*, ** denote significance at the 1%, and 10%.

Table 1b

Regression results	
R-squared	0.626259
Adjusted R-squared	0.476762
F-statistic	4.189118
Prob(F-statistic)	0.030126
Akaike info criterion	-5.423135
Schwarz criterion	-5.187119
Hannan-Quinn criter.	-5.425650
Durbin-Watson stat	2.347525

Source: Own processing in E-Views.

All the estimated coefficients of regression equation are statistically significant at the 0.01 level, except the variable E(-1), whose coefficient is statistically significant at the 0.1 level.

After estimating the regression model one can observe a positive influence of the first lag of the employment rate variable from the previous period and the household income variable on the current employment rate. Income is expected to have a positive impact on the employment rate because an increase in household incomes leads to an increase in the production of goods demand and thus in the labor force demand.

Also it is worth noting that labor productivity has, in some degree, a negative impact on the employment rate. This can be explained by the fact that an increase in labor productivity among employed people leads to a stagnation or even a decline in the number of new jobs. Productivity growth is due, in general, to the growth of the technological progress and continuing trainings for employees. The development of new technologies in almost all fields has both positive effects through the increase of labor productivity and negative effects, much of the physical and intellectual activity being taken over by these "automated equipment", leading to a decrease in the number of new jobs.

The explanatory variables considered are not the only variables which can explain the variation of the dependent variable. There are other factors that influence and explain the variation of the employment rates for the North-Eastern region and other regions. In general, these determinants are mainly qualitative and regard the investors' decision to invest in a certain region, the existing economic and employment policies and the business position towards creating new jobs and maintaining the existing ones.

Conclusions

A very important issue that Romania is faced with at the moment is the decrease of the employment rate, especially in the low developed regions. Among them we can find the North-Eastern region, where the biggest part of the population is engaged in agricultural activities.

The present study analyzes the labour market from the demand perspective, without getting into details as regards to the labour demand dependent on professional components, age groups of employed population, activity fields.

The study's estimated model shows the influences of a number of socio-economic indicators on the labour demand, quantified by means of the employment rate of labour resources.

The results obtained for North-Eastern region may contribute to developing some strategy for increasing the employment rate in the region or may be used as support for investors' decisions.

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Robustness of public choice models of voting behavior

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Abstract. *Modern economics modeling practice involves highly unrealistic assumptions. Since testing such models is not always an easy enterprise, researchers face the problem of determining whether a result is dependent (or not) on the unrealistic details of the model. A solution for this problem is conducting robustness analysis. In its classical form, robustness analysis is a non-empirical method of confirmation – it raises our trust in a given result by implying it with from several different models. In this paper I argue that robustness analysis could be thought as a method of post-empirical failure. This form of robustness analysis involves assigning guilt for the empirical failure to a certain part of the model. Starting from this notion of robustness, I analyze a case of empirical failure from public choice theory or the economic approach of politics. Using the fundamental methodological principles of neoclassical economics, the first model of voting behavior implied that almost no one would vote. This was clearly an empirical failure. Public choice scholars faced the problem of either restraining the domain of their discipline or giving up to some of their neoclassical methodological features. The second solution was chosen and several different models of voting behavior were built. I will treat these models as a case for performing robustness analysis and I will determine which assumption from the original model is guilty for the empirical failure.*

Keywords: neoclassical economics; public choice theory; robustness analysis; rationality; voting behavior.

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1. Unrealisticness of assumptions and robustness analysis

1.1. Robustness analysis: a brief description

In (2006) Weisberg started his paper on the problem of robustness analysis, by comparing physics with population biology: “Physical scientists can often construct and analyze models that are derived from fully developed, well-confirmed background theories. A scientist in possession of such a theory can be very confident about her ability to [...] make accurate predictions with these models [...]. Unfortunately, many phenomena, such as those studied by population biologists, have yet to be described by comprehensive theories, and it is unlikely that such theories will be developed in the near future [...]. Thus in population biology and other sciences that deal with highly complex systems, theorists generate multiple models for individual phenomena, all of which are idealized” (Weisberg, 2006, pp. 730-731).

As population biology, modern social science lacks fully developed, well-confirmed background theories and makes use of various idealized models. The drawback of this current practice is that researchers face the problem of determining “whether a result depends on the essentials of the model or on the details of the simplifying assumptions” (Levins, 1966, p. 423). The problem that the unrealisticness of assumptions poses could be solved in several ways. The neoclassical economics answer was Milton Friedman’s (1966) *F-twist*: if the predictions implied by our idealized models pass the empirical tests, the unrealisticness of assumptions is not a problem at all. So, if an idealized model works, then its idealizations are not problematic. This solution has several shortcomings though, and I will focus on only one of them here⁽¹⁾. It is not uncommon, as social scientist, to be in the position of having trouble to collect relevant data. In other words, testing our hypothesis is not always an easy enterprise. So we stick to the original problem: how do we know “how much distortion was introduced by each idealization” (Weisberg, 2006, p. 731)? Another answer came both from biology and economics⁽²⁾. To address the issue in hand, social scientists could use a non-empirical technique – robustness analysis.

Robustness analysis applied to biological systems, as described by Levins (1966), is a method which treats “the same problem with several alternative models each with different simplifications but with a common biological assumption. Then, if the models, despite their different assumptions, lead to

similar results we have what we call a robust theorem which is relatively free of the details of the model” (Levins, 1966, p. 423). In 1993, Levins gave a few new hints about the procedure he used in (1966). “The search for robustness as understood here is a valid strategy for separating the conclusions that depend on the common biological core of a model from the simplifications, distortions and omissions introduced to facilitate the analysis” (Levins, 1993, p. 554). The antecedent citation should be understood in the following way: first we should have several models and second, we should delimitate C , “the common part of all models, the core relationships we are either confident of or wish to test” (Levins, 1993, p. 553) and V_i , “the variable part of the model introduced for convenience or because it might hold for some cases” (Levins, 1993, p. 553). From these two parts of the models we could derive a robust result, which depends only by the common part C . So in Levins’ terms, “we may strengthen our confidence in the implications of some assumptions by using ensembles of models that share a common core of these assumptions but also differ as widely as possible in assumptions about other aspects. Then the more the variable part spans the range of plausible assumptions, the more valid the claim that the conclusions shared by all of them depend on the constant part” (Levins, 1993, p. 553).

1.2. The goals of robustness analysis

Starting from Levins (1966), (1993) and his description of robustness analysis, there are few topics worth discussing. First of them is the view that robustness analysis is a tool that helps us to strengthen our belief in a given result. The idea that robustness should increase the epistemic credence in a result it was implicitly or explicitly expressed by Wimsatt (1980), (1981) and others. This seemed to be the (original) goal of robustness analysis. But there is another possible goal. In 1980 Wimsatt stressed that when we perform robustness analysis, “The models must be sufficiently similar that we can compare them, isolating their similarities and differences. If we cannot do this, we cannot [...] «assign praise and blame» to individual component assumptions. We can only praise or blame each model as a whole” (Wimsatt, 1980, p. 310). This contention highlights that robustness has a feature of discovering the effects of each individual assumption from a model. So, the second goal of robustness analysis could be to assign the praise or the blame on particular assumptions. Both goals (strengthening the belief in a result and

assigning blame or praise) are non-empirical tools which can help us when testing if a result is difficult or even not possible. And as Weisberg, Kuorikoski, Lehtinen and Marchionni (2010) pointed out, the impossibility or the increased difficulty in collecting data is not an unusual occurrence in current scientific practice. There is, though, another way. Assume that we build a model and the data for testing it are easily available. Suppose for the sake of the argument that the result is not compatible with observable facts (it fails the empirical test). Borrowing from Wimsatt's (1980) method, choosing similar enough alternative models could help us to assign the blame for failing the empirical test, to certain assumptions. For this goal, Wimsatt's formulation should be further specified. What actually is needed to perform *post testing robustness analysis* is a special kind of similarity. I argued elsewhere (2013a) that this kind of robustness is a method of elimination and it involves incremental modifications. In other words, we should split the models we use into two parts. One part should always remain constant and the other should vary. Further, the variable part should have one and only one member. In other words, we can "assign blame" only by varying models in respect to one and only one assumption at the time. If the result varies under different specifications of an assumption then we could have some information about the reasons of the empirical failure.

The second issue that should be discussed here concerns the problem of which kind of assumption should be varied. This brings on a discussion about peripheral and core assumptions. As Mäki (1994) noted, peripheral assumptions "serve to neutralize factors that are not regarded as central or essential to the phenomenon" (Mäki, 1994, p. 244). *e.g.* Galilei's vacuum assumption, or the perfect divisibility of goods assumption in neoclassical economics. Core assumptions "serve to sort out what is believed to be the most central force [...]" (Mäki, 1994, p. 244); for example, Galilei's statement that bodies are attracted by the gravitational field of the Earth, measured by parameter g , or the neoclassical economics assumption that agents maximize utility. Having this distinction in mind, and returning to Levins' (original) formulation, robustness seemed to be about the artificial particularities of a model. In other terms it seemed to be about what above was described as peripheral assumption. Moreover, it seems to be about a particular kind of peripheral assumptions – tractability assumptions. Defined by Hindriks in 2005, 2006, "tractability is a matter of solubility or of the efficiency of a solution. A problem is intractable if it cannot be solved; a problem is more tractable with a certain assumption than without it if it can be solved more easily or efficiently in that case"

(Hindriks, 2005, p. 392). Cartwright (2005, p. 131), Kuorikoski, Lehtinen, and Marchionni (2010, p. 548), strengthened the idea that robustness analysis should involve tractability assumptions (seen as peripheral assumptions). There are, though, two arguments against their position. First, the procedure I described above fits very well, both core and peripheral assumptions. If a model failed an empirical test there is no certainty that only our peripheral assumptions could be blamed. Second, even though many authors have seen tractability assumptions only as peripheral assumptions, there is no reason to think that a core assumption could not have some tractability features. In 2013b I argued that assumptions could have simultaneous functions. For example, the utility maximization postulate is a core assumption for many neoclassical models but it has tractability functions also. Without maximization, neoclassical models would be mathematically intractable. So, my contention here is that in order to perform robustness analysis as I define it, we should treat any unrealistic assumption as a possible suspect even if it is a core assumption with tractability functions in the model.

2. Robustness of public choice voting behavior models

In its classical form, robustness analysis is a single (or intra-author) or multiple authors' (or trans-authors) endeavor. The first class refers to robustness analysis conducted by an author who is consciously modifying his own models to determine if they hold under alternative specifications of its unrealistic assumptions. The second class refers to series of models which were built by different authors, the last of them trying to secure the results of his predecessors. Neoclassical (economics and its manifestations into other social sciences⁽³⁾), current research practice displays both forms. An example from the first class belongs to Olson (1965). The main argument of Olson's analysis was that individuals would not participate in the production of collective goods in large groups. This result was derived using the *homo oeconomicus* behavioral assumption. Olson felt, though, that he could get the same result from using altruistic maximizers. As Olson beautifully put it: "A man who tried to hold back a flood with a pail would probably be considered more of a crank than a saint, even by those he was trying to help" (Olson, 1965, p. 64). So, even with altruistic maximizers the result holds. From the second class (multiple-authors robustness) a good example is Becker's (1962) paper. Here, Becker explored the robustness of the traditional theory of household behavior (a theory built by

other authors) which predicted that “the demand curve for any commodity, real income held constant, must be negatively inclined” (Becker, 1962, pp. 2-3). For securing this result, Becker replaced the neoclassical postulate of utility maximization with two other behavioral specifications, irrational biased or random preferences. Becker argued that the result is robust because it held even without maximizing individuals⁽⁴⁾.

In this paper I advocate a third way of doing robustness analysis. The case I choose for this endeavor starts with a model which failed to predict real behaviors. Therefore the subsequent models of the same phenomena were not meant to secure a result because there was no result to secure it in the first place. These latter models were actually meant to show that the approach is theoretically compatible with the observed facts. However, they could be used to isolate the sensitive parts of the original model and to assign the blame for the empirical failure. The voting behavior case from public choice theory fits this framework and it will make a good case study.

2.1. Public choice theory – introductory remarks

One of the most important aspects of the democratic process is citizens' voting behavior. Defined as “the application of economics to the study of politics” (Shugart, Razzolini, 2001, p. xxii), public choice theory started to model this behavior in the middle of the 20th century. Using the expected utility framework of modern micro (economics), Downs (1957) and later Tullock (1967), predicted that almost nobody will vote. This result was clearly at odds with reality. Economics standard tools apparently failed and its imperialistic claims⁽⁵⁾ seemed to be out of place. This failure was highlighted by many critics of the approach. The voting behavior case was often considered “*the Achilles' heel of public choice theory*” (Udehn, 1992, p. 249), (Aldrich, 1997, p. 373). In a strong interpretation, this result meant that neoclassical economics (through one of its offspring, the public choice theory) is not fitted for explaining a very important behavior of the democratic process. In a weaker interpretation the problem was one of choosing between hard core methodological principles and peripheral ones. Of course, the opponents of public choice theory chose the strong interpretation and the supporters assumed the weaker one. While the former position was one of rejecting the approach, the later tried to keep the most important neoclassical methodological principles by losing some less important methodological features. Public choice scholars took this later path

and chose to sacrifice the *homo oeconomicus* assumption by the sake of the much more important assumption of utility maximization. In this way, at least two important subsequent voting accounts appeared: the expressive voter models and the altruistic voter models. They both gave away something in exchange for protecting the methodological core of the public choice theory and they both could be used to argue for the causal importance of the behavioral assumption. In what follows I present these models and argue that their results are unrobust with respect to some features of their behavioral assumption.

2.2. The conventional model

As mentioned above, the story of public choice modeling of voting behavior begins with Downs (1957) and Tullock (1967). I will label it as *the pure rational choice voting model*. A few notations are needed⁽⁶⁾: V stands for the set of actual voters in a particular election with v being the cardinality of V , R represents the reward that an individual voter receives from his act of voting, B is the differential benefit that an individual voter receives from the success of his more preferred candidate over his less preferred one, P is the probability that an individual, by voting, brings about the benefit B , with $0 \leq P \leq 1$ and C is the cost of the act of voting. With these notations, the calculus of voting formula is: $R = (BP) - C$. If $R > 0$, it is rational to vote and if $R \leq 0$, it is not rational to vote. If v is a large number and $C > 0$, the calculus of voting will predict zero or low turnout. Actually the probability (P) of being the decisive voter is so low that scholars like Meehl (1977), Sobel and Wagner (2004) anecdotally commented that it is more likely to be killed driving to the polls than being decisive. This conclusion was puzzling since the beginning because it was clear that actually many people vote. Are they irrational? In the following sections, I explore two negative public choice responses to this question.

2.3. The expressive voter model

Brennan and Buchanan (1984), Brennan and Lomasky (1985), (1987) developed the expressive voter theory as an alternative to the classical approach to voting behavior. The theory starts with Buchanan's (1954) argument that there is a difference between individual's voting choice and his/her choice in the market. As Buchanan (1954) noted, in the market, individuals choose between outcomes. This is not true about voting because in this case the

outcome depends on the actions of all the other individuals. This means that voting is not instrumental in the same way market choices are. From this, citizens could have non-instrumental reasons for voting. As Brennan and Buchanan (1984) argued, the latter had expressive reasons for voting. In expressive account, voters might be seen as booing and cheering spectators at a sports event. They are not supporting their teams because they will, by doing so, affect the outcome of the game. These expressions of support or lack of support for a sports team or for political candidates are not instrumental but they are rational. Another point that needs to be made is that people are not only booing and cheering candidates when they vote. In (1985) Brennan and Lomasky building on Tullock's (1971) and on Adam Smith's (1759) argued that voting was an opportunity to express moral views that otherwise it would be costly to express. Talking about charity is cheap, but voting about it is also cheap: „Bakers who donate their wares to the hungry forgo the income that could have been achieved through selling the bread and will soon be out of business. But bakers who vote in favor of a program to compel bakers to donate some share of their output to the hungry do not bear a similar cost. All that is given up is the opportunity to vote against the program – because the vote has negligible impact on the political outcome” (Brennan, Lomasky, 1985, p. 198). Starting from all these, the two key points of the expressive account of voting behavior are that voters have true knowledge about the *p-term* and that they will choose to express otherwise costly views by talking and voting about them. If voting is cheap then people will buy it. The conclusion is, of course, that rational expressive people will vote⁽⁷⁾.

2.4. The altruistic voter model

The *homo oeconomicus* assumption, used in the pure rational choice model of voting, is the behavioral rule in neoclassical economics models. The expressive account of voting behavior traded, as Brennan (2008) argued, the instrumental feature of *homo oeconomicus* for saving the more important, maximization assumption. Another trade is still possible. We could keep the maximization and the instrumental behavior assumptions and give up (totally or partly) to the self-interest feature of rationality. As Buchanan, Tullock (1962), Becker (1976), Sen (1977), Sugden (1982), Andreoni (1989), (1990) and others argued, altruism could also operationalize the utility maximization principle of modern economics. For the voting behavior case I will shortly review one such

attempt. The first public choice mention of altruistic voting behavior was in Buchanan's (1954) paper. He briefly noted that in a voting situation people could think about the welfare of the whole group. Later, Jankowski (2002), (2007) and Edlin, Gelman, Kaplan (2007) took this intuition to the scale of an altruistic model of voting behavior.

Edlin, Gelman, Kaplan (2007) began their analysis of voting behavior from the notion of individuals with social preferences. To have such preference means that when voting, you are considering the utility received by other members of the community. So, building on the pure rational choice model of voting behavior, Edlin, Gelman, Kaplan defined two kinds of benefits that an individual could receive by voting. The first is its self-interested benefit denoted by B_{ego} , and the second is its altruistic benefit denoted by B_{soc} . With these notations, the total benefit that a voter receives is given by the formula: $B = B_{ego} + \alpha NB_{soc}$ – where α is a discount factor which reflects the intuition that the altruistic benefit is a fraction of the self-interested benefit. If $\alpha = 0$ then the voter is purely self-interested; if $\alpha > 0$ then the voter has social preferences. For the first case the prediction of the pure rational choice model of voting behavior stands: almost nobody votes. For the second case though, the implication is that much more people vote. If I receive a benefit of, let's say $\alpha = 0.5$, then, even with a big electorate it will be probable that I vote. So the most important assumption here is that $\alpha > 0$ for most of the voters.

3. Robustness of the voting behavior case: discussion

Before any other qualification, I will rewrite the models in a form more suitable for robustness analysis. I will denote the first model by A , the second by B , the third by C , the behavioral assumptions by I, the structural assumptions by II and the two possible results by R_1 (not voting) and R_2 (voting).

A The classical model of voting behavior

I. Behavioral assumptions:

I.a1) Voters are *homo oeconomicus*;

I.a1.1) The formal behavioral assumption: voters are utility maximizers;

I.a1.2) The 1st operationalization: voters are self-interested;

I.a1.3) The 2nd operationalization: voters behave instrumentally.

II. Structural assumptions:

II.a1) The mass elections assumption: the number V of voters is very large;

II.a2) The low cost assumption: voting is a low cost decision.

III. Hidden or implied assumptions:

III.a.1) The behavioral uniformity assumption: all agents behave as described in I.

B. The expressive voter model

I. Behavioral assumptions:

I.b1) Voters are *expressive*;

I.b1.1) The formal behavioral assumption: voters are utility maximizers;

I.b1.2) The 1st operationalization: voters are self-interested;

I.b1.3) The 2nd operationalization: voters behave non-instrumentally.

II. Structural assumptions:

II.b1) The mass elections assumption: the number V of voters is very large;

II.b2) The low cost assumption: voting is a low cost decision.

III. Hidden or implied assumptions:

III.b.1) The behavioral uniformity assumption: all agents behave as described in I.

C. The altruistic voter model

I. Behavioral assumptions:

I.c1) Voters are *a mixture of altruism and egoism*;

I.c1.1) The formal behavioral assumption: voters are utility maximizers;

I.c1.2) The 1st operationalization: voters are self-interested but they have altruistic motivations also;

I.c1.3) The 2nd operationalization: voters behave instrumentally.

II. Structural assumptions:

II.c1) The mass elections assumption: the number V of voters is very large;

II.c2) The low cost assumption: voting is a low cost decision.

III. Hidden or implied assumptions:

III.c.1) The behavioral uniformity assumption: all agents behave as described in I.

The results: $A \rightarrow R_1, B \rightarrow R_2, C \rightarrow R_2$.

The models of voting behavior presented above have at least three properties that made them suitable for my version of robustness analysis. The first is their simple structure. There are few assumptions about factors which are exogenous to the individuals *i.e.* few structural assumptions. Together with

the also few behavioral assumptions, they are very easy to manipulate in a robustness analysis. The second desirable property is that all structural assumptions are realistic. Modern democracies are almost everywhere capable to organize the elections so that voting is cheap. The probability to be decisive is also usually low. Modern democracies may be, in principle, as large as possible, and usually they are large. If V is large, then the probability of being decisive is low. This makes the P term to be realistic for almost any modern democratic state. Having realistic structural assumptions facilitates the analysis because there are fewer variations that should be studied. Finally, the third property is that the models are similar enough to allow the detection of problematic assumptions. This similarity is in terms of a common model structure. Here, there are two options. If we treat I – the set of behavioral assumptions – as having a single member ($I = I.a1$, $I = I.b1$ and $I = I.c1$) then we could perform robustness analysis on all three models at once. Still, if we consider that I 's cardinality is three (as presented above) then the robustness analysis should be performed by grouping model A with model B and model A with model C .

Choosing the first way – performing robustness on all three models at once – is easy. Taking the behavioral assumption as the variable part of the model and the structural assumptions as their constant part, we get R_1 but also R_2 . The conclusion is straightforward: the behavioral assumption is to be blamed for the empirical fallacy of the classical model. So using *homo oeconomicus* described as a self-interested, instrumental utility maximizer is problematic. The second way involves as I noted above, grouping A with B and A with C . For A and B the constant part is II , III , $I.a1.1 - I.b1.1$ and $I.a1.2 - I.b1.2$. The variable part consists in $I.a1.3 - I.b1.3$. Changing $I.a1.3$ into $I.b1.3$ changes the result from R_1 into R_2 . The same goes with A and C . The constant part is II , III , $I.a1.1 - I.c1.1$ and $I.a1.3 - I.c1.3$. The variable part consists in $I.a1.2 - I.b1.2$. Changing $I.a1.2$ into $I.b1.2$ changes the result from R_1 into R_2 . So both $I.a1.2$ and $I.a1.3$ are sensitive to alternative specifications. This means that they are both to be blamed for A 's empirical failure.

So, it is clear from the above discussion that the results are variable under different behavioral assumptions. The problem is magnified by adding non-public choice behavioral assumptions. For example, if we replace the *homo oeconomicus* assumption with irrational biased pro-voting individuals then the result changes again. The same happens with irrational random voters. My primary contention here is therefore that the problem of failed prediction of the

first model of voting behavior was produced by its behavioral assumptions. The whole *I.a1* or its parts *I.a1.2* and *I.a1.3* are not peripheral assumptions, and even though they have tractability functions, they are actually core assumptions and they are part of the model's causal mechanism. Another important part in deriving R_1 is *III*, or what I called hidden or implied assumption. This is actually a feature of the whole neoclassical economics and politics: it assumes that there is behavioral uniformity across the entire model world. All agents are either *homo oeconomicus* or expressive and so on. If we change this feature and allow behavioral diversity, deduction will be impossible. Without knowing how many people are in each behavioral class we won't be able to predict turnout. We would get though (maybe) a better representation of the real world. Of course this would imply trading tractability and deduction-prediction for representation, but I won't discuss this problem here.

Notes

- (1) For other critiques for Friedman's position see, for example, the Musgrave-Mäki-Hindriks typology of assumptions and my (2013b) subsequent discussion of it.
- (2) Even though until recent times it was theorized only by biologists.
- (3) In (1984) Stigler argued that neoclassical economics exported its core methodological principles into the traditional domain of other social sciences. He labeled this as being economics imperialism.
- (4) Becker's result held with irrational households because it was implied by a structural variable: everybody's revenues are limited so, when the prices are high, people – rational or irrational – will buy less.
- (5) See note (3).
- (6) I use a part of Riker's and Ordeshook (1968) notations because they are more suited for my analysis than Downs' (1957) original notations.
- (7) They will even do so despite their interests. Brennan and Lomasky (1985) offer an example of voting for declaring war to a nation's foe. Nobody wants this war, but voters will express their patriotism and disdain for the antagonist and the result will be one that is in nobody's interest.

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The evolution of sovereign wealth funds and their influence in the global economy. The case of China

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Abstract. *This paper, through the deductive analysis and the causal explanations, catches the positive and negative character of the Sovereign Wealth Funds development as a relatively new economic tool, but with a strong impact in the global economy, especially in the context of the current financial changes. The benefits brought by them to the global capital market, in terms of increasing liquidity and allotting financial resources, however cannot diminish the fears related to the states holding sovereign funds in the economy of other countries, and in order to give an example we present the case of China.*

Keywords: sovereign wealth funds (SWFs); economic tool; capital market; investment; globalisation.

JEL Codes: F01, F65.

REL Codes: 10A, 10I.

1. Introduction

In the current context in which the world economy is under a strong impact of the economic, monetary, technological, military and diplomatic changes, globalisation seems to have generated an unprecedented development of a relatively new economic tool called sovereign wealth funds (SWFs). They recorded a sustained increase of the assets' value in the last ten years and, in the context of the effects of the current economic crisis, they have undergone spectacular dynamics, growing from \$ 3.265 billion in September 2007 to \$ 5.182 billion in December 2012, a value which exceeds by far the aggregate capital of the hedge funds and of the private equity. During the financial crisis and the recession, public debts, budgetary deficits and investments are followed more attentively at world level (Pociovălișteanu, 2011, p. 1018).

To assess the impact of the SWFs on the capital market, not only the value of their assets is important, but also the way of making investment decisions. The decision to invest requires a careful analysis of the field to which the investment is directed, and the decision to invest is subject to a number of factors (Ioneci, Mîndreci, 2010, p. 199). The general feature of the investment funds is that they operate according to the business principles to the benefit of the holding country.

China is the country that has become increasingly important in the global economy, benefiting greatly from globalisation, through the use of foreign capital to improve economic efficiency, to encourage competition and to gain access to the state-of-the-art technology. China is currently the world's second largest economy in the world, the world's leading exporter and producer, surpassing, in turn, established countries in the world hierarchy, such as the USA, Japan and Germany.

China's sovereign wealth funds amount to approximately 29% of the total assets of all SWFs in the world, positioning itself on the first place in the world in this regard, with a significant lead over the second place, the United Arab Emirates (16%)

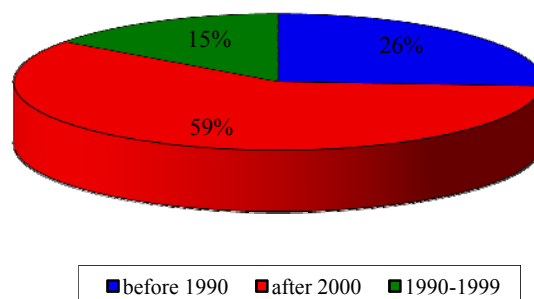
2. Evolutionary and functional aspects of the sovereign wealth funds

In the second half of the twentieth century, the emerging states group recorded deficits of the current account, which have been kept under control by accessing external capital. Paradoxically, after 1999, the emerging economies

have recorded current account surpluses and have exported capital worldwide. This surplus has increased rapidly, reaching an estimated value of \$ 685 billion in 2006, that is to say 1.3% of the global GDP (Mezzacapo, 2009, p. 3). Basically, the countries in Asia are models of this trend, but also the oil-exporting countries and the developing countries in Latin America were included in the category of capital creditors. Also as a result of this process, the emerging countries began to accumulate foreign assets. When the level of these assets exceeded the level of the reserves required for stabilisation purposes, it became reasonable to seek more benefits from these reserves by diversifying investments, by creating sovereign wealth funds (SWFs). According to Christopher Balding, ISPs need predictable sources of capital, being dominated primarily by the commodity-dependent countries (Balding, 2012, p. 1). The strong development of these investment vehicles reflects the significant change in the emerging economies from debtors to creditors. Under the impact of the globalisation effects one can notice the rise of sovereign wealth funds as a direct consequence of this irreversible phenomenon (Mostrous et al., 2010, p. 4).

The first sovereign investment fund was Kuwait Investment Authority, created in 1953 to invest the excess income from oil exploitation. In 1956, the Republic of Kiribati created the investment fund called the Revenue Equalization Reserve Fund to hold the revenues from the export of phosphate applied as fertilizer. The creation of Abu Dhabi's Investment Authority (1976), Singapore's Government Investment Corporation (1981), and Norway's Government Pension Fund (1990) show the resumption of the states' concerns for SWFs, starting with the 70s, after the first oil shock.

The increase of the size, but also of the number of sovereign wealth funds is a relatively recent phenomenon, given that more than half of the number of FSI was created after 2000. Upon them acted as if FDI several factors that favored SWFs and touching capitals (Ene, 2012, p. 71).



Source: TheCityUK, *Sovereign Wealth Funds*, Financial Market Series, February 2012, p. 3.

Figure 1. *The launch year of the 50 largest sovereign wealth funds*

Under the pressure of the changes in the current economic environment, new sovereign wealth funds have been created to exploit the opportunities generated by the global crisis. Nigerian Sovereign Investment Authority (2011), for example, was created to manage the revenues from crude oil. The Italian Strategic Fund (2011) aims to support the growth of the Italian strategic companies. The feverish outbreaks of the worldwide market cause more and more countries, such as Angola, Bolivia, Canada, India, Japan, Taiwan and Thailand, to plan the establishment of investment funds. The growing role of SWFs on the international financial market and their opening towards adapting the operating characteristics to the current economic changes, is more and more visible. Basically, the participants in the international financial-monetary market have focused their attention on SWFs, which have visibly become major players on this market.

Robert M. Kimmitt, then deputy US treasury secretary, distinguished among four different kinds of sovereign wealth: SWFs, international reserves, public pension funds, and state-owned enterprises. International reserves are the funds countries hold for use by their treasuries or finance ministries and central banks. Public pension funds hold the funds that states promise their citizens. Kimmitt noted that these funds have traditionally kept low exposure to foreign assets. State-owned enterprises are companies fully or partly managed by the state, each of which may have its own assets and investments. SWFs are defined by International Working Group of Sovereign Wealth Funds (IWG, 2008, p. 27), as those special purpose investment funds held by a general government. Created by the government for macroeconomic purposes, SWFs hold, manage or administer assets to achieve the financial objectives, and

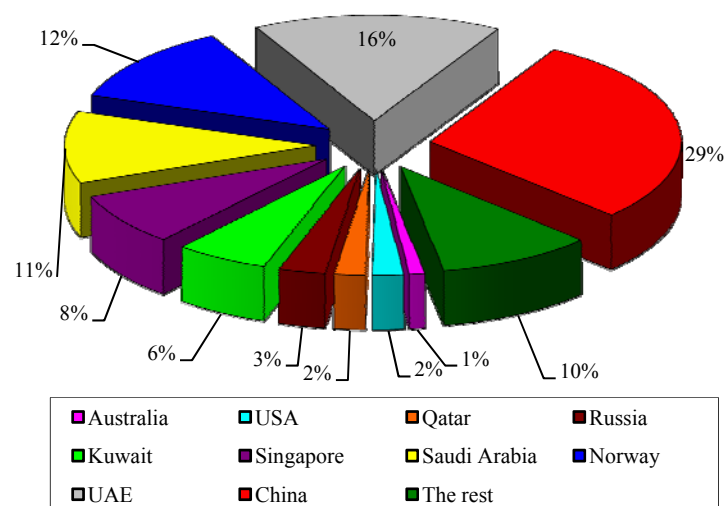
employ a set of investment strategies which include investment in the foreign financial assets. Regarding the funding sources, they come from: the surplus of the balance of payments, official foreign currency operations, income from privatisations, fiscal surpluses and/or from the receipts resulting from raw materials exports. The definition of the sovereign wealth funds excludes the assets from the foreign currency reserves held by the monetary authorities for the balance of payments or for monetary policy purposes, the operations of the state-owned companies in the traditional sense, the government employees' pension funds, or the assets managed for the benefit of the natural persons.

Therefore, we can say that SWFs are defined and characterised by several elements which contribute significantly to the achievement of the objectives aimed at by:

- *The system of property.* SWFs are owned by a general government, a term that includes both the central government and the subnational governments.
- *Investment strategies.* They include investment in foreign financial assets, so that those funds that invest only in domestic assets are excluded.
- *The goals and objectives aimed at.* SWFs, established for macroeconomic purposes, operate to invest the government funds to achieve the financial objectives, and can have responsibilities that are only broadly defined, allowing thus the SWFs to have a wide range of investment strategies on medium or long-term.
- *The economic impact.* SWFs behave, usually, as a fiscal stabiliser, providing their governments additional income and, in some cases, directing money to help pay pensions or for company with financial problems, thus fuelling disputes about transparency and the intentions of SWFs.

3. Empirical research on sovereign wealth funds – China's case

In the top made by the Sovereign Wealth Fund Institute (SWF Institute), the largest investment fund was, in December 2012, the Government Pension Fund-Global of Norway (664.3 billion dollars), which surpassed Abu Dhabi Investment Authority (627 billion dollars) (SWF Institute, 2012).



Source: (www.swfinstitute.org/fund-rankings). Accessed on 02 Dec. 2011.

Figure 2. Country distribution of the Sovereign Wealth Funds value in April 2012

At the end of 2012, out of the total assets of SWFs (\$ 5,182.1 billion), 58% had as main source of financing oil and natural gases, and the difference came from other funding sources that are not based on raw materials.

Table 1

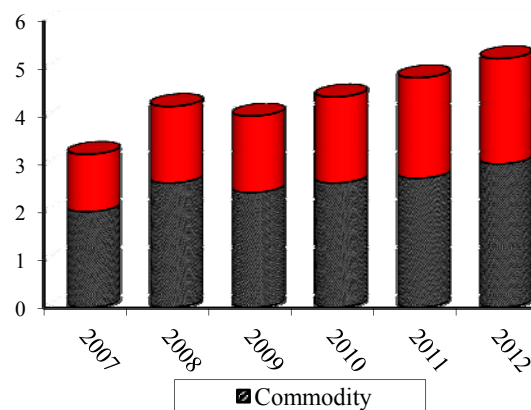
The evolution of assets administered by SWFs at the beginning of the financial crisis

(billion \$)

						Sept. 2007	Dec. 2007
						3,265	3,259
March 2008	June 2008	Sept. 2008	Dec. 2008	March 2009	June 2009	Sept. 2009	Dec. 2009
3,427	3,916	4,054	4,140	3,749	3,790	3,914	4,022
March 2010	June 2010	Sept. 2010	Dec. 2010	March 2011	June 2011	Sept. 2011	Dec. 2011
4,052	4,107	4,154	4,406	4,551	4,731	4,847	4,830
March 2012	June 2012	Sept. 2012	Dec. 2012				
4,995	5,019	5,135	5,182				

Source: SWF Institute, (www.swfinstitute.org/fund-rankings). Accessed on 26 Jan. 2013.

The value of the SWFs assets, during the global economic crisis, has seen a positive trend, recording in September 2012 a value higher by 57% than in September 2007, before the onset of the crisis. The funds investing primarily in debt securities (for example, state bonds) have been largely unaffected by the global financial crisis, and the sovereign wealth funds with significant exposure to equities suffered a dramatic erosion in the value of their investments (WIR, 2011, p. 14). However, together with the return of world stock exchanges, most SWFs were able to recuperate their losses during the crisis. Moreover, the sovereign wealth funds have experienced a sustained increase of the assets' value in the last ten years and the strong growth in the share of the funding sources that are not based on raw materials, from 23% in 2002 to 42% in 2012 is obvious.



Source: TheCityUK, *Sovereign Wealth Funds*, Financial Market Series, February 2012, p. 1.

Figure 3. *The evolution of the assets managed by SWFs before the onset of crisis (billion \$)*

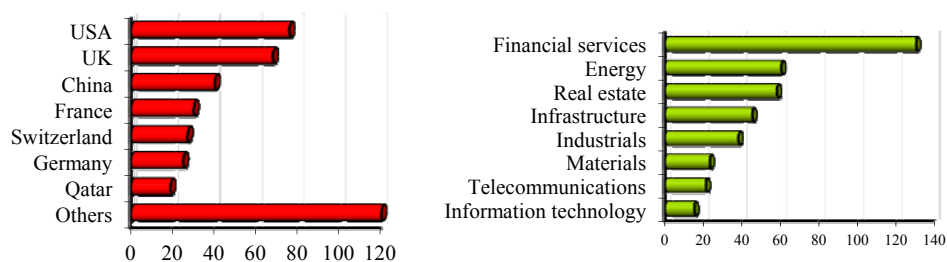
The sovereign wealth funds differ significantly from one another in the allocation strategies of assets and in the risk management, reflecting the differences between objectives and constraints. Typically, SWFs adopt a long-term approach to investment. However, the stabilisation SWFs have shorter investment horizons as they take into account possible terms for the national needs of liquidity and funding. The public disclosure of the investment administration strategy varies among SWFs, although it is generally limited. The SWFs have considerable freedom in asset-allocation decisions and they are

not usually constrained to specific asset classes or to currency exposure, unlike other investment administration entities, such as pension funds.

The SWFs of raw materials have a long-term approach to investment decisions and a preference for capital investments. Approximately four-fifths of the petroleum exporting countries' funds are invested in the foreign assets. Out of these, the capital investments represent about 50%, followed by those with fixed income (25%) and by the bank deposits (15%). As the risk aversion of the sovereign funds has increased, the share of investments in bonds is increasing.

The SWFs that are not based on raw materials represent an important source of liquidity for the global capital market. They tend to invest in American assets, particularly in the US government bonds. In October 2011, the central banks in Asia had the largest stock of US Treasury securities, among which China and Japan each held more than a fifth of the total of foreign holdings. These were followed by Great Britain, with 9%, and the oil-exporting countries by 5% (TheCityUK, p. 6).

The substantial dimension and the high liquidity of the SWFs assets have turned the government sector into a significant group of international investors. Since SWFs have their long-term investment horizons, they are a constant source of capital for investments that can help stabilise markets. The funds' assets largely consist of: holdings of shares on the developed or emerging markets, hedge funds, sovereign or corporate debt, real estate, private equity, raw materials, direct and special investment.



Source: TheCityUK, *Sovereign Wealth Funds*, Financial Market Series, February 2012, pp. 6 (SWF Institute – Sovereign Wealth Fund Transaction Database). (www.thecityuk.com/assets/Uploads/SWF-2012.pdf). Accessed on 29 Jan. 2013.

Figure 4. *Direct investment between 2005-2011, by country and sectors (billion \$)*

The main destination of the direct investments in the period 2005-2011 was the USA, with \$ 76 billion or 19% of the total, followed by Great Britain, with 68 billion dollars or 17% of the total. Other important destinations are

China, France, Switzerland, Germany and Qatar. In the period 2006-2009 the activity concentrated mainly in the developed economies. The emerging countries, notably the BRICS countries (Brazil, Russia, India, China and South Africa), however, have accumulated most of the investments after 2009, being very likely for these countries to benefit from a rising share of investments in the future years. Direct foreign institutions have been admitted as an essential factor of assuring economic growth, both in the host-countries as in these of origin (Voiculeţ, 2004, p. 136).

3.1. Analysis of the sovereign wealth funds in CHINA

In the top twelve sovereign wealth funds, accounting for value of the assets in the administration, China is the leading investor in the world, for this type of investment vehicle, being present with four funds, representing almost 29% of the overall total of 5,182.1 billion \$: SAFE Investment Company, China Investment Corporation, Hong Kong Monetary Authority Investment Portfolio and National Social Security Fund.

Table 2

Sovereign wealth funds from China

No.	Name of the fund	Total assets (billion \$)	Transparency index	Source of capitals
1	SAFE Investment Company	567.9	4	Non-raw materials
2	China Investment Corporation	482	7	Non- raw materials
3	Hong Kong Monetary Authority Investment Portfolio	298.7	8	Non- raw materials
4	National Social Security Fund	134.5	5	Non- raw materials
5	China-Africa Development Fund	5.0	4	Non- raw materials

Source: SWF Institute (www.swfinstitute.org/fund-rankings). Accessed on 08 Febr. 2013.

To estimate the transparency degree of the SWFs, the Linaburg-Maduell Transparency Index is used (SWF Institute, 2012), which takes values from 1 to 10 and which was developed at the Sovereign Wealth Fund Institute. For an adequate transparency, it is recommended to have an assessment of at least eight of the SWFs. By analyzing the case of China, it appears that only one fund meets this requirement, and the largest fund in China and third in the world is half of the transparency index required.

By analyzing the SWFs from China, it is found that the total value of the assets held by them amount to 1,483.1 billion dollars, an amount equal to 44% of China's official currency reserve, accounting for more than the currency reserves held by the central banks of any other country in the world. The first two funds are the most important:

- The SAFE Investment Company Fund (1997) is a Hong Kong subsidiary of the State Administration of Foreign Exchange (SAFE) - an entity responsible for managing China's currency reserve. The Fund is managed by the SAFE officials and through it there are made capital investments abroad. In terms of strategies and objectives of the fund, it is known that it has made significant investments on the capital market in the UK. The important stakes are: Royal Dutch Shell, Rio Tinto, BG Group, Tesco, BHP Billiton and Barclays. Its investment style is considered to be the Index – Passive type, that is to say small holdings in publicly traded companies.

- The China Investment Corporation (CIC) Fund is responsible for managing part of China's foreign currency reserve, the largest in the world (3,200 billion dollars), totaling half of the reserves currently held by the group of emerging and developing countries. Its investment style is considered to be of Portfolio, that is to say large holdings of publicly traded companies. The CIC fund is, according to the value of assets, the fifth largest in the world and it is considered China's main sovereign wealth fund. The need to seek higher returns, to diversify the growth and desire to hold less US currency helped create the fund. Established in September 2007, CIC has made substantial investments in a variety of asset classes. The capital of the fund is financed by issuing special treasury bonds worth \$ 200 billion. The fund wholly owns several state companies, through which it invests in a range of international activities, the most important being the Central Huijin Investment Ltd. The official purpose of the China Investment Corporation Fund is to maximise benefits to acceptable risk tolerances and to improve the corporate governance of certain major state-owned financial institutions. Furthermore, CIC aims to use an external money management and to participate with indirect holdings of shares through various investment funds. Some of the money in the fund is used to help certain state-owned enterprises. The fund is active in pursuing the global resources, such as those in Africa, Asia, North America and Australia.

Some economic analyses identify other reason that led to the creation of the CIC sovereign wealth fund. According to Thomas Lum, its creation was part of a plan to mitigate the inflationary pressures that occurred in China's

economy (Lum et al., 2010, p. 58). According to this theory, the rapid growth of the foreign currency reserves, which almost doubled between September 2005 and September 2007, created excess liquidity in China's money supply. In order to remove the excess money from circulation, the People's Bank of China has sold bonds to the public, a process often called sterilization, thereby constituting the social capital of the CIC investment fund.

It should be noted that there have always been concerns that the Chinese government, by establishing the CIC fund, could gain control over the key industries and/or access to important natural resources (oil, natural gas, iron ore, etc.) or access to sensitive technologies by getting a place in the boards. The change of the CIC direct investment, which began in the summer of 2009 from financial entities to energy and natural resources companies, draw the attention of investors and analysts. Michael F. Martin said that the change indicated a modification in the CIC investment strategy and that it could be part of a larger effort of the Chinese government to ensure access to natural resources for China's economy which is rapidly expanding (Martin, 2010, p. 10). Ever since the establishment of the CIC fund, the Chinese officials have denied any intention to use the fund to gain control over the Western economies and they have underlined its beneficial importance for solving global economic imbalances and for developing the global economy. Basically, the ability of the Chinese funds as an instrument of global influence is nevertheless a fact, as a result of the SWFs investments in distressed financial firms, such as investment made by CIC in Morgan Stanley, to ensure its stability on the market in the context of the global financial crisis, or in Bleckstone Group, at the end of 2007.

Although China's investment activity in the US is closely monitored, for Americans, there are many economic risks arising from the Chinese sovereign wealth funds, such as the emergence of certain imbalances on the financial-monetary market or undue foreign influence on key industries, as well as access to sensitive technology. The increase of the regulatory constraints of the Chinese investment in the US could generate retaliatory measures on the American companies' access on the financial-monetary market in China.

4. Conclusions

No doubt that the sovereign wealth funds bring significant benefits on the global capital market in terms of increasing liquidity and allotting financial resources. However, some governments are reserved concerning the SWFs

because of the limited transparency of some of them, which harms the competitive process and limits the positive effects resulting from a stronger market discipline. Moreover, it is feared that they could invest in order to ensure the control of certain important businesses or sectors strategically, from political reasons rather than commercial ones, using these investments to promote their own national interests. Therefore, as the international assets held by SWFs are becoming increasingly important, the politicians and economists' anxiety linked to the impact of the activity of these funds on the receiving countries also intensifies. Basically, SWFs can influence their portfolio companies in a way that involves national security issues for the countries of origin in order to achieve competitive advantages or to gain access to natural resources, to technology and know-how or even to get strictly confidential information.

Following the analysis of the SWF's impact on world economy, a number of concerns was identified with regard to their role and influence, but also a number of proposals to improve the practical performance:

- increased transparency of SWFs by increasing the number of published annual reports and disclosing the assets under management;
- avoiding internal social reactions by informing the taxpayers from the SWFs owner state on how their public resources are invested;
- compliance and continuous improvement of the Santiago Principles by all SWFs as a result of the changes occurring on the global financial-monetary and market;
- increasing the regulatory constraints of the SWFs without proliferating the financial protectionism;
- elimination of unfair practices and retaliatory actions by strengthening the legislative framework and creating a balance between the development of the national economies and the growth of the SWFs;
- elimination of unfair competitive advantages;
- tighter control over the SWFs, as compared to the other foreign investors, to remove the suspicion about the intention of certain governments to achieve strategic economic interests through these funds.

In the current context, the SWFs may have a negative impact on the effectiveness of corporate governance, imposing additional costs by constraining certain companies to act in their own interests to the detriment of the other shareholders' interests. The acquisition of major shares packages from

foreign companies operating in strategic sectors gives the foreign government the possibility to intervene to protect the national security and interests. As a result of the confusing boundaries between the private and public investors, the financial system's development based on a free market is countered and the financial power is concentrated on the strategic importance of investments, thus creating pressure for the protectionist measures. Consequently, their dimension and goals of the SWFs create concerns about the impact of the investment-related decisions on the global financial market, on the assets' prices and on the course of the monetary and exchange policies.

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How does the labour's market dynamic influence the level of the public pension in Romania in the actual economic context?

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Abstract. *In order to survive, the ageing population depends on the level of the public pension, for most of them the only source of income. This crucial social variable registers modest values in Romania in many cases, its level being less than the level of the minimum wage per economy.*

As underlined below the average pension is an important social indicator and based on its value one can indicate the poverty level of one area or country.

Since according to Eurostat the percentage of the people at risk of poverty or social exclusion with ages over 60 years was greater than a quarter for 2011, we can state that the resources allocated for the pension public budget are insufficient.

In this study we analyze the connections between Romania's labor market and the real pension. We assume that the labor market configuration has an important role for the evolution of the pension income.

Using an econometric time series model we capture a particular correlation between the real pension and different categories of active population and the real wage, both of the mentioned exogenous variables being representative and characteristically linked to the labor market dynamics.

Our approach underlines once more the importance of sacrificing the present, the immediate reality for a safer and better future. Nevertheless we express our concern for the future generations since the effects of the economic crisis will persist a long time further.

Keywords: pensions; wages; unemployment benefits; employment.

JEL Codes: J21, J26.

REL Codes: 12B, 12I.

Introduction

Employer-provided pensions represent an important part of labor compensation. According to the economic theory the firms are paying the workers the compensation equal to the value of productivity.

Since compensation has many forms the firms could be viewed as neutral sellers of employee benefits, willing to provide whatever combination of cash payments and benefits that employees wish for. Usually they prefer a percentage of their total compensation to be paid in the form of pension benefits because their net compensation is enhanced by the tax treatment of pensions.

Pension systems purpose is to finance the expenses of the employees during their retirement or in the event of disability. These systems are referring to the economic problem of setting aside part of the production for these types of situations.

In that matter it is necessary to identify the financial resources for covering the cost of these benefits.

Among this resources are the workers savings, public taxes for the financing of public benefits or insurance premiums for defraying costs in cases of disability and death.

Many persons will be left without any form of social protection if the systems do not take into consideration all the influence factors.

The fundamental social function of a pension system must be to achieve universal coverage, providing decent retirement and disability pensions for income-earners and survivors' benefits for dependents after the death of the contributor, as well as coverage for non-income earners. Achieving these goals is difficult because of the multitude of factors that influence differently one's life style and applying the same condition to everyone is often wrong and unfair.

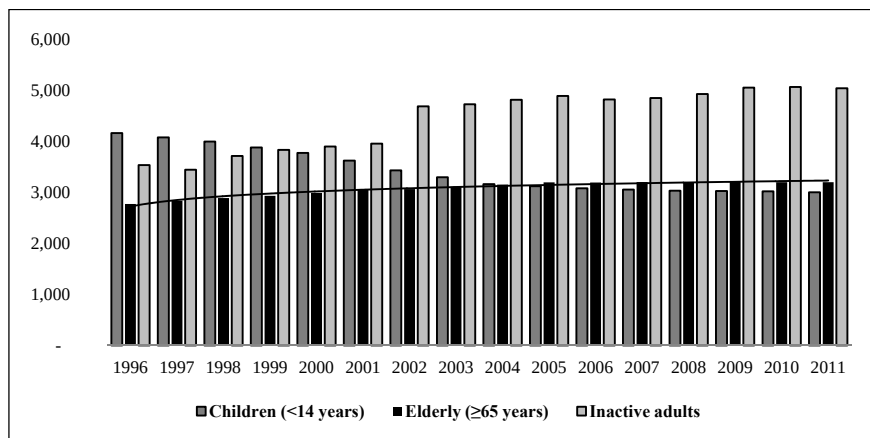
According to the economist Peter Diamond pension benefit depends more on the individual history far more than taxes do, and age plays a much larger role in the determination of it.

In this study firstly, we analyzed this hypothesis using a Granger test to determine if taxes have an influence on the average public pension.

Furthermore we try to determine the relation between the labor market and the size of the public pension using an econometric approach.

The economic context in Romania

According to the figure above, the rapid pace of population ageing has more negative elements than positive. On the negative side, the working age population that is participating in the economy is continuing to decrease and the retirement-age population is growing steadily.



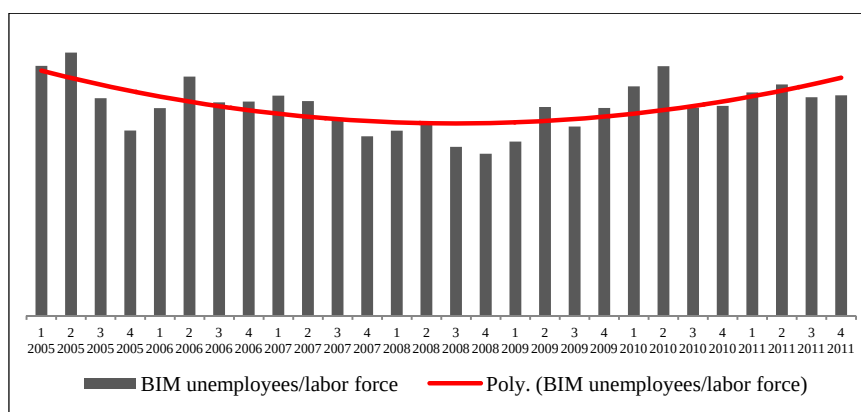
Source: www.insse.ro; all calculations and representations were made by the authors.

Figure 1. Romania: Demographic dependency

The only positive fact on short term although is that the children of school age which dependent on the working population is going down. Nevertheless, on the long term this shows a deficit when it will come to the future labor force.

Another concerning fact pointed by the International Labor Organization (ILO) is that those who work are subject to increasingly precarious conditions which are reflected in higher rates of unemployment (Figure 2), informality and lack of social protection.

If we look at the graph below we can notice the ascending trend of the BIM unemployment rate, even if until 2008 its tendency was of slow decreasing. The moment of growth is coinciding with the triggering of the economic crises that seems to have an important negative impact on the labor market in Romania.

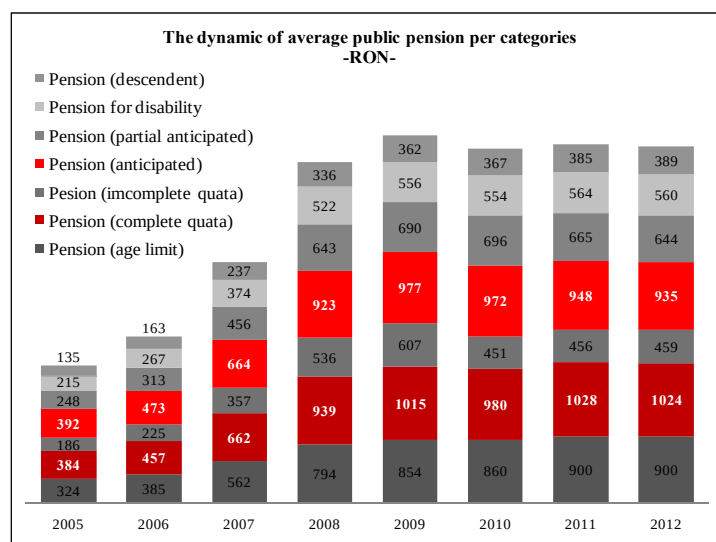


Source: www.insse.ro ; all calculations and representations were made by the authors.

Figure 2. Romania: The quarterly dynamic of BIM unemployment 2005-2011

The sharply ascending of the different pension categories until 2009 was slowed down by the same phenomenon, the economic crises. Although the effects of the crises weren't as visible as in the case of the labor market, the growing rhythm stagnated.

A worrying fact when it comes to pensions is their small values, insufficient for many of the elders.



Source: www.insse.ro; all calculations and representations were made by the authors.

Figure 3. Romania: The dynamic of public pension per categories

The effect of taxes on the public pension in Romania (2005-2011)

Usually, it is expected that the level of taxes to influence the level of the public pension. Nevertheless, according to the economist Peter Diamond pension benefit depends more on the individual history far more than taxes do. In that sense, in order to identify the particularities of this relation in Romania we have chosen to apply the Granger test for two types of taxes: in the right part of Table 1, taxes on wages calculated as the difference between the sum of gross salary and the sum of net salary (registered at ITM) and in the left part of Table 1 the total taxes on product (VAT and other types).

Also, the regularity of the analyzed data was quarterly for six consecutive years and we eliminate the seasonality effect.

Table 1

The relationship between the public pension and taxes			
Pairwise Granger Causality Tests			
Sample: 2005Q2 2011Q4			
Lags: 1			
Null Hypothesis:	Obs	F-Statistic	Probability
IMP_SAL_SA does not Granger Cause PENS_SA	26	3.64134	0.06892
PENS_SA does not Granger Cause IMP_SAL_SA		1.36106	0.25531
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Probability
IMP_SAL_SA does not Granger Cause PENS_SA	25	5.66709	0.01122
PENS_SA does not Granger Cause IMP_SAL_SA		0.14205	0.86844
Lags: 3			
Null Hypothesis:	Obs	F-Statistic	Probability
IMP_SAL_SA does not Granger Cause PENS_SA	24	4.47594	0.0172
PENS_SA does not Granger Cause IMP_SAL_SA		0.08333	0.96821
Lags: 4			
Null Hypothesis:	Obs	F-Statistic	Probability
IMP_SAL_SA does not Granger Cause PENS_SA	23	3.22354	0.04512
PENS_SA does not Granger Cause IMP_SAL_SA		1.94139	0.15932
Lags: 5			
Null Hypothesis:	Obs	F-Statistic	Probability
IMP_SAL_SA does not Granger Cause PENS_SA	22	2.29404	0.11666
PENS_SA does not Granger Cause IMP_SAL_SA		1.50392	0.26561
Lags: 6			
Null Hypothesis:	Obs	F-Statistic	Probability
IMP_SAL_SA does not Granger Cause PENS_SA	21	1.90448	0.19591
PENS_SA does not Granger Cause IMP_SAL_SA		2.84949	0.08637
Lags: 7			
Null Hypothesis:	Obs	F-Statistic	Probability
IMP_SAL_SA does not Granger Cause PENS_SA	20	3.38769	0.09896
PENS_SA does not Granger Cause IMP_SAL_SA		5.16293	0.04465
Pairwise Granger Causality Tests			
Date: 11/18/12 Time: 22:02			
Sample: 2005Q2 2011Q4			
Lags: 1			
Null Hypothesis:	Obs	F-Statistic	Probability
IMP_PROD_SA does not Granger Cause PENS_SA	26	0.28234	0.60026
PENS_SA does not Granger Cause IMP_PROD_SA		0.02259	0.88183
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Probability
IMP_PROD_SA does not Granger Cause PENS_SA	25	0.37706	0.69065
PENS_SA does not Granger Cause IMP_PROD_SA		0.10963	0.8967
Lags: 3			
Null Hypothesis:	Obs	F-Statistic	Probability
IMP_PROD_SA does not Granger Cause PENS_SA	24	0.4787	0.70133
PENS_SA does not Granger Cause IMP_PROD_SA		0.19253	0.90002
Lags: 4			
Null Hypothesis:	Obs	F-Statistic	Probability
IMP_PROD_SA does not Granger Cause PENS_SA	23	0.35091	0.8391
PENS_SA does not Granger Cause IMP_PROD_SA		0.45819	0.76516
Lags: 5			
Null Hypothesis:	Obs	F-Statistic	Probability
IMP_PROD_SA does not Granger Cause PENS_SA	22	0.39663	0.84122
PENS_SA does not Granger Cause IMP_PROD_SA		0.8575	0.5383
Lags: 6			
Null Hypothesis:	Obs	F-Statistic	Probability
IMP_PROD_SA does not Granger Cause PENS_SA	21	0.34659	0.89321
PENS_SA does not Granger Cause IMP_PROD_SA		0.57643	0.74091

Source: www.insse.ro; all calculations were made by the author.

In the table above, we have tested using the Granger causality test whether the two variables: taxes on wages and taxes on product are influencing public pensions or not.

According to the results taxes on wages influence the public pension five cases and vice versa in three cases (starting from the fifth lag until the last one).

When it comes to the other type of taxes, according to the test results the null hypothesis couldn't be rejected. In all of the cases (since p value > 0.05) the results show that in Romania, in the analyzed periods, neither taxes on products nor average public pension influence one other.

Econometric analysis

In this section we analyzed the correlation between real average pension (pensie_medie_reală) and four of the labor market representative indicators like real wage (salariu_real), the employment rate for different age categories

(ocupare), the unemployment benefits as percentage of the minimum wage for workers with experience in the labor field (som_exp) and the unemployment benefits as percentage of the minimum wage for workers with no experience in the labor field. All the data used were collected from the INSSE databases (www.insse.ro) for the period 1991-2011, for Romania.

We tried to test the correlation between the real average pension and these variables by using nine econometric equations, starting with the elder employee population and finishing with the youngest one. Also, in order to obtain relevant and consistent estimators all data suffered modifications.

Table 2

Econometric regressions

Real pension		Real wage		Employment			Unemployment benefits (experience)		Unemployment benefits (no experience)	
Lags	Coeff.	Lags	Coeff.	Age	Lags	Coeff.	Lags	Coeff.	Lags	Coeff.
1	0.533685		0.981551	60-64	3	0.820727	2	0.19189		
		3	-0.164908							
1	0.493929		0.954687	55-59	3	0.955661	2	0.14627		
		3	-0.208406							
1	0.545358		0.745536	45-49	2	1.411295				
		3	-0.143491							
1	0.421265		0.766857	40-44	2	1.97606		0.09847		
1	0.493721		0.753943	35-39	2	2.437797				
1	0.441531		0.823988	30-34	2	2.471687				
1	0.505428		0.790367	25-29	2	1.774151				
1	0.540274		0.872304	20-24	2	1.154159				
1	0.548551		0.917098	19-15	2	2.479926			1	-0.218455

Source: www.insse.ro; all calculations were made by the author.

Based on the above results we notice that the inertial trend of the real pension is maintaining in all of the equations, the coefficient oscillates in the 0.4 - 0.5 interval.

The correlation between real wages and real pensions seems to have different directions if we change the number of lags. In that matter there is a positive connection for the actual values and a negative one for the values at three lags distance.

The employment rate effects on the pension level are different for all of the occupied population categories. As we descend from 64 years to 30 the coefficient values are greater but if we go any further until the 20 years age its strength seems to weaken. For the youngest category the value for the coefficient overcomes the one for the group of 30-34.

Econometric tests show that the equations are consistent and the coefficients and the degree of significance for coefficients are about 90% each of them. Unit root test show that the model variables are stationary.

Based on the Akaike and Swartz tests we have chosen the first three of the most relevant equations to describe:

Table 3

The Akaike and Swartz tests results		
	Akaike criterion	Schwarz criterion
Eq.1	4.52729	4.78804
Eq.2	4.69751	4.95825
Eq.3	5.08959	5.30688
Eq.4	5.27178	5.500015
Eq.5	5.473347	5.655935
Eq.6	5.276652	5.45924
Eq.7	5.451705	5.634293
Eq.8	5.737124	5.919712
Eq.9	5.344514	5.572749

Source: www.insse.ro; all calculations were made by the author.

$$\text{PENSIE_MEDIE_REALA (t)} = - 87.15471 + 0.53368 \times \text{PENSIE_MEDIE_REALA (t-1)} + 0.19189 \times \text{SOM_EXP (t-2)} + 0.98155 \times \text{SALARIU_REAL (t)} - 0.16490 \times \text{SALARIU_REAL (t-3)} + 0.82072 \times \text{OCUPARE60_64_ANI (t-3)} \quad (1)$$

The first equation shows that there is an important inertial trend in the dynamics of the real average pension (coefficient 0.53368) at the first lag.

The most important influence factor is the dimension of the real wage at one lag (0.98155), positively correlated with the real pension. The same variable but at with 3 lags has a negative impact on the real pension, though its coefficient strength is more weak (only -0.16490).

When it comes to the employment rate for workers with ages between 60 and 64 years, the correlation is strong and positive and at three lags away.

As expected the unemployment benefits are positively correlated with the pension level since these two variables represent two of the most important social indicators and if the level of one increases the other must increase as well. The distance between the growth moments is two years (2 lags).

$$\text{PENSIE_MEDIE_REALA (t)} = - 91.92381601 + 0.49392 \times \text{PENSIE_MEDIE_REALA(t-1)} + 0.14626 \times \text{SOM_EXP (t-2)} + 0.95468 \times \text{SALARIU_REAL (t)} - 0.20840 \times \text{SALARIU_REAL(t-3)} + 0.95566 \times \text{OCUPARE55_59_ANI (t-3)} \quad (2)$$

If we substitute the employment rate for workers with ages between 60 and 64 years old with the one for workers with ages between 55 and 59 years old, the sign of the coefficients remains the same as expected but their values is reduced whit a few percentages. Nevertheless the effect of the new employment rate is stronger (0.95566).

$$\text{PENSIE_MEDIE_REALA (t)} = - 127.7945138 + 0.54535 \times \text{PENSIE_MEDIE_REALA(t-1)} + 0.74553 \times \text{SALARIU_REAL (t)} - 0.14349 \times \text{SALARIU_REAL (t-3)} + 1.41129 \times \text{OCUPARE45_49_ANI(t-2)} \quad (3)$$

Furthermore, if we replace the employment rate for people aged between 55 and 54 years with the ones aged between 45 and 49 years, the coefficient of the one lag real pension variable is changing exceeding a little bit the level registered in the first equation. Compared with the second equation the other coefficients are still decreasing.

Final remarks

The economic crises had an impact on the public pension system in Romania too. Although the effects of these phenomena affected in a greater proportion the active labor market, the pensions suffered important decreases in a short period of time. The modest level of the pension, for many of the elders the only disposable income, is affecting the welfare of the elder social group.

The econometric analysis shows a positive correlation between the endogenous variable, the real pension, and the real wages in current period, employment rate, and unemployment benefits for experienced workers. Nevertheless, the effects of those factors aren't immediate and this fact is reflected in the number of lags for each exogenous variable taken into analysis.

The sign of the coefficient for the real wage variable changes at three lags and the pension will decrease in the current year if the level of the real wage from past three years increased.

In order to connect to the current economic problems such as high level of unemployment, that the majority member states in the European Union are facing we also tested the relationship between pensions and unemployment benefits and the results sustain the assumption of a positive correlation between them when it comes to experienced workers and a negative one when it comes to inexperienced workers.

Since there is an important relationship between the labor market and the retired generations it is necessary to rethink the actual public pension system in Romania.

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The customers borrowing behavior during the financial crisis

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Abstract. *The global financial crisis determined the transition of the Romanian banking system from excess of liquidity to deficit, namely from an aggressive lending activity to a significant reduction of credit growth rate. In our country, the high indebtedness rate, especially in foreign currencies, is the main vulnerable spot of the population sector. The main objective of this paperwork is to analyze factors that influence the customers in their decision to borrow in foreign currencies or in Ron. In this matter, it was used a regional econometric model for panel data in order to see Romania's customers borrowing preferences and to analyze if the crises have changed their behavior.*

Keywords: financial crisis; banking system; borrowing behaviour; regional economy.

JEL Codes: R1, G21, E5.

REL Codes: 11C, 11E.

Introduction

The banks practice of an aggressive selling in foreign currency made the evolution of the exchange rate the new obsession of the Romanians. The big percentage of debts in foreign currency amplifies the vulnerability of the indebtedness. The main problem is that the flow for the new loans approved by banks is also in foreign currency (2011-2012).

The National Bank of Romania showed in its reports that the mortgage loans and the consumer ones are approved in majority in foreign currency. Also, the “First House” program contributed to this evolution.

This paper tries to identify the factors that influence the consumers in their decision of borrow a loan in another currency than RON.

Macroeconomic background

At the end of 2008, money market was affected by the global financial crisis and the reduction of the external financing forced the banks to rethink their strategies. Although in the first half of the year was registered a rapid expansion of the credit for private sector, this decreased in intensity in the last quarter, reaching 33.7% in December.

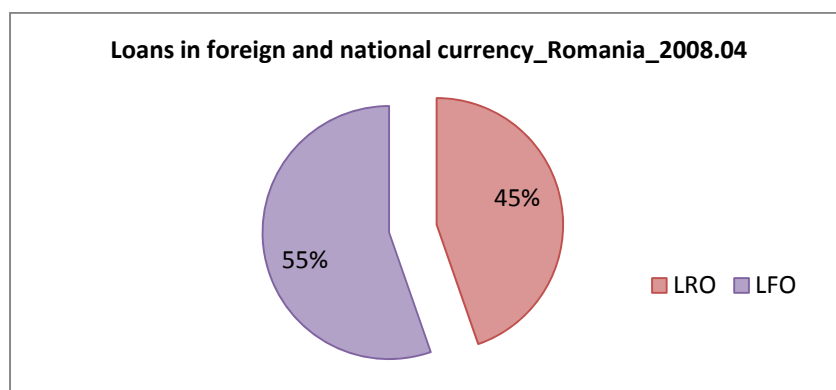


Figure 1. Loans in foreign and national currency in Romania at April 2008
(LFO-loans in foreign currency, LRO-loans in RON)

After analyses of the international financial crisis conjuncture and of the internal competition existing at the time, it can be said that the banking system during 2008 went from excess of liquidity to deficit, from excessive lending to significant restrain of the growth rate for credit and offers for deposits. In terms of credit growth rate, it was found an important reduction compared with 2007

but the deterioration of loan portfolio could not be avoided. This is why 2008 worth to be study.

National Bank of Romania (Annual Report 2008, p. 27) revealed that for retail sector the preferred loans are those on long term, in foreign currency and for consumption. Also, in 2008 the new offered products had promotional interest rates, indicating a delay of the debt impact in a future period.

The contagion effects of the external crisis revealed many of the unresolved internal problems of the Romanian economy and produced many changes in the labor market, not only at national level but at regional level, modifying the existing patterns. The majority of the counties in the same region seem to equalize their unemployment levels.

Reduced growth of household borrowing has become evident in the second quarter, reaching 63.3% compared to 70.9% in December 2007 (National Bank of Romania, Annual Report 2008, p. 39). First semester was dominated by the combined effect of extending the action of stimulating factors of supply and demand of credit and the emergence of inhibitory influences: increasing interest rates for new loans, massive indebtedness of the population, increasing costs with mother banks, the transfer of some credits in other countries. The demand for loans has been severely affected by the growth of interest rates for new loans but also to those already contracted, by RON depreciation and uncertainties on the evolution of the exchange rate.

A gradual decrease of the credit risk was registered and associated with RON loans substitution with those in foreign currency. Growth rate of the denominated component in Swiss francs (both for consumption and for housing) decreased drastically; banks almost dropped entirely the lending in this currency. However, the balance of foreign currency loans had higher growth rates relative to RON, mainly due to RON depreciation.

The international financial crisis has deepened and the authorized institutions in Romania had to intervene to maintain the stability of the banking system. No grant of public funds for credit institutions was needed as full responsibility returned to shareholders. Romanian banking system remained stable, with capitalization and solvency levels consistent with prudential standards.

In 2009 were registered variations in interest rates level, exchange rate, market value of land and buildings and the income reductions. Therefore, there has been registered a tightening of both supply and demand for loans and a deterioration of quality for banks credit portfolio.

The labor market was also affected by the economic crisis, reacting by an increase in unemployment to 7.8% and by the moderation of annual gross earnings growth that reached 1.9% in the last quarter of 2009. The private sector has made massive staff reductions especially in the first three quarters of

the year (the employee number reported by employers was compressed by about 400,000 people in 2009).

Some factors that influenced the restriction of the demand for loans were the decreased incomes, the uncertainty of job prospects and high interest rates. Because of tighter lending standards and terms the offer for loans suffered mainly, but reported a stimulating effect in the end of the year, when there were reduced the interest rates of loans in lei and Euro, especially because of the “first house” program. The most affected were the consumer loans, with a reduced growth to -5.7% (influenced both by RON and foreign currency).

Mortgages had a low annual growth of 27.8%, but remained positive and determined the growth of the percentage for this product in total share of population loans. The currency structure had no significant changes, the percentage of foreign currency in total share of population loans increased to 61.3%. The prudential effect was found mainly in short-term savings, less than two years, where growth in real terms was by 49.8%.

The 2010 challenges for the banking stability in Romania, as the quality of the loans portfolio and the high level of borrowing in foreign currency, continued to be the main discussed issues. From regulation point of view, was issued the Government Emergency Ordinance No. 131/2010 and the National Bank of Romania was involved in the drafting of it, concerning the Guarantee Fund of Deposit in the banking system that increases the provided coverage to 100,000 Euro/depositor.

The demand for loans in retail sector declined significantly, fact that is explained by the pessimism of the jobs prospects, while the banks offer reflected a prudential attitude. Annual growth rate of the contracted consumer loans reached -10.8% (according to the Annual Report of National Bank of Romania, 2010, p. 43) and mortgage loans registered a slight dynamic, this trend being a result of the implementation of the “First House” Program (a project between Romanian Government and NBR that offered smaller interest rates and tax cuts for customers that were buying their first home). The main component was the currency, the foreign currency loans registered a percentage of 64.8% and the share of mortgage loans in total loans recorded an upward trend.

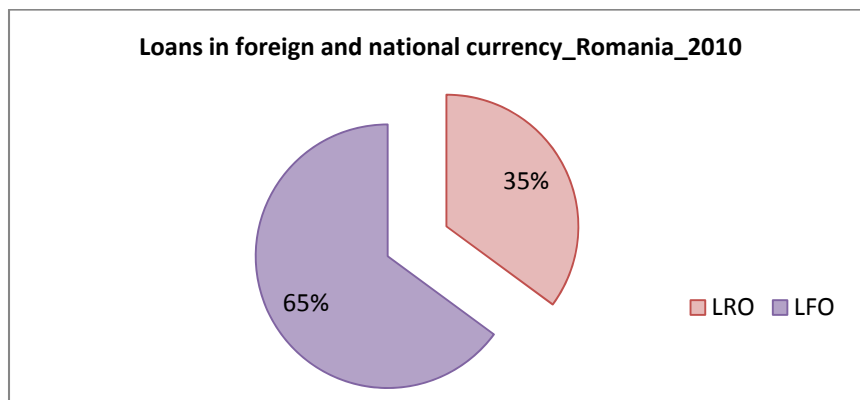


Figure 2. Loans in foreign and national currency in Romania in 2010
(LFO-loans in foreign currency, LRO- loans in RON)

Concluding, the lending activity in foreign currency represented in 2010 a big problem both in stock and flow. The National Bank of Romania closely monitored the evolution of lending activity and took the necessary measures to ensure appropriate conditions of risk. On mortgage loans for retail sector, the main vulnerabilities are the higher share of these products in banks' balance sheets and the risk of worsening the quality of these exposures.

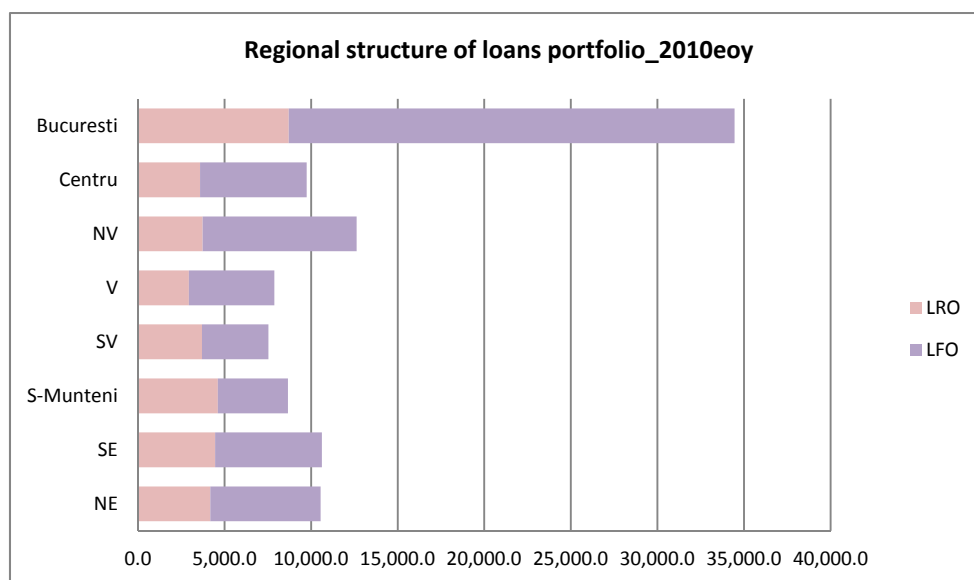


Figure 3. Regional structure of loans at the end of 2010

As you may see in the above figure, the territorial structure of the loans and deposits portfolio in Romania shows a clear preference of the population for loans in foreign currency (LFO). At the end of 2010, most loans were obtained in Bucharest (Romania's capital) followed by the North West Region. The same situation is kept in case of deposits portfolio structure but the preferred currency for these products is the local one.

Borrowing behavior – econometric analysis

It is now known that one of the main problems of the banking system in the crises period was the bad loans, especially those in foreign currency. This is the reason for which we are challenged to understand the factors that determined the customers to choose lending products in foreign currency. One explanation for this behavior is that banks develop marketing campaigns for loans in EUR/USD in order to have a better result for external balance. On the other hand, customers ask for loans in foreign currency because the interest rate is smaller than for RON products and because the inflation volatility is even higher than exchange rate fluctuations.

Starting from this hypothesis, there were considered for the econometric analysis the following factors: balance of loans in foreign currency in retail sector (LFO_), balance of deposits in foreign currency with maturity term and redeemable at notice (DFO_), balance of deposits in local currency with maturity term and redeemable at notice (DRO_), medium net wage (SMN_) and the unemployment rate (RS_). All the variables used in the model are expressed in RON.

In 2008 the financial crises started to be a certain thing also in Romania. For this model it was used a panel data with monthly frequency for the period between May 2008 and December 2010. The panel was build using data for all the 41 counties in Romania and the total number of observations in this model was 1312.

The first regression obtained after applying the panel least squares method is the following one:

$$\text{LOG(LFO_)} = 0.91295 - 0.62468 \times \text{LOG(SMN_)} - 0.59537 \times \text{RS_} (-1) + 0.75434 \times \text{LOG(DFO_)} \quad (1)$$

Dependent Variable: LOG(LFO_)

Method: Panel Least Squares

Date: 11/21/12 Time: 20:05

Sample (adjusted): 2008M05 2010M12

Cross-sections included: 41

Total panel (balanced) observations: 1312

LOG(LFO_)=C(1)+C(2)*LOG(SMN_)+C(3)*RS_(-1)+C(4)*LOG(DRO_)+C(5)*LOG(DFO_)

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	9.206911	0.649927	14.16606	0.0000
C(2)	-0.736128	0.080611	-9.131888	0.0000
C(3)	-0.326583	0.083395	-3.916117	0.0001
C(4)	0.279564	0.039898	7.006981	0.0000
C(5)	0.576322	0.027458	20.98909	0.0000
R-squared	0.807021	Mean dependent var	20.45182	
Adjusted R-squared	0.806431	S.D. dependent var	0.925291	
S.E. of regression	0.407096	Akaike info criterion	1.044267	
Sum squared resid	216.6050	Schwarz criterion	1.064005	
Log likelihood	-680.0388	F-statistic	1366.443	
Durbin-Watson stat	0.737715	Prob(F-statistic)	0.000000	

Even so, the results generated by the first estimation were not complete. The borrowing decision may also be influenced by the money placed in current account or in deposits by the customers. This is why, it was also generated the following equation:

$$\text{LOG(LFO_)} = 0.90691 - 0.73612 \times \text{LOG(SMN_)} - 0.32658 \times \text{RS_}(-1) + 0.57632 \times \text{LOG(DFO_)} + 0.27956 \times \text{LOG(DRO_)} \quad (2)$$

Dependent Variable: LOG(LFO_)

Method: Panel Least Squares

Date: 11/21/12 Time: 20:20

Sample (adjusted): 2008M05 2010M12

Cross-sections included: 41

Total panel (balanced) observations: 1312

LOG(LFO_)=C(1)+C(2)*LOG(SMN_)+C(3)*RS_(-1)+C(4)*LOG(DRO_)

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	6.319964	0.734217	8.607755	0.0000
C(2)	-1.088169	0.091136	-11.94001	0.0000
C(3)	0.480300	0.085541	5.614866	0.0000
C(4)	1.054431	0.017489	60.29147	0.0000
R-squared	0.741975	Mean dependent var	20.45182	
Adjusted R-squared	0.741384	S.D. dependent var	0.925291	
S.E. of regression	0.470551	Akaike info criterion	1.333218	
Sum squared resid	289.6147	Schwarz criterion	1.349008	
Log likelihood	-870.5909	F-statistic	1253.761	
Durbin-Watson stat	0.511957	Prob(F-statistic)	0.000000	

The coefficients maintain their effect on the foreign currency loans and the coefficients have almost the same value in both equations. Also, it must be said that the probabilities associated to the coefficients are 0 and the R-squared is around 0.80 for each case. Consolidated, the results are:

Table 1

Results of the econometric model

Equation	R-squared	C(1)	C(2)	C(3)	C(4)	C(5)	DW
(1)	0.799	0.912	-0.624	-0.595	0.754	-	0.74
(2)	0.807	0.906	-0.736	-0.326	0.576	0.279	0.73

Because they are provided from external sources of the mother banks, the foreign currency loans tend to have an inertial importance. They are positive correlated with the deposits in RON but also with the savings accounts in foreign currency. One explanation for this is the advance asked by banks when customers contract a mortgage loan. So, this correlation might show the fact that the saving decision could be based actually on a borrowing intention. Even

so, it is possible to need a longer term for RON deposits in order to offset exchange rate fluctuations.

In Romania, an important volume of foreign currency loans is destined to be used for home construction/acquisition. In the rural area (dominant in Romania), many houses are built by the householders and not contracted from a builder. So, if the medium wage will increase, the people will not ask for additional loans but they will pay on installments, considering the stage of the constructions or they will even try to build without borrowing money from the bank. This is the reason for which, analyzing the results, it is observed that the average wage (SMN_) has a negative effect on lending in foreign currency.

Also, it must be said that in Romania the vast majority of people get their income in local currency and exchange rate fluctuations (especially in terms of the ratio RON/EUR) is the main concern of those who take foreign currency loans. Most unperformed loans were based on inability of the debtors to pay the rates in foreign currency considering the trend of depreciation of the domestic currency.

The same negative influence was obtained in case of the unemployment rate. This is a common sense result considering the eligibility criteria asked by the banks regulations and, of course, because of the impossibility of accessing loans in a period when no wage is obtained.

Conclusions

After more than three years of economic fluctuations generated by the global financial crisis, the population perceives loans as riskier but even so, the foreign currency products are preferred. The causes are diverse (generated by the demand and supply) and the borrowing conditions seem to be the reason for this aspect. The interest rate is smaller for loans in EUR/USD and the individual indebtedness rate is on a reduced level.

The weak point of borrowing in other currency than that of the wage is the volatility of the exchange rate. It is well known the situation of the CHF loans and the boom of bad loans generated by the appreciation of this currency.

For this reason, NBR proposed in August 2012 a new regulation in order to condition the bank to offer only loans in RON and to ask for special condition in case of foreign currency products. In this matter it will try to make a better loan portfolio and will reduce the possibility of default.

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Foreign direct investment and economic growth in Romania

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Abstract. *FDI issue was and is heavily debated, therefore, in this area there are concerns both at nationally and internationally level. With the hypothesis that large flows of foreign direct investment determines a number of benefits for the economy of recipient country, in recent years, global FDI flows rose eminent. This paper illustrates the trend of FDI, their structure and evolution, thus anchoring our economy among other European countries in terms of volume of FDI attracted.*

Keywords: economic growth; foreign investment; gross domestic product.

JEL Codes: E22, E27.

REL Codes: 8E, 10F.

1. Introduction

Discussion on foreign direct investments in academia, but also in political and public environment associates capital flows with a number of favorable results for welcoming countries. Thus, foreign investment becomes the essential engine of economic development strategy and modernization, of income growth and employment, especially for developing countries, emerging and in transition economies.

Increased attention to foreign direct investment is justified by the fact that they are seen as the main factor of stimulating the economic growth. They are part of the financial flows class that do not generate external debt and are considered as a complement to domestic investment, and also a significant funder of the current account deficit. Thus, it is clear that foreign direct investment is preferable to other sources of capital, taking into account that capital outflows involved in – repatriation of profits – depend on the economic results achieved by answering the specific interests of the investor and the state interested in growth. Worth mentioning are the indirect effects that FDI manifest in the local economy, for example, boosting human capital formation, technological externalities, access to foreign markets. These are listed in the new growth theory as a driver of economic growth in the long term. Researchers turned their attention to the link between FDI and economic growth, a number of empirical studies aiming if investments positively influence growth. They suggested that the positive relationship is influenced by certain economic conjuncture.

Within this theme, I will try to highlight the role and effects of foreign direct investment, our country necessity to attract foreign direct investment, which has a significant influence on the modernization of the Romanian economy. I think that attracted investments should be directed towards those sectors that contribute to sustainable economic growth – agriculture, tourism, manufacturing – and not towards speculative sectors such as real estate or retail.

2. Literature review

International Monetary Fund defines foreign direct investment as a “long-term investment relationship between a resident entity and a non-resident entity, which implies that the investor exerts a significant influence in the management of the investee company. Are considered direct investment: share capital and reserves accruing to an investor who owns at least 10% of the share capital of a company, credits between the investor and the enterprise in which he invested and reinvested profit”. According to the authors Bird, Rajan (2002), foreign

direct investment have horizon for a long time and they are more stable and have a limited mobility, representing more than simply a transfer of capital.

Over the years, there have been a number of empirical studies which have shown that between high levels of GDP and FDI flows there is a positive link, but this link is not available in all regions. It is necessary to remember that the impact of FDI depends to a large extent on economic conditions in the host country, the level of saving and investing in the receiving country, how that investment enter in the economy – whether in the form of new investment greenfield type or form of mergers or acquisitions, but also country's ability to govern foreign direct investment.

In the neoclassical model, FDI contributes to economic growth by increasing investment volume and increase their efficiency, while in the endogenous model foreign direct investment improves the dispersion technologies from developed economies towards recipient countries (Borensztein et al., 1998).

Authors such as Borensztein, De Gregorio and Lee (1998) consider that FDI has a positive growth effect when the receiving country has a labor category with a high level of education, being able to exploit spillover effects that FDI involves. Thus, a higher level of human capital skills may induce higher rates of growth at a given level of FDI (hypothesis supported by their empirical results). The authors state that countries may require a minimum level of human capital to achieve positive results in FDI.

Instead, Blomström, Lipsey and Zehan (1994) do not consider that the level of education would be crucial juncture, they advocate for the idea that FDI has a positive effect only if the host country is sufficiently rich.

Bengo and Sanchez-Robles (2003) argue that FDI is positively correlated with economic growth, but they call into question the fact that host countries need human capital, economic stability and liberalized markets in order to benefit the effects of flow FDI on long-term. In turn, Alfaro (2003) reinforces the hypothesis that FDI promotes economic growth in economies with sufficiently developed financial markets.

In 2000, Carkovic and Levine arrive at the same conclusion, but Balasubramanyam, Salisu and Sapsford (1996) note that the liberalization of trade is crucial for achieving positive effects of FDI. The study conducted by Balasubramanyam (1996) reached significant results, which are based on the assumption that FDI is more important for economic growth in countries promoting exports than in those that encourage imports. In other words, the impact of FDI varies depending on the specific of the country and the trade policy can affect the role of FDI in economic growth.

The table below provides a summary of studies on the causal link between FDI and economic growth:

Table 1

Foreign direct investment and economic growth

Authors	Aim of the research	Results and conclusions
Bloomstrom, Lipsey and Zejan (1994)	Effects of FDI on economic growth	positive, but depends on income per capita in the host country
Balasubramanyam, Salisu and Sapsford (1996)		positive effect if the country has an export-oriented strategy and negative for import substitution strategy oriented
De Mello 1997		positive, for high-income countries
Borensztein, Gregorio and Lee (1998)		positive, but depends on the level of education
Bosworth and Collins (1999)		positive
Carkovic and Levine (2002)		positive, if the economies have financial markets highly developed
Bengoa and Sanchez-Robles (2003)		positive, but depends on the economic conditions of the host country
Alfaro(2003)		the effect depends on sector of investment: positive for industry, negative for primary sector and inconclusive for the service sector
Hansen and Rand (2004)		positive effect
Kholdy and Sohrabian (2005)		no effect

Source: own processing.

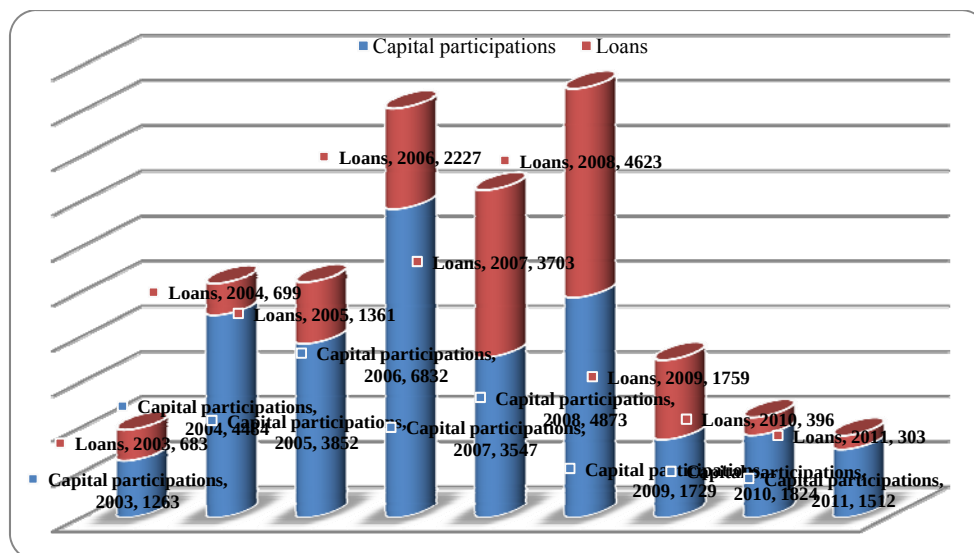
Previously presented studies highlight the importance of certain conditions for FDI to have positive effects: a minimum level of technology and macroeconomic stability, favorable business environments, a certain level of education, even in sectors where investments are held may influence the relationship FDI – growth. Analysis of the effects of FDI on economic growth cannot be considered complete, there is no universally conclusion accepted. Different results obtained in specific countries are influenced by a number of factors examined, analyzed periods, economic and technological conditions of the host country. But in general we can say without any doubt that FDI creates and develops business, encourage employment. As mentioned earlier, when it is approached the connection foreign investment – growth, we assumed that investments are those that affect growth. Specialists consider that macroeconomic results achieved in periods of economic expansion are influenced by the size of investment flows attracted in that period. 60's – twentieth century marked the most intense periods of foreign investment activity and coincided with the sudden increase of macroeconomic indicators, especially GDP. In France, England, USA, GDP grew between 1966 and 1970 by 25-30% and even 40% in Japan. In the case of developing countries, in 1970-1980, GDP grew annually by 10.1% in South Korea, 9.5% in Egypt, 8.2% in Singapore and Brazil. In the 80-90 decade, GDP grew annually by 10.2% in the Czech Republic, South Korea – 7.6%. Between 1990-1995, in the midst of globalization, economic growth rates in countries that have attracted a

considerable volume of FDI were greater: China – 12.8% annually, Malaysia and Singapore – 8.7%. But this is not always the case. The best example is our country, which, although recorded high growth rates, this was not attributed to the level of FDI attracted, since in 2005, the share of FDI in GDP was around 24.2% (below the EU average, 31.7%).

3. Dynamics of FDI and GDP in Romania during 2003-2011

Romanian business environment requires economic freedom and friendly taxation to entrepreneurs and especially for foreign investors. Among countries of the world was developed a fierce competition to create favorable conditions for attracting foreign direct investment. Thus, international experience has shown that the main condition for attracting foreign investors is improving the investment climate.

When referring to the dynamics of FDI in Romania, we can say that since 2003 they recorded a positive trend. This is explained primarily due to increased FDI flows from the EU to Romania (Romania was approaching the adherence moment), but also due to the economic performance of our country. This increase can be explained by the fact that foreign investors viewed profit opportunities, relatively large, in the Romanian economy, either as greenfield investment or through acquisitions – mergers. In the chart below it is shown the evolution of FDI flows during 2003-2011:



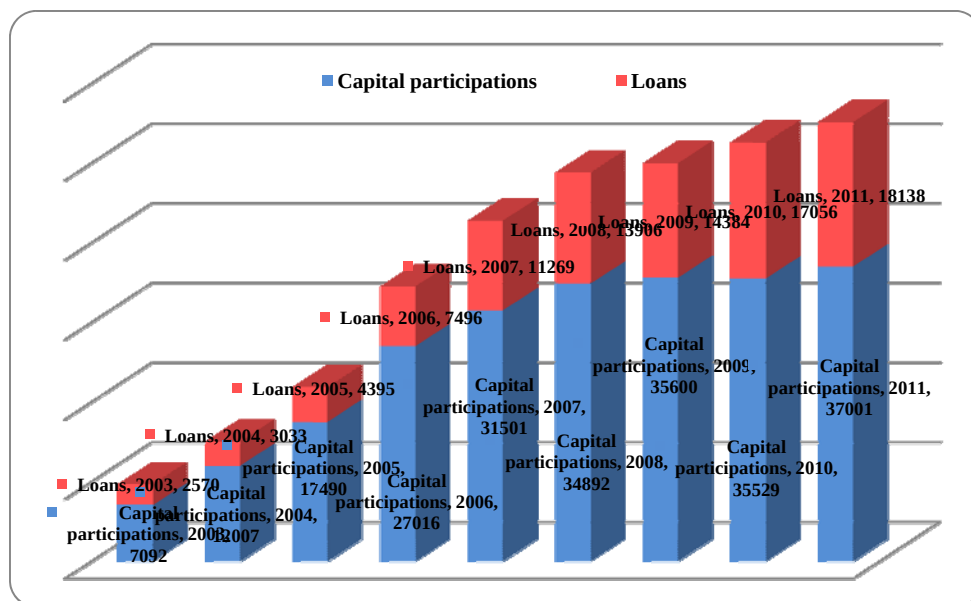
Source: own processing based on data provided by NBR

Figure 1. Evolution of FDI inflows during 2003-2011 (EUR million)

Evolution of annual FDI flows (capital participation and loans) in Romania between 2003-2011 can be divided into the following subcategories:

- 2003-2006: during this period the total flows of FDI registered a steady growth from 9,059 million Euros to 1.946 billion Euros, increased by 78.51%. The positive trend was due to large privatizations registered in Romania in banking and industrial sectors (oil and petrochemical, metallurgy, machine building);
- 2007-2008: privatization in the banking sector continued, and 2008 marks the maximum amount of FDI attracted in Romania, their value being 9,496 million Euros;
- 2009-2011: FDI volume has known a dramatic drop compared to previous years, reaching 1,815 million Euros at the end of 2011, this decrease being due to the impact of economic and financial crisis.

In the next graph it is shown the evolution of FDI balance during 2003-2011:



Source: own processing based on data provided by NBR.

Figure 2. The evolution of FDI balance during 2003-2011 (million euros)

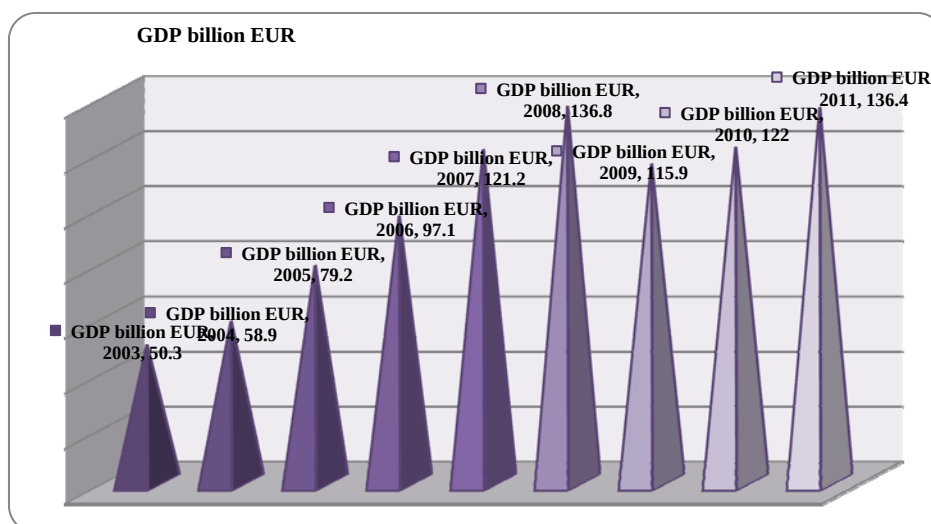
Throughout the period under review, 2003-2011, there is a continuous increase in foreign direct investment balance, but since 2008, when economic and financial crisis was felt on the Romanian economy, we can notice that the balance of cumulative FDI increases very slow. Also, it can be seen that loans increased during the period, indicating a negative situation, leading to the idea

that foreign companies have significantly reduced or even suspended their net investment income realized, since some of these companies were significantly affected by losses.

At the end of 2011, the balance of foreign direct investment reached 55.139 million Euros, 4.9% more than the balance of the previous year. According to information provided by the National Bank of Romania, foreign direct investment has been directed towards areas such as manufacturing (31.5% of total), financial intermediation and insurance (18.2%), trade (11.4%), construction and real estate (10.7%), information technology and communications (5.4%). In terms of country's origin, first four positions are occupied by the Netherlands (21.7% of total FDI stock at the end of 2011), Austria (17.5%), Germany (11.4%) and France (9.1%), unchanged positions since 2009.

Regarding the content of economic growth there have been emerged a variety of views leading to a series of definitions of it. Growth expresses those changes that occur in a given time horizon in a certain space, resulting in increasing size of macroeconomic results, in conjunction with the factors influencing its size, including economic and social environment in which it occurs. This can be measured through synthetic indicators that are significant in assessing a country's economic growth. Best measure of economic growth is GDP.

The following chart illustrates the upward trend of this indicator over the entire period analyzed, 2003-2011:



Source: own processing based on data supplied by NIS.

Figure 3. Evolution of GDP in the period from 2003 to 2011

This macroeconomic indicator has known an impressive growth during 2003 – 2008. 2008 represents the year when the GDP amounted reached 136.8 billion euros, the maximum value, a period which coincided with the increase of foreign direct investment. Since 2009, both variables decreased significantly, as a consequence of the financial crisis that affected the whole world.

Economic recovery in 2011 is due significantly to the sector of industry, exports and agriculture. Relative low increases of workload occurred in areas such as construction, trade, hotels and restaurants.

4. The impact of FDI on economic growth

In order to analyze the influence of FDI on economic growth in the period 2003-2011, we used an econometric modeling using E-views 7.1 software. Thus, I will follow the relationship between FDI and GDP, where FDI represents the independent variable and GDP is considered the dependent variable.

Table 2

Economic indicators used during the econometric study (billion Euros)

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011
FDI	9.66	15.04	21.88	34.51	42.77	48.79	49.98	52.58	55.13
GDP	50.3	58.9	79.2	97.1	121.2	136.8	115.9	122	136.4

Source: own processing.

The econometric model used to determine the influence of FDI on economic growth in the period 2003-2011 involves using a simple linear regression : $Y = \alpha + \beta \times X + \varepsilon$, where:

Y = dependent variable, meaning PIB;

α = free term;

β = independent variable parameter;

X = independent variable, meaning ISD;

ε = error term of equation.

Below are the results of the calculations based on program EViews 7.1.

Table 3

Parameter estimation obtained in E-views

Dependent Variable: PIB

Method: Least Squares

Date: 11/21/12 Time: 12:58

Sample: 2003 2011

Included observations: 9

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	34.72487	6.625917	5.240765	0.0012
ISD	1.832232	0.165065	11.10007	0.0000
R-squared	0.946241	Mean dependent var		101.9778
Adjusted R-squared	0.938562	S.D. dependent var		32.46266
S.E. of regression	8.046451	Akaike info criterion		7.201469
Sum squared resid	453.2177	Schwarz criterion		7.245297
Log likelihood	-30.40661	Hannan-Quinn criter.		7.106889
F-statistic	123.2115	Durbin-Watson stat		1.808076
Prob(F-statistic)	0.000011			

Consequently, the regression equation becomes:

$$\text{PIB} = 34.72487 + 1.832232 \text{ ISD}.$$

The value of the correlation coefficient between the two variables, $R = 0.946241$ is close to a value of 1, which indicates that between GDP and investment values there is a strong correlation, meaning that if there is a increase in the value of investments, there is also an increase in GDP.

Adjusted coefficient of multiple determination ($R^2 = 0.938562$) reveals that 93.95% of GDP is influenced by the value of investments. Since credit worthiness indicators have values close to 1, we can say that the simple regression model was well chosen.

Because $F = 123.2115$, and Prob (F-statistic) is 0.000011 (a lower value than 0.05) this model is considered to be valid.

Estimated coefficient for FDI is properly considered (accepting the null hypothesis) and has statistical significance, the t-statistic value (11.10007) is well above the critical one and standard error values are small (0.165065).

Durbin Watson statistic test is a statistical test that reveals the first-order correlation between errors. If the value of DW is around 2 (in our case $DW = 1.80$) then the errors are not correlated.

5. Conclusions

Thus, although the number of statistical observations is relatively small, we appreciate that the model constructed is representative to illustrate, at the macroeconomic level, the link between foreign direct investment and economic growth. Regarding the time period considered, the change in FDI inflows has a moderate impact on changes in the level of economic growth.

The phenomenon studied, namely the impact of FDI on GDP, considered the best indicator that characterizes growth causes a positive relationship between these two macroeconomic indicators. Thus, GDP is sensitive to changes that may occur over a period of time, but growth depends to a large extent on foreign investment flows.

Beyond the initial macroeconomic impulse, FDI has a positive impact on economic growth, improving the total productivity and, more generally, effectiveness of resource use in the recipient economy. Many experts have said that the Romanian authorities have not conducted enough activities to attract foreign investors and the large investment that our country has managed to attract during 2006-2008 was due to favorable conjuncture related to the European Union adherence. According to data published in a report by UNCTAD on the value of investments attracted, Romania ranked 10 at the end of the year 2010 and the largest share of this investments were held by greenfield investments.

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The image of the economic institutions in the context of global economy

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Abstract. *In the context of the current economic crisis that still makes its presence felt and the economic activities of the economic institutions that have already overcome the national borders trying to capture new markets, the image of these institutions play an increasingly important role. Therefore many economic institutions are trying to build a positive image in the business environment, image that can be a competitive advantage in the market, even decisive. It can be seen that more and more companies begin to invest an increasingly higher amount of money in their image and they start to pay more attention than in the past to the relationship with employees, customers, business partners, public institutions, etc. Thus we can see that image plays a key role in the current economic development, on that image depends the success or failure of many business firms. Attracting foreign investment in our country often speaks of the image that we have created, situation in which Romania can be seen as a country in that you can invest or can not invest.*

Keywords: image; economic institutions; competition; market; customers.

JEL Codes: M00; M3.

REL Codes: 5A; 14A; 14D.

Introduction

At present the image of economic institutions play an important role in the global economy. Given that all market players try to gain a competitive advantage against the competition, a positive image in the eyes of the customers can lead to a performance advantage.

From the moment that various economic institutions began to work outside their countries of origin, it is important to take into account any possibility of exceeding the major competitors in the market (while the competition has become more fierce).

In the current economic climate economic institutions image is very important and worth a big attention. Who manages to create a favorable image and finally get to build a brand awareness will have a much greater advantage than others in terms of market supremacy.

Thus, we can see that many brands try to maintain on the market or to capture more of the market by using various image-building strategies:

- Promoting products and services offered by the economic institutions or promoting the image of that institution (in this sense there will be a well-established budget for advertising, publicity, public relations). In this case (depending on the position that the company is holding on the market and its reputation) can be used an aggressive or defensive promoting campaign.
- An attitude and a behavior in the communication with the external environment and domestic economic institutions through which the companies can identify themselves with their own clients.
- A strong relation between price and quality of the products close to the customers expectations.
- Providing quality products and services (it is very important and often very difficult for the economic institutions to maintain the same quality of the products and services).
- A product policy through which economic institutions manage to keep their loyal customers (each time they have to come up with a new product or service trying to keep the same quality or even improve it).
- A price policy adapted to the current economic context, the requirements of the target customers, and also adapted at the requirements of the market on which the economic institutions activate (depending on price strategies that the competitors are using).
- An efficient internal communication strategy and an organizational culture based on satisfying both customers and their employees. When the economic institution have some weaknesses in the internal communication they will be seen out in the quality of the products and

services. Very important is the way in which economic institutions can motivate employees, because they are in many cases the institution interface with the customer. If employees are well trained and motivated they will have a high contribution in creating a positive image of the company, organization, institution with the external public (customers, business partners, suppliers, media).

- A permanent cooperation with the media. It is known that the media is like an image multiplier and in this situation can lead to a competitive advantage by creating a favorable image of that company.
- A high transparency in communication with the external environment can often help economic institutions to create a positive image and a competitive advantage in the market, which can often be decisive.

When economic institutions have created a good image in the market it is important that they continue to invest time and resources in that image because the target customers can be attracted by the competition. Often not known is the case when you can get first on the market quite easy, but it is more difficult to keep yourself in that position.

The image of the economic institutions

Over time we noticed that we live in a society and in a global economy where economic institutions, and the products and services offered for sale by them exists and survive on building a strong identity and how this identity is perceived by the target public. How economic institutions are perceived by the external environment (customers, competition, business partners, suppliers) and internal environment (employees) is the image of this institutions. In general the main tools through which we are trying to build these perceptions are often marketing and economic communication.

Broadly viewed the image can be defined as the overall perception that an individual has towards an object. In the same time the image of the economic institutions is a multitude of representations of feelings, attitudes, ideas, beliefs, more or less explicit, more or less conscious, more or less deep with a emotional content with a more or less importance, more or less dense.

The image is the result of the communication process, reaching to have a strong influence on human behavior. It is very important for the economic institutions to know the image that the customers have about the products and services offered for sale, because image came to influence customer behavior. Thus, many times consumers get to decide whether to buy a product based on how they perceive the image of the company that sells it.

The image of the economic institutions can be seen as a function of organizational signals that cause the perception of stakeholders on the actions

of an organization (Riordan et al., 1997, p. 401). That's why the signals sent to the market by an economic institution in the global economy can have a strong influence on how it is perceived by the target customers, competition, business partners, but also by employees. In this sense each signal that is sent by an economic institution is well calculated and analyzed. In this case we speak of signals such as: involvement in social responsibility (signal can transmit, for example that the company wants to be more involved in helping the less developed regions); aggressive promotion campaigns or less aggressive (signal that can transmit that company intends on keeping the market share or extending the market share); quality products and customer service (which can transmit the signal that the firm intention is to focus on customer satisfaction); prices of products or services (through this signal it can be seen the location of the firm on the market and customers who want to address); a collaborative relationship with the media (signal that can be translated through communicational transparency in the relations of the economic institutions with the media and thus the target customers).

Nowadays when we discuss about the economic institutions image we take into account their identity. The identity of the economic institutions can be interpreted in two distinct levels: implementation of the visual identity tactics of the organizational symbols (logos, trademarks, advertising, marketing materials, websites, etc.) and strategic vision of the economic institutions behavior and the organizational culture that is the center of the economic institutions performance (Camara, 2011, p. 48). In the literature most definitions are saying that the identity of economic institutions raise from the organizational culture, values and behavior of firms plus their visual appearance (Melewar, Jenkins, 2002, pp. 76-90). It is very difficult in the current economic climate for economic institution to survive if they are not taken into account all aspects of their identity that in the future will lead to a positive image among the target public. For this reason, in addition to visual appearance (logo, colors representative), many economic institutions have come to focus on developing an organizational culture. Organizational culture is to create collective standards of thinking, values, norms, attitudes, beliefs and habits among employees. It has a very important role in the development of labor productivity among employees and can also achieve efficient communication relationships that will better perform their tasks. Thus, it can be seen that the role of employees in identity formation of the economic institutions and then their image is very high and therefore companies that wants to succeed in the market have to invest in creating the best possible working conditions for their employees, but also they have to invest in the employees training and motivation.

Reputation that reaches some point to have an economic institution is an issue worthy of consideration when we create the image of an economic institution. Reputation is measured in terms of how economic institutions work is perceived by customers, employees, suppliers, business partners, competitors and communities which it operates in (Camara, 2011, p. 49). Reputation is crucial in economic institutions ability to attract customers, employees, and a large number of investors. It is also important in reducing transaction costs and improving relations with suppliers and local authorities, but also has an impact on marketing strategies such as premium pricing (Camara, 2011, pp. 49-50). A good reputation through quality products and services and a policy of effective communication with the customer leads to higher prices setting. Thus, the reputation of economic institutions can be defined as the way in which these institutions are perceived by the external environment and internal representatives plus the experiences they had when they interacted with a specific economic institution.

In the case of the economic institutions image and reputation we can speak about a difference between the two terms. In this way it is possible to form an opinion about the image of an economic institution without coming into direct contact with it, but in the case of reputation there should be an experience in terms of interaction between customers and companies (Chun, 2005, pp. 157-179). An economic institution can have a good reputation but still have old fashioned image or, conversely, economic institution can have a powerful image that has developed through its visual identity and marketing program, but it is not accompanied by a convincing reputation (Bennett, Gabriel, 2003, pp. 276-289).

These issues are valid when referring to the image that the economic institutions have only visually with the promotion strategies they adopt. In case we discuss in general terms about the image of economic institutions we can take into account both their identity and reputation in developing their general image that they have on the market. A negative reputation can lead to the creation of a negative image.

In current market conditions to survive competition increasingly fierce, economic institutions must send simple messages, catchy and persuasive messages, messages that together with a good reputation can help to develop a positive image.

The image of the economic institutions in the context of global economy

From an economic perspective, globalization is in antithesis with the economic nationalism and the protectionism. The global economy is a free market economy that is close to the neo-liberalism. The global economy has arisen since the development and innovation of communications, infrastructure and vehicles.

There are four aspects that relate to economic globalization indicates four types of cross-border flows: flows of goods/services, eg free trade, flows of people, capital and technology (sursa: <http://ro.wikipedia.org/wiki/Globalizare>).

In the case of global economy the trade takes place between economic institutions in different countries and regions located at large distances, distances that in this moment no longer represent an obstacle in conducting trade.

In this sense it can be seen that in the global economy (where there is a huge competition in the market) the economic institutions image and how they are perceived by the internal environment (employees) and external environment (customers, competitors, suppliers, business partners, local institutions) plays an important role and can make a difference in many situations.

In the global economy where competition is felt in every field of activity is necessary for economic institutions to be always one step ahead of main competitors in the market. In this situation it is taken into account a market research through which you can explore and analyze customer behavior and how they perceive the economic institutions (the image which they have created among the target public). Also, do not lose any company should know the main signs announcing the loss of market share, the perception of a negative image of the company, and loss of respect (Rogojanu, Badea, 2009, p. 141).

Regarding building a competitive advantage in the market through the image should be taken into account that it can start from employees of the economic institutions. In this case should be built a organizational culture that helps employees to give a high yield activities plus a high quality of goods and customer service. However, in a increasingly high competition, managers must demonstrate resourcefulness in the decisions they make because they can provide that advantage they need in the market. In this context, managers must take into account that may be useful to practice a corporate culture different from conventional (Rogojanu, Badea, 2009, p. 149).

Regarding creating a competitive advantage in the global economy must be taken into account as an essential factor the economic crisis that is still leaving traces at international level. Because of this, economic institutions seek to maintain or improve their image through different strategies that are not expensive. In this first example is the case of economic institutions that promote via the internet (the costs in some cases are zero) on certain social networking sites. Thus, it can be in direct contact with the customers realizing a continuous interaction that can help shape a positive image and hence to gain new customers.

Another example is the use of the promotion techniques known as BTL (Below The Line) or more exactly the BTL advertising. The BTL Advertising

(Below The Line) is a form of advertising that uses other type of media than conventional media or uses conventional media in an atypical way (Nicola, Peter, 2001, p. 17). In the case of BTL advertising there are two ways through which it can act: events and supports/objects. When using this form of advertising compared to traditional advertising techniques ATL (Above The Line) we can speak about much lower costs of financing campaigns. In the case of ATL advertising compared to BTL advertising there are used only conventional channels of communication media (radio, television, newspapers, cinema and street display). By using the BTL advertising, economic institutions come to build a direct relationship with certain groups of public defaulters.

Another strategy to improve the image of economic institutions are social responsibility campaigns. This helps to build a positive image among the target public and is touching the sensitive part of the target public that can choose from such a campaign to buy the assets of a company at the expense of another. In social responsibility campaigns economic institutions are involved in various fields such as environmental protection (planting trees and recycling paper) to help develop local communities (through various donations), helping people with disabilities, etc. Could be observed in this regard the increasingly higher involvement of economic institutions in such campaigns.

In the present the economic institutions are increasingly turning to strategies that are promoting their image that are less expensive. One can say that in the global economy context the economic institutions had become very pragmatic in building and promoting their own image.

Romania's image in the context of attracting foreign investment

In the moment we discuss about the country brand it is important to analyze the way the foreign investors are seeing the image of Romania. Thus, the image that a country can have from the economic point of view it can positively or negatively influence the foreign investors. It is normal that in the current economic context the potential foreign investors to take every precaution on the money they are going to invest. In the global economy investors will seek to conduct business in those countries that they will have the most benefit.

It is well known that Romania has tried to attract investment in tourism and especially is trying to build a positive image of our country as a tourist destination. Thus, tourism marketing has been giving customers full and responsible information that led to the enhancement of natural and cultural environment of the areas visited and the degree of satisfaction of tourists (Minciu, Hornoiu, 2009, pp. 34-43). However, although Romania has a high

tourism potential, the image we have in this area until now gives us a competitive advantage not too high compared to other countries with the richest tradition in the sector. For this reason the number of foreign tourists and foreign investors in this area is still quite low. To return to international tourism competition is required along with general and specific infrastructure development, creating new tourism products, modern and original; in this context, developing and promoting ecotourism through appropriate arrangements, as well as through increased marketing activity can provide Romania multiple opportunities for affirmation as the main European tourist destination (Hornoiu, 2009, p. 212). Thus, our country can gain more in terms of image in this area, and receipts may come to represent a significant percentage of GDP (unfortunately revenues to GDP in this area are anywhere from 1.4%).

Besides tourism, Romania should try to attract foreign investment in other areas. That's why it should be necessary to make an analysis of the economic image of our country:

- Labour force in Romania is quite cheap compared to other countries in the region. This can be seen as an advantage in attracting foreign investment that can bring a more positive note to the image.
- Infrastructure. Unfortunately this is a segment where our country is not situated very well and is losing a lot in terms of the image that the foreign investors have about our country.
- Corruption Perceptions Index. In this case Romania's image has suffered greatly because we are ranked 75 out of 183 countries analyzed in 2011 with a score of 3.6 points out of 10 and we are ranked 25 of the 27 EU Member States (<http://www.transparency.org.ro>).
- Stifling bureaucracy often hinders economic activities in optimal conditions, which unfortunately makes Romania's image to suffer in front of potential investors.
- High fiscality and the continuous changing in this area makes foreign investors to be very uncertain whether to invest or not in Romania. The large number of taxes (116 in our country compared to 16.97 EU average) makes the activity of economic institutions very hard.
- The country rating. In this case, the rating agency country risk, Coface has maintained its rating B of Romania (source: www.ziare.ro). Regarding rating for long term debt and currency RON rating agency Moody's gave the rating Baa3 with low investment (source: www.mediafax.ro). Hence it can be concluded that Romania has a negative image in attracting foreign investment.

From the above analysis we can see that Romania's image is not good for attracting foreign investments as confirmed by the low number of foreign investments lately. In 2011 there was a net inflow of foreign investments amounting to only 1.185 billion Euros according to data from the NBR and NIS.

Conclusions

Nowadays it can be seen the importance that the image of economic institutions have in a global economy with strong competition where every detail can make the difference. For this reason it is very important that all economic institutions that want to maintain on the market to consider all factors that help to build their image.

Although currently we still discuss about the economic crisis, the economic institutions must invest their money in the image that they have, and it is true that nowadays the money will be lower and that why promotion strategies chosen will be with a much lower financial implications, but perhaps more effective. In this situation market players must show very much pragmatism, originality and innovation.

Regarding the image the countries have created in terms of attracting foreign investors is very important for the future to find solutions for Romania to attract more foreign investment than today.

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