

Psychologized economicity

*“What we are will in fact appear to us as a shadow,
while that which represents the human nature’s avatars in the fight to understand
its essence will take the form of reality.”*

Macroeconomics lingers ambiguously between the two limitations of its epistemic condition: the psychological drive of the functions and the politically filtered finality. The interval of these limitations presents such a diversity of forms of explanation that a focused object is attributed with often contradicting functions. It is a total perversion of the primary elements of existence.

The solutions to the problems of wealth, from production to distribution, are spread throughout the patchy field of theories and visions. These establish the origins of economicity in the murkiness of the psyche, which is built on materiality and which predestines the result of the natural action generated by the need of subsistence to the satisfaction of social expectations. What is essentially objective, in the sense that it necessarily stems from the concreteness of life (which is the building of the comfort of human nature), will eventually come to be justified and to occur in a different order, that of the ideal, defined through the spectrum of living the dream in paradise.

Surely, no one asks (or almost no one, as there are a few demiurgical demands here and there) for Economics to be responsible for the triumphs and failures of the human nature. The delicate part is when we try to bind the factual state of the economic reality to the extreme forms of the irrational. The argument is somehow turned on its head: wealth is the product of exuberance, while its loss is due to the panic!

There is no doubt that the overthrow of determinism comes from a predisposition towards mythical thinking, to which we exist in accord because we are the earthly correspondent of our celestial projections. Exuberance creates wealth in the same way we have imagined Olympus to explain to us how we became its product, while panic devours wealth just as we devour our illusions that we could be immortal.

The fantasy wouldn't be complete without exuberance and panic pushing the swing of a cheeky god who takes the worries of our existence into his invisible hand. The market increases and decreases our economic power and our disposition towards wealth in an implacable manner, according to the exuberance or the panic which are made autonomous by our worldly intentions. What we are will in fact appear to us as a shadow, while that which represents the human nature's avatars in the fight to understand its essence will take the form of reality.

Things are even more convoluted with regards to human ambitions. They are futile due to the excess of rational intentions, but also possible because of the spirit of adventure. Assuming the risk or the aversion to it creates the diversity of positions in a societal structure born out of the fatality of natural order. What we have in this order is sacred, what we don't have individualizes us, just as the things which we can do are being liberalized, while those we cannot do are being regulated.

The functional relations between the randamental factors indicate that effort is naturally distributed, but that the effect remains discretionary. The balance cannot reach any sort of equilibrium, the role of measurement being alternatively played by equity and by efficiency. Equality tears down the order of value, polarization demolishes the social lift. When one factor is cheap, the other stimulates its own cholesterol until it has a heart attack.

A correction through the use of the specific difference of the anthropical is out of discussion. Reason is drowned in the ocean of faith which floats the ark of wealth. The mark of value is made out of the trust that everything moves for prosperity. But if we all do the same thing at the same time, the faith retreats to the pages of manuals. The instinct of conservation digs out the social anomia and the fear of hell bursts from the human nature.

The addition which completes the picture of liberty comes from the size of the foam off the top of the pint, which defeats gravity, being forbidden to fall no matter how many past failures it carries. The failure belongs to people, not to their constructions. Government is liable to pay because it bets on wealth instead of on exuberance or panic. The market knows how to ask, the government must learn how to give. If it does give, there's only one option: to give ever more.

With its determinants confiscated by psychology, economicity is left with one choice: allying with politics. After all, being founded on faith, the economicity adopts the goal of the will for power. The religion of trust expands on the political correctness of the equivalence between wealth and power. Governance is rationalized, while democracy is sublimated.

In the new upside down context money becomes a purpose in itself, ceasing to be the means for sustainable functionality of the action dedicated to dynamically satisfy life's needs. There's a real money-sphere established around the world, filtering principles and producing norms for the general functioning of affairs. Money has replaced space and time in the relativistic model of the corporatized world.

The portrait of Economics, coloured with instincts and framed by political preferences, inspires waves of passions which carry the human being through all forms of feeling, giving him the sensation of strength; that strength through which speculation absolves him of work, profit saves him from mobility, virtuality satisfies his dreams, pollution sends him towards the stars.

Oikonomia was born in Greece together with Oikoumene, the stable World. Their symbols were the freedom of the public space and the management of the private space. The modern economy has transformed the Agora into the Market, making the market-society possible. Its symbol: the consequence determines the cause.

Marin Dinu

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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 Classification: C5, J2, R1.

REL Classification: 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 analysing 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 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.

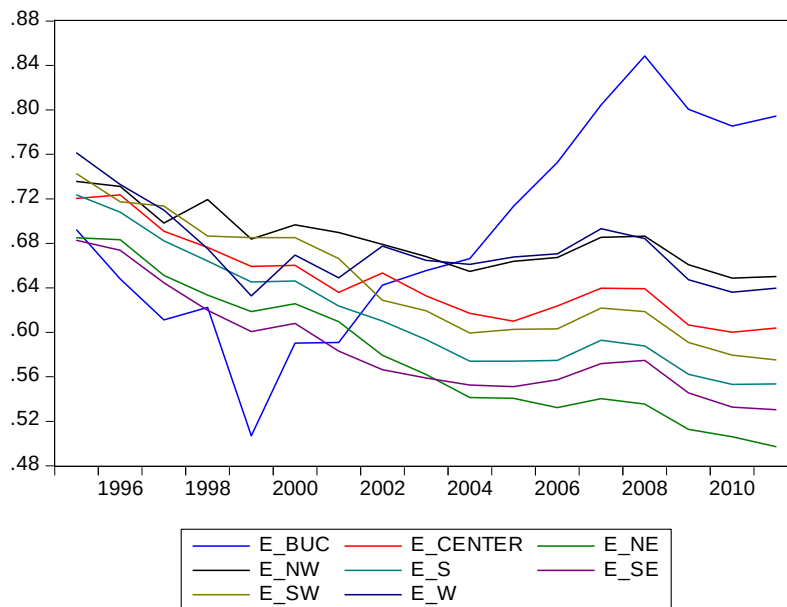
The dummy variable is used for highlighting structural breaks occurred in the evolution of some indicators (Gujarati, 2003).

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.

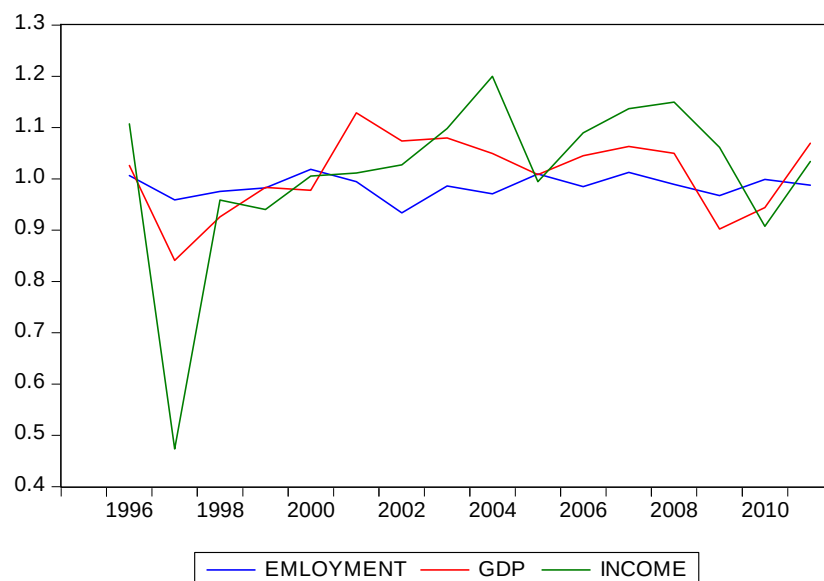


Source: Authors' computing based on the database of the National Institute for Statistics.

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

As one can see, beginning with 2003-2004 the North-Eastern region has 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

After employing 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 analyses 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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Romania's accession to the Eurozone – a simulation using a simple DSGE model

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Abstract. *In this paper we present a simulation where Romania is a member of the Economic and Monetary Union (EMU); for this purpose we make use of a simple two-country Dynamic Stochastic General Equilibrium (DSGE) model linking Romania to the Eurozone. This research is motivated by the perspective of Romania entering in the EMU and by the poor research about the structural differences between these two economies and, also, about the macroeconomic effects of Euro area accession. In the first part we present the difference between the parameters describing the agent's decision-making in Romania and Euro area. The estimation showed that there is a degree of heterogeneity between the structural parameters describing the agents' behaviour, but a larger degree of heterogeneity can be observed at the volatility and at the synchronization of the structural shocks; the shocks that are hitting the Romanian economy are more volatile than those that affect the Eurozone. Because we have a micro-founded analysis of both economies, we can easily analyse the impact of losing monetary policy autonomy. In the absence of autonomous monetary policy, the most important stabilizer for a newly entered economy in the EMU is the competitiveness channel. To assess the importance of the competitiveness channel, the impulse response functions before and after Romania entry in the EMU are plotted. The simulation showed that the autonomous monetary policy plays an important role in stabilizing the Romanian economy after an internal originated shock and, thus, the competitiveness channel isn't able to stabilize the economy in a reasonable period; the inflation and the output are in general more volatile in the case where Romania is a member of the EMU.*

Keywords: two-countries; DSGE model; Bayesian estimation; Eurozone; heterogeneity.

JEL Classification: F36.

REL Classification: 20H.

1. Introduction

It is largely accepted in the literature that joining a common currency union comes with costs and benefits; the benefits of a monetary union can be summarized in the following advantages: lower transaction costs, lower interest rates and trade creation. Now, regarding the costs, Mundell (1961) clearly states that asymmetric shocks can negatively affect a member of a monetary union because joining a currency area reduces the policy tools available for mitigating these shocks. Also, there are costs arising from micro and macroeconomic differences; in order for a currency area to be optimal, the value of the parameters describing agents' behaviour should be the same. We propose using a small two-country DSGE model for testing the above mentioned hypothesis for the Romanian economy. From our point of view, DSGE models are suitable for this kind of analysis because they are based on microeconomic foundations with rational agents and optimizing behaviour. Also, from our knowledge this kind of simulation has never been done for the Romanian economy.

The model that we have chosen was developed by Kolasa (2009) to assess the heterogeneity between Poland and Eurozone. We take the analysis even further, after estimating the model, when the values of the structural parameters are available we use them in a simulation where Romania is a member of the Euro area. The main idea is that after accession the competitiveness channel is substituting the monetary policy, via the exchange rate, for the role of stabilizing the economy. In order to carry out this simulation we have dropped the exchange rate equation and the monetary policy rule for the Romanian economy; after these modifications in the model there is only the interest rate set by the European Central Bank.

Now, turning to some key findings, it seems that there is some degree of heterogeneity between Romania and the Eurozone, namely, the habit in consumption is much lower than Euro area counterpart, the capital adjustment cost is almost 50% larger in Romania, the prices are adjusting more rapidly in Romania, the indexation of prices with past inflation is also higher than in Euro area and the shocks that are hitting the Romanian economy are three times more volatile; the simulation exercise is based on the analysis of macroeconomic adjustments after an internal structural shock. After this exercise we cannot conclude that the costs are larger than the benefits or vice versa of Romania accession to the Euro area. After some structural shocks the economy is adjusting more quickly under EMU and the opposite is true, but joining a common currency area creates a larger volatility in output and inflation after an internal generated structural shock.

The remaining of the paper is organized as follows: in section 2 is presented a brief literature review, followed, in section 3, by the presentation of some key equations; in section 4 is presented the estimation methodology and the results, in section 5 is presented a more in-depth analysis of the implications of Euro area accession for the Romanian economy and in section 6 are presented the conclusions and the directions for further work.

2. Brief literature review

Dynamic stochastic general equilibrium (DSGE) models have become a very powerful tool for describing economies, mainly due to the rigorous treatment of the microeconomic foundations describing the behaviour of the agents. The presence of microeconomic foundations allows for a more detailed and structured analysis of the origins of the business cycle fluctuations than can be provided by a-theoretical econometric models (e.g. VAR models).

The literature regarding costs and benefits attributed to the Euro era accession is rather limited; the main source is the National Bank of Poland where there are research papers dealing with this fact⁽¹⁾. Kolasa (2009) makes a pre-EMU analysis and is testing for sources of heterogeneity between Euro area and Poland using a small two-country DSGE model. Regarding the parameters that are describing agents' behaviour he finds rather inconclusive differences, but he finds a large degree of heterogeneity in terms of volatility and synchronization of shocks hitting both economies. Gradzewicz and Makarski (2013) study the macroeconomic effects of losing monetary policy autonomy for the Polish economy, making use of a two-country Bayesian DSGE model. They find that euro adoption will have a noticeable impact on the Polish economic fluctuations; in particular the volatility of the output increases and the volatility of inflation decreases. They are, also, computing a welfare analysis and they find that the welfare costs of Euro adoption for Polish economy aren't large. Toroj (2011) tries to assess the stabilization capacity of competitiveness channel for the Poland economy and attempts a comparison with the Slovakian economy. He uses a DSGE models, but with a rather alternative mean of estimating, namely full information maximum likelihood estimation, which was proposed by Ireland (2001). He compares the impulse response function of the two economies and finds that Slovakia seems to be more capable of handling asymmetric shocks than Poland, in the case where both countries are in Eurozone. Moons (2009) tries to assess the losses that might occur from United Kingdom (UK) accession to the Eurozone. He finds that there is an important degree of heterogeneity in consumers' behaviour between these two economies but there is, also, a high degree of homogeneity in conducting monetary and fiscal policies. After

computing the welfare loss, he finds that UK will lose significantly in terms of social welfare if it joins the Eurozone and the automatic stabilizers can play an important role in reducing these costs.

In Romania, there are a few papers that analyse the costs and the benefits of Euro adoption; Dumitru (2009) tries to evaluate the progress of Romanian economy from the perspective of real and nominal convergence. He finds that Romanian economy isn't prepared for Euro area accession and the progress in terms of real convergence must continue. Marinas et al. (2011) are trying to identify gaps in economic and commercial structures between Romania and Euro area and to see if the delay of Euro adoption after 2015 is justified. Also, they are testing for business cycle correlation between these two economies and they find an increased correlation of the business cycle fluctuations, mainly because of an increased industrial activity and export synchronization. They argue that there isn't an internal mechanism which is able to mitigate the external negative shocks and, thus, the Euro adoption for Romania might turn to be very costly. Marinas (2013) analyse the risk of euro adoption for the Romanian economy based on ten criteria. After analysing all the criteria, he finds that Euro adoption will have a negative impact on the entire economy, mainly due to the inability of the Romanian economy to adjust after an economic shock when the monetary policy tools are unavailable.

3. Overview of model equations

The model is built upon the previous work in the new open economy macroeconomics (NOEM literature)⁽²⁾. The model is relatively small and, thus, the most important parameters can be estimated. The model has standard neo-Keynesian features like sticky wages and prices, habit in consumption, investment adjustments costs. The dynamics of the model is driven by fourteen stochastic disturbances, seven for each economy, namely: *consumption preference shock*, *labour supply shock*, *investment efficiency shock*, *technology shock in tradable and non-tradable production*, *government consumption shock* and *monetary policy shock*. The setup is very straightforward, the home economy is linked with the foreign economy by the trade flows; there aren't other relationships between these countries and the rest of the world. The agents in the economy are distributed over the interval $[0, 1]$, where $[0, n]$ are living in the domestic country; n is the share of domestic GDP in foreign GDP⁽³⁾. The production of tradable and non-tradable goods is distributed over the same interval.

Now we are going to review the most important equations⁽⁴⁾. Because the foreign economy setup is very similar with the home economy, we will be presenting only the equations describing the home economy.

The consumption equation is given by:

$$c_t = \frac{h}{1+h}c_{t-1} + \frac{1}{1+h}c_{t+1} - \frac{1-h}{(1-h)\sigma}(r_t - \pi_{t+1}) + \frac{1}{(1-h)\sigma}(\varepsilon_{d,t} - \varepsilon_{d,t-1}) \quad (1)$$

where c_t is the level of consumption in the moment t , which depends on a weighted average of past and future consumption, on the ex-ante real interest rate ($r_t - \pi_{t+1}$) and on the disturbance term $\varepsilon_{d,t}$. Under the assumption of no external habit formation ($h = 0$) and log utility in the utility function ($\sigma = 1$) the consumption equation becomes a purely forward looking consumption equation. The disturbance term $\varepsilon_{d,t}$ displays changes in the intertemporal allocation of consumption and savings. A positive shock to the consumption preference raises the current consumption and decreasing the future consumption level. This shock follows a first order autoregressive process with i.i.d normal innovations:

$$\varepsilon_{d,t} = \rho_d \varepsilon_{d,t-1} + \eta_{d,t}.$$

The investment equation is given by the:

$$i_t = \frac{\beta}{(1+\beta)}i_{t+1} + \frac{1}{(1+\beta)}i_{t-1} + \frac{1}{S''(1+\beta)}(q_{T,t} + \varepsilon_{i,t}) - \frac{\gamma_i(1+\omega) + \gamma_c}{S''(1+\beta)}x_t \quad (2)$$

where i_t is the level of investment which is a weighted average of past and future investment, $q_{T,t}$ is the relative price of installed capital (i.e. Tobin's Q) and x_t is the internal exchange rate (the price of non-tradable goods relative to the price of tradable goods). Now turning to the parameters of the investing equation (which can be interpreted as the investment demand), β is the households discount factor, γ_i is the share of final tradable investment, γ_c is the final share of final tradable goods in the consumption basket. S'' is the investment adjustment costs; following Christiano et al. (2005) the capital adjustment costs is modeled as a function of changes in investment in order to capture the hump-shape response of investment to various shocks. Also, a disturbance term is present in this equation, $\varepsilon_{i,t}$ which can be interpreted as an increase in investment efficiency after the capital is installed. This shock, also, follows a first order stochastic process, similar to the consumption preference shock.

The capital accumulation equation is given by the:

$$k_{t+1} = (1 - \tau)k_t + \tau(i_t + \varepsilon_{i,t}) \quad (3)$$

where k_{t+1} is the capital available for the next period, which depends on the last period capital minus the depreciation and on the last period investment which is available for the production process in the next period.

The wage equation is given by the following equation:

$$w_t = \frac{\beta}{1+\beta} w_{t+1} + \frac{1}{1+\beta} w_{t-1} + \frac{\beta}{1+\beta} \pi_{t+1} - \frac{1+\beta\delta_w}{1+\beta} \pi_t + \frac{\delta_w}{1+\beta} \pi_{t-1} + \frac{(1-\theta_w)(1-\beta\theta_w)}{\theta_w(1+\Phi_w\varphi)(1+\beta)} (mrst - w_t) \quad (4)$$

where w_t is the real wage, π_{t+1} is the next period inflation expectations and $mrst$ is the marginal rate of substitution between consumption and labour. The real wage is a function of expected and last period level of wages, expected and last period inflation rate and a mark-up over the marginal rate of substitution (the labour supply is assumed to be monopolistic). In this model wages are specified in line with Erceg et al. (2000) framework: δ_w is the indexation parameter for the last period inflation, θ_w is the Calvo probability for wage resetting Φ_w is the elasticity of substitution between different categories of labour and φ is the inverse Frisch elasticity. If θ_w is set to zero, the real wage is a constant mark-up over the marginal rate of substitution, also, the wage adjustment depends on the level of wage stickiness. When the wage indexation is zero ($\delta_w = 0$) there is no indexation with past inflation.

Because the model features price stickiness, in line with Calvo (1983) framework, the prices are adjusting slowly to their desire level. In the model there are two sectors which are producing tradable and non-tradable goods, and thus, profit maximization of the price setting firms give rise to two New-Keynesian Phillips curves:

$$\pi_{n,t} = \frac{\delta_n}{1+\beta\delta_n} \pi_{n,t-1} + \frac{\beta}{1+\beta\delta_n} \pi_{n,t+1} + \frac{(1-\theta_n)(1-\beta\theta_n)}{\theta_n(1+\beta\delta_n)} mc_{n,t} \quad (5)$$

$$\pi_{h,t} = \frac{\delta_h}{1+\beta\delta_h} \pi_{h,t-1} + \frac{\beta}{1+\beta\delta_h} \pi_{h,t+1} + \frac{(1-\theta_h)(1-\beta\theta_h)}{\theta_h(1+\beta\delta_h)} mc_{h,t} \quad (6)$$

where $\pi_{n,t}$ is the inflation in non-tradable goods, which depends on lagged inflation and the expected inflation in this sector and on the price markup over the marginal cost, $mc_{n,t}$ (the firms are operating in monopolistically environment). δ_n is the level of price indexation with past inflation and θ_n is the Calvo probability of price resetting in the non-tradable sector. If indexation parameter is set to zero, the lagged inflation disappear from the Phillips curve and if there is no price stickiness the level of the prices is constant mark-up over the marginal cost. The

Phillips curve in the tradable sector is similar with the one from the non-tradable sector. The CPI inflation is composed of non-tradable inflation and tradable inflation and is aggregated using a CES function with the share γ_c .

And, finally, the model is closed with a simple monetary policy rule:

$$r_t = \rho r_{t-1} + (1 - \rho)(\varphi_\pi \pi_t + \varphi_y y_t) + \varepsilon_{m,t} \quad (7)$$

which allows for additional interest rate smoothing ρ and targets the deviation of inflation from the target and the output gap. φ_π and φ_y are the central bank response to the deviation of the inflation and, respectively, the response to the output gap. $\varepsilon_{m,t}$ is the monetary policy shock.

The relation with the foreign economy is given by the international risk sharing equation and the real exchange rate equation.

4. Estimation procedure

This section covers the estimation procedure, the calibration of the model, the data used in estimation, the priors and the results of the estimation.

4.1. Bayesian estimation

The Bayesian technique allows for the use of prior information from early studies, on both micro and macro level, in the estimation of the parameters of DSGE model. Bayesian inference is summarized in one simple idea: the Bayes' theorem. The elements that appear in the Bayesian theorem are the data and the model, motivated either by the economic theory or by some other types of reasoning.

The model is composed by a parameter set θ , that defines the admissible value of the parameters that indexes the functions of the model – there are some restrictions that came from statistics and economic reasoning – a likelihood function, $p(y|\theta)$, that tells us the probability that the model assigns to each observation given the parameters values and a prior distribution, $p(\theta)$ that captures pre-sample beliefs about the value of the parameters.

Accordingly to Bayes' theorem the posteriori distribution is given by:

$$p(\theta|y) = \frac{p(y|\theta)p(\theta)}{p(y)}. \quad (8)$$

The likelihood corresponds to the joint density of all variables in the data sample conditional on the structural parameters of the model. Before evaluating the likelihood function, the DSGE model must be solved. A log linearized DSGE

model with rational expectations can be cast in state-space representation, where observed variables are linked to the model variables through the measurement equation. At the same time, the state equation provides a reduced form of the DSGE model, mapping current variables to their lags and the i.i.d. shocks. The reduced form is obtained by solving for the expectation terms in the structural form of the model using a suitable method (e.g. Blanchard, Kahn, 1980, Sims, 2001). If a unique convergence solution exists the Kalman filter can be applied to compute the value of the log-likelihood function. The first step is to maximise the log likelihood function with respect to the parameters and to obtain an estimate for the mode of the posteriori distribution and the Hessian matrix evaluated at the mode (the Hessian matrix is an estimator for the variance-covariance matrix of the parameters); this step is performed using an optimization routine. Next, the posteriori distribution is simulated with Random Walk Metropolis (RWM) sampling method. The general idea of the algorithm is to generate a Markov-Chain that represents a sequence of possible parameter estimates in way that the whole domain of the parameter space is explored.⁽⁵⁾

For the estimation of this DSGE model we've used Dynare⁽⁶⁾ model which estimates the model using the methodology described above. The posterior maximization was performed with Sims algorithm (csminwel); the algorithm uses a simple line search and randomly perturbs the search direction if it reaches a cliff caused by nonexistence or non-uniqueness of a stable rational expectation solution for the DSGE model. The posteriori distribution was approximated using Metropolis-Hastings sampling method. The reported estimates are obtain by applying five Markov chains, with 100.000 replication for each chain.⁽⁷⁾

4.2. Data, calibration and priors

The model is estimated using fourteen macroeconomic variables, seven for each of the two economies, namely: *real GDP*, *real households' consumption*, *real investment*, *real wage*, *inflation rate*, *internal exchange rate*⁽⁸⁾ and *nominal interest rate*. The variables for the euro area (EA 17) where taken form the ECB website and for the Romanian economy from the Romanian National Institute of Statistics, the exceptions are: the inflation rate (HICP) and the internal exchange rate, for both economies the data were taken from the Eurostat website; the nominal interest rate (Robor 3M) was taken from the National Bank of Romania website and the European counterpart from the Euribor website. Because the model is a short term one, all the data are in logarithm difference and detrended. The entire variables are seasonally adjusted, except the series regarding the interest rates. After adjustments the length of the series is 49 observations, from 2000 Q2 to 2012 Q2.

As common in the DSGE literature some of the parameters are calibrated, this is done mainly because these parameters are weakly identified in the data and because of the short number of observations. The discount factor β is calibrated at 0.99 for both economies, which matches a 4% annual real interest rate. The elasticity of substitution between different types of labour ϕ_w is set at 11, which means a 10% mark-up over the marginal rate of substitution; it is assumed that labour unions in Romania can obtain a 10% raise in wages. The elasticity of capital input for the Romanian economy was set at $\eta = 0.33$ and for the Euro area was set at $\eta = 0.30$. The capital depreciation for both economies was set to $\tau = 0.025$ which means an annual rate of depreciation of 10%.

The parameter which expresses the share of Romanian GDP in the Euro area GDP n is set at the value of 0.0108, which is implied by the Romanian nominal GDP relatively to the Euro area (EA 17) nominal GDP, averaged over the length of the series. The share of final tradable consumption for the Romanian economy γ_C and for the Euro area γ_C^* was set at the value of 0.6 and 0.52, respectively; this value represents the share of services and energy goods in the HICP basket. The share of final tradable investment goods for the Romanian economy γ_I and for the Euro area γ_I^* was set at 0.57, and 0.48, respectively, which corresponds to the share of non-construction share in total investment from 2000Q1 to the 2012Q2. The share of goods in tradable basket was calculated using the trade flows between the two countries, the value for the Romanian economy is $\alpha = 0.58$ and for the Euro area is $\alpha^* = 0.01$. The rest of the parameters are calculated from the steady state equations or from the long term averages presented in the data; for example the share of private consumption in Romania was set to 0.7442, which corresponds to the average of the private consumption relative to the nominal GDP over the period taken in consideration. The rest of the calibrated parameters are presented in Table 1.

Table 1. Calibrated Parameters

Parameter	Value
Discount factor (Romania) - β	0.99
Discount factor (Euro Area) - β^*	0.99
Labour elasticity of substitution * (Romania) - ϕ_w	11
Labour elasticity of substitution * (Euro Area) - ϕ_w^*	11
Elasticity of capital input (Romania) - η	0.33
Elasticity of capital input (Euro Area) - η^*	0.30
Capital depreciation rate** (Romania) - τ	0.025
Capital depreciation rate** (Euro Area) - τ^*	0.025
Share of final tradable consumption goods (Romania) - γ_C	0.60
Share of final tradable consumption goods (Euro Area) - γ_C^*	0.52
Share of final tradable investments goods (Romania) - γ_I	0.57

Parameter	Value
Share of final tradable investments goods (<i>Euro Area</i>) - γ_I^*	0.48
Share of goods in raw tradable baskets (<i>Romania</i>) - α	0.58
Share of goods in raw tradable baskets (<i>Euro Area</i>) - $(1-\alpha^*)$	0.01
Share of Romanian GDP in Euro area GDP	0.0108
Share of consumption in GDP (<i>Romania</i>)	0.7442
Share of consumption in GDP (<i>Euro Area</i>)	0.5708
Share of investment in GDP (<i>Romania</i>)	0.2490
Share of investment in GDP (<i>Euro Area</i>)	0.2074
Share of Government consumption in GDP (<i>Romania</i>)	0.0889
Share of Government consumption in GDP (<i>Euro Area</i>)	0.2068

* wage mark-up of 10%.

**depreciation per quarter (10% per annum).

Now turning to the prior distribution, these distributions were set mainly in the line with the DSGE literature.⁽⁹⁾ The prior distributions for the parameters are chosen in conformity with constraints on the parameter space implied by the economic theory. For the parameters bounded between 0 and 1, we've chosen beta distribution, this group is formed by the habit in consumption with the mean 0.5 and standard deviation of 0.1, the Calvo parameters with the mean 0.7 and the standard deviation of 0.1, the indexation parameters with the mean 0.5 and standard deviation of 0.1. Also for the autoregressive parameters of the structural shocks the beta distribution was chosen with the mean of 0.7 and standard deviation of 0.1. Regarding the standard deviations of the structural shocks, it is assumed that the shocks that are hitting the Romanian economy are three times more volatile and, thus, the prior mean is set accordingly. Finally, given the well-known weak correlation of structural shocks, the mean of the priors for the shock correlation was set to zero. The full list of prior distribution is presented in the left columns of Table 2 for the parameters and in the left columns of Table 3 for the structural shocks. The final means and standard deviations of the prior distribution were set after several optimization of the log likelihood and the choice was based on the marginal likelihood criteria and on the convergence charts.

4.3. Estimation results

The estimation results are showed in Table 2 for the structural parameters and Table 3 for the structural shocks. Because we use a two country DSGE models, the structural parameters for both economies are available to us and, thus, we will attempt to make a comparison of both economies based on the value of the parameters. Also, for the Romanian economy there aren't reliable papers in which

DSGE models are estimated and, thus, we can't compare our results with others; we will try to validate our estimates using economic reasoning.

Table 2. *Distribution of the structural parameters*

Parameter		Prior distribution			Posteriori distribution		
		type	Mean	std.	Mean	5%	95%
<i>Preferences</i>							
Habit in consumption (Romania)	h	beta	0.5	0.1	0.1439	0.0915	0.1948
Habit in consumption (Euro area)	h^*	beta	0.5	0.1	0.4205	0.2916	0.5480
Inverse elasticity of consumption (Romania)	σ	normal	2	0.2	1.8638	1.5619	2.1484
Inverse elasticity of consumption (Euro area)	σ^*	normal	2	0.2	2.4352	2.0899	2.7517
Inverse elasticity of labour supply (Romania)	φ	normal	2	0.2	1.9751	1.6533	2.2974
Inverse elasticity of labour supply (Euro Area)	φ^*	normal	2	0.2	1.9647	1.6517	2.2912
<i>Adjustment costs</i>							
Capital adjustment costs (Romania)	S''	normal	4	1.5	2.8400	0.9252	4.7470
Capital adjustment costs (Euro area)	S''^*	normal	4	1.5	1.9477	0.6074	3.2884
<i>Adjustments of prices and wages</i>							
Calvo – Wage (Romania)	θ_W	beta	0.7	0.1	0.6197	0.5088	0.7295
Calvo – Wage (Euro area)	θ_W^*	beta	0.7	0.1	0.6652	0.5667	0.7659
Wage indexation (Romania)	δ_W	beta	0.5	0.1	0.4431	0.2741	0.6081
Wage indexation (Euro area)	δ_W^*	beta	0.5	0.1	0.4358	0.2831	0.5886
Calvo – Non-tradable (Romania)	θ_N	beta	0.7	0.1	0.5231	0.4339	0.6120
Calvo – Non-tradable (Euro area)	θ_N^*	beta	0.7	0.1	0.7957	0.7429	0.8471
Non-tradable indexation (Romania)	δ_N	beta	0.5	0.1	0.4599	0.2903	0.6269
Non-tradable indexation (Euro area)	δ_N^*	beta	0.5	0.1	0.4083	0.2461	0.5619
Calvo – Exports (Romania)	θ_H	beta	0.7	0.1	0.3389	0.2320	0.4432
Calvo – Exports (Euro area)	θ_F^*	beta	0.7	0.1	0.6292	0.5069	0.7480
Exports indexation (Romania)	δ_H	beta	0.5	0.1	0.3821	0.2226	0.5396
Exports indexation (Euro area)	δ_F^*	beta	0.5	0.1	0.3252	0.1757	0.4669
<i>Monetary policy</i>							
Interest rate smoothing (Romania)	ρ	beta	0.7	0.1	0.5262	0.4222	0.6372
Interest rate smoothing (Euro area)	ρ^*	beta	0.7	0.1	0.6811	0.5764	0.7919
Inflation feedback (Romania)	ϕ_π	gamma	1.5	0.1	1.5489	1.3920	1.7110
Inflation feedback (Euro area)	ϕ_π^*	gamma	1.5	0.1	1.4813	1.3140	1.6434
Response to output gap (Romania)	ϕ_y	gamma	0.5	0.1	0.5929	0.4480	0.7524
Response to output gap (Euro area)	ϕ_y^*	gamma	0.5	0.1	0.5934	0.4168	0.7697

First, we start with the parameters regarding the consumer preferences; we observe a difference regarding the habit in consumption, 0.14 for Romanian economy, respectively 0.42 for Eurozone. This parameter reflects how households adjust the consumption in response to shocks hitting the economy, a small value relates to a quicker adjustment of the households consumption level. The smaller value for the Romanian economy can be attributed to the fact that Romania is an emerging market and it is subject to a larger volatility of the output. Also, after

taken in consideration the last data sample of the Eurozone, the value for the habit in consumption is much lower, pre-crisis estimates show a value for this parameter around 0.7 (Smets, Wouters, 2007). Regarding the inverse intertemporal elasticity of consumption, which can be interpreted as a relative risk adverse parameter (CRRA), measures the responsiveness of the growth rate of consumption to the real interest rate; if the real interest is rising the future consumption may be increased due to the increased savings. If the real interest is rising with 1%, the future consumption will rise with 0.53% for the Romanian economy and with 0.41% for the Eurozone. A higher value of the inverse elasticity of consumption means a higher level of risk aversion, thus the households from the Eurozone have a higher risk aversion than the Romanian counterpart. The inverse elasticity of labour supply is the same for both economies, this elasticity measures the level of hours worked with respect to real wages; the values for both economies are around 0.5.

Now, turning to the capital adjustment costs, the estimates for the Romania economy are higher than those of for the Eurozone counterpart, 2.84 respectively, 1.94. The capital adjustment costs are an important mechanism in the DSGE models, because it helps us to capture the hump-shape form of the capital input which appears after a disturbance in the economy. A higher value of this parameter represents a lower rate of adjustment, thus in Romania, after a negative disturbance of the economy, the capital input is returning more slowly to the equilibrium than in the Eurozone, this makes sense, because the Romanian economy is less “technological” than the Euro area.

Also, the model features friction like sticky wages and prices, in line with the Calvo (1983) framework. A household (the labour supply is organized in unions) or a firm receive the permission to reset their wages with the probability $(1 - \theta)$ and they are choosing the same level of prices or wages. Those agents that do not receive permission to adjust their wages or prices are setting then by indexing with past inflation. The duration between adjustments is given by the following formula: $1/(1 - \theta)$. The difference between Romania and Euro area regarding the duration of a wage contract is very small, around one month, in general, the duration of a wage contract for the Romanian economy is around two quarters and two months and for the euro area is around three quarters. This difference is so small that we can consider the duration of a wage contract in both economies to be the same; also, the indexation parameters with past inflation are the same, around 0.44. Turning to the adjustment of the prices, here we can observe some differences, for example, the prices in non-tradable sector in Romania are adjusting every two quarters, in contrasts with the period of five quarters between price adjustments in Euro area. The differences also continues in the tradable sector, where the duration between price adjustments for the Romanian producers

is around one and a half quarters and for the Euro area is around two and a half quarters. The indexation parameters for the Romanian economy are higher than those of the Euro area which is in accordance with the economic reality; Romania had a long period of large inflation. The quickly adjustments in the tradable sector can be attributed to the exchange rate, as we know the exchange rate is volatile and thus affects the price levels of exported and imported goods. Also, a high adjustment rate of the prices means that the producers can quickly achieve their desired mark-up level.

Looking at the estimates for the monetary policy, we observe that the parameters are roughly the same; a larger difference can be observed at the value of the interest rate smoothing parameters, the value for the Romanian economy is smaller than the Eurozone counterpart, 0.52, respectively 0.68; this parameter reflects the importance given to the past inflation by the central bank. Taken in consideration the disinflation process that took place in Romania, it is normal that the curve of interest rate adjustments to be steeper than the euro area counterpart.

In Table 3 are showed the estimates for the structural shocks. When setting the priors we have made the hypothesis that the shocks that are hitting the Romanian economy are there times more volatile than those affecting the Euro area.

Table 3. *Distribution of the structural shocks*

Structural Shocks	Prior distribution			Posteriori distribution		
	type	mean	std.	mean	5%	95%
<i>Autoregressive coefficients</i>						
Productivity in tradable (Romania)	beta	0.7	0.1	0.3941	0.2219	0.5546
Productivity in tradable (Euro area)	beta	0.7	0.1	0.3642	0.2061	0.5163
Productivity in non-tradable (Romania)	beta	0.7	0.1	0.3185	0.1893	0.4358
Productivity in non-tradable (Euro area)	beta	0.7	0.1	0.3844	0.2332	0.5374
Consumption preference (Romania)	beta	0.7	0.1	0.5009	0.3437	0.6713
Consumption preference (Euro area)	beta	0.7	0.1	0.5981	0.4086	0.7795
Labour preference (Romania)	beta	0.7	0.1	0.3274	0.2028	0.4494
Labour preference (Euro area)	beta	0.7	0.1	0.2949	0.1814	0.4052
Government consumption (Romania)	beta	0.7	0.1	0.3749	0.2301	0.5142
Government consumption (Euro area)	beta	0.7	0.1	0.5082	0.3418	0.6691
Investment efficiency (Romania)	beta	0.7	0.1	0.3799	0.2520	0.4961
Investment efficiency (Euro area)	beta	0.7	0.1	0.3899	0.2564	0.5305
<i>Standard Deviation</i>						
Productivity in tradable (Romania)	inv. gamma	0.3	inf.	0.1133	0.0750	0.1503
Productivity in tradable (Euro area)	inv. gamma	0.1	inf.	0.0856	0.0376	0.1305
Productivity in non-tradable (Romania)	inv. gamma	0.3	inf.	0.1036	0.0703	0.1356
Productivity in non-tradable (Euro area)	inv. gamma	0.1	inf.	0.0359	0.0212	0.0494
Consumption preference (Romania)	inv. gamma	0.3	inf.	0.0915	0.0694	0.1139
Consumption preference (Euro area)	inv. gamma	0.1	inf.	0.0171	0.0139	0.0203
Labour preference (Romania)	inv. gamma	3	inf.	3.2343	1.2186	5.3300
Labour preference (Euro area)	inv. gamma	1	inf.	1.0133	0.3849	1.6477

Structural Shocks	Prior distribution			Posteriori distribution		
	type	mean	std.	mean	5%	95%
Government consumption (<i>Romania</i>)	inv. gamma	0.3	inf.	0.2734	0.2150	0.3305
Government consumption (<i>Euro area</i>)	inv. gamma	0.1	inf.	0.0388	0.0317	0.0451
Investment efficiency (<i>Romania</i>)	inv. gamma	0.3	inf.	0.7118	0.2658	1.1242
Investment efficiency (<i>Euro area</i>)	inv. gamma	0.1	inf.	0.0528	0.0220	0.0834
Monetary policy shock (<i>Romania</i>)	inv. gamma	0.1	inf.	0.0154	0.0129	0.0180
Monetary policy shock (<i>Euro area</i>)	inv. gamma	0.03	inf.	0.0047	0.0039	0.0054
<i>Correlation of Shocks (Romania and Euro area)</i>						
Productivity in tradable	normal	0	0.04	0.0088	-0.0571	0.0716
Productivity in non-tradable	normal	0	0.04	-0.0049	-0.0675	0.0610
Consumption preferences	normal	0	0.04	0.0161	-0.0520	0.0816
Labour preference	normal	0	0.04	-0.0235	-0.0866	0.0404
Government consumption	normal	0	0.04	0.0295	-0.0322	0.0945
Investment efficiency	normal	0	0.04	0.0269	-0.0395	0.0891
Monetary policy shocks	normal	0	0.04	0.0249	-0.0418	0.0906

The level of shock persistence (the autoregressive coefficients) seems to be roughly the same for both economies, with a slightly higher persistence for the Euro area. Also, the estimates show that the shock that are hitting the Romanian economy are three times more volatile, this results are conclusive because we observe a difference between the prior distribution and the posteriori distribution. As expected, the correlation of structural shocks between these two economies is very low.

5. A simulation – Romania accession to the Eurozone

For this exercise we make use of the estimates from the previous section and we calibrate the DSGE model. In order to simulate the accession of Romania to the Euro area we've dropped the internal monetary policy rule in favour to the ECB's one and the exchange rate equation. We assume that after accession the Romanian economy will reach equilibrium⁽¹⁰⁾ and we study the effects of internal originated asymmetric shock. In order to assess these effects we make use of the impulse response function and we compare the dynamics in both scenarios. Now, some methodological notes: (i) the economy is studied in the hypothesis of *ceteris paribus*, meaning that the effect of only one shock can be studied, (ii) it is assumed that the Eurozone is not affected by any disturbances and continues on its natural rate of economic growth; (iii) the system is shocked with the variance of the structural shocks, (iv) the results are reported in percentage deviation from the trend, and (v) the growth rates of the economic variables are expressed from quarter to quarter (chain base).

In Figure 1 is presented the adjustment that takes place after a positive consumption preference shock; this practically means a rise in the current level of consumption.

In the case where Romanian is not part of the Economic and Monetary Union (EMU), a rise in the consumption level increases the output but is crowding the investment level – on the demand side; on the supply side, the level of labour input increases. Because the labour input is rising the marginal cost is raising translating into a higher inflation rate, which is compensated by the central bank with a higher interest rate. We can observe some adverse effects when Romania is under common monetary policy, mainly because a positive consumption shock isn't raising the level of output in Romania. In the case of a monetary union, transaction costs are absent and, thus, the households are inclined to consume foreign made goods, resulting in a drop of the Romanian GDP, a larger drop in the investment level and a drop in the capital input. The real wage tends to rise because of a slightly drop in the labour input. Because the production has dropped, the exports are also dropping accompanied by a rise in imports to satisfy the households' consumption needs. From this graph we may conclude that the Romanian economy isn't competitive enough in comparison with the Eurozone.

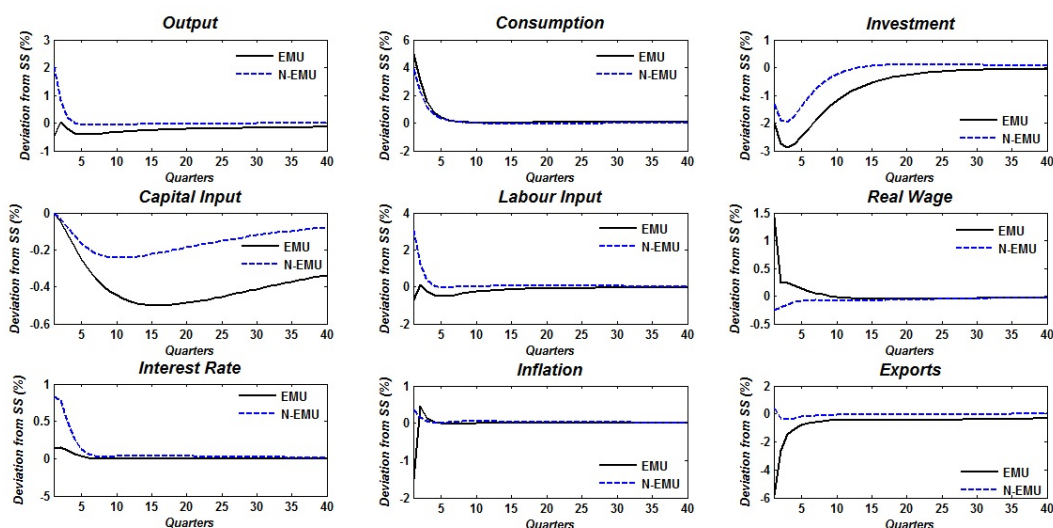


Figure 1. Consumption preference shock

In Figure 2 are plotted the adjustments after an investment efficiency shock. In the case where Romanian is not part of the EMU, after this shock, the investment and output are rising, mainly because the capital becomes more efficient. First, the consumption is declining, because the funds are diverted towards investment, but later is starting to rise. In order to meet the demand, producers are supplying more

goods and, thus, translating in a higher labour input, capital input and, because the productivity is rising, in a higher real wage. Also, a positive effect of the increased productivity implies a smaller inflation. Under the EMU, the Romanian GDP is much higher mainly because of a raise in exports; being in a monetary union relates in lower transaction costs (in this case the exchange rate fluctuations). Also, the households have more available funds to raise their consumption, because firms are producing more and the dividends for the households are higher (households own all the firms in the economy). In the economy are available imported goods which in the first period are better than the domestic ones, but, when the new, more efficient, capital is available for production the domestic firms are getting more productive translating in a higher export rate. Also, because the ECB isn't responding to country specific problem, the inflation is rising and fades very slow. If we take in consideration that for the agents in the economy the volatility of the main economic variable isn't good, under EMU the output is higher but also the inflation is higher, in contrast when the Romania is out of the EMU the real GDP is also rising, but without a higher inflation rate.

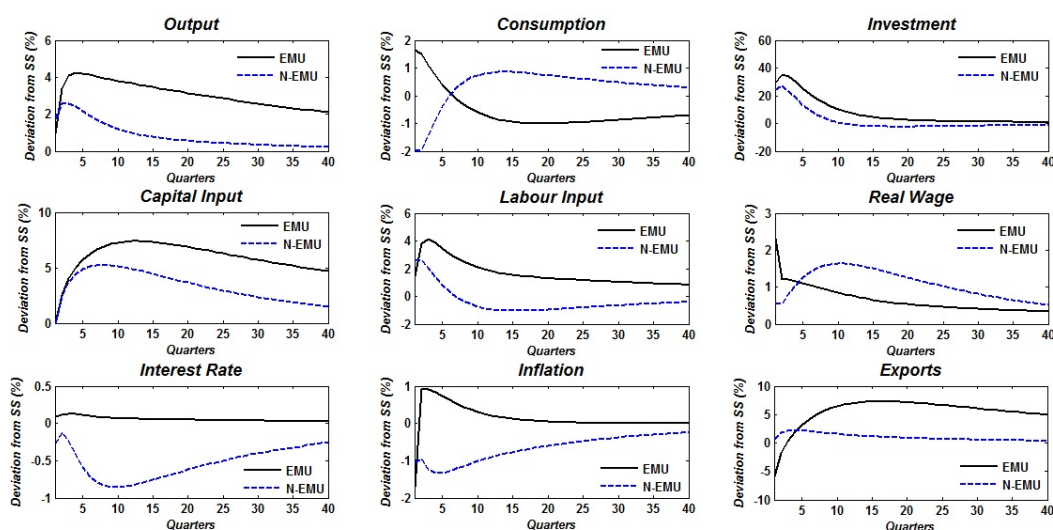


Figure 2. Investment efficiency shock

In Figure 3 the effects of a positive labour supply shock are plotted (i.e. households are shrinking their activity), which translates in the first case (N-EMU) in a reduction in output, consumption and investment. Because the real wages are rising, the marginal cost is also rising and, thus, the inflation is rising. The central bank is responding by raising the interest rate in order to compensate for a higher inflation rate.

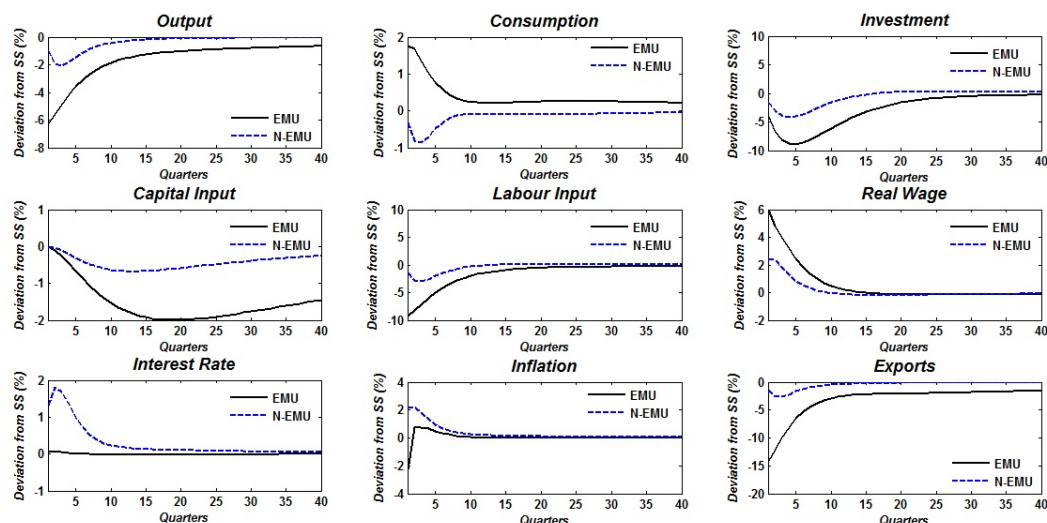


Figure 3. Effects of positive labour supply shock

In the case when Romania is a member of the EMU, the labour input is falling even more, resulting in a higher reduction in the GDP, a higher reduction of the investment and capital input. Because the home firms are producing fewer goods, also, the exports are falling. The labour input is falling even more which translates in a higher real wage and, thus, the households that are working are capable to compensate for the drop in consumption. In the case of a labour supply shock, when the monetary policy tools are unavailable, the effects of this adverse shock are even higher; the output is falling with almost 6% in the first period and after a longer period the GDP is returning to the equilibrium.

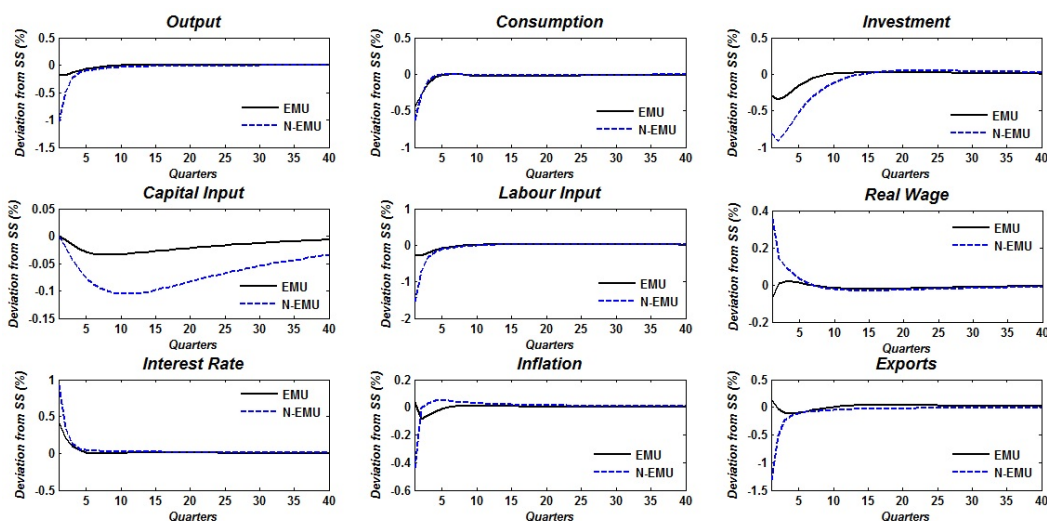


Figure 4. Monetary policy shock

In the case of a monetary policy tightening, plotted in Figure 4, the reaction of the economic variables are standard. As we observed from the previous section, National Bank of Romania (NBR) is targeting the inflation more aggressively (i.e. NBR sets the nominal interest rate higher) than the European Central Bank, having a more negative impact on the macroeconomic variables.

In the last two figures we present the effects of a technology shock in non-tradable production Figure 5 and in the tradable production Figure 6. An increase in efficiency in the non-tradable sector has a positive effect and, consequently, the output is rising. Because the rise in consumption is moderate, households have available funds for investment and, thus, the investment is rising. The positive effect of this shock continues with a drop in inflation because of a higher labour productivity.

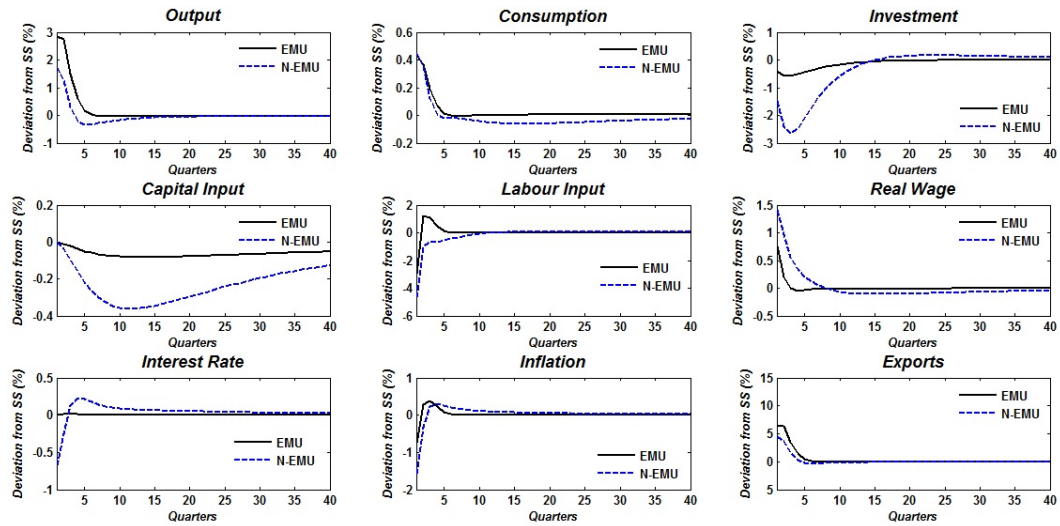


Figure 5. Effects of a technology shock in no-tradable production

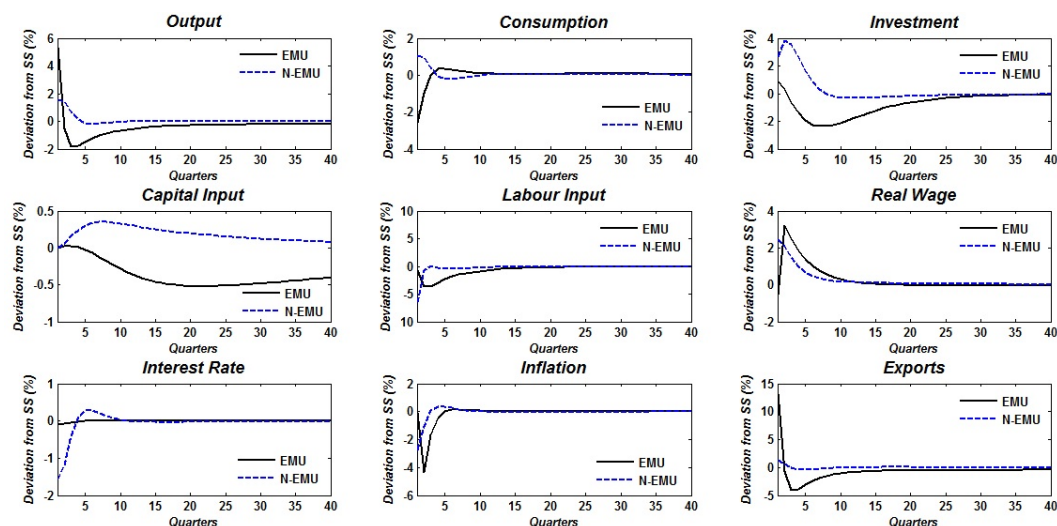


Figure 6. *Effects of a technology shock in tradable production*

When Romania is in EMU, this shock creates larger volatility in the main macroeconomic variables; in this case we observe a larger volatility in output, inflation, consumption and investment level. Also, in the first period the higher GDP is sustained by higher exports, but when the impact of the transitory technology shock fades, the output is falling and recovers very slowly. Turning to the tradable sector; this sector collects the main benefits from joining a monetary policy union. In this case, after a positive technology shock in tradable production (i.e. temporary increase in efficiency), when Romania is a member of the EMU the output is raising with more than one percentage, also, the higher GDP raise attenuates the drop in the investment rate resulted by the higher consumption rate. The increased level of the output comes with almost none adverse effects, like the rise in inflation, mainly because the increased level of wages are sustainable; the growth rate of wages is sustained by the increased productivity.

6. Conclusions and directions for further work

In this paper we have tried to analyse the impacts of internally generated shocks in the case where Romania is a member of the Economic and Monetary Union and comparing the results with the case where the monetary policy tools are available for the stabilization of the economy; for this purpose we make use of a two country DSGE model, linking Romania to the Eurozone. First we have tried to analyse the degree of heterogeneity between these two countries and we observed that there are a few structural differences, like: the habit in consumption parameter, the CRRA parameter, the capital adjustment costs and the Calvo

probabilities; these differences arise from the fact that Romania is an emerging country with well-known periods of large inflation.

Now turning to the simulation exercise, only in the case of an increased efficiency in the tradable sector we observe some important benefits without any drawbacks; the output is rising without a raise in inflation. An important fact is that without the monetary policy tools (i.e. nominal interest rate and the exchange rate) the economy is unable to stabilise like in the case where these tools are available; this means that the competitiveness channel is unable to stabilise the economy proper and any volatility of the inflation and of the output creates losses in terms of households welfare; for example, in the case where Romania is a member of the Eurozone, after an positive labour supply shock the output is falling with almost four percentage and the recovery takes twice as longer than in the alternative scenario; also, a positive technology shock in non-tradable production creates a larger volatility of output, consumption and investment when Romania is a member of the EMU.

Because we've used a small DSGE model without financial markets, we were unable to study the impact of a reduction in the risk premium. This analysis can be done with a more complex DSGE model which takes into count the financial markets. Also, the fiscal policy is modelled in a simplistic way; it will be academic rewarding to remake this exercise and to study how the fiscal policy affects the economy in a monetary union. Finally, for a better understanding of the costs association with accession to Euro area, we'll need to compute a social welfare analysis where we can take in consideration all the changes that appear in the economy.

Notes

- (1) An extensive report on benefits and costs associated with euro area accession for the Polish economy can be seen at: http://nbp.pl/en/publikacje/euro_adaptation.pdf.
- (2) See Lane (2001), Gali and Monacelli (2005), Lubik and Schorfheide (2005).
- (3) For a more detailed structure of the model see the original paper of Kolasa (2009).
- (4) The equations are in log-linear form.
- (5) For a more detailed discussion on Bayesian estimation for DSGE models see An and Schorfheide 2007, Villaverde (2009).
- (6) For more information visit <http://www.dynare.org/>.
- (7) The convergences of the Markov chains were asses using the diagnostic charts developed by Brooks and Gelman (1998) which are available upon request.
- (8) Price of non-tradable relative to the tradable goods is based on the HICP basket, price of service and energy goods are treated as non-tradable.
- (9) See Smets and Wouters (2002), Adolfson et al. (2007), Christoffel et al. (2008).

- ⁽¹⁰⁾ Immediately after accession it is large accepted in the literature that it will be a period of large inflation. We do not attempt to study the first effects of entering in Euro area; we rather try to study how the economy finds its equilibrium under the EMU after an internal originated shock where the monetary policy is unavailable.

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Occupational mobility networks of female and male higher education graduates

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Abstract. *We employ a network based approach to explore occupational mobility of the Romanian university graduates in the first years after graduation. This representation of data permits us to use the novel statistical techniques developed in the framework of weighted directed networks in order to extract a set of stylized facts that highlight patterns of occupational mobility: centrality, degree and network density. We find that the gender plays a significant role in shaping the patterns of occupational mobility.*

Keywords: occupational mobility; weighted networks; econophysics.

JEL Classification: E58.

REL Classification: 8J.

1. Introduction

Occupational mobility represents an important feature of the labour markets. While there is a rich literature on the structure and rate of occupational mobility, there are important gaps in understanding career trajectories. Such a challenge should rely on understanding individual histories of transitions among occupations into coherent sequences, if such patterns exist. This paper explores the early career of higher education graduates during the first years after graduation in order to understand their occupational mobility. For understanding paths of occupational mobility, we unify elements from job mobility and human capital theories. By exploiting a unique dataset on working histories of higher education graduates from Romania, we provide novel evidence on the fact that individuals move to similar occupations and that the entrance occupation influence their subsequent career.

We extract a set of stylized facts regarding the occupational mobility of the university graduates by employing a network based approach in which the nodes are represented by occupations and the links by the numbers of individuals moving from one occupational category to another. Such an approach helps us to better visualize paths of mobility and calculate network indicators in order to understand models of connectivity between different occupations. We consider that occupations are related to each other via transferable skills which can be sector-specific or not.

2. Data

The micro-data employed for this study are extracted from a national survey carried out between November 2008 – January 2009. The survey was designed to investigate the labor market entry process and early career of the Romanian university graduates in the first years after graduation. The data were retrospectively recorded and they cover both personal characteristics (e.g. age, sex, place of residence) and information regarding the jobs held by the subjects from graduation until the moment of investigation (e.g. job title, occupation, economic sector, type of contract). There were investigated 2,194 university graduates, the sample being stratified by their field of study according to the structure provided by Romanian National Institute of Statistics.

At the moment of survey, 93.8% of university graduates were employed and around 75% of them declaring that their jobs match their field of study (Pîrciog et al., 2010). This high insertion rate of the university graduates is explained mainly by the moment when the survey was carried out, during that period the Romanian economy was still growing and the labor force demand was high, especially for

those highly qualified. Thus, we have to underline that our data were collected in a favorable economic environment characterized by important job mobility.

Scholars distinguish between inter-generational mobility and intra-generational mobility. This article is focused strictly on the second type of occupational mobility. Investigating the employment patterns of university graduates in the first years post-graduation, we noticed two things: they were practically rapidly "absorbed" by the labour market and they encounter significant job mobility.

Table 1. Occupational mobility rate, by gender

	% of graduates that changed their job at least ones	
	Women	Men
during the 1 st career year	15	13
during the first 3 career years	32	36
during the first 3 career years	47	43

For this study we analyze all the job changes even if they result or not in an occupational change. Originally, the occupations were recorded as string variables, but we coded them according to the International Standard Classification of Occupations ISCO - 88 at 3 digits, in order to keep under control the measurement errors in occupational codes. An occupation change means a modification in the occupational code at 3 digits at the transition from one job to another.

3. Occupational mobility network by gender

Over the last years, a large body of literatures employing a network-based approach has been emerging in the study of socio-economic systems (Granovetter, 1995, Freeman, 1996, Barabasi et al., 1999). Within this approach, the socio-economic systems such as markets, industries or even the global economy are viewed as networked structures (e.g. international trade (Li et al., 2003), social relations structures (Jackson, Rogers, 2007), internet, peer-to-peer networks, electronic circuits, neural networks, metabolism and protein interactions).

We employ a network approach to analyses the statistical properties of the occupational mobility network (OMN) of the Romanian university graduates, by gender, over five years period (2003-2008). We generate the networks by overlaying the transition matrixes between jobs, without taking into account the unemployment spells. We construct the network as directed and weighted. It is important in this case to consider both the magnitude and the direction of the flow of workers between occupations in order to have a complete view.

Figure 1 shows the empirical occupational network for each gender (a – females and b - males). The nodes represent the occupations coded at 3 digits according to ISCO-88 and the links are weighted with the number of persons moving from one occupation to another. We also counted the people that are changing their jobs in the same occupations as self-loops. A full description of the ISCO-88 Standard Classification of Occupations may be found on International Labour Organization (ILO) web page ⁽¹⁾.

The thickness of the links is proportional with their weights, while the intensity of the color of the nodes reflects their total strength. We can notice that in the case of females, the most central occupation, according to the total strength is 244 (Social science and related professionals), while for males is 214 (Architects, engineers and related professionals). Their central position is highly determined by the amount of graduates that are changing their jobs in the same occupation, represented as self-loops in Figure 1 (a,b).

Both networks have the same number of nodes, $n = 130$ nodes, representing the total number of occupations at 3 digits according to ISCO-88, while the number of edges is different for each network ($m = 224$ edges for females and $m = 161$ edges for males).

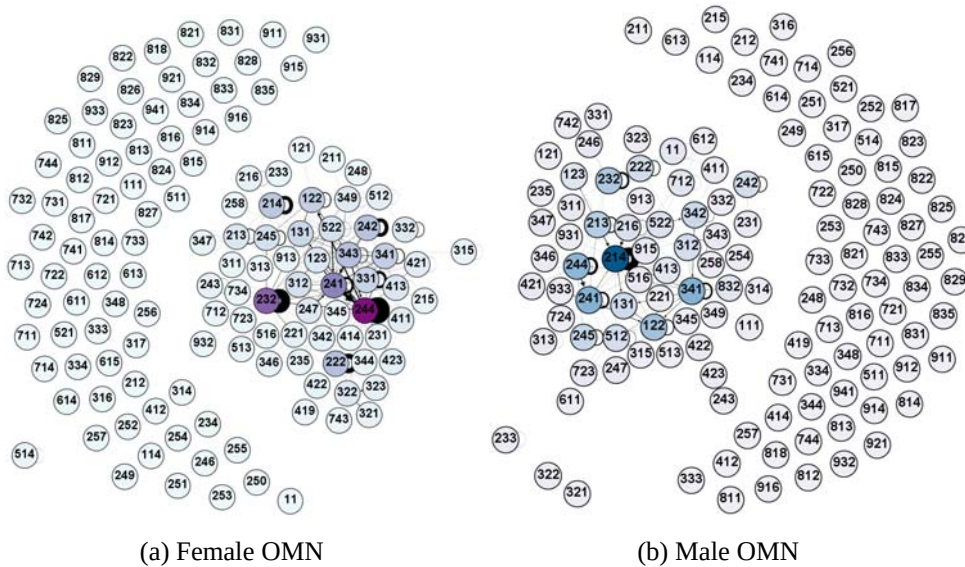


Figure 1. Visualization of the empirical occupational mobility network (OMN) for female (a) and males (b). The thickness of the links is proportional to their weights and the color of the nodes reflects their total strength (light color - isolated node, dark color - highly connected node). The numbers in vertexes represent the occupational codes according to ISCO-88. The networks are realized in Gephi 0.8.- beta using ForceAtlas2 layout (Bastian et al., 2009).

4. Network statistics

Knowledge of the topological properties of the occupational mobility network is essential in order to have a global perspective over the occupations set and how they interconnect.

The graph density is calculated by dividing the existing number of links at the number of possible ties and it shows how connected or disconnected a network is.

Mathematically it is defined as $\rho = \frac{2m}{n(n-1)}$, where m is the number of edges and

n is the number of vertexes of the network. The density takes values between $[0,1]$, the closest is its value to 1 the denser is the network.

The graph density of the two OMN is statistically different (H_0 : independent samples, t-test: 3.4743^{**}); the occupational mobility network of females being denser than the ones of males (Table 1 and Figure 1). An important part of the occupational mobility is explained by the job mobility in the same occupation, 18% for women and 13% for men (see self-loops in Figure 1). However, one should notice that women mobility on the labour market is more ample than men's as they cover a higher share of the occupational space.

Due to the fact that we are investigating the ISCED5 graduates, they don't move in all the occupational set, but just in 45% of it, around 59 occupational categories being connected into the giant component. Taking into account that the occupations classified in the first two groups which require higher education represent around 29% of the total occupational categories, we can conclude that the movement of ISCED5 graduates, during the first years after receiving their degree, is quite diverse, part of them transiting in inadequate occupational groups.

Both the network diameter and the average path length are lower in the case of OMN for females, proving that the nodes in the occupational mobility network of women are better connected. The first network metric shows the longest distance between any two nodes in a network and the second one the average distance between any two nodes.

Table 2. Occupational mobility networks (OMN) statistics, by gender

Network metric	OMN	
	Female	Male
Graph Density	0.018	0.011
Self-loops (%)	18%	13%
Giant Component (%)	46%	44%
Average Degree	1.723	1.238
Degree Variance	6.999	4.858
Average Weighted Degree	3.946	2.577
Weighted Degree Variance	23.020	15.107
Network Diameter	6	8
Average Path Length	2.584	3.093

The degree of a node i denotes the number of links connected to it. In the case of directed networks, there are defined also the in-degree as the number of links that point to node i and the out-degree as the number of links that leave from node i (Chinazii et al., 2012). In the context of OMN, the in-degree could be interpreted as the number of occupations from where an occupation i attracts labour force, the out-degree as the number of occupations where the labour force from node i flows and the total degree the total number of occupations a specific node has connections with.

$$ND_{in} = \sum_{j=1}^n A_{ij} \quad ND_{out} = \sum_{i=1}^n A_{ij} \quad ND = ND_{in} + ND_{out} \quad (1)$$

where A_{ij} is the adjacency matrix.

In the same manner is defined the total strength, in-strength and out-strength for the weighted directed network:

$$SD_{in} = \sum_{j=1}^n W_{ij} \quad SD_{out} = \sum_{i=1}^n W_{ij} \quad SD = SD_{in} + SD_{out} \quad (2)$$

The average degree and average weighted degree are calculated as averages over the node's total degree/strength. On average, the nodes from the occupational mobility network of females are better connected than the ones of males.

Even thou degree is a local measure of a specific node i , the degree distribution provides us information about the global topology of the network. If the degree distribution is narrow, with a well-defined mean and small variance it suggests that all the nodes are similar in terms of structural importance. This is not out case, since both the degree and weighted degree present high variances (Table 1). So, there is high probability to observe nodes with a large degree relative to the rest of the network.

Since a lot of empirical networks that have high variance are characterized by a distribution which decays as a power law: $p(k) \propto k^{-\alpha}$, with the exponent α taking values between 2 and 3, we test this hypothesis for the two occupational mobility networks.

We analyze the tails of the degree and strength distributions of the OMN for females and males as power laws, described by the probability density function $p(x)$:

$$p(x) = \Pr(X = x) = Cx^{-\alpha} \quad (3)$$

where X is the observed integer value, C is normalization constant and α the scaling parameter.

In order to estimate the exponent α , we use the maximum likelihood method (MLE) or Hill estimator. The likelihood function in the case of integers has the following form:

$$p(x | \alpha) = \frac{x^{-\alpha}}{\zeta(\alpha, x_{\min})} \quad (4)$$

where $\zeta(\alpha, x_{\min})$ is the generalized of Hurwitz zeta function. Further we calculate the log-likelihood function and set $\partial L / \partial \alpha = 0$ in order to obtain the approximate solution for α .

$$\hat{\alpha} = 1 + n \left[\sum_{i=1}^n \ln \frac{x_i}{x_{\min} - \frac{1}{2}} \right]^{-1} \quad (5)$$

Further details regarding the calculations may be consulted at Clauset et al. (2009).

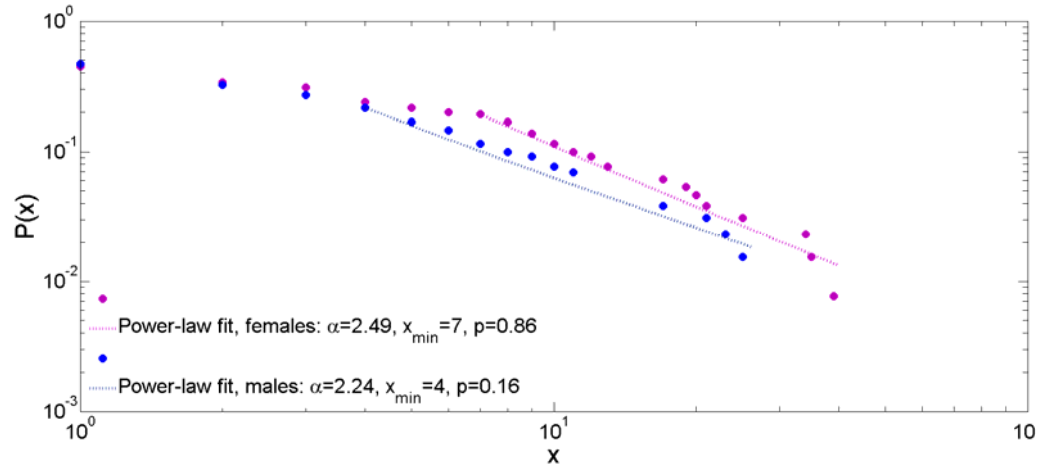


Figure 2. The cumulative density function $P(x)$ of degree for females (pink dots) and males (blue dots). The dotted lines are the power-law fits for the distributions tails

In Figure 2, we plotted the cumulative density function of degrees for female's and male's occupational mobility network and the fitted power-laws. According to Clauset et al. (2009), we accept the power law hypothesis if the goodness-of-fit

test (p) is higher than 0.1. The p-value (p) quantifies the plausibility of the hypothesis by measuring the distance between the distribution of the hypothetical power law model and the empirical data. We can see from Figure 2, that both of our distributions pass this test. These networks that exhibit power law behaviour are called scale-free networks, because there is not a characteristic scale for the degree of the vertexes.

5. Node centrality

Node centrality is a key issue of the social networks. The relevance of this measure emerges from the fact that job mobility defines a certain degree of dependency of an occupation to another. In this case the vertex/occupation centrality denotes the likelihood of a given occupation to appear along a randomly selected mobility flow within the OMN. The higher is their likelihood the more influential is the occupation in the network. Consequently shocks affecting central occupation are more likely to be transmitted in the whole network, to all the occupations. We consider three measures to quantify the centrality of a node: degree centrality, closeness and betweenness.

Betweenness centrality is calculated as the average number of short paths between pairs of the nodes that pass a certain node.

$$C_B(i) = \frac{g_{jk}(i)}{g_{ji}} \quad (6)$$

where g_{ij} is the number of shortest path between two nodes and $g_{jk}(i)$ is the number of shortest paths that pass node i .

Closeness centrality is defined as the inverse sum of the shortest distance to all other nodes from a specific node.

$$C_C(i) = \left[\sum_j^N d(i, j) \right]^{-1} \quad (7)$$

where $d(i, j)$ is the length of shortest path between two nodes.

Table 3 presents the first three occupations according to different node centrality measures. In the case of females the most central occupations are social science and related professionals (244), secondary education teaching professionals (232) while in the case of males are architects, engineers and related professionals (214), business professionals (241).

Table 3. *Top three occupations by node centrality measures, for females and males occupational mobility network*

Centrality measure	Occupational mobility network (OMN)	
	<i>Female</i>	<i>Male</i>
Degree	Social science and related professionals (244)	Architects, engineers and related professionals (214)
	Secondary education teaching professionals (232)	Finance and sales associate professionals (341)
	Business professionals (241)	Business professionals (241)
In-degree	Social science and related professionals (244)	Production and operations manager (122)
	Business professionals (241)	Architects, engineers and related professionals (214)
	Secondary education teaching professionals (232)	Business professionals (241)
Out-degree	Secondary education teaching professionals (232)	Finance and sales associate professionals (341)
	Social science and related professionals (244)	Architects, engineers and related professionals (214)
	Administrative associate professionals (343)	Business professionals (241)
Strength	Social science and related professionals (244)	Architects, engineers and related professionals (214)
	Secondary education teaching professionals (232)	Finance and sales associate professionals (341)
	Business professionals (241)	Business professionals (241)
In-strength	Social science and related professionals (244)	Architects, engineers and related professionals (214)
	Secondary education teaching professionals (232)	Business professionals (241)
	Business professionals (241)	Finance and sales associate professionals (341)
Out-strength	Social science and related professionals (244)	Architects, engineers and related professionals (214)
	Secondary education teaching professionals (232)	Finance and sales associate professionals (341)
	Business professionals (241)	Social science and related professionals (244)
Betweenness	Secondary education teaching professionals (232)	Finance and sales associate professionals (341)
	Social science and related professionals (244)	Architects, engineers and related professionals (214)
	Business professionals (241)	Business professionals (241)
Closeness	Optical and electronic equipment operators (313)	Secretaries and keyboard-operating clerks (411)
	Protective services workers (516)	Legal professionals (242)
	Textile, garment and related trades workers (743)	Primary education teaching associate professionals (331)

Conclusions

This new approach to study of occupational mobility provides interesting insights in the movement of the employees between jobs and occupations. Creating a different network for each gender, we could observe the occupational segregation that exists on the Romanian labour market, and highlight specific features of the job mobility of females and males. We find that women and men not only enter, but also move in different occupations along their career.

Both occupational mobility networks present scale-free properties. The degree distribution takes the form $p(k) \propto k^{-\alpha}$, where $\alpha=2.49$ for the OMN of females and $\alpha=2.24$ for the OMN of males.

Note

- ⁽¹⁾ International Standard Classification of Occupations (ISCO-88) on International Labour Organization web page, <http://www.ilo.org/public/english/bureau/stat/isco/isco88/index.htm>

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Creating competitive poles – the sustainable model for obtaining the competitive advantage

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Abstract. *In a global economy that has as its own competitive advantage the transfer of information and goods around the world in real time, the annexes that surround the ecosystem are the centers for innovation founded on hedge & mutual funds, investment scenarios and the development of biotechnology (for developed countries) or for the development of aircrafts or equipment used for the manufacturing of tangible goods (in emergent countries). For these to create synergy there is the idea of clusters, because they offer to the companies the possibility to change and to add dynamism to the microeconomic open system. Although globalization offers the power of global trading, clusters are found in developed countries with economies that can support multidisciplinary interactions, and their creation must be followed by the emergent countries that want to progress in this area. This paper represents a review and a research in progress on creating competitive poles (or clusters) as a sustainable model for obtaining the competitive advantage.*

Keywords: competitive advantage; competitive poles; innovation; knowledge; sustainable model.

JEL Classification: D80, F63, O10, O30, Q55.

REL Classification: 17E, 17H.

Introduction

In the context of global competition for markets, Europe must act quickly to compete internationally on the basis of excellence. According Ministry of Economy, Trade and Business Environment (METBE, 2011), European industry needs a strong, competitive and innovative clusters and networks based on clusters, because they are recognized as key drivers of innovation and economic growth by developing collaborative and multi-sectorial approach and stimulate interactions between innovation actors. At European level (COM614/27.10.2010 “Industrial Policy in the Globalization Era” and COM546/6.10.2010 “An Union of Innovation“, two initiatives of strategy “Europe 2020”), “innovative clusters” or “top level clusters” are considered the “engine” of economic development and innovation, because they are a framework for business development, collaboration between companies, universities, research institutions, suppliers, customers and competitors in the same geographical area (local, regional, national, transnational). The competitive poles is considered a key driver of innovation and growth, an instrument of industrial policy and research, as well as a generator of competitiveness and inter-cluster cooperation projects at national, European and global level. According to Ministry of Economy, Trade and Business Environment (METBE, 2009), innovative clusters or competitive poles is a successful solution because it offers a combination of entrepreneurial dynamism, intensive linkages between companies and institutions that have knowledge of top level, and proactive synergies between the main actors of innovation. The benefits of belonging to a competitive pole resulting from the quick and easy access to research results in their production implementation and creating of innovative products using advanced technologies and joint development strategies, from cooperation in the production and purchase of technology and advanced equipment for shared use, up to the marketing.

1. General framework

1.1. Conceptual approaches: cluster/competitive pole

The concept of “cluster” has a long history, giving it the several terms, including “competitive pole”, “industrial district”, “industrial agglomeration”. Currently the terms that were imposed are “cluster” and “pole of competitiveness” (in France and Belgium). Although originally there was no difference between the cluster (Anglo-Saxon branch) and the competitive pole term (French branch), however, they tend to be used differently, requiring a conceptual distinction of these terms (Table 1).

Table 1. *Conceptual distinction: cluster/competitive pole*

Term	Features	Theoretical foundation
Competitive Pole	Complete structure “triple helix” or “four clover” Strategy generated from objective to act on one or more markets Export orientation Focus on innovative projects National and international impact Focus on production	Porter's diamond
Cluster	Industrial cluster, focusing on the relationship between businesses and structures in various stages of maturity	Marshall's theory

Source: Made by author.

In the literature there are several approaches to the concept of cluster. According to Porter (1998), the cluster is defined as “a geographic concentration of interconnected companies and institutions in a particular field”. In his view, clusters contain a group of interconnected companies, companies in industries related by skills, technologies and common inputs and other important entities in terms of competition, suppliers of specialized inputs (components, services), suppliers specialized infrastructure, distributors, customers, manufacturers of complementary products, government, universities, standards agencies, vocational training providers, employers, research institutes and trade associations, local government in specific fields that compete but also cooperate. European Commission's Communication 652/2008 define cluster as a group of companies of related economic actors and institutions located in a geographical proximity and reached the degree of magnitude for the development of specialized expertise, services, skills and suppliers. According to “The Community Framework for State aid for Research, Development and Innovation”, cluster is a group of independent companies (innovative start-ups, SMEs) and research organizations, working in a field in a given region, to stimulate innovative activity by promoting intensive interactions, access to shared facilities, exchanges of experience and knowledge and helping technology transfer, networking and dissemination. In Romanian legislation (HG 918:2006 – Programme “Impact”), the cluster is defined as a group of producers, users and/or beneficiaries, in order to implement best practices to increase competitiveness of EU economic operators. Thus, the term “cluster” refers mainly focus on industrial agglomerations concentration of firms in the same field or related fields, with economic effects as they were identified by Marshall (on labour, the specialization of suppliers and in the technology transfer and innovation). They may or may not complete structure “triple helix”.

The definition of “competitive pole” is similar to the cluster's definition: a geographical concentration of public and private agencies, research organizations and training and development (research centers and educational institutions), working in partnership, under a common strategy development, to generate synergies and collaboration on innovative projects in the interest of one or more markets. The

competitive pole unifies businesses of all sizes, research laboratories and training institutions with the purpose to develop synergies and cooperation in a given area. It can associate other partners such as national and local authorities, and business services companies. The challenge is to build on synergies and innovative collaborative projects and allowing businesses engaged in these partnerships take a position at the forefront of their fields, both nationally and internationally. We consider therefore that a competitive pole can have a complete structure of triple helix (authorities, industry research, and development) or four clover (triple helix + institution catalyst).

1.2. The competitive advantage

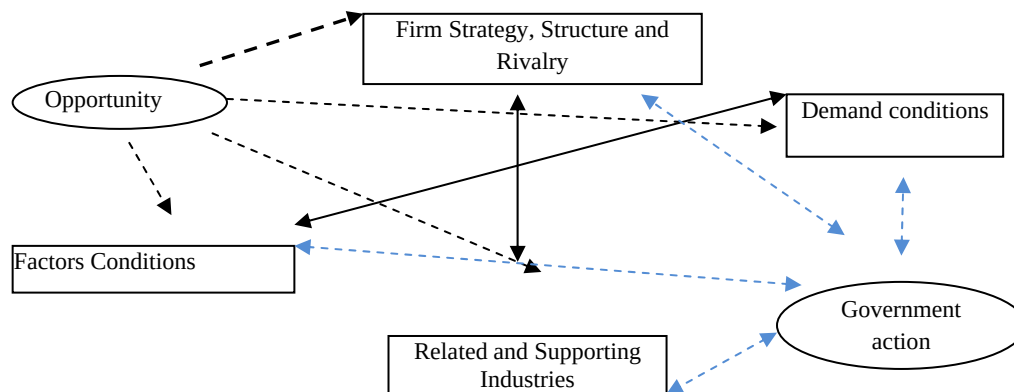
Competitive advantage is a complex concept used in many areas and has many definitions depending on the level of its approach. Looking in the strategy literature, we find that approaches for competitive advantage varies for different levels of analysis of the concept. Thus, some researchers address enterprise-wide competitive advantage level (Barney, 1991), the transaction (Williamson, 1985) or activity level (Dunning, 1993 and others), in a business unit (Rumelt, 1991), industry (Porter, 1980) or even at the nation level (Porter, 1990). Although most researchers in strategy literature suggests that competitive advantage should be addressed at the firm level, Porter argues that competitive advantage is a “multilevel” construction that need to be investigated at different levels from activity level to country on. The company is a connection point between these multiple levels of analysis. It is recognized the fact that competitive advantage theory and research basis is found in the work of Michael Porter (1990), “The Competitive Advantage of Nations”, work that attempts to answer the question: “Why [do] nations succeed in particular industries, and [what are] the implications for firms and for national economies?” According this, “a nation’s economic environment, institutions and policies” play an important role for successful competitive industry development. Porter (1990) sustained that “the home nation takes on growing significance because it is the source of the skills and technology that underpin competitive advantage”. Also, Porter underlined the fact that “differences in national economies structures, values, cultures, institutions and histories contribute profoundly to competitive success”.

2. Issue: The competitive pole and competitive advantage relationship

According to Porter (1990), economic success can't be explained only by recourse to the classical theory of economic development, but also it depends on the complex interaction of factors, grouped in what was then called “Porter's Diamond” (Figure 1): demand conditions, factors conditions, related and supporting industries, and firm

strategy, structure, and rivalry. According to Porter, the determinants above, addressed both individually and as a system, create context for achieving competitiveness at organizations level. This context is characterized by a number of issues such as: availability of resources and knowledge to achieve competitive advantage within an industry; providing information that reveal emerging opportunities, and directions of focusing resources and knowledge; help create scope owners, managers and employees involved in the competition and not least the pressure exerted on companies to invest and innovate.

Based on Porter's approach, it can say that the competitive advantage resulting from the way an organization manages its activities (from product design and procurement of raw materials, through to sales and service) and constituted a basic element of “value chain”. Supply chains and horizontal integration also relieve resource availability, access to information on companies that decide to act one direction, with those resources based on strategies, and pressure on companies to innovate and invest. Many of these activities involve interactions with other entities – suppliers of raw materials or parts, specialized services, research and innovation services, schools, distributors, customers. In such context, Porter (1990) points out that geographical position of the company is important in defining its strategy, and he underlying the fact that the importance of supplier-customer relationships increased with distance companies' vertical integration model.

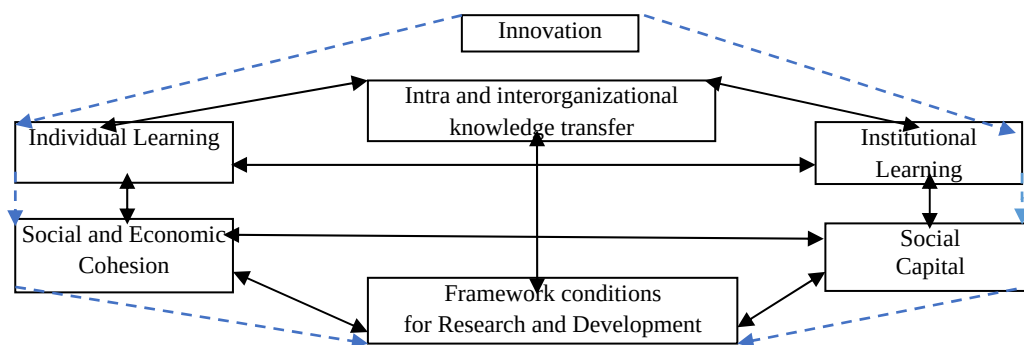


Source: adapted from “Porter’s Diamond”.

Figure 1. *Determinants of competitive advantage*

A common element of theories related above can be that geographical proximity of entities within a cluster is a central feature of a cluster. If in the past

geographical proximity of entities within a cluster must be understood in terms of transport and communication opportunities and cultural identities, traditions and preferences of customers, today it has another dimension, because the modernization of transport and communication means (for instance, Internet). Particular emphasis is placed on technological proximity (how close are the technologies used by companies within a cluster), complementary to the workforce, complementarities of customers and social proximity (the level and types of interaction between managers and employees of companies within a cluster). Based on Porter's competitive advantage theory and concepts of individual and institutional learning, Centre for Innovation and Technology of North Rhine Westphalia-ZENIT (Germany) has recently developed the “New diamond of innovation” (Figure 2).



Source: METBE (2009).

Figure 2. New “Diamond of innovation”

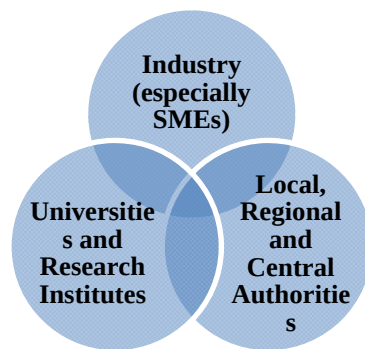
According METBE (2009) there are several existing aspects on the basis of “New innovation diamond” development model:

- Innovation is based on extensive scientific knowledge supported by modern infrastructure and it appears only when knowledge is applied in a product/service/process or a new management tool;
- A condition for the implementation of innovative processes is the economic and social cohesion, because technology transfer and innovation processes can't perform in a polarized economic and social environment;
- Innovation is built on individual and institutional learning. Individual and institutional learning can take place in a context of a common set of norms, rules and visions.

Another practical approach of “innovative cluster” is the paradigm of “triple helix” (Etzkowitz, 1997, Leydesdorff, Etzkowitz, 1996, 1997) of innovation and technology transfer that can be considered an application of innovation systems theory combined

with the concepts of individual and institutional learning. Economic practice has validated the “triple helix” (Figure 3) in a cluster which brings together representatives of:

- Industry, especially SMEs (including start-ups and spin-offs) -representing the economic side of the cluster or innovation demand;
- Universities and research institutes, training centers, representing providers of innovative solutions and technologies applicable to the real needs of enterprises existing in the cluster or in other words the supply of products, processes and services (technological pole);
- Local, regional and central authorities with competencies in order to facilitate innovative processes and to provide the harmonious development.



Source: adapted from Etzkowitz (1997).

Figure 3. The “Triple Helix” model of innovative cluster

Potential effects of intangible innovative clusters within an industry are very important because it stimulates the growth of competition and cooperation between firms in order to produce more innovative ideas and shape a “win-win” environment that generate performance. Because of clusters effects embedded in network externality, companies grow and contribute to the industry development, generate also increasing economic regions, attractiveness for investment firms and the degree of international competitiveness. According to Zhao et al. (2009), industry clusters, viewed like a series of interconnected firms in designated geographic concentrations, provide competitive advantage because they are rooted in local institutional systems including government, industry and academia aspects. The effect of network closure on the competitive advantage of organizations and mediation role of knowledge-based processes were also reflected by Chai et al. (2011). They suggest that a holistic level “of network closure” may affect the capabilities of the organization that aims to identify, transfer, protection and institutionalization of knowledge, capabilities that in turn

affect the organization's competitive advantage. Network closure may affect competitive advantage by exerting a negative effect on the identification of knowledge and a positive effect on protection. Moreover, positive or negative character of network closure effects depends on the importance given to the identification and protection of knowledge process. Shim and Lee (2012) argue that network effects and technology sustainability must be considered from the perspective of resource-based decisions in order to formulate decisions for technology development, which means that a sustainable competitive advantage is generated by a system of innovative goods in a market characterized by network effects and new threats.

2.1. The possible solution for creating and maintaining competitive poles

In the book from the year 1990 entitled “The Competitive Advantage of Nations”, Michael Porter defined clusters and competitive poles as having the following main characteristics “geographical concentrations of interconnected companies, suppliers of services, companies that come from related industries and that are in a continuous competition, but they also cooperate”. The most known cases are the cases of Hollywood and Silicon Valley. In a global economy there is the environment for companies that compete in related industries to establish their area of domination, their distribution markets with the help of developing their headquarters near their relevant market. In an interview from 1999, Michael Porter underlined the fact that in a global economy transferring or moving goods or services or even plain information around the world is fast and simple, this way the process represents on their own a competitive advantage that is available as a derivate asset for all companies, but if all companies could use it that means that it isn't framed anymore as a competitive advantage according to economic theory. As a result there are needed some decisive advantages, that could be seen as super-competitive advantages like creating the framework for developing innovation centers, by attracting mutual funds, seed capital and biotechnology research centers, the global pillar being Boston, Massachusetts or by developing aircrafts and their ecosystems, building ships and other models of water related crafts like Southern France, Alabama or Seattle, Washington for aircrafts, or Rotterdam, Holland or Piraeus, Greece for boats. Because of their proximity to other clusters, companies could collaborate without developing a new corporate entity or mandatory legal relations. According to Porter (2000), this flexibility offers many possibilities for creating a dynamic and developing environment that represent the foundation for a modern economy where sustainable growth depends only on innovation.

From what was presented earlier in this paper an idea emerges, the fact that local economies still do matter in an era of globalization. Although clusters are seen only in developed economies, they represent the primordial sparks that appear where emergent economies or countries want to reduce the gap between them and developed economies.

The case of emergent countries could be brought into the spotlight. The case of Romania could be a successful one if they will follow the steps of other emergent countries that succeeded. A good example is Costa Rica, a country with an immaculate investment strategy. They started almost two decades ago their investment in education and they transformed the country nowadays in a pole for information technology. On Costa Rica there were done many papers, even Michael Porter stresses the fact that Costa Rica was a third world country that could be considered a second tier country at best, but today is a pole for technology. Intel opened a factory there, but with Intel there came the mandatory development of local infrastructure (transportation – roads and airports) and the economy opened to new investors (the suppliers of Intel started to see in the local market a huge opportunity for their company: as a market for their products and as a resource for their human capital). Until today the Costa Rica information technology pole isn't developed completely, maybe there will pass another twenty years until the development and deployment process will be completed, but the continuous improvement creates small competitive advantages that help develop the local economy before the private sector grabbing the competitive advantage for their sake.

2.2. Creating competitive poles for the sake of developing competitive advantage

The investment in developing competitive poles is proof of the fact that different focused entities that have similar long term objectives must collaborate to ease their business model. Successful collaboration for creating competitive poles doesn't appear overnight and it must be prepared, sometimes failure is part of it because of the individuals that aren't prepared for collaboration (Bodislav, 2012).

To create and successfully deploy a competitive pole four major domains in a country or a company must be stimulated:

- Human Capital/Human Resources;
- Processes;
- Platforms;
- Programs.

Developing human capital/human resources

The training path of individuals is different in creating a competitive work force for a country or for a business' framework, resulting in different skills and work paths for individuals that are in similar positions (be them social or work related).

Redesigning processes

Innovative countries and companies were based on a learned model for understanding how a competitive pole is created and developed. This model can be implemented through experimental projects that have as a purpose obtaining the same result, but through different ways, and the most efficient solution can be used on the entire country or organization scale. A good example is Siemens through hiring the Research – Development Center from Princeton for leading a global project (this represented the hypothesis and final result node of all Siemens' partner universities chosen for participating in the project). As results there were observed the best ways to approach teams by their cultural context (the same approach of an Irish team and of a Chinese team can offer different performance – Bodislav, 2012).

Creating platforms

Innovative countries and companies create informatics platforms for labor/work coordination. They maintain under control and streamline the work and its distribution, integrates outputs of external partners, guarantees divided property rights between partners and systematization of knowledge management for creating an aggregate with high efficiency (business integrator). This system of business integrator creates the inner fire for the fusion of elements that develop the synergy that represent the competitive advantage of creating a competitive pole that at its turn represents a competitive advantage in front of other countries that could be considered as a comparative advantage brought to life in the information economy.

Programs management

Innovation appears by calculating future trends of the elaboration way of creating future skills for streamlining future processes that need a high degree of collaboration of countries that created some small competitive advantage that could evolve into competitive poles or at the same level for niche companies' network. Simplifying procedures and processes create large and complex processes easier in approaching, these being on the same trajectory with already developed skills (Bodislav, 2011). Through programs management is followed the creation of a general knowledge framework for simplifying future project needs. Through a project there is understood the idea of higher meaning of what a project is not only at microeconomic level, but also at macroeconomic level.

3. Instead of a conclusion – Some rules for creating a favorable environment for the development of competitive pole

Creating a local competitive pole or a cluster, depending on what views exist between these two concepts, is based on ten rules that could bring the edge for creating the right environment for deploying a sustainable model for competitive poles:

1. *Meritocracy* – a competitive pole must continuously attract new “brains”;
2. *Fail & try again policy* – failure is part of the development process and mustn’t be abolished or severely punished;
3. *Tolerance for traitors* – secrets and personnel come and go, they are cyclical and represent momentum flow;
4. *Collaboration* – for the short run alliances are created between individuals, companies or individuals with companies;
5. *Attractiveness for risk* – the failure from the 2nd rule do not come without a cost;
6. *Reinvested profits in the competitive pole* – what happens in the business area stays in the business area, this way the warranty for durability of the competitive pole is created;
7. *Change embracers* – countries and corporations are created by people and individuals are afraid of getting stuck in the daily routine, usually the daily routine transforms into bankruptcy on the long run;
8. *Obsession for the deliverable* – the final product or service for corporations or the created and maintained competitive advantage for countries attract new partners or new investors and differentiate businesses between them;
9. *Generous opportunities* – success is wanted and admired, not envied;
10. *Welfare distribution* – when countries or corporations that cohabitate in a competitive pole are fully developed, the profits or the added value must be shared with the people or the employees.

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Financial development and economic growth in Central and Eastern Europe

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Abstract. *The objective of this paper is the empirical analysis of the relationship between financial development and economic growth in Central and Eastern Europe. Financial development is measured by broad money growth (annual%), domestic credit to private sector (% GDP), domestic credit to private sector (% GDP) annual growth, interest rate spread (lending rate minus deposit rate,%) and nonperforming loans (% total loans) and annual growth in GDP growth rates. Methodologically, we used a panel model for eight countries in Central and Eastern Europe for the period 1996 - 2011 (the date panel approach). The main conclusions of the paper are: (1) increase nonperforming loans and interest rate spreads negatively affect economic growth, (2) increase in domestic credit to private sector negatively affect GDP growth, but increase its growth rate positively affects GDP (3) broad money growth is less relevant for economic growth.*

Keywords: financial development; economic growth; Central and Eastern Europe; nonperforming loans; interest rate spread.

JEL Classification: E51.

REL Classification: 10D, 11B, 16E, 18B.

1. Introduction

The influence of the financial sector on economic growth is widely debated in economic literature for over a hundred years. The banking system is the one that prevents information asymmetry between lenders and borrowers, reduces transaction costs, monitors the managers and provides financial resources in an inherently uncertain economic environment. Meanwhile, in the absence of an adequate institutional framework and/or in a specific economic context, in turn the banking system can develop opportunistic behavior manifested by moral hazard and adverse selection, which is reflected in non-performing loans and inefficient allocation of resources.

The objective of this paper is the empirical analysis of the relationship between financial development and economic growth in Central and Eastern Europe. Importance of the topic is shown by the scale and speed with which financial problems have spread to the real economy after 2007. Financial development is measured by indicators related to banking system as banks in transition economies have absolute majority in financial intermediation. Research methodology is explained in the third part of the paper. Part two summarizes the literature reference underlying this study. The fourth part presents the analysis model and its results. The last part is devoted to discussions and conclusions.

2. Theoretical references

Numerous empirical studies are focused on the relationship between financial development and economic growth. Since this paper's topic is Central and Eastern, will be further synthesized reference studies that have investigated these countries.

To measure financial development, these studies are using both (1) quantitative indicators such as the rate of monetization, financial intermediation ratio, the ratio deposits/GDP, ratio loans to private enterprises/total domestic credit, etc., and (2) qualitative indicators such as interest margin, the ratio of loan/deposit, the level of nonperforming loans in total loans, etc.

Thus, King and Levine (1993) study the relationship between financial development and economic growth for a number of 80 countries for the period 1960 to 1989. The indicators built to measure financial development are: the ratio of liquid liabilities of the financial system/GDP (the ratio of liquid liabilities of the financial system to GDP), the ratio of deposit money bank domestic assets/ domestic assets of deposit money bank domestic assets of the bank + central (the ratio of deposit money bank domestic assets to deposit money bank plus central bank domestic assets), the report of claims on non-financial private sector/total domestic credit (the ratio of claims on nonfinancial private sector to the total domestic credit) and report of claims on non-financial private sector/GDP (the

ratio of claims on nonfinancial private sector to GDP the). Economic growth is measured by: real GDP per capita growth (real per capita GDP growth), the rate of accumulation of physical capital (the rate of physical capital accumulation), the report of domestic investment/GDP ratio (the ratio of domestic investment to GDP) and a residual measure which includes all the other factors that may influence real GDP growth (mainly capital allocation efficiency). The two researchers concluded that financial development indicators are strongly correlated with indicators of economic growth.

Graff (1999) tests on a sample of 93 countries for the period between 1970 to 1990 (divided into subperiods of five years), the hypothesis that financial development is a determinant of economic growth. Financial development is measured by the share of resources that society spends for its financial operation ("the share of resources a society devotes to run its financial system"). That percentage is a composite indicator constructed from the perspective that organizational mechanisms of financial transactions have as main purpose saving transaction costs. The indicator construction was done by transforming specific methods as explained in the article, the information on the proportion of workers employed in the financial sector in the GDP share of the financial system and the number of banks and branches per capita, so that they become comparable between different countries and periods. The author concludes that the financial sector is important, especially for less developed countries. In addition, the impact on growth of the financial sector can be both positive and negative, depending on the period.

Jaffee and Levonian (2001) in their paper assess the state of banking system development in 23 transition economies of Central and Eastern Europe and the former USSR. Level of development is measured by reference to 26 developed countries from OECD, considered to be reached the effective balance (for 1995). Compared to OECD countries, the authors conclude that "the banking systems in the transition countries have too many generally banks and relatively low total banking assets". In studying the relationship between banking structure and GDP per capita, both are based on the assumption that GDP increases more quickly as economies in transition are closer to the developed countries. The study convergence with developed countries in terms of number of banks (bank called ratio) and EBRD banking rating (measured by the EBRD Bank Reform Index) positively affects GDP growth.

Koivu (2002) conducted an empirical study on 25 transition economies, including Romania, for the period 1993 to 2000, and showed that there is a strong negative relationship between interest margin, on one side, and the annual GDP growth, on the other hand. Private credit growth was not found relevant for growth, finding explained by the author by crises crossed by the banking systems in transition economies over the period analyzed and soft lending criteria that led to contaproductive loans.

Fink, Haissam and Vukšić (2005) used the model of the production function to study the relationship between financial development and economic growth on the example of nine transition countries, including Romania, during 1996 to 2000. They built two aggregate indicators of total financial development as the sum of domestic credit/private credit, stock market capitalization (stock market capitalization) and total issuance of bonds (bonds outstanding). According to them, both indicators of financial development are significant (at a 5% or 10% level) and positively correlated with GDP growth, if they are introduced in the regression with a delay of one or two years. Domestic credit is also found relevant and positively correlated, the significance level is best for the delay of two years, except for the one year. Instead, the authors show that private credit growth is not significant. They explain intuitively meaningful difference between private credit and domestic credit in that the latter includes loans to public entities, characterized by a very low rate of cessation of payments.

Haissam and Kichler (2009) conducted a comprehensive study in which they "investigated the interdependence of the financial sector - growth" ("the finance-growth nexus") in a sample of 10 countries in Central and Eastern Europe, including Romania, along period 1999 to 2006. The two have added to financial development indicators used by Fink, Haissam and Vukšić (2005) the volume of leasing. Using annual data in a panel model, the authors show that bad loans have a strong and significant negative impact on the growth of GDP per capita. In addition, other indicators identified as slightly but significantly negatively correlated with economic growth are M3 and two aggregate indicators of financial development. Domestic credit and private credit were found to be slightly positively correlated with economic growth if they are introduced in the regression with a delay of two years, meaning the higher domestic credit.

Cojocaru, Hoffman and Miller (2011) demonstrated in 25 CEE and CIS countries (including Romania) for the period 1990 to 2008, that there is a significant positive relationship between credit to the private sector (as a percentage of GDP) and GDP growth and a negative correlation between interest rate spread and GDP.

3. Methodology

This paper empirically examines the relationship between financial development (independent variables) and economic growth (dependent variable) in the countries of Central and Eastern States. We chose the study of Central and Eastern considered emerging economies characterized by the transition. These are: Bulgaria, Estonia, Czech Republic, Hungary, Latvia, Lithuania, Poland, Romania. Slovenia and Slovakia were excluded from analysis due to incompleteness of data series available. To measure financial development it's used quantitative indicators

as broad money growth (annual%), domestic credit to private sector (% GDP), interest rate spread quantitative indicators (lending rate minus deposit rate,%) and nonperforming loans (% total loans) as they are defined in the World Bank statistics. For economic growth we used the rate of economic growth (annual%).

The relationships between dependent variable and independent variables are analyzed following periods (annual data series):

- 2000 - 2011 for the impact of nonperforming loans to GDP growth due to lack of data for 1996 to 1999.
- 1996 - 2011 for the other independent variables, on the one hand, and GDP growth, on the other. Limiting the analysis to 1996 was imposed by the absence of comparable data for the variable domestic credit to private sector (% GDP).

Assumptions that starts are:

(H1) Nonperforming loans have a negative impact on economic growth.

(H2) Interest rate spread has a negative impact on economic growth.

(H3) Broad money growth has a positive impact on economic growth.

(H4) Domestic credit to private sector has a positive impact on economic growth.

Data are taken from the World Bank website, with two exceptions. In Poland for the period 2007 - 2011, data on interest rate spreads come from the Central Bank of Poland. For Lithuania, the interest rate spread data for the period 2010 - 2011 come from the Central Bank of the country.

The used method of analysis is that of econometric modelling with EViews 7.0. programme. This software allows the analysis of data into a pannel type system, involving a mix of periods of time and series of data for different entities. More exactly, we associate independent variables specified dependent variable. Equation which is based on this model is:

$$\text{GDPcap}_{i,t} = \beta + \alpha_{i,t} X_{i,t} + \delta_{i,t} + \gamma_{i,t} + \varepsilon_{i,t},$$

where

$\text{GDPcap}_{i,t}$ is the dependent variable and shows the real growth in country i at time t ;

β is the coefficient for constant term;

$X_{i,t}$ is the vector of explanatory variables of the model;

$\alpha_{i,t}$ is the coefficient of explanatory variables (NonperformantCR, Private_credit, M2_growth, Interest_rate_spread);

$\varepsilon_{i,t}$ are error terms, random variables;

$\delta_{i,t}$ and $\gamma_{i,t}$ are the values of cross-section or period specific effects (random or fixed);

i indicates country on which to make regression (EU members countries of Central and Eastern Europe: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania);

t indicates the year (2000-2011 for NonperformantCR and 1996-2011).

We opted for the construction of four scenarios to better capture the dependence relationship between economic growth and financial development for the eight countries selected for the study. Difficulties may arise in the analysis of the statistical system transition countries studied due to the introduction of market concepts, and to several methodological changes. Another reason for the difficulty is that the analyzed data series is not very long.

First we tested whether the model is valid using T test and F test. Another test used is R^2 which tests on whether the regression model is well specified. It shows what percentage of the total variance of the dependent variable is due to the independent variables. Then we resorted to testing the chosen method: the fixed effects method and random effects method. To do this we used the Hausman test which tests if the orthogonality assumption is violated in the case of fixed effects method. If the regressors are correlated with the error term, then the estimation of fixed effects method is consistent while the method of random effects estimation is not. Free term using fixed effects may vary across countries but vary over time, while slope coefficients are assumed to be constant across countries. This method assumes that the free term is deterministic that means it is correlated with covariates (regressors vector) and is based on internal estimation that means each observation is inside the country "i" over the entire period. In contrast, random effects method assumes that the free term is stochastic (random), that means it is uncorrelated with the variables and it is included in the error term. This test compares the estimates made in the case of fixed effects and random effects. If there are fixed effects, Hausman test tests the hypothesis H_0 : fixed effects approach would be consistent and efficient versus H_1 : random effects method would be inconsistent. Test is a vector of dimension k which will be distributed chi-square (k). If the test statistic is large, then the fixed effects method should be chosen, and if the test statistic is small then you must choose random effects method. Another test used is AIC. AIC is a measure of the relative "goodness" of a model compatibility. It provides a relative measure of loss of information when a model is used to describe reality. The results of the model are described in the next section.

4. Scenarios for testing dependency relationship between economic growth and financial development

As shown in the previous section, four scenarios were conducted to better capture the dependence relationship between economic growth and financial development for the eight countries selected for the study. Analysis results are presented in Table 1.

Table 1. Scenarios for testing dependency relationship between economic growth and financial development

Variable	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Non-performant CR	-0.32 (-5.123***)	X	X	X
Private_credit_% GDP	X	-0.066 (-2.63***)	-0.066 (-2.68***)	X
Private_credit_growth%GDP	X	X	X	0.052 (2.86***)
M2_growth	X	0.0011 (0.08)	X	0.027 (1.84*)
Interest rate_spread	X	-0.055 (-2.73***)	-0.0545 (-3.89***)	-0.088 (-4.50***)
Constant	6.05 (12.11***)	6.98 (4.40***)	7.01 (6.41***)	2.95 (5.59***)
R ²	0.284	0.287	0.288	0.2927
Ajustat R ²	0.21	0.226	0.234	0.2322
AIC	4.98	5.270	5.25	5.25
Chi-squared	4.97 (0.0258)	3.69 (0.29)	1.36 (0.50)	2.38 (0.49)
F-statistic	4.3269 (0.0000)	4.71 (0.0000)	5.31 (0.0000)	4.8423 (0.0008)
Number of observations	96 ⁽²⁾	128	128	128 ⁽³⁾
Number of groups	8	8	8	8

Source: own processing.

Notes: * significant at $p < 0.1$, ** $p < 0.05$, *** $p < 0.001$.

⁽²⁾ period is 2000-2011.

⁽³⁾ period is 1996-2011.

Scenario 1 tests the dependency relationship between economic growth and bad loans. Period is relatively short, 2000 – 2011, due to lack of data. The data analysis showed that the model is valid. The dependent variable of the model which is growth rate is explained of 28.4% by nonperforming loans, between the two variables being an inverse relationship which shows that an increase of one unit of the non-performing loan credit the economic growth falls by 0.32 units. All other tests show that the dependence relationship is statistically significant as well as Hausman test method showed fixed effects across countries and random effects method at level of the years. The same result has been obtained for Hausman test and for the following three scenarios. That hypothesis H1 is true for the eight countries surveyed.

Scenario 2 tests the dependency relationship between growth and the share of private credit to GDP, money supply growth and interest rate spread. Due to data availability for the following three scenarios we chose the study period 1996-2011. According to T test the the share of private credit to GDP and interest rate spread have a high degree of significance (p -value $< 1\%$) and M2 growth is not

significant, so we opted for its elimination in the third scenario. Private credit and economic growth are in an inverse relationship that means that an increase in private credit by one unit leads to a decrease of 0.066 units of the dependent variable which contradicts the hypothesis H4. Direct relationship exists for broad money growth and shows that an increase of one unit of this variable leads to an increase of 0.0011 units of the dependent variable for the model but this variable is not significant, so H3 is not checked. Between interest rate spread and economic growth rate the model shows an inverse relationship which shows that an increase in interest rate margin with a unit drives a decrease of economic growth by 0.055 units. That hypothesis H2 is true for the eight countries surveyed. We then went on to analyze the data from the third scenario.

Scenario 3 tests the dependency relationship between growth and the share of private credit to GDP and interest rate spread. We chose testing this relationship because we wanted to eliminate every hypothesis that the variable given by the increase in money supply can cause errors in the model and for this reason the share of private credit to GDP could be negatively correlated with growth variable, but the results contradict this given hypothesis H4. Although in this case we found that having a high significance for model variables "private credit growth" and "interest rate spread" because the results contradict the hypothesis we opted to replace in the scenario 4 the variable "share of private credit to GDP" with the variable "private credit to GDP percentage growth".

Scenario 4 tests the dependency relationship between economic growth and private credit growth, money growth and interest rate spread. This scenario shows a coefficient of determination of 29.27% which indicates that the dependent variable of the model, economic growth, is explained in the proportion of 29.27% by the independent variables. AIC test has a good value compared to other scenarios. T and F test show that the model is well specified. According to T test variables private credit growth and interest rate spread have a high degree of significance (p-value <1%) and money growth is significant but with a higher model weak (p-value <10%). In terms of economic theory and of econometrics, this scenario is preferable to other scenarios. At the level of this scenario, private credit growth is directly related to economic growth which shows that an increase of one unit of private credit increases the dependent variable by 0.052 units. The same direct relationship exists between the growth of money supply and economic growth and a change of one unit of money supply leads to a change in the same direction and of 0.027 units of the economic growth. Regarding the interest rate spread the relationship is negative and a change of it by one unit leads to a change in an opposite direction of economic growth with 0.088 units. Compared with the other scenarios, this one records the best values on tests used.

5. Conclusions and discussions

This paper analyzes the relationship between the banking sector and economic growth in Central and Eastern Europe, using public data available on the website of the World Bank for the period 1996-2011 and 2000-2011 for the independent variable nonperforming loans. The main conclusions of the study are: (1) bad loans have a significant negative impact and rather large on economic growth, (2) interest rate spread is significant for growth and negatively correlated with it, (3) increasing the share of domestic credit to the private adversely affects negatively the GDP growth, (4) the rate of growth of private credit (as a percentage of GDP) is significantly and positively correlated with GDP growth, (5) when the indicator the increase in private credit to GDP is replaced with its growth rate, the variable money supply growth (M2) becomes partially significant for economic growth and correlated slightly positive with it.

Some of the conclusions of the paper are similar to the results of the studies cited in the literature reference. Thus, Haissam and Kichler (2009) identifies as well a strong negative relationship between growth and bad loans. Koivu (2002) and Cojocaru, Hoffman and Miller (2011) find a significant negative relationship between interest rate spread and GDP growth. However, the studies investigated are not converging regarding the influence of private sector credit and broad money to GDP. Contrary to other studies (such as Cojocaru, Hoffman and Miller, 2011), this one highlights the fact that economic growth is negatively influenced by credit growth to the private sector, comparing data for the same year. A first explanation may come from the potential endogenous nature of private credit, especially since the data were correlated for the same year without any delay. For example, Haissam and Kichler (2009) have found that there is a positive influence of private credit to GDP if it is introduced in regression with two-year lag. The fact that the result might change if entered for this indicator lags by one or two years is suggested by the results obtained when he was replaced with its annual growth (scenario 4). On the other hand, another explanation for the negative relationship may lie in banking crises crossed by countries in the region during 1996 - 2000 and the effective allocation and use of loans to/private sector.

For example, Mehl et al. (2006), cited by Cojocaru, Hoffman and Miller (2011), identifies also a significant negative effect of private credit easier for the countries of South-Eastern Europe and argues that the influence of the financial sector depends on the quality of the economic environment. Hagmayr and Haissam (2007), quoted in Haissam and Kichler (2009), identified the example of four transition countries of South-Eastern significant negative impact on the growth of private credit to GDP. In contrast, in the same work, the impact on growth of domestic credit changes sign from negative to positive when switching from 0 lag

delays of one or two years. A third explanation for the negative effect may be low level of financial intermediation in the countries analyzed. For example, D'Alfonso and Moretti (2012) show in their paper that the ratio private credit/GDP exerts a statistically significant negative influence on economic growth in that countries in which this independent variable is low (below 40%). Therefore, a natural continuation of this research is to introduce lags banking development indicators. In addition, another future research development refers to the introduction of additional indicators such as domestic credit, the share of foreign banks in total assets, the annual number of changes in banking laws rules (as an indicator of institutional stability of the banking system) and the extension research on a larger number of countries grouped by level of development.

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Neoclassical economic orthodoxy and the need for a new post-crisis economic paradigm

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Abstract. *Capitalism is a social adaptive system that evolve, change and grow in response to the challenges of a rapidly changing economic environment. When capitalism is seriously threatened by a systemic crisis, a new version much better adapted to existing conditions appears. Critical analysis of the fundamental ideas underlying neoclassical economic theory shows that the capitalist system is fundamentally a dynamic and therefore static neoclassical models proved to be unsuitable for studying it. Contrary to neoclassical economic vision, the capitalist economy is not governed by immutable economic laws. Global systemic crisis of capitalism that began in 2007 has highlighted the need for a new economic paradigm on which to be built and to be performed a new version of capitalism, in line with the increasingly complex realities of a globalized and quick changing world.*

Keywords: economics; neoclassical economics; the economic crisis.

JEL Classification: A1, B2, N1, N2, P1.

REL Classification: 1A, 2B, 3B.

Introduction

The financial crisis triggered in 2007 revealed that between dominant economic theory and economic reality there is a great discrepancy. Absolute confidence in standard neoclassical theory has led governments to deregulate financial markets, a process triggered in the Anglo-Saxon decades ago under the influence of neo-liberal paradigm. Apparent success of financial markets in the last three decades – despite regional or sectorial crises – has turned into a role model to restructure society as a whole. In addition, under the neoliberal paradigm that remains dominant, global capitalist reform is very difficult, and the creation of a new variant of capitalism based on a new paradigm remains a difficult goal to achieve.

In the Western world, the last 40 years have been marked by a series of major economic policy errors. These errors were, according to Barbera (2009), strategic, not tactical, and this was determined, first, that the economic policies were the product of a flawed economic theory. Therefore, the architects of these theories can be considered at least partially responsible for their contribution to triggering the greatest systemic crisis in the history of capitalism.

Literature review and some history

The global financial crisis has shown in a manner quite clear and tough that the functionalist perspective of the capitalist system, seen as an impersonal machine for creating wealth, seek or remain in a steady state, is erroneous. This view underestimates, as underlined Streek (2009), both anarchism Schumpeterian entrepreneurship and the predator Keynesian spirit. On the other hand, regarded the institutionalist perspective, capitalism is a complex institutional social order, and not a mere combination of private property and free markets. The importance of political institutions to create conditions for capitalism has long emphasized the works of Adam Smith, Max Weber, Joseph Schumpeter, Douglas North and many others. What happened with the onset of the conservative revolution in the 1980s was that the conservative political leaders, the business world and a large part of economists decided to ignore historical facts pleaded in the direction of a more complex approach to economic and social realities in favor of ultra short version ideology promoted by free market fundamentalism. In essence, these free-market fundamentalists believed that markets are always right, and governments acted almost always wrong. This approach represented a radical break with respect to the previous phase of capitalism between 1930 and 1970, when economists started on the assumption that governments were always right and markets always fail.

As with other major crisis, its causes were analyzed and discussed in detail, and one of the main questions was about how so many economists have been unable to predict the 2008 financial collapse and recession that followed. According to Orrell (2010), the failure of economists to predict the crisis was not something unusual. What was unusual, however, was that not only theoretical models were untrue but also contributed to the crisis. And this, because the fundamental ideas underlying economic theory (neoclassical) are wrong. Orrell points out that this means that not only mathematical models are wrong, but economists mental models are completely wrong (Orrell, 2010). From this perspective, the failure of Lehman Brothers on September 15, 2008 was the collapse of the economic system and philosophy that formed the basis thereof. More specifically, the crisis signaled the end of the free market neoliberal model, the extreme version of neoclassical neoliberal orthodoxy. It is more likely that in the medium term after the neoliberal model will cease to be the dominant economic model, to show a new economic paradigm based on which economic growth takes place in the capitalist world.

Age of the free market fundamentalism of the 1980s and 2009 was dominated by neoliberal dogma that government intervention is always harmful to private initiative. The main theme that links almost all negative developments that have converged to the global economic crisis in 2007-2008 system was quasi-religious doctrine of perfect markets and its corollary that the market and efficient governments are in Manichean opposition and are unable coexistence. For neoliberal, ideal political-economic system was and still is laissez-faire capitalism, a highly capitalism system, characterized by a complete separation of the economic from state in a manner similar to the separation of church and state. Beliefs of the neoliberal economists in the supremacy and perfectly functioning markets remained adamant even if a majority of philosophers, sociologists, political scientists and economic historians have realized that it is flawed because any society dominated by pure market game will collapse catastrophically. This is evident in the case of failed states such as Somalia, Congo and Afghanistan, countries where the pursuit of profit at any cost is the main law that guide the whole society and governments are extremely weak and unable to perform its functions. These countries fall into a much greater neoliberal model to the United States or Hong Kong and even to tax havens such as the Cayman Islands.

Solutions to economic theory or reality?

As a method of scientific investigation, the economy is simultaneously a social science, environmental, political, and moral mathematics (Boulding, 1970).

According to Schumpeter (2004), economic theory is a "toolbox" used for multidimensional analysis of economic developments. At the core of neoclassical economic theory are a number of ideas that have a major impact on society and affect the process of decision making at the individual, governmental, business environment and society as a whole. At the core of neoclassical theory are a number of statements that have a status of axioms:

1. Economy can be described by economic laws;
2. Economy is composed of independent individuals;
3. Economy is stable and tends toward equilibrium;
4. Economic risk may be relatively easy managed using statistics;
5. Economy is correct;
6. Growth can continue indefinitely;
7. Growth will make everyone happy;
8. Economic growth is always good.

However, the real economy is very different from economic theory, the result of complex processes that are very difficult to fit economic models. The economy is not rational or fair, and economic growth is not automatically desirable. Moreover, it is obvious even to laymen in mathematics that something is clearly wrong with the models that are in the center of the global financial system. One of the fundamental weaknesses of the neoclassical theory is that the entire construction is based on intellectual static patterns that are used to decipher a process characterized primarily dynamism. According to Schumpeter (2003) capitalism is not a static set of institutions, but a system that is constantly evolving and reinventing itself through major crisis, the process of "creative destruction". Schumpeter's analysis of the functioning of the capitalist economy was achieved in a sharp controversy with the neoclassical school, in his view failed in terms of understanding that, fundamentally, capitalism consists in change and cannot be examined, consequently, in statistical terms.

According to Sewell (2008), change is the only constant thing in capitalism. Capitalism is a social system found in an ever-changing, a system that encourages systematic "mess" and that gives rise to unpredictable events. Capitalism, as shown in Schumpeter (2003), is by nature a form or method of economic change that has not been and cannot be stationary. This dynamic state, evolving capitalist process exists not only because that economic life takes place in a constantly changing environment and modifying economic action data or quasi-automatic increase in population and capital. First, the momentum of the engine that powers the capitalist economy is generated by innovation, technological progress, new

methods of production and transport, new consumer products, new markets and new forms of industrial organization created by the capitalist system.

The entire evolution of capitalism shows that long-term economic growth is the rule, but this increase is not linear but occurs within economic cycles that are characterized by periods of economic boom, followed by seizures and depression/recession. After that cycle resumes. Cyclical evolution of capitalism highlights the inherent instability of the system and its main sources were identified by Minsky (2008b) in the financial sector because in times of economic prosperity, when the level of employment is high and maintained for longer businessmen and bankers tend to take higher doses of indebtedness. Also, during periods of economic expansion, financial institutions, in an attempt to maximize profits, invents and reinvents new types of financial instruments and techniques, and this guarantee, in Minsky's vision, financial instability. Minsky saw in what he called financial instability hypothesis (Hypothesis Financial instability) the fact that the persistence of favorable conditions for economic development generates a sense of trust in sustaining this condition benign and, secondly, decision-taking encourages confidence risk in the financial world. In Minsky's view, the economic cycles of boom and depression are inherent in the capitalist economy (Minsky, 2008b).

Free markets operate in the real world differently from how their operation is described in theoretical texts, which offer only a distilled version, schematic, used strictly to illustrate the principles on which markets work in the real world. All too often it is forgotten that real markets are existing theories that explaining the functioning of markets and the recent post-crisis debate has revealed that contemporary neoclassical vision prevails the idea that theoretical models are preeminent and real markets should be a reflection of theoretical models free market as it appears based on neoliberal theories described in efficient markets hypothesis (Efficient Market Hypothesis/EMH) and that of rational expectations (Rational Expectations Hypothesis). According to McCleskey (2010), it is very easy to slip into the ideological trap of trying to make reality conform to the model theory, instead of trying to eliminate discrepancies between theory and economic reality.

According to Keen (2001), neoclassical macroeconomics, the product of neoclassical microeconomics, is a theoretical construction marked by a series of errors, the most important of which is related to obsession on macroeconomic equilibrium models, ignoring the role of credit and debt in a market economy, the refusal to accept the existence of division in terms of economic functions between different social classes, the reduction of risk and uncertainty, not least, by treating the financial sector separately from the rest of the economy.

Keen's perception as to the operation of the capitalist system is that it is a dynamic system, powered by the application, which normally operates far from steady state in which the leverage credit and play the principal role in determining the demand and the relationship between social class both in terms of their economic roles and the changing income distribution trends are cyclical and sometimes secular (Keen, 2001).

The central conventional neoclassical thinking is based on IS-LM model, recently completed the new wave of the theory of rational expectations. Both are essentially static models of economic equilibrium, while DSGE models (Dynamic Stochastic General Equilibrium) are currently only unconvincing attempts of theorization of economic equilibrium in a dynamic manner. All these models are based on a number of conclusions of theories that do not account sufficiently demonstrated, for example, from Sraffa the evidence showing that the marginal theory of income distribution based on marginal productivity does not apply in a world of multi-product or incorrect calculation based on perfect competition model. In other words, as pointed out by Kates (2010), neoclassical economists have built a number of macroeconomic models using a conceptual apparatus that proved through microeconomic analysis unrealistic and inconsistent with the real model of how capitalist economy works. The fact that neoclassical macroeconomic models seemed to comply economic realities revealed by empirical data is more evidence of progress in modern econometric techniques in analyzing complex patterns and not necessarily evidence of relevance to the real economy neoclassical models.

The IS-LM model, standard neoclassical model, is highly instructive. IS-LM model is based on the work of John Hicks that has already been questioned even by the economist in question in his work "IS-LM – An Explanation" (Hicks, 1982). Hicks pointed out that the model in question was not inspired by the "general theory" of Keynes, but the author's previous work, in which Hicks tried to build a theoretical dynamic model of a so-called "savings bread" (Hicks, 1935). The author's intentions and some of the arguments were very interesting. Hicks noted that theories whose construction assuming a steady state were quite satisfactory in terms of that hypothesis, but were unable to be extended and combined with other assumptions and therefore were inapplicable. Hicks also noted that theories of capital, very fashionable at that time, were based on a number of applicable equations in a stationary state of the economy, but once stationary conditions cease to exist, these equations become inapplicable (Hicks 1935). In an attempt to build a dynamic model, Hicks, unfamiliar with complex mathematical techniques for calculating the economic flows in continuous time,

introduced the temporal dimension in his model by dividing the future into short fractions, each of which will be treated as constant. In the model developed by Hicks, these fractions were equal to one week, every Monday – and only on Mondays – market opened and established salaries and interest rate, then the output is held throughout the week, taking prices down in the first Monday as data, the effect of expectations regarding price changes were reduced to zero. Subsequently, irrespective of its initial argument that the applicable state theory equation involves only static terms, Hicks tried to use this type of dynamic equations in his model. Moreover, Hicks used Walras's law to argue that capital markets can be left out of the model on the basis that if the labor market is in equilibrium and that the bread market is in equilibrium, the capital market must be in equilibrium (Hicks 1935). Subsequently, Hicks used the same way of thinking to disregard the development of IS-LM model labor market (Keen, 2010).

Neoclassical economic orthodoxy

Neoclassical macroeconomic theory is celebrating the "invisible hand" of Adam Smith. This theory has dominated classical and neoclassical economic thinking not questioned until the impact of the Great Depression in the 1930s, when Keynes realized that economic realities have denied the existence of a self-correcting mechanism of the capitalist economy. Publication of the fundamental work "The General Theory of employment, interest and money" in 1936 sparked an intense debate on issues that are still on the agenda of economists worldwide. First, in terms of Samuelson, Keynes substance heresy was the denial of the existence of "invisible hand" that directs the actions of individual market players to achieve the social optimum. The classical economists before Keynes believed that free markets process information fairly and accurately, and this ensures perfect course obviates the economy and state intervention in the economy. Keynes and his followers have challenged this view and stressed that government intervention is needed, especially in times of economic downturn. While Keynes serious argued and indicated that the capitalist system is far from perfect one in terms of the neoclassical synthesis followers capitalist economy is a system that tends towards equilibrium despite external shocks on relatively minor shocks could be mitigated by means of economic policies. Another major difference between these two schools of thought is that while the Great Depression Keynes considered as a normal result of the operation of a complex capitalist financial system. Neoclassical synthesis followers considered the crisis as a special case, resulting and following an unfortunate convergence of economic shocks and economic policy errors. Keynes believed that fundamental changes are needed at

both theoretical and practical level, while devotees of the neoclassical synthesis, felt on the contrary, the system works as expected, and fine tune it is enough.

Neoclassical economists have provided important support to American neoconservative ideologues starting in the 1980s. Since the merger of the two streams – neoclassical economics and political conservatism – has resulted the contemporary neoliberalism, an separate ideology based on Friedman's monetarist theories and politico-philosophical conception of Hayek. From an economic perspective, neoliberalism promotes the idea that individual welfare can be fastest achieved by promoting private initiative in an institutional framework characterized by protecting property rights, free markets and free trade. Neoliberalism is also remarkable in that it focuses primarily on the need to maintain macroeconomic stability, in the opposite end of the Keynesian ideal of full employment of labor and poverty reduction. The political perspective is that the whole building neoliberal Hayek's critique is based on the state, whose role should be limited to ensuring the safety of citizens, protecting the freedom of trade and property right. Neoliberal ideology calls for a reduction of the role of the state and to create a society governed by free market mechanisms. While the market is traditionally defined as being characterized by the absence of state intervention, historical experience shows that market factor is a phenomenon that occurs naturally, but it must be established and regulated through economic policies. Therefore, as pointed out by Birch and Mykhnenko (2010), neoliberalism is based on a contradictory theory of the state as laissez-faire policies can not be implemented without government interference. In other words, the theory of minimal state is illusory, given the neoliberal policies that increase the interventionist role of the state in different ways even in more explicit forms of state intervention.

Neoliberalism has had various versions and proved to be highly adaptable to the social context in which it was applied. Appeared in a negative economic situation caused by structural crises of the 1970s, neoliberalism is, as pointed out by Dumenil and Levy (2011), a new strategy of the capitalist class in alliance with top managers, particularly those in the financial world, which aimed to strengthen their hegemonic position within the capitalist system and, on the other hand, the strengthening of the US hegemonic position globally. Before the biggest contract that began in 2007, this strategy seemed to work, especially if it is considered in the light of their own objectives: increasing income and wealth of a privileged minority and the establishment of US hegemony globally. The crisis has, however, this strategy unsustainable and marked the neoliberalism in deep crisis (Dumenil, Levy, 2011). In reality, as Harvey (2010) remarked, neoliberalism is a

project of economic and political elites, masked abundant rhetoric about individual liberty, individual responsibility, about the virtues of privatization, free markets and free trade. What is important to note that this project is legitimized draconian policies of economic austerity, highly prevalent in the early years of the crisis, policies aimed primarily actually restoring or strengthening power of capital owners. Therefore, in the same way that neoliberalism emerged in response to the crises of the 1970s and now the economic policies adopted in response to the current crisis will define the future evolution of capitalism.

The need for a new post-crisis economic paradigm

Crises are, as noted Harvey (2010), "rationalize irrational of irrational system" (Harvey, 2010, p. 210). Crises are an integral part of the capitalist system. But as pointed out Soros (2008), this time something was different in the sense that if previous crises have successfully tested and misconceptions prevailing trends, the current crisis is a turning point as far as trends and concepts wrong were denied and became untenable. There Soros points out (1998) therefore "an urgent need to rethink and reform the capitalist system and rethinking must start with the recognition that financial markets are inherently unstable. The capitalist system is based on the belief that financial markets tend toward equilibrium alone. It is assumed that they are moving like a pendulum: it could be displaced by external forces, the so-called exogenous shocks, but will seek to return to the equilibrium position. This belief is false. Financial markets are subject to excesses, and when succession occurs boom/crash, beyond a certain point, returning to the starting position is no longer possible. Rather than acting as a pendulum, financial markets have recently acted more like a demolition ball which shattered economy after another" (Soros, 1998, p. 13).

Soros, proposes instead to adopt a new paradigm that is not strictly limited to financial markets, but rather the relationship between theoretical and actual constructions, based on the finding that erroneous conceptions and interpretations have played a major role in determining the course of history. In Soros's view, contemporary dominant economic paradigm is contradicted by the entire financial history shows that periods of economic boom, followed by the economic downturn are exceptions, but the rule in capitalism. According to Soros (2008) paradigm based on the idea that financial markets tend towards equilibrium is false and the source of contemporary economic problems can be attributed to the fact that the entire international financial system was built based on this paradigm. The central idea of the conceptual apparatus developed by Soros is that social

events have a different structure from that of natural phenomena. If natural phenomena, there is always a cause linking a set of facts straight next. In terms of social processes, the course of events is more complicated because not only facts are causal chain, but their interpretation by social actors. There is a two-way connection between facts and opinions prevalent at any point in time: on the one hand, participants seek to understand the situation, which includes both facts and opinions about them, on the other hand, participants seek to influence the situation, a process that again includes both facts and their interpretation. The cognitive and manipulative functions involved in the causal chain where social processes and influences which reflects the opinions of the participants. In other words, since these opinions and interpretations are not accurate, unlike the case of natural phenomena, within social processes there is an element of uncertainty that affects both the actions and opinions of the participants.

According to Soros (1998), free market fundamentalists "have essentially flawed design on the operation of financial markets. They believe that financial markets tend towards equilibrium. Equilibrium theory of economics is based on a false analogy with the physics. Physical objects move according to their own laws, no matter what anyone thinks. Financial markets, however, attempt to predict a future that depends on the decisions that take people today. Instead of passively reflect reality, financial markets actively creating the reality that they in turn reflect. There is a bilateral relation between present decisions and events, which I call reflexivity ... same type feedback mechanism interferes with other activities involving human participants aware. Human beings react to economic forces, social and political conditions in their environment, but, unlike inanimate particles of physics science, human beings have perceptions and attitudes that simultaneously transforms the forces acting on them. This bilateral reflexive interaction between what participants expect and what actually happens is very important for a proper understanding of all economic, political and social ... the concept of reflexivity is relevant for financial markets (and many other economic and social phenomena) than the equilibrium concept underlying conventional economics. Instead of knowledge, market participants start with a certain bias. Reflexivity will act either to correct this bias, where we tend towards equilibrium or initial bias can be enhanced by thoughtful feedback, where markets may depart significantly from equilibrium, without any tendency to return to the point at which they started. Financial markets are characterized by periods of rapid prosperity, but also to collapse and it's amazing that economic theory is based, I'm still on the concept of balance, which denies the possibility of these phenomena, in contradiction with reality. The potential for imbalance is inherent in the financial system, it is not only the result of external shocks." (Soros, 1998, pp.18-19).

What Soros wants to emphasize is the importance of reflexivity as a feedback mechanism between thought and reality, in analyzing social and economic problems, especially in a time when the dominant paradigm based on economic equilibrium theory and its derivative political free market fundamentalism, proved unable to explain how it came to the biggest crisis of the system of capitalist development.

Current global economic crisis is still a new phase in the dynamic evolution of capitalism. Traumatic events of 2007-2008 were, as emphasized Kaletsky (2010), the catalyst of the fourth fundamental transformation of capitalism over the past 200 years, comparable to the transformation triggered by the crises of the 1970s, the Great Depression of 1929-1939 and the Napoleonic wars between 1803 and 1815. The first of these was a major transition period of economic and social momentum that began with political revolutions in America and France and the Industrial Revolution in England, which was created after the first era of modern capitalism. This was long, the relative systemic stability and growing prosperity ended with World War I, the Bolshevik Revolution in Russia and finally triggered the Great Depression of the 1930s in the United States. These events have destroyed capitalism catastrophic classic laissez-faire and created a different version of the capitalist system, inspired by Keynesian economics and adopted successively by the Roosevelt society draft (New Deal), by the Great Society draft announced by Lyndon Johnson and welfare states of Western Europe in the postwar period. Subsequently, the overall inflation in the late 1960s and the 1970s inspired free market revolution promoted by Thatcher and Reagan revolution led to the creation of the three versions of capitalism very different from previous ones. Revolution tandem Thatcher-Reagan conservative in the early 1980s has been described as being neither more nor less than a rediscovery of capitalism "true" after a long period dominated by heresies and deviations crypto-socialist Keynesianism. Then in 2007-2009 the global economy was hit by another systemic crisis that marks the beginning of the process of creating four versions of the capitalist system, a new kind of economy different from previous ones. According to Kaletsky (2010), this version is the so-called capitalism 4.0.

To be able to provide useful analysis, on which it can be made effective economic policies, the new economic thinking must satisfy at least three conditions. First, you have to recognize that the market economy is not a static system at equilibrium or tending toward equilibrium, but a constantly evolving system. Moreover, its ability to adapt in response to changing social, political and technology is the most important feature of the capitalist system. Second, economists will have to accept the key idea that efficient governments and

dynamic private enterprises are in a symbiotic relationship, not in a mutually-exclusive one. In other words, for the proper functioning of the capitalist system is needed so strong governments and strong markets, while the dream of creating a market system by reducing the state's role in the economy extreme end with the global financial crisis 2007. Third, the new post-crisis economic thinking will have to start from the unpredictability of human behavior and economic events.

The unforeseeable essential role played by human behavior was emphasized by Keynes, Schumpeter and Frank Knight and the idea of unpredictability will have to stay in the center of future models that will compete for intellectual supremacy in the next phase of economic thought. In the new economy that is born in the post-crisis period, all players will have to recognize that markets and governments are likely to fail. In a world where the future is increasingly uncertain and depends to an extent becoming more reflexive interactions between human behavior, expectations and reality. The concept of a single model, the only correct in describing the operation of the economy, an idea assumed rational expectations theory is misleading and dangerous illusion. In an uncertain world, decisions at both the economic and institutional, will be taken through a process of trial/error type, and government policies, market behavior and business expectations continually evolve simultaneously with continuous attempts of economic system capitalist adaptation to changing conditions created by their own behavior. As a conclusion of all mentioned above, the future economy will be a mixed explicit in the sense that both public and private sector will play an important role. It will also be an adaptive economy, meaning that the rules of the economic game conduct and relations between governments and markets will be in constant change.

Intellectual and ideological foundations of the new phase of development of capitalism will probably be built on an interdisciplinary theoretical merger through the use of concepts, methods and techniques from related economic sciences, such as psychology, sociology, chaos theory, engineering and psychiatry. A number of theoretical results based on research conducted in the shadow of formal neoclassical paradigm in the 1980s have been reinterpreted and revalued as a result of the current crisis, the most obvious example being that of behavioral economics that has gained visibility in the post-crisis period. Popularized by Robert Schiller, behavioral economics, consider a world in which investors and businessmen are motivated by crowd psychology and not obsessive calculation as if the theory of rational expectations. Behavioral economics is but the most radical approach while not question the fundamental ideas underlying the neoclassical paradigm and therefore they can be prevented by improving the game

more complete markets by disseminating information and by strengthening regulation to prevent fraud and excesses. Behavioral economics has found a widespread audience in the academic world, especially in the Anglo-Saxon world, because of the compatibility with the neoclassical paradigm based on rational expectations hypothesis (REH/Rational Expectations Hypothesis). The results were highlighted through the Nobel Prize awarding an important number of economists who have embraced this theory, such as the work of Herbert Simon to the limits of rationality (bounded rationality), Vernon Smith for game theory (game theory), Daniel Kahneman experimental economy (experimental economics) and George Akerloff, Joseph Stiglitz and Michael Spence for research on asymmetric information (asymmetrical information).

A much greater challenge to the neoclassical theory has come from the direction of mathematical research in the field of chaos theory suggests that much of the mathematical techniques used by standard economic theory pre-crisis are flawed. For example, mathematical research in complex nonlinear systems applied in studying the behavior of economies and markets undertaken by Brian Arthur, challenges a number of standard economic assumptions. Although the findings of research in the field of chaos theory have produced impressive results by applying them to the field of industrial organizations, they were not integrated of macroeconomic policies study and financial markets, precisely the areas in which economic theory has proven the most obvious limits.

Another example is the discovery of Benoit Mandelbrot, one of the most creative mathematicians of the twentieth century, whose mathematical ideas have been applied in studying the effect of the 1960 earthquake, weather forecasting, the study of galaxies and biological systems. Mandelbrot (2004) described in his book "The (miss)behavior of Markets", as research results from the past 40 years in the field of fractal geometry were ignored by standard economy though seem to provide a much better analysis of market behavior in extreme conditions to standard methods. Even if the results of research in the field of fractal geometry and nonlinear modeling has been successfully applied in the study of earthquakes, weather, evolution, ecology and other complex systems, they were not accepted by economists because in their view the standard mathematical methods gives only approximate results unlike deemed accurate results provided by Gaussian statistics and the efficient market hypothesis (Efficient Market Hypothesis/EMH). The economists under the same standard does not seem to be bothered by the fact that the alleged exact results have nothing to do with reality (Mandelbrot, Hudson, 2004).

Another example that illustrates the cognitive dissonance on the use of mathematical techniques by neoclassical economists is the research conducted by Roman Frydman and Michael Goldberg towards imperfect knowledge based economy (Imperfect Knowledge Economics)/IKE). This approach questions the most important (and least plausible hypothesis) theory of rational expectations, namely the idea that there is one model that accurately describes the functioning of the economy. IKE is based on Keynes and Hayek claims that the economy is too complex to be sure whether a model describes better the economic realities than alternative models alone future ones. Under this approach, due to uncertainty, investors and business people will work on a variety of rational economic assumptions that will change as both the events and their perception evolves. IKE underlying idea is that it would be economically irrational for participants in the game to behave as representative agent model of rational expectations theory, relying only on a single model, given that it is generally impossible to predict the future and much less even knowing the future. The starting point of the theory IKE consists of ideas of Edmund Phelps, one of the Nobel laureates who rejected the hypothesis of a single universal model recognizable and fairly, IKE uses conventional mathematical apparatus of neoclassical theory to generate but radically different results. Because the future is inherently unknowable. IKE assumes that there will always be a multitude of plausible models that describe the functioning of the capitalist system. Another important idea is that economists IKE theory starting from assumptions that take into account a reasonable measure of uncertainty are more able to provide a close analysis of the actual course of economic events to those that rely on the theory of rational expectations. An important role is played by the IKE concept introduced by George Soros reflexivity. This leads to a world where market participants who have different views on the actual conditions of the economy and economic laws, can alter reality through feedback mechanism of reflexivity.

These are just some of the alternative approaches that can help reform the neoclassical paradigm in the post-crisis period while will be recognized the inherent limitations of market forces and economic knowledge. Reforming economics is required, the alternative being, as Kaletsky suggested (2010), its disappearance as a tool of valid, credible economic policies and consistent with economic realities.

Conclusion

Hence, a balanced conclusion of all mentioned above is that to be able to provide useful analysis, on which it can be made effective economic policies, the new economic thinking must respond to specific problems with adequate instruments. In one hand we can not accept the idea of using static models for dynamic conjecture as we have in economic science. We have to admit that the market economy is not a static system at equilibrium or tending toward equilibrium, but a constantly evolving system. Second, economists will have to accept the key idea that efficient governments and dynamic private enterprises are in a symbiotic relationship, not in a mutually-exclusive one. In other words, for the proper functioning of the capitalist system is needed both strong governments and strong markets. In the end of this we'll have to reestablish the importance of considering the unpredictability of human behavior and economic events. We can no longer pretend that using only mathematical instrument we can define and predict human behavior. Economics is more than that.

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Territorial analysis of discriminated groups

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Abstract. *Labour market discrimination may lead to segregation resulting in the separation between the majority and the minority group at the local level, occupational level, educational level in public spaces etc. In this study we analysed the distribution of the Roma population at local level, because they are regarded as the most vulnerable group in Romania. We also analysed the extent to which spatial localization affects the poverty rate in this community. Data were provided by “A social map of PROROMI Roma communities”.*

Keywords: employment; discrimination; poverty.

JEL Classification: J01, J71, P36.

REL Classification: 5G.

1. Introduction

The term topology comes from Greek and it means „the study of a given place”. *The topological analysis is related to the spatial relationship* which the discriminated group has with the majority. The more distant is the relationship, the more limited the development opportunities of the discriminated group are. If there is a direct relationship between the majority and minority groups, the latter can easily integrate into the community.

The spatial analysis of the discriminated groups can lead to the emergence of territorial segregation. The economic theory shows that segregation generally has negative effects on the segregated population. Cutler and Glaser (1997) analysed the segregation effects on employment, schooling and concluded that the segregation of the population in certain areas or within certain occupations negatively influences the development of individuals belonging to minority groups. Segregation inhibits the exchange of information, of human capital between the segregated areas (Benabou, 1993, Buisson, 2005) which leads to the self-exclusion of the minority group from various levels of education and occupations.

Ethnic segregation may be based mainly on three factors: discrimination, disadvantaging and personal choice (Johnston, Poulsen, Forrest, 2007). The marginalization of ethnic groups is determined by several factors (Nevin Turgut Gültekin and Özlem Güzey, 2007), and the most important are: establishing social location that differs from the dominant group, rejection of general values that exist in the society, stereotypes etc.

Vermeiji, Duijn and Baerveldt (2009) studied ethnic segregation and social discrimination in the Netherlands by examining how students in secondary school behave. Social discrimination can be defined as an ethnic group's preference to have social relations only with the members of their group (intra-ethnic) and less with those who are part of the majority group (inter-ethnic). This conclusion was validated by other studies: Clark, Ayes (1992), Halinan (1982), Halinan and Smith (1985, 1989).

Blau (1994) considers that the chances of an individual who belongs to a minority group to establish social relationships with the individuals who are part of other groups increase depending on the size of these groups.

2. Spatial analysis of the Romani group

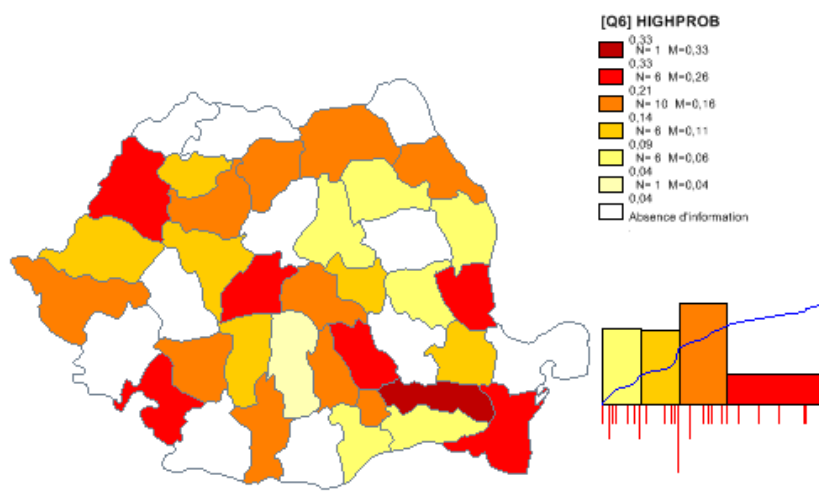
According to EU-MIDS report (2009), spatial segregation is high among Roma people; they live mainly in areas predominantly populated by other Roma people. Bulgaria records the highest level of segregation (72%), then Romania (66%), Slovakia (65%) and Greece (63%).

According to the Population Census of 2011, the ethnic distribution of the population in Romania is the following: Romanians (88.6%), Hungarians (6.5%), Roma (3.2%), Ukrainians (0.3%), Turks (0.17%), Russian-Lippovan (0.14%), Tatars (0.12%), and 0.3% of the respondents did not declare their ethnicity. Roma people are evenly distributed over the entire territory especially in the following counties: Călărași (8.1%), Sălaj (6.9%) and Bihor (6.1%).

Regarding location of the Roma population in settlements compared to the majority group in the study *Rroma communities in Romania (2005)* we could draw the following conclusions:

- The highest concentration of poor Roma population is in the developed villages and the small towns;
- Generally speaking, the size of the Roma community is increasing: from the rural to the urban; from those located peripheral to the central ones;
- Most Roma live on the outskirts of the village, however, nearby (57.1%) primarily in the following counties: Sibiu, Alba, Arad, Bihor, Timiș, Maramureș (Annex 1, Figure A1. *Respondents living on the outskirts of the village, nearby*).
- 36.2% of the respondents live within cities, especially in the following counties: Dolj, Călărași, Giurgiu, Botoșani, Galați, Vaslui (Annex 1, Figure A2. *Respondents living in towns*).
- 6.5% of the respondents live on the outskirts of the city, especially in: Ialomița, Constanța and Prahova (Annex 1, Figure A3. *Respondents living on the outskirts of the city, farther*).

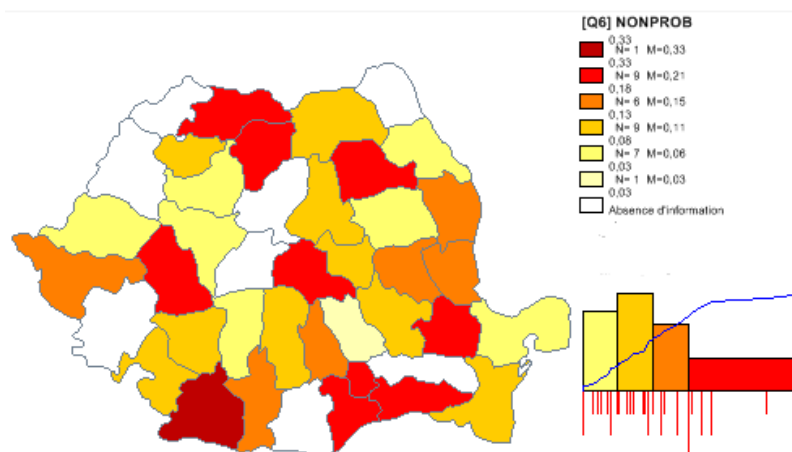
Sandu (2005) created a social map of the Roma group based on the study of the *Rroma Communities in Romania* and classified the Roma communities into four categories: *Highprob – very poor*, *Midprob – poor*, *Lowprob – less poor* and *Nonprob – without social problems*. Based on the data drawn from this investigation we could represent the counties experiencing the most serious social problems in Roma using a map (Figure 1).



Source: Own representation based on the survey: A social map of the PROROMI Roma communities, 2005.

Figure 1. Respondents with serious social problems

The map above groups the counties into seven categories according to the value of the Highprob indicator and generates an average at the level of each group. In Ialomița County this indicator has the highest value (33%), followed by: Bihor, Sibiu, Mehedinți, Prahova, Constanta and Galați (with an average of 26%). At the opposite pole we find Dolj, where 33% of the respondents said they do not have social problems (Figure 2).



Source: Own representation based on the survey: A social map of the PROROMI Roma communities, 2005.

Figure 2. Respondents without serious social problems

3. Empirical analysis

According to the study conducted by the World Bank (2010) poverty rate among the Roma population was 67%. In order to see to what extent the location of the Roma population influences the poverty rate within this group, we used the database information provided by the study called *A social map of the PROROMI Roma communities* (Sandu, 2005). This database consists of 848 respondents and we used the following variables:

Table 1. *Model variables*

Independent variables	Codification
Location	1- Within locality 2- On the outskirts, nearby 3- On the outskirts, farther
Region (Codreg)	1-Macro-region 1 2-Macro-region 2 3-Macro-region 3 4-Macro-region 4
Dependent variable	
Level of poverty	0-Nonprob (without social problems) 1-Lowprob (low poverty) 2- Midprob (average poverty) 3- Highprob (very poor)

In order to identify the influence of the independent variables we used the following regression equation:

$$y_i = a + b_1 \times x_1 + b_2 \times x_2 \dots \dots b_n \times x_n + u_i$$

where: y_i represents the level of poverty, b_i is the vector of the coefficients to be estimated and u_i is the residues.

For the results of the model not to be distorted we calculated the correlation matrix for the exogenous variables. The table below notes that the independent variables are not correlated with each other because the values obtained are less than 0.5 or 0.6 (Leech, Baret, Morgan, 2005).

Table 2. *Correlation table*

		Codreg	Location in village/ town
Codreg	Pearson Correlation	1	0.101**
	Sig. (2-tailed)		0.003
	N	848	848
Location	Pearson Correlation	0.101**	1
	Sig. (2-tailed)	0.003	
	N	848	848

** Correlation is significant at the 0.01 level (2-tailed).

The second column of the table below presents the Pearson correlation coefficient between the dependent variable and independent variables which is 0.601 and it means that there is a strong correlation between variables. The coefficient of determination (R^2) is 0.36, which means that 36% of the variance of the dependent variable can be explained by the variance of the independent variables,

Table 3. Model summary

Model	R	R^2	Adjusted R^2	Standard error
1	0.601 ^{a)}	0.362	0.360	0.68035

^{a)} Predictors: (Constant), codreg, location in village/town.

In the table below, ANOVA, the F test verifies if the regression line is significant. In this model, the F test has high value; it is statistically significant ($p < 0.001$).

Table no 4. Anova^{b)}

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	221.547	2	110.773	239.317	0.000 ^{a)}
	Residual	391.128	845	0.463		
	Total	612.675	847			

^{a)} Predictors: (Constant), codreg, location in village/town

^{b)} Dependent variable: Roma community type according to Sandu Roma Social Mapping, ANR, 2005.

Regression coefficients and t test results are presented in the table below. Standardized coefficient for the variable location is 0,589 and for the region is 0.076. They represent the correlation between the dependent variable and the independent variables. After analysing these factors, we see that location at the level of settlement affects much more the poverty level than the region which the respondent comes from. Unstandardized coefficients (the slope of the regression equation) are 0.856 (for location) and 0.33 (for region). Based on these factors we can write the regression equation as follows:

$$y = 0.048 + 0.856 \text{ Location} + 0.033 \text{ Codreg}$$

Table 5. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.048	0.082		0.588	0.057
	Location	0.856	0.040	0.589	21.316	0.000
	Codreg	0.033	0.012	0.076	2.738	0.006

Note: Dependent variable: Romani community type according to Sandu Roma Social Mapping, ANR, 2005.

Coefficient values are statistically significant ($p < 0.01$).

4. Conclusions

Roma communities are located mainly on the outskirts of the settlements 57.1% of respondents (Sibiu, Alba, Arad, Bihor, Timiș), and 36.2% live within settlements (Dolj, Călărași, Giurgiu, Botoșani, Galați, Vaslui).

In terms of poverty, the most serious social problems in this ethnic group are registered in Ialomița followed by: Bihor, Sibiu, Mehedinți, Prahova, Constanta and Galați (with an average of 26%). At the opposite pole we find Dolj County, where 33% of respondents said they do not have social problems.

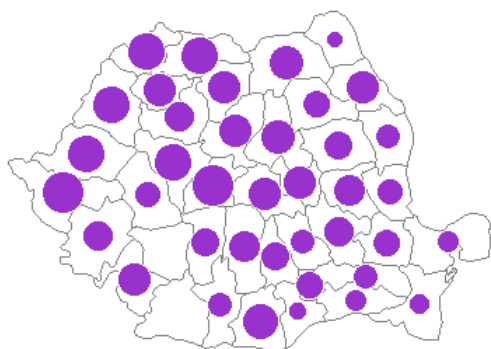
Analysing the factors influencing poverty within Roma communities, location at the level of settlement (inside, on the outskirts and on the outskirts, but farther) influences more than the geographical area where the respondents come from.

Acknowledgements

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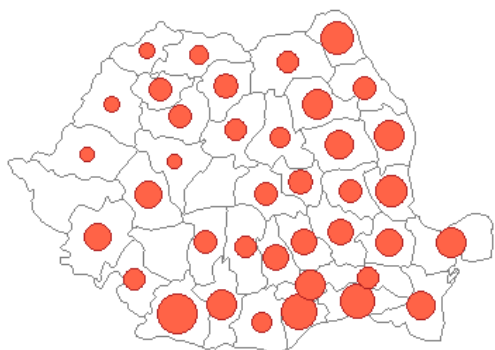
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Annex 1

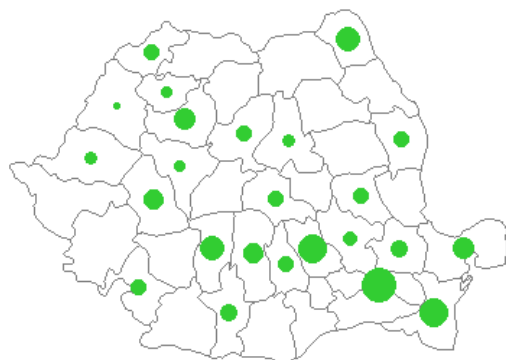
Source: Own representation based on the survey: A social map of the PROROMI Roma communities, 2005.

Figure A1. Respondents living on the outskirts of the village, nearby



Source: Own representation based on the survey: A social map of the PROROMI Roma communities, 2005.

Figure A2. Respondents living in towns



Source: Own representation based on the survey: A social map of the PROROMI Roma communities, 2005.

Figure A3. Respondents living on the outskirts of the city, farther

The causal relationship between Foreign Direct Investment and Current Account: an empirical investigation for Pakistan economy

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Abstract. *This paper investigates relationship between FDI and current account (CA) in Pakistan using the Johansen-Juselius cointegration technique and the Granger causality test. The study results indicate that FDI and CA are cointegrated and thus exhibit a reliable long run relationship. The Granger causality test findings indicate that the causality between FDI and CA is uni-directional. However, there is no short run causality from FDI to CA and vice versa. Therefore, as a policy implication that FDI inflows may cause to the deterioration of the balance of payments in the long run should be taken into account when policy makers decide to implement policies to attract foreign investors.*

Keywords: Asia; Pakistan; Cointegration; Granger; FDI; causality; Current Account.

JEL Classification: F21, F41.

REL Classification: 8L, 8N, 10F.

1. Introduction

Foreign direct investment has been argued to play a key role in accelerating growth in developing countries. Over the past two decades, world saving as a proportion of world income has fallen. As a result saving, real interest rate has declined and inflation rate has risen in the world. It is against this background that foreign direct investment (FDI) has appeared increasingly attractive to developing countries facing declining domestic investment and higher costs of foreign borrowing⁽¹⁾. And as the World Bank (1993, p. 3) claims, there may be dynamic benefits: "Foreign direct investment is a large and growing source of finance that may help developing countries close the technology gap with high-income countries, upgrade managerial skills, and develop their export markets" and this could leads towards a spill over effect in form of improving productive efficiency in the economy. That could the reason as to why FDI over the last decade have grown at least twice as rapidly as trade Meyer (2003).

However, at the same time, it is also noticed that widening current account deficits is one of the less desirable macroeconomic effects of large capital inflows like FDI. Developing countries normally ran current account deficit problems and the surge in international capital flows to developing countries have coincided with widening current account deficits in many of these countries Calvo et al. (1996). Globally current account imbalances are not strictly the phenomenon of 1990s. Following the oil prices shocks in 1970s, there have being large swings in current account balances of most countries. These imbalances are caused by mismatch between saving and investment. If international capital inflows are used to increase investment, but savings remains stable; this implies an increase in current account deficit. Hence investment and saving and ultimately current account balance may depend on capital flows. And FDI is considered to be a critical component of capital flow. And indeed empirical evidence suggests that FDI flows are significantly correlated with the current account financing requirement⁽²⁾. Various other studies reached the similar conclusion⁽³⁾, in contrary few studies like Fry (1993) proved otherwise⁽⁴⁾. Jansen (1995) has argued further that the impact of FDI on the current account is further complicated by the investment income payments that arise from FDI⁽⁵⁾. And according to UNCTAD (2002), unregulated FDI flows can bring about serious difficulties to balance of payments owing to high import content and profit outflows related to multinational capital.

Pakistan faces problems in financing its current account deficit for last four decades and hence relies heavily on capital flows and as a result Pakistan keen to attract as FDI in all sectors. However most of foreign investment focuses on non tradable, consumption based sectors (like telecom, banking, oil and gas, food,

beverage) instead of tradable sectors that could lead to value addition, exports and enhancing savings. Empirical studies shows that FDI inflows cause domestic output but not exports in Pakistan.⁽⁶⁾

Few studies have been conducted to examine the identification of nature and direction of a causal relationship between foreign FDI inflows and current account deficit in the relevant literature.⁽⁷⁾ However, most of the empirical evidence about the relationship between foreign capital inflows and current account deficit are based on cross-sectional and cross-country analysis. Quite apart from general methodological flaws relating to model specification and econometric procedure, two fundamental limitations make results from any cross-country study on the subject rather dubious. First, cross-country regression analysis is based on the implicit assumption of “homogeneity” in the observed relationship across countries. This is very restrictive assumption. Secondly, given vast difference among countries with respect to nature and quality of data, cross-country comparison is fraught with danger. These considerations point a need for undertaking econometric analysis of individual countries over time in order to build a sound empirical foundation for informing the policy debate. However, there is compelling evidence that many macroeconomics time series are non-stationary and as a result, OLS estimates using these data may produce spurious results. Although by now there exist well-developed techniques for handling non-stationary time series data.

Furthermore, no attempt has yet been made in Pakistan to study the long run causal relationship foreign direct investment and current account by using well developed econometric techniques. This study examines the long run causal relationship between FDI inflows and current account deficit on quarterly data for Pakistan economy over the period 1976-2005.

The plan of the paper is as follows: Section 2 presents an overview of foreign capital inflows in Pakistan; In Section 3, data sources and econometrics methodology is discussed; Section 4 presents and analyzes the empirical findings. And Section 5 and the Section 6 present a concluding summary.

2. Overview of FDI and current account in Pakistan

2.1. Foreign Direct Investment

In modern times, as countries take advantage of open economy to enhance there growth and development through foreign investment, Pakistan has lagged behind in this field. In past, trade policies of Pakistan have swung between import substitutions and export promotions. Foreign investment was not allowed in the field of banking, insurance and commerce during 1960s. In early 1970s, Pakistan

went for nationalization making the government biggest player in the economy. But afterwards government softens its stance on foreign investments and gradually started allowing the foreign investment in the country. During the 80s, the government initiated market-based economic reform policies. It established Export Processing Zones (EPZs) and special industrial zones (SIZs) for facilitation of export orientated and other industries. These reforms began to take hold in 1988 and late eighties and nineties showed some healthy signs for foreign investments. Since then, government has gradually liberalized its trade and investment regimes by providing incentives to foreign investors through number of tax concessions, credit facilities and tariff. In nineties, government opened the sectors of agriculture, telecommunications, energy and insurance to foreign investors in order to further liberalize its policy. Another factor that augmented foreign investment flow was liberalization of foreign exchange regime by which investors were allowed to bring in, possess and take out earnings and investments whenever they like.

Table 1

– in million USD –

Period	FDI	FDI as % GDP	GFDI (%)
76-80	177.6	0.20	
80-85	388.3	0.30	118.60
86-90	877.5	0.60	125.90
90-95	2,087.10	0.90	137.90
96-00	2,984.20	1.20	42.90
00-05	11714.6	1.90	292.60

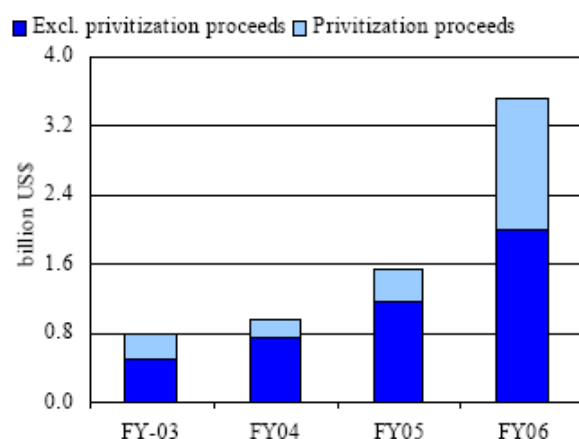
Note: GFDI: growth rate of FDI.

Source: IMF Stats.

FDI is considered to be a largest component of foreign capital flows in Pakistan. Table 1 indicates actual inflows have increased sharply over the years. Pakistan have received considerably higher amount of FDI flows over the last two decades, especially during the decade of 1990s, where market openness, and focus on private sector for economics growth, created an environment of investment conduciveness, here investment largely concentrated in agriculture and energy sector. Just in 1995, FDI flows have increased about 50% from 0.8% of GDP to 1.25% amounting to \$ 722.65 million.

There also were some brief periods where FDI flows depicted negative growth, specially during 1997 to 2000, where it decreased about 200% from FDI flows of \$ 922 million in 1996 to \$ 308 million in 2000. This could be due to economic instability, because of economic sanctions by world powers in wake of testing of nuclear devices. Perhaps the major reason was freezing of foreign currency accounts, which greatly shattered confidence of foreign investors. Periods of 1998

to 2000 showed that economy was in recession but it soon followed by a sharp revival after 2002 as a result of aggressive economic reforms, which revive the confidence of foreign investors and provides sound ground for reintegration into world economy. FDI flows increased from \$ 308 million in 2001 to \$ 2.18 billion in 2005 with cumulative increase of about 600%. In the same period Pakistan GDP also increased about 50%. This trend is continuing till present.



Source: IMF Stats.

Figure 1. Foreign direct investment

During Fiscal Year (FY) 06, FDI flows into Pakistan more than doubled from the preceding year, sustaining a 5-year trend. In fact, even adjusting for the privatization transactions, FDI flows in FY06 amounted to US\$ 2.0 billion, registering a sharp rise of 70.6 percent over the preceding year. Also during FY06 privatization proceeds have registered an unprecedented rise to US\$ 1.5 billion (see Figure 1) mainly on account of power, finance & insurance and oil & gas exploration and telecommunication sectors. Privatization is comparatively a new phenomenon and foreign Privatization proceeds, which were non-existence before 2002, suddenly jumped to \$ 1.1 billion in 2003 and trend seems to hold up. Particular, the telecommunications sub-sector fetched more than half of the FDI during FY06 compared with about one-third FDI under this head in FY05.

2.2. Current account

Pakistan's current account balance that slipped into red in 2004-05 after posting surpluses for three consecutive years remained in deficit in 2005-06 with gap continued to widen. In FY06, the current account deficit (excluding official

transfers) stood at \$ 4696 million in the first nine months (July-March) of the current fiscal year as \$ 1181 million in the same period last year. As percentage of projected GDP for the year FY06, the current account deficit stood at 3.7 percent as against 1.1 percent in the same period last year. Although trade deficit almost doubled over the last year and services balance deteriorated by 27.5 percent, the strong inflows under private transfers fueled by rising workers' remittances and resident foreign currency accounts offset some of the negatives with current account deficit standing at \$ 4696 million.

Table 2. *Current account balance*

– in million USD –

Items	FY04	FY05	FY06	Yr to Yr change FY06
1. Trade balance	-1,279	-4,514	-8,442	-3,928
Exports	12,459	14,482	16,506	2,024
Imports	13,738	18,996	24,948	5,952
2.Services (net)	-1,316	-3,293	-4,402	-1,109
Transportation	-890	-1218	-1790	-572
Travel	-1034	-995	-1,185	-190
Communication services	166	272	97	-175
Other business services	-332	-2,217	-2,552	-335
Government services	905	1,041	1,359	318
Other	-131	-176	-331	-155
3.Investment income (net)	-2,207	-2,386	-2,671	-285
Direct investment	-1,215	-1,622	-2,076	-454
Portfolio investment	-201	-154	-95	59
Interest Payments on Official and Private External Debt	-839	-764	-749	15
Others	48	154	249	95
4. Current transfers (net)	6,614	8,659	10,516	1,857
Private transfers	6,102	8,409	9,837	1,428
Workers remittance	3871	4168	4600	432
Foreign Currency Accounts – residents	367	521	312	-209
Others	1864	3720	4925	1,205
Official transfers	512	250	679	429
Current account balance	1,812	-1,534	-4,999	-3,465

Source: SBP.

Trade Balance: The deficit in the trade account worsened sharply to US\$ 8.4 billion in FY06 as compared to a FY05 deficit of US\$ 4.5 billion (See Table 2). This expansion was primarily due to a significant 31.3 percent year to year growth in imports that outpaced the 14.0 percent growth in exports.

Services (net): Services account deficit widened by US\$ 1.1 billion to US\$ 4.4 billion in FY06 as compared to last year. Moreover, the outflow under travel also accelerated sharply, while inflow in the communication services witnessed a fall during FY06.

Table 3. *Income outflows*

Period	IF	Avg. Yearly IF	IF as % of GDP	– in million USD –
				GIF (%)
76-80	-1304.02	-260.80	-1.46	
80-85	-2853.79	-570.76	-2.45	118.85
86-90	-4867.81	-973.56	-3.12	70.57
90-95	-8310.40	-1662.08	-3.77	70.72
96-00	-11122.14	-2224.43	-4.27	33.83
00-05	-12764.05	-2552.81	-2.97	14.76

Note: IF- Income Outflows; GIF- Growth in income outflows.

Source: IMF Stats.

Income (net): investment income mainly constitute of three major heads i.e. direct investment, portfolio investment and other investments. Average yearly income outflows were \$ 260 million in 1976-80. It then gradually increased to \$ 570 million and then 973 million in periods of 1980-85 and 1985-1990 respectively (Table 2). This trend further increased in the decade of 90s, with average outflow of about \$ 1.6 billion in 1990-95 and about \$2.3 billion in 1995-00.

During FY06 alone, the net income deficit further expanded by 12.0 percent year to year to US\$ 2.7 billion. Direct investment outflows recorded an increase due to rise in payments made by the government to foreign oil and gas exploration as well as the higher repatriation of profits and dividend by foreign banks and companies operating in Pakistan. The rise in the profits and dividends is a result of continuous rise in the banking sector profitability. The only difference is that while in FY05, the outflows were on account of repatriation of profits, in FY06 the outflows are due to dividends repatriation. Other investment outflows reflect payments on external debt and liabilities and returns on investment of official forex reserves. During FY06 despite the rise in interest payments on external debt and liabilities, net payments decreased by US\$ 82.0 million.

Current Transfers (net): Current transfers includes both the private transfers as well as official transfers. Private transfers are largely made up of net change in foreign currency accounts, workers remittances and others mostly on account of exchange companies. Current transfers increased by 21.4 percent to US\$ 10.5 billion during FY06 (Table 2). During FY06, resident foreign currency accounts registered lower inflows of US\$ 312 million as compared to the US\$ 521 million seen in FY05. However remittances have more than quadrupled since FY00 averaging US\$ 4.2 billion since 2003. FY06 also witnessed a sharp increase in other private transfers (credit) as they reached US\$ 5.0 billion, recording 31.1 percent growth year to year, the most prominent part was private donations of US\$ 402 million witnessed in FY06 from US\$ 150 million last year. This probably reflects contribution for earthquake relief activities.

3. Data source and methodology

3.1. Data source

Data for foreign direct investment (FDI) and current account (CA) are obtained from various issues of International Financial Statistics (IFS) and Economic Survey of Pakistan (various issues). Consumer price index is used to convert the data into real term. The sample range is 1976Q1 up to 2005Q4, which comprises 116 observations.

3.2. Econometric methodology

The following sequential procedure will be adopted

Step 1: Unit root test and order of integration

It is important to determine the stationary properties of time series before we proceed with the multivariate analysis. To examine whether a time series have a unit root, this paper has used Augmented Dickey-Fuller (ADF) unit root test. The critical value for this test is provided by MacKinnon (1991).

Step 2: Cointegration analysis

The second step is to identify whether all the variables that are included in the system are cointegrated, i.e. tied in a long run relationship. A widely used approach is Johansen's (1988) and Johansen and Juselius (1990) procedure based on "Maximum Likelihood method" and "eigen value statistics" to confirm the existence of long run relationship among all tested variables. Cointegration is said to exist if the values of computed statistics are significantly different from zero. Thus, variables if found to be cointegrated, implies that there exist a linear, stable and long-run relationship among variables, such that the disequilibrium errors would tend to fluctuate around zero mean. This means that variables tend to move together to its steady state path in the long run.

Step 3: Vector error-correction modeling (VECM)

The purpose of the VECM is to focus on the short run dynamics while making them consistent with long run solution. If a number of variables are found to be cointegrated with at least one cointegrating vector, then there always exists a corresponding error-correction representation which implies that changes in the dependent variable can be formulated as a function of the level disequilibrium in the cointegration relationship and fluctuation in other explanatory variables. In other words the error-correction term in the VECM provides additional channel for the detection of Granger causality. The Granger causality can be detected through the statistical significant of t-test for the lagged error correction term and

of the F-test applied to joint significance of the sum of lags of each explanatory variables. The non-significance of both the t-and F-test in the system indicates econometric exogeneity of dependent variable. In addition to indicating the direction of causality amongst variable, the VECM also allows us to discriminate the short-run and long-run Granger causality. The F-test of the explanatory variables (in their first differences) indicates the “short-run” causal effects, whereas the “long-run” causal relationship is implied through the significance of the t-test of the error correction term, since it contains long-run cointegration information between the variables, because it is derived from the long-term cointegration relationship(s).

4. Empirical results and analysis

The Johansen co-integration method and vector error-correction model technique has been used in order to examine the long run and the short run dynamic of system respectively.⁽⁸⁾

Prior to testing the long run co-integration relation, it is necessary to establish the order of integration presented. To this end, an Augmented Dickey Fuller (ADF) was carried out on the time series levels and difference forms. The results are given in Table 4 and as this table shows, all the variables have a unit root in their levels and are stationary in their first difference. Thus two variables (FDI and CA) are integrated of order one I(1).

Table 4. Test of the unit root hypothesis

Variables	Level		First difference	
	t-statistics	k	t-statistics	k
FDI	-1.14	1	-7.69*	3
CA	-2.42	4	-4.81**	3

The optimal lags (k) for conducting the ADF test were determined by AIC (Akaike information criteria).

** and * indicate significance at the 5% and 1% levels, respectively.

Note: The t-statistic reported in is the t-ratio on γ_1 in the following regression.

$$\Delta X = \gamma_0 + \gamma_1 X_{t-1} + \sum_{i=1}^p \beta \Delta X_{t-i} + \gamma_3 T + u_t.$$

Given the common integration properties of variables under consideration the next stage to test the presence of multilevel cointegration in the two dimensional VAR model (FDI and CA) by employing the Johansen (1988) and Johansen and Juselius (1990) procedure using the trace statistic and maximal eigenvalue test. The λ trace statistic indicating that there exist one cointegrating vector, with null

hypothesis of no cointegration ($r=0$) among the variables, the trace statistic is 40.94 exceeds the 99 per cent critical value of the λ trace statistic (critical value is 30.45), it is possible to reject the null hypothesis ($r=0$) of no cointegration vector, in the favour of the general alternative $r \geq 1$ (Table 5). Similarly, On the other hand, λ max statistic reject the null hypothesis of no cointegration vector ($r=0$) against the alternative ($r=1$) as the calculated value $\lambda_{\max}(0,1) = 36.64$ exceeds the 99 per cent critical value (23.65). The finding of cointegration has several implications. First, the presence of one cointegration vector shows that there exists a long run relationship between the variables. Second, this evidence of cointegration between these two variables rules out spurious correlations and also implies at least one direction of Granger causality.

Regression analysis deals with dependence of one variable on the other variables; it does not necessarily imply causation. In other words existence of a relationship between variables does not prove causality or direction of influence.

Table 5. Johansen's test for multiple cointegration vectors

Co-Integration Test Between [FDI CA]					
	H0:	H1:	Tests Statistics	95%Critical values	99%Critical values
	λ trace		λ trace		
	$r = 0$	$r > 0$	40.94	25.32	30.45
	$r \leq 1$	$r > 1$	4.30	12.25	16.26
	λ max values		λ max values		
	$r = 0$	$r = 1$	36.64	18.96	23.65
	$r = 1$	$r = 2$	4.30	12.25	16.26

Engle and Granger (1987) demonstrated that once a number of variables are found to be cointegrated, there always exists a corresponding error correction representation which implies that changes in the dependent variable are a function of level of disequilibrium in the cointegration relation (capture by the error-correction model) specifies that the first differences of all $I(1)$ variables are function of the lagged differences of all these terms in addition to lagged equilibrium error terms. In this respect, since the error-correction term is stationary, all variables in this model are also stationery. This implies that OLS standard errors will also consistent and efficient. As stated earlier, cointegration cannot detect the direction of causality that is indicated by the VECM (Table 5). The short run dynamics will be captured by individual coefficients on the difference terms. The inclusion of error correction term makes it possible to distinguish the short run causality from the long run causal relationship. Evidence of cointegration between variable will rule out the possibility of Granger non-causality and will imply that there must be at least one instance of Granger causality either unidirectional or bi-directional (Granger, 1986, 1988). The error

correction model representation of the Granger causality model with two variables is given in following equations.

$$\Delta CA = C_1 + \sum_{m=1}^{p_1} \alpha_m \Delta CA(-m) + \sum_{m=1}^{r_1} \beta_m FDI(-m) + \Phi_1 E(-1) \dots\dots\dots E(1)$$

$$\Delta FDI = C_2 + \sum_{m=1}^{p_2} \lambda_m \Delta CA(-m) + \sum_{m=1}^{r_2} \gamma_m FDI(-m) + \Phi_2 E(-1) \dots\dots\dots E(2)$$

Before implementing the Granger causality test one has to choose the order of lags. There is evidence that the causality tests are often sensitive to choice of lag lengths. In literature there exist a number of suggested methods for choosing the lag orders. Here an Akaike information criterion has been used. This suggests two lags of each variable.

From the estimated results reported in Table 6, it is evident from the table that error correction term is only significant in current account equation (1). So FDI Granger causes the CA in the long run. The error correction term is not significant in FDI equation (2). Thus, CA does not cause FDI in long run.

The results indicate that the long run causality between current account and foreign direct investment is uni-directional: there is only one-way long run causality from FDI to CA; however, no long run causality, in the Granger sense, was found in opposite direction. This indicates that foreign direct investment causes current account imbalance in Pakistan. The estimated p-value of joint test shows that lags of FDI are insignificant in CA equation and lags of CA are insignificant in FDI equation. Thus there is no short run causality from FDI to CA and vice versa.⁽⁹⁾

Table 6. Granger causality test

Table 6: Granger causality test			
Causality		Test of Joint Significance	Error-Correction
			Term
		ΔCA Equation	
CA			
H0		β1=β2=0	φ1=0
P-value		0.34	0.01
		ΔFDI Equation	
FDI			
H0		λ1=λ2=0	φ2=0
P-value		0.51	0.32

Source: Authors' calculations and estimation.

Econometric problems of serial correlation, heteroscedasticity, functional form and normality of the VECM are examined through the standard diagnostic tests (Table 7), in each case the null hypothesis could not be rejected at conventional 5% level of significance, implying thereby that our results are statistically free from any specification problems.

Table 7

Summary of Diagnostics for VECM		
	<i>E(1)</i>	<i>E(2)</i>
	$\Delta(CA)$	$\Delta(FDI)$
Diagnostic Tests		
<i>Serial Correlation</i>	0.35	0.22
<i>Heteroscedasticity</i>	1.34	0.16
<i>Functional Form</i>	0.55	0.58
<i>Normality</i>	0.21	0.42

6. Conclusions

In this paper, we have examined the question of whether foreign direct investment, Granger-cause current account deficits or *vice versa*. This paper has examined the long run relationship between foreign direct Investment and current account in Pakistan using quarterly data for the period 1976-2005. The empirical investigation consists of: (1) the application of cointegration analysis to ascertain the long run relationship between FDI and CA (2) the determination of the direction of causality among the variables in the context of vector error correction model.

Our results indicate that FDI and CA are cointegrated and thus exhibit a reliable long run relationship. The results indicate that the causality between FDI and CA is uni-directional: There is only one-way long run causality from FDI to CA; however, no long run causality, in the Granger sense, was found in opposite direction. Similarly, there is no short run causality from FDI to CA and vice versa.

Therefore, as a policy implication, we should stress the fact that the significant effects that FDI inflows may cause to the deterioration of the balance of payments in the long run (due to profit remittance)⁽¹⁰⁾ and should be taken into account when policy makers decide to implement policies to attract foreign investors. In case of Pakistan, these investments could not contribute towards income generating activities; rather raising conspicuous import based consumption, making high returns and repatriating the proceeds back home. Hence the economic activities generated by these investments are not sustainable leading to low future growth and high present inflation through pressurizing the exchange rate and making current imports, which are largely inelastic, more expensive. Hence foreign investment flows in tradable sectors such as exports should be

encouraged where value addition and enhancing peoples' real income and savings should be preferred. Where the foreign capital flows would instead of causing pressure on current accounts, produce export proceeds through value addition. Here Foreign Investments could be beneficial since profit outflows would matched or even less than the export based inflows hence making positive impact on current account.

Notes

- (1) In 1997 FDI accounted for 45 percent of net foreign resource flows to developing countries, compared with 16 percent in 1986 Perkins (2001).
- (2) See Philip Turner (1991) and Bosworth and Collins (1999).
- (3) See Chuhan et al. (1996), Sarno and Taylor (1999) and the World Bank (1999a).
- (4) This study long-term capital flows appear to be just as sensitive to current account financing requirements as short-term flows. It ranks portfolio investment as the most autonomous, FDI to the public sector next, and both long- and short-term bank loans as the most accommodative type of capital in the sample of developing countries.
- (5) See Athukorala and Menon (1995) for positive impact. For a critical perspective of FDI, see Agosin and Mayer (2000).
- (6) See Ahmad and Mohsin (2004).
- (7) See Fry et al (1995), Seabra, F. et al. (2005).
- (8) The Johansen-Juselius (1990) can find multiple cointegrating vectors; Engle-Granger approach has several limitations in the case of more than one cointegration vector.
- (9) The estimates of coefficients and the sum of coefficients in the Granger causality exercise are not reported in the text. However, they are available upon request.
- (10) Average annual Income flow for the past nine years on account of earnings repatriation amounts to \$ 1060 million (value arrived from that data taken from SBP).

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Interdependence between labor market and unemployment in the post-crisis economy

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Abstract. *Labor market is the main model of demand and supply, between employer and employee. This partnership decide division gain-wages, ratio of accumulation (the main function in any society) and household consumption, ratio between economic efficiency and social equity, earned income of both partners, from the perspective of present and future generations, rhythm and quality of economic development, economic progress and democratic character of capitalist society, cohesion and social peace, essential for economic and social progress.*

Keywords: labor market; lower unemployment; competitive economy; economic growth.

JEL Classification: E24, F16, R23.

REL Classification: 8G, 12I.

1. Introduction

Labor factor, to be used in the activities of modern society, should be purchased from a special called labor market. Land and natural resources markets, labor markets, capital, goods and services market, operating simultaneously interdependent, they form a system which regulates market phenomena and processes in the economy.

Any modern national economy acts as a structured set of markets, which communicate with each other. All markets are interdependent, so that the phenomena that occur on one of them affect all others. In markets are traded both inputs and goods and services as a result of economic activity. The labor market is one of the chief components of market inputs; it occupies an important place in this market, just as labor is the most important component inputs (ASE, Catedra de economie și politici economice, 2005, pp. 267-271).

Interdependence of markets is the direct effect of correlations between the activities of market economy and, ultimately, between economic needs and economic resources of a human community. It is a known fact that in every moment of life of human communities, needs are conditioning business, providing what and how much should be produced of each good and service. This does not mean, automatically, the company can produce all the goods and services. Solvent needs aggregate demand turns of goods and services and economic resources in factors of production that support the supply of goods and services.

EU labor market describes the demographic profile of the workforce, and settlement systems, focused on the free movement of workers and other forms of regulation of this market. Since the formation of the European Economic Community in 1957, to provide freedom of movement of workers helped shape guidelines regarding labor market.

Demographic profile of the EU labor market has changed significantly in recent years. The proportion of employed women increased in the last decade so that the difference between men and women in the labor market decreased to 11.9% in 2011, compared to 17.1% in 2000. Migration is a factor influencing this market and the rise of new Member States, which used the free movement of people to encourage changes in ethnic and national profile European labor market. Demographic changes associated with the aging workforce have led to the need to introduce new incentives to encourage older workers to continue working for a longer period of time.

2. Unemployment is regarded as a determinant of loss of competitiveness in the labor market

Since early 1990 the Romanian population decreased by 3.4% (or 800,000), reaching 22.4 million in 2001. In the mid-1990s, due to deterioration of economic situation people's migration has changed to rural areas. Decrease labor force participation particularly affected younger age group and the population included in the group aged 65 years and over is a high and even a feature Romania's participation in the labor force. In 1990, employment was 10.84 million people, leading in 1999 to 8,420,000 people. In 1990, total employment fell by 20%.

Categories of people unequally affected by unemployment, but the most affected are young. Time required to find a job is reduced as long as the level of education is higher, thus leading to a high rate of youth unemployment. Unemployment has affected more women than men until 1998. Thus, over 50% of the unemployed were women.

Since the beginning of the transition, the first people who were affected by the redundancies were women. However, after 1998, the percentage among unemployed men was higher. The cause was the restructuring that took place in the industry.

Thanks to the early retirement and discourage people after 50 years of age, men are more affected. With an unemployment rate of 21.7% in 2002, people aged 14-24 years are the most affected by unemployment, according to labor force surveys, surveys that provide information on the effect ILO unemployment (Bureau International Labor Organization). Thus, one of two ILO unemployed has less than 24 years.

At the beginning of the reporting period there is some balance between the number of unemployed among women and among men, in the course of time the situation began to change, unemployment representing a bigger problem for men than for women because the number of unemployed women decreased steadily from year to year, while the number of unemployed men increased gradually, which means that in recent years, the labor market in Romania began to note the trend of feminization of labor resources. Out of the total unemployed registered, men hold the majority, their share being of approximately 60% in early 2011.

I believe that the high percentage of women in various economic sectors such as education, trade, banking and real estate is the main reason due to which female unemployment decreased. One must also consider the fact that out of the economically active population, female weight is less than of men, and accounting the demographic burden, to perpetuate their species, their duties.

In terms of the distribution of unemployment between the two population segments, the number of unemployed in urban areas is 1.8 times higher than those in rural areas, but should be kept in mind that the population development on environments level still looks pretty much the same. In urban areas, the unemployment rate significantly exceeds that of rural areas, in the second quarter of 2011 a difference of three percentage points being attained. Not even in the previous years the situation was different, the biggest difference (8%) between the two rates being recorded in 2000. Current situation (8.5% in urban and 5.5% in rural areas) I think that is mainly due to slow economic restructuring and permanent alternation between periods of positive growth and negative growth.

Among young people aged less than 24 years, the unemployment rate is 10 times higher for the unemployed with high school or middle school, and about eight times higher for unemployed with post-secondary education or higher. There are a number of occupational features characterizing unemployment related to areas and branches that supply the stock of unemployment, as well as by characteristics related to educational level of the unemployed.

Therefore, the year 2009 has preserved trends occurred in the autumn of 2008, of continued growth in terms of unemployment. In 2010, the labor market was influenced by the economic and financial crisis, so that unemployment registered a significant increase.

Increasing the unemployment benefit, i.e. "technical unemployment" is a measure that has been taken by the Government in 2009 and 2010, when the unemployment rate has not grown on far downturn manifested in the Romanian economy. Vacancies reported by employers in 2010 were slightly higher than in 2009.

Jobs were created in 2010, in fields such as: manufacture of clothing, protection and clearance activities, construction, life insurance activities.

During 2010, they were given more unemployed workers from layoffs that occurred in areas such as public administration and defense, social security insurance, land transport, transport via pipelines, construction of buildings, civil engineering works.

During 2010, the counties most affected by the redundancies were: Timis, Suceava, Prahova, Hunedoara and Bucharest. Unemployment decreased in the following counties: Ilfov and Bucharest.

Compared with 2010, in 2011 the unemployment rate has decreased. So in reference vacancies were recorded as: product manager, unskilled workers in the clothing industry, the packaging etc.

Yet fewer jobs due to the crisis is well maintained to reduce economic activity by the employer. Defining for 2011 is that the percentage of unemployed was lower than the unpaid indemnity (Burghilea, 2011b, pp. 48-67).

At the territorial level, 2011 was the year in which they recorded the highest unemployment rates in the counties of Mehedinti and Dolj; in Valcea County unemployment rate was the lowest.

In Romanian economy, global financial and economic crisis, in 2011, was felt with an intensity much lower than in 2010, thus knowing a significant decrease unemployment. Unemployment has stabilized in 2011 at the rate of 7.3% and is still very close to the peak of 7.5% reached by Romania after the recession (in the fourth quarter of 2008). In 2012, at the end of February, the national unemployment rate was 5.27%.

3. Population vulnerability to the economic crisis

Unemployment among young people aged 15-24 years is very high (21.8%), the most affected being those between 15-19 years (29.3%). Thus, in early 2011 the unemployment rate for this age group, but in rural areas, reached the highest level of 29.1%. Unemployment affected particularly young people, especially young people entering the labor market for the first time. Regarded as the most vulnerable population against unemployment, lack of jobs for young people remains a serious problem facing the labor market in Romania, especially if we take into account the global crisis that affected the whole economy. An explanation of this development would be insufficient jobs attractive to young people, given their higher expectations, but also a higher level of training. As expected, the lowest unemployment rate was in the 60-64 years group, a rate of 1%.

ILO unemployment rate in the third quarter of 2011 was 7.3%, up from the third quarter of 2010 and down from the fourth quarter of 2009, with an unemployment rate of 7.5%. By gender, the difference between the two ILO unemployment rates was 1.4 percentage points (7.9% for men and 6.5% for women), and 4 percentage points residential (9% in urban areas compared 5% for rural). ILO unemployment rate was the highest (22.8%) of young people (15-24 years). Unemployment affected to a greater extent people with low and medium education, the unemployment rate was 8.2% and 7.8%, much higher than that recorded for the unemployed with higher education (4.9 %).

ILO long-term unemployment (unemployed for a year and over) was 2.8%.

The incidence of long-term ILO unemployment (percentage of people unemployed for a year and over the total unemployed) manifested more strongly

for men - 31.6% compared to 29.8% for women in urban areas - 32.2%, compared to 28.7% in rural areas.

Unemployment in Romania has not particular developments while he constantly maintained a high value, most unemployment being represented by long-term unemployment. This type of unemployment persistence is due to the reduced capacity of the Romanian economy to create jobs, but also by the labor market rigidity, rigidity which hinders harmonization of supply and demand. However, labor market faces a permanent imbalance due to staff shortages in certain industries.

In Romania, since 2011, amid the resumption of economic growth and employment is expected to improve, creating the conditions for job growth and improve employment for people aged 20-64 years to achieve stated objective in Europe 2020. It also predicts that unemployment will begin to have a downward trend, the unemployment rate reaching to fall by 1.5 percentage points in 2015 compared with 2010 (Table 1).

Table 1. *Labor rate*

	2010	2011	2012	2013	2014
Employment rate (20-64 years)	63.3	63.9	64.3	64.7	65.5
Men	70.8	71.6	72.0	72.4	73.1
Women	55.9	56.1	56.5	57.0	57.8
Unemployment rate (ILO %)	7.3	6.4	6.2	6.0	5.8

Source: www.cnp.ro

Over time it has been shown that unemployment causes problems both at the family, individual and national level, through the effects they produce: reduced income, increased welfare costs, and reduced labor efficiency, increased social tensions, all leading to decreased quality of life.

From the literature it follows that the unemployment rate tends to decrease as the level of education attained is higher.

One of the main reasons of labor market shortages lies in correlation with the number of unemployed vacancies existing in an economy. Therefore, while there may be segments of the labor market in which we have a surplus of labor, which offer higher wages and better working conditions in segments where there is shortage of labor which in turn is characterized by the persistence of relatively high number of vacancies because salaries are appropriated by the minimum wage and where working conditions are difficult. Poor compensation surplus with labor shortages can be caused both by loss of regional migration phenomenon and the regional development gap so that developed regions tend to register vacancies in sectors that are paid less when poor regions recorded surplus labor in most

segments of the labor market. Also if the less developed regions are characterized by high labor migration then they could have a high rate in the number of vacancies in certain sectors. Therefore, by analyzing the relationship between unemployment and vacancies we can provide some important information about the degree of labor market flexibility and gaps between regions.

The current economic crisis has seriously affected the labor market in the European Union and its impact varies from state to state: some countries have managed to maintain high employment levels and low unemployment by preserving the employment and creating new jobs combined with active labor policies of labor market expansion.

If the economic crisis seriously affected the labor market, we must not forget the attempts made to minimize impact on the great mass of people (Burghilea, 2011a, pp. 137-147). Among anti-crisis measures adopted in 2009-2011 that would also help to reduce unemployment were: the introduction of a minimum pension and extend unemployment subsidy period for three months, avoiding redundancies and supporting companies through uncollected all taxes and contributions social security for some time. In this respect, companies have been forced to cease production, sent employees in technical unemployment, paying them 75% of salary, which were exempted from all taxes on Social Security.

Thus, in April 2009, 2,000 companies took advantage of the measure and 140,000 employees were temporarily laid off.

There were followed measures for adjustment of public service for employment assistance, to avoid long-term unemployment and inactivity by increasing monitoring employers and notified holidays, by improving outplacement services.

4. Post-crisis prospects for employment growth nationally

Forecasts for Romania show a significant reduction in population from 20,254 million in 2011 to 19,857 people in 2035, and 17,308 people in 2060. As a result, the country's population will reduce by 7.7% in 2035 and 19.8% in 2060.

This trend related to population aging will significantly influence the employment being in a downtrend.

Table 2. *Trend of population aging*

	Percentage of people aged 65+		Percentage of people aged 80+		Dependency ratio age limit	
	2011	2060	2011	2060	2011	2060
Population	15.1	35.2	3.4	13.2	21.5	64.9

Source: http://epp.eurostat.ec.europa.eu/cache/ITY_PUBLIC/3-08062011-BP/EN/3-08062011-BP-EN.PDF.

One can be noticed how the percentage of people aged over 65 tends to double while the percentage of people aged over 80 years will be more than four times more than in 2011.

A solution for improving the aging of the population, would be the rising of the retirement age which could act positively on both ends: it would increase labor force participation and would decrease the number of new retirees. Romania has applied such a measure by the 2000 (Law no. 19/2000) reform, gradually rising the retirement age from 57 for women and 62 for men, to 60 and 65, respectively.

We must also be concerned with stopping the migration of gifted young people. This phenomenon is known as "brain drain" and involves movements from poor countries to rich ones usually highly trained young professional. Migration of young people concerned are likely to obtain higher and more stable income, living conditions superior professional achievement, escape poverty and political and religious repression.

Due to economic disparities between Romania and developed countries, numerous restructurings done in industry and a still subsistence agriculture have increased the number of unemployed and their determination to seek work abroad. The trend of migration is encouraged mainly by higher earnings provided by outside.

Employment offices in Romania face real problems in the organization; they failed to capture all aspects of labor supply and demand flows, conversion and training.

In Romania, the labor demand is considerably higher than supply. A source of imbalance in the labor market is the restructuring of large industries generating unemployment. For example, people redundant due to restructuring of mining, engineering and steel industry can not easily be classified in other industries⁽¹⁾.

To prevent such failures occupational and geographical mobility could be improved, capacity development of employment mediation services to labour force and also the development of policies to prevent skills shortages.

You also need to follow the correlation, by means of as varied structures and contents of education and training of the workforce and the current and future needs of the workforce.

Attractive measures aimed at creating jobs, especially in areas that could be developed in our country, such as agriculture, infrastructure development, environmental protection could stop labor migration.

Finding unity between different labor market states, currently in Romania there are big differences between sectors and industries, in terms of the relationship

between labor demand and supply potential could actually work to improve quality of life.

Achieving employment structure based on raising productivity by adopting a model of economic growth based on increasing employment and training programs, retraining, outplacement and labor flexibility could make our country a partner reliable in the European Union.

Conclusions

Reducing unemployment is one of the most serious problems for governments and social forces in each country, and of particular importance is held timeframe envisaged when promoted measures to improve employment (not infrequently measures short-term imbalances caused long term). These measures are aimed interdependent society, businesses and the unemployed.

20-30 years ago, the average unemployment rate was 3.2% in the world, and now most countries the rate reached 10% and over 10% unemployment called "massive and chronic" (Dinu et al., 2004, pp. 82-86).

Passive helping policies are applied after a person becomes unemployed; they have a defensive character, and lead to an increase in government spending generating strong inflationary effects.

The active policies intervene directly in the labor market to increase employment levels to the upper limit, that of total employment. These policies are offensive and are of three main types: efforts to facilitate entry into contact bidders and interested persons job, retraining programs for the unemployed, creating jobs.

Labor market flexibility is the primary way of modeling labor supply, mainly in this way and not only by employment and administrative-legislative means.

Alarming increase in unemployment levels associated with a decrease in employment will be issues of particular interest for the functioning of an economy.

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Note

⁽¹⁾ See <http://www.anofm.ro/files/3/Pilonul%20I.pdf>

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The internet is changing our world

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Abstract. *This work aims to bring the importance of the internet into discussion, given that it has changed the way we organize the functioning of our social and economical lives, if this change is towards the better or the worse and how we could go about to make use of the internet to improve humanity's social and economical lives at a global level. The appearance and development of the internet has led to fantastically rapid changes to our world, from day to day or even major changes within hours, instantly changing our vision of the world, forcing us to adapt our thinking and beliefs to new tendencies and discoveries of a technical level, of a technological level and of innovation. Those which succeed in adapting to these global changed, from all points of view, it's them who will hold the key to success, and the internet is the gate house to success.*

Keywords: internet; tendencies; technology; innovation.

JEL Classification: L86, F63, Z00.

REL Classification: 5I.

In the past few decades, our world has changed at a fantastic rate, even from day to day, and this has become more pronounced from generation to generation. If our grandparents and great grandparents lived their entire lives without having anything come up which would suddenly and violently change their vision of the world, today, such events take place over hours if not minutes. Such new information can jolt our understanding of the world and may undermine our whole mental construction, forcing us to review our thinking and beliefs.

Why have these changes taken place in such alert rhythm? As humanity progressed, its needs multiplied and grew varied, and people's desire to fulfil as many needs as they could, at an as high as possible level of quality and as quickly as possible has generated an unprecedented process. Science and knowledge have evolved have evolved at a rapid rate precisely so that they may keep up with the needs and wants of humanity, entailing a continually increasing consumption of resources and inputs, practically forgetting that resources are limited to the planet's potential. By ignoring that fact, humanity has made waste of resources, and the tension between needs and resources has not improved, but instead increased and amplified. All these changes have not made us happier than our great grandparents and grandparents, whom possessed but rudimentary means of satisfying their needs. We possess no more free time than them, we can't enjoy the fruit of our work quietly and peacefully anymore, we no longer have time to spend with our children and family, we no longer delight in joys of the soul, but rather material ones (cars, villas, yachts, luxury jewelry, etc.) lead in our decisions, etc.

What has changed the way we live the experience of change? Humanity's progress is tied in a direct manner to technical, technological and informational progress, in their desire to as better and as fast as possible satisfy their needs at a high level of quality, and why not, satisfy their needs too at a decent level. All of these have gone increase economic, increase associated with the innovation and technological change, i.e. tabbing internet subsidiary processes and changes in process of production on which this relatively new technology has brought them (Moroianu, 2012, p. 118).

Satisfying needs at a high level of quality has forced a certain ways of communication and the desire of people to relate to as many other people from different parts of the world. In this context, internet came into play. The internet is the greatest development of this century, producing profound changes in the the way our social and economical lives are organized. Today, a medic may perform surgery from afar, people can hold international conferences with participants from different corners of the world without the participants needing to relocate, you may shop online from any country, you may sign deals, you may advertise your company via publicity and marketing strategies, it allows even the smallest of companies to be everpresent on many markets and do business around the world etc.

The history of the internet has begun with the development of ARPAnet (Advanced Research Projects Agency), which has led to the development of the first communication networks, using point-to-point links and perforated paper to transmit information. The internet was born on the 1st of January 1983 when ARPAnet had successfully connected 500 centers together. In 1990, ARPAnet vanishes, all operation being moved over to NSFnet (National Science Foundation) which in turn was replaced in 1995 with a commercial bus. This moment has opened access to the internet to the masses of home users and as a result the internet has grown from year to year by 100%. If in the beginning the internet was being used exclusively for research and communication in universities and the military, today, the internet is present everywhere and its uses are unlimited, allowing for a series of services ranging from online shopping, to reading books, to administrating bank accounts⁽¹⁾.

Now we ask ourselves: Is this crisis a change towards good or bad? If we were to answer by making use of a popular saying, then it'd be "a kick to the behind is a step forwards" as any revolution brings about change, it is obvious that everybody wants that change to improve their lives, and for the vast majority these changes were for the better, yet there still being some who are put in an unfavorable position by these changes. Those hit hardest are those who are vulnerable from an economical and social point of view, those with low and fixed revenues, those who must take care of children, of the elderly, of disabled people, those with only low level training, those who refuse to accept such change or to adapt to the new situation and so on.

If the economical crisis is not properly managed, the global banking-financial system may crash and the world will be faced with protests and unbelievable violence, possibly degenerating into war and chaos in which personal freedom is limited and democracy possibly lost⁽²⁾. To this end, we must find rapid solutions to improve our economy, and George Soros says that Barack Obama's proposition to increase taxes for the rich would work towards this goal. It is preferable that we lose some wealth as opposed to losing all of it.

Now that the internet has been developed, we've created for ourselves a new social structure and from this we try to furnish a new structure at an economical, social, political and security level. The internet and telecommunication systems represent the foundation of this new social structure, and everything else is furniture. In Romania, the internet has appeared as a means by which people have learned to use it, just as if someone were looking in shop windows to see that there's a new product and is curious to look at it closer. That's how Facebook, LinkedIn and other socialization networks appeared, by which people try to relate and learn the secrets of these communication networks, by which business people

compare their levels of competence without fearing that somebody might steal their ideas and creativity because these programs are secure and protected.

An economical aspect of the technological and informational level is the how money and financial transactions may be performed with the assistance of the internet via online operations by making use of the communications infrastructure, which is conceived just like the human nervous system and which used to be the center of balance of society at some point. The internet may allow some banking operations to be performed in good conditions over the phone and is the answer to our needs and why not, to the discovered technological level by making use of fluent thinking capable of creating a functional infrastructure.

Bank and financial operations are secured and checked by a well thought out system and, because of this, information leaks and embezzlement are practically impossible if the accessing and trading procedures of operations and services available are respected. Those which refused the implementation of the new techniques and technologies are part of the old structures which are overdue and slow per what regards processing data and information at a national and international level. Many know that a change in the structure of institutions and their functioning in any economy would not do them good because they would lose a series of advantages given to them and gained by them in the old structure. The struggle for power and to keep the positions they held is quite fierce and, for some, change could mean a loss of goods, power and even loss of freedom.

Morse code and radio worked on low frequencies, and once television and the internet came into play, much higher frequencies were needed. The internet has the highest frequency and this allows for all types of communication and for the security such high frequencies require. This high frequency allows for the development of a spiritual society which allows paranormal humans to relate via the new energy.

In Romania, the internet is in a pioneering phase and is used to a fairly high degree to socialize via Facebook, linkedIn, e-mail and quite less to initiate and develop businesses. The online market is a free market, with hundreds of millions of users with rapid capacity to manage information and redirect it to other users. The level of communication is very rapid and the market itself is very big thanks to this, because we have the courage to start businesses on our own and to learn how to self-manage them. Sadly however, even if some realize and understand how things work, our general mentality does not allow the managing and use of information.

Marketing is a profitable internet business. For example, there are firms which promote some products or services by posting ads for the firms offering the product/service or by contacting other firms which hold the rights to publish in exchange for having certain conditions met or tasks done. If a natural or legal person desires to promote a certain product or service, they may go about the task

in varied ways. They either buy software and have their ad delivered to a great number of clients for a few days, multiple times each day, or wait to accumulate publicity firm credit points by performing certain tasks. To this end, the firm sends certain ads to those interested, which if opened and read (the website must stay active for a few minutes), each ad is rewarded with an amount of credit points. These credit points are then turned into money. These credits may be used to make ads or may be paid to be given access to the list of clients of the marketing firm. The online marketing policy is cheaper and it informs people of and promote the product in question faster, tens if not hundreds of times faster than traditional marketing. All this is learned and requires very much time to understand and manage the working mechanisms of the marketing strategies, but also how the virtual world functions.

The internet's apparition produced a new type of business and that is online shopping. Countless websites and companies appeared that deal with sales of products via the Internet; they organize auctions; they offer pages of information if you pay, in another words they deal with a form of online commerce, in an ever growing field.

In Romania the first online shop was opened by PCNet in 1997 and it was called CyberShop.ro – they were selling music CDs. On September 14th 2000 the first successful online shop is launched, followed by Rate.ro, MagazinulTau.ro, Okazii.ro and eMAG. In 2004 Visa and MasterCard develop the security standard 3D Secure, a moment in which card owners can pay online and we have the first official data regarding online shopping. This type of commerce is on the rise: in 2004 we had around 19,000 transactions with a value of 3.5 millions Euro and by 2011 the number of transactions was higher than 50,000/ month with a total value of 350 million Euro⁽³⁾. Today, the Internet is ever present in our lives and its use is unlimited .

The economic potential of online commerce can make the most of it if it is used both by the producers and the consumers. Studies of OECD⁽⁴⁾ indicates that e-commerce has strong potential in education and training: the demand of program studies with online classes through the usage of new technologies which gives a new challenge to the traditional model of academic accreditation. This creates new opportunities for teachers, entrepreneurs and students so that they can remove national borders and create a new dimension through the usage of information and communication technologies.

Trust is the base for every commercial transaction. The development of new types of business in the electronic environment is anchored in the security of the services offered to consumers and businessmen. The consumers want total control over their personal data, while businessmen need a framework which can be

applied to worldwide transactions. Currently we find seven types of e-commerce: phone, fax, television, e-payments, money transfers, electronic data exchange and Internet. The Internet made possible the worldwide spread of services, being used for publications, websites design, management, medicine, tourism – online reservations, electronic mail, research, etc.

The usage of e-commerce brings many advantages to the consumers: the transactions can be made at any hour of the day or night, all over the year and from everywhere; buyers can participate to virtual auctions; can interact with other buyers so that they can compare their experiences; they are well informed because they can access the latest news which are received in a couple of seconds; they can benefit from promotions based on coupons, bonuses or special offers; give more options to choose products and prices, etc. But we cannot point out some disadvantages in using e-commerce: security and safety of transactions; the impossibility of seeing, smelling and touching the products – elements present in the traditional commerce; difficulty understanding language and cultural issues; access is still very expensive for some potential clients; difficulty in the integration of Internet and e-commerce software with some applications and databases, etc.

If we look from the point of view of those who are offering to the buyers all the necessary information needed for online shopping, they also have advantages and disadvantages. Advantages: by creating websites which are virtual shops, the costs for creation, processing, distribution, storage and retrieval of information are lower; expansion into international markets and promoting the goods and services offered; they can test in the most efficient way the taste and preference of customers through online questionnaires; enabling staff to work at home thus reducing fixed costs and other expenses, having only online support services and after-sale service, covering a large number of potential clients as there is no limit geographically speaking, etc. Disadvantages: internet's technology can create the possibility of fraud because in the absence of a direct contract, a client can cheat the retailer about its identity or actual payment possibilities; Romanians are still skeptical about purchasing products online, so a low degree of safety is being exhibit in the use of electronic commerce; the infrastructure, mentality and ignorance are other disadvantages that prevent many traders to make their business known on the Internet.

To highlight the role that the Internet plays in our lives we conducted a survey based on a questionnaire consisting of 15 questions, on a sample of 300 subjects among students aged 18-24 years, i.e. first year students of Faculty of Commerce at the Academy of Economic Studies. In quantitative analysis we can draw the following conclusions:

- A majority of 96.5% surf daily and only 3.5% few times a week;
- 45% of those interviewed surf for more than 35 hours a week (an average of five hours a day), 33.5% surf for periods ranging from 21 to 32 hours, 17.3% surf for periods ranging from 16 to 20 hours a week and 4.2% surf for periods of 11-15 hours a week;
- Reasons to surf the internet: 37.5% socialize and keep in touch with their friends, 33.2% spend their time relaxing (music, movies, games), 13% get informed and documented on things, 10% work on their education, 6.3% work in business and commerce;
- To sort out school problems and other issues, 75.6% inform themselves over the internet very often, 22.3% do it often and only 2.1% only do it from time to time;
- 83.6% hit the internet to download books and study papers very often, 14% do it often and 2.4% do it from time to time;
- 26.5% of those interviewed surf the internet 0%-25% of their spare time, 51.3% anywhere between 26%-50%, 19.4% spend 51%-75% of their time on the internet and 2.8% spend 76-100% of their time on the internet;
- The most accessed websites are : Facebook (100% of all interviewed), Google (87% of all interviewed), YouTube (68% of all interviewed), Yahoo! (56% of all interviewed), Messenger, Skype (32% of all interviewed);
- The most accessed websites are entertainment, music, sports, education, personal pages, commerce pages;
- Checking information: 18% of all interviewed check their info by making use of other sources, 27.5% check one more source before proceeding, 38.6% do not check their information and 15.9% have never asked themselves if what information they've come across is correct;
- Do you believe that the internet can change the way we organize our social-economical lives and how it works? 65.4% say that things will evolve in an increasing direction but do not know how and what radical changes the internet can bring, 23.6% believe that electronic commerce will bring upon major changes in commercial transactions while the rest 11 % do not know what to say.

As expected, young people give special importance to internet access because it is a rapid source of information and documentation for any domain of activity. It is an easy and cheap means to socialize and communicate with your friends. The speed at which information travels is fantastic, and access to the international network is easier and more visible. Young people, with their attitude towards the internet, can change something in the way we think and manage our informative potential transmitted via the internet network.

Conclusions

The Internet has changed and will continue to change the organization, development and operation of economic, social, cultural, educational and political life etc.. Thus, the emergence and development of the Internet has led to changes in the world at a fantastic pace, suddenly changing world view and forcing us to adapt our thinking and beliefs to new trends and discoveries in art, technology and innovation. The Internet connects us to the reality of global life, information flow at a fantastic rate and the communications are at a high level. The online market is a free market, with hundreds of millions of users thus being conducive to business development. The Internet is also the base for electronic commerce and in Romania it took a tremendous boom since 2004. Marketing activity has taken a tremendous swing speed increasing the promotion and marketing of a product or brand. Internet is the front door to success and for success we should be able to find the right key. Internet can change the world but the world must change their mentality entrenched in unprofitable habits for society. Change in the institutional structure and functioning of an economy would be beneficial but it is not desirable because the fight can be very fierce and change can mean for some a loss. Young people can transform the world; they can change the current institutional structures that no longer meet the requirements of the new society.

Notes

- (1) Tabbing and evolution of internet, article available online www.scribd.com, accessed 2.10.2012.
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Improvement of labor flexibility in Romanian companies using practices in the field in some EU countries

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Abstract. *In current conditions, many EU countries are characterized by crisis, respectively economical recessions. Based on the study undertaken in 2009 by the European Trade Union Institute for Research, Education, Health and Safety are presented the measures applied in some EU countries regarding the labor flexibility as well as the difficulties faced by the human resources management from the organizations of the respective countries. The study makes an analysis of various forms of insuring the labor flexibility: working time flexibility, contractual flexibility, functional flexibility, wage flexibility. There are analyzed a series of good practices on internal flexibility of labor applied in some European organizations.*

Keywords: labor flexibility; internal flexibility; working time flexibility; contractual flexibility; functional flexibility; wage flexibility; flexible thinking; negotiated flexibility; flexibility by restructuring.

JEL Classification: F22.

REL Classification: 12E.

In several EU Member States, the crisis period has caused major changes in human resource management in the socio-economic organizations and companies in particular taking into account their needs but also their employees to be more flexible and therefore more adaptable in an increasingly volatile environment.

In 2009, the European Institute for Research, Education, Health and Safety of the trade union organization carried out an extensive research that had, among the fundamental objectives proposed, the flexibility of labor among economic operators in different EU countries, too (Glassner, Galagóczy, 2009). Analyzing companies experience in these countries, reflected in this study, we believe that there is a series of good practices that can be used and Romanian companies for effective responses to the effects of the economic and financial crisis and recession. To this end, we synthesize the experiences in the field in some EU countries.

In *France* there have been taken measures regarding:

- Reducing the working week to 35 hours without wage losses and flexible labor conditions on shifts or increasing the holiday period;
- Partial unemployment due to lower number of working hours;
- Improving professional transition contracts by supporting dismissed persons for economic reasons to attend training programs;
- Flexible working hours in some companies using flexible work schedules;
- „Voluntarily leaving the job" by employees (voluntary dismissal) in the situation of monetary compensation.

In *Holland*, an important role is the one of the mobility centers representing internal temporary work agencies, facilitating temporary reallocation of workers temporarily unemployed, there have been amplified in parallel forms of training for the temporarily unemployed persons. In addition, were improved financial conditions of temporary unemployment, for periods between 6 and 24 weeks, allowing the compensation representing 75% of the salary for the first two months and 70% for the following.

In *Belgium*, many companies have suspended their activities under temporary economic unemployment opportunities. The state has taken a number of measures to increase economic amounts of unemployment compensation, reduction of VAT on construction and investments in public infrastructure.

In *Germany*, there were taken measures for the flexibilization of the working hours based on collective employment agreements; there has also been a reduction in work programs while maintaining the employment. There has been reduced the overtime work, there have been extended vacation periods and periods of inactivity due to low labor programs have been used for professional training.

In the new EU countries – *Hungary, Czech Republic, Romania, Bulgaria*, companies usually took measures on: temporary interruption of work, dismissal of workers, extended holiday periods, etc. However, there was registered a number

of aspects regarding: low internal flexibility of labor, lack of flexibility schemes of working time, lack of legal regulations or financial resources on SMEs to cope with the crisis effects. Accordingly, in these countries, limited flexibility and lack of rules regulating this area have determined the management of some companies to use resources only for the possible "survival" of the company, but without further obligation on workers' safety.

A synthesis of the measures used in companies in some EU countries on labor flexibility in the context of economic and financial crisis is shown in Table 1.

Table 1. *Measures applied by some EU countries regarding employment flexibility during crisis*

Country	Labor market measures	Company measures (internal flexibility)	Human resources measures
Germany	Collective labor agreement for flexibilization of working hours The existence of "open clauses"	Flexible working hours Reducing working hours Reducing overtime work Extension of holiday periods	Professional training measures for workers who work part-time
France	Partial unemployment Extension professional transition agreements Voluntary abandonment of employment based on a social plan	Reduction of working hours (annually) Flexible working hours Extension of holiday periods	Professional training measures for workers who work part-time Compensation for voluntary leaving the job
Belgium	Temporary economic unemployment	Firing workers employed by temporary employment agencies and non-renewal of temporary employment agreements or on fixed term	Professional training measures for workers who work under occupational transition agreement
Holland	Unemployment law was extended to cover the economic crisis, as to reduce working hours (for permanent workers, not for temporary ones) Temporary reallocation of temporarily unemployed workers	Reduction of working hours	Professional training measures for temporarily unemployed workers
United Kingdom	Dismissal of temporary workers and then of the permanent ones	Extension of holiday periods	Insignificant
Hungary	Temporary interruption of the activity, firings	Elimination of overtime work Firing of temporary workers Use of instruments of internal flexibility in companies Temporary interruption of production	Insignificant
Czech Republic	Firing of temporary workers and then of the migrants	Elimination of overtime work Reduction of working hours Temporary interruption of production	Insignificant
Poland	Temporary interruption of the activity	Elimination of overtime work, Temporary interruption of production	Insignificant
Slovakia	Temporary interruption of the activity	Elimination of overtime work Reduction of working hours Temporary interruption of production	Insignificant
Bulgaria	Firings	Companies are governmentally encouraged to working hours reduction and "saving" jobs	Insignificant
Romania	Firings	Temporary interruption of production	Insignificant

Source: Glassner Vera, Galgóczi Béla (2009), *Level responses to the economic crisis in Europe*, European Trade Union, Institute for Research, Education and Health and Safety, Publisher: ETUI aisbl, Brussels.

Important information and examples of good practices on employment flexibility used by some European companies, with implementation by the management of Romanian organizations, also result from research carried out in 2009 by the European Foundation for the Improvement of Living and Working Conditions.

The study was based on the existence of major difficulties faced by human resource management in companies from EU countries, as shown in Table 2.

Table 2. *Difficulties in human resources management in various organizations in EU countries* (%)

	Difficulties related to finding well professionally trained staff	Difficulties to finding unqualified staff or staff with low qualification	Difficulties in keeping the staff	Need to reduce the staff	Reduced motivation of the staff
1. Austria	39	6	6	14	8
2. Belgium	55	22	12	13	15
3. Bulgaria	58	16	23	16	21
4. Cyprus	59	27	18	19	30
5. Czech Republic	43	14	13	20	20
6. Germany	47	7	7	21	11
7. Denmark	44	13	6	33	17
8. Estonia	35	7	12	34	15
9. Greece	35	9	15	23	23
10. Spain	28	9	7	34	16
11. Finland	43	7	7	25	8
12. France	43	19	13	18	17
13. Hungary	49	13	11	10	9
14. Ireland	14	4	5	49	14
15. Italy	32	7	6	25	21
16. Lithuania	27	6	15	35	20
17. Luxembourg	58	11	6	17	19
18. Leetonia	29	10	11	44	18
19. Malta	55	20	14	10	14
20. Holland	36	10	9	19	11
21. Poland	24	8	13	18	20
22. Portugal	32	20	9	21	15
23. ROMANIA	30	12	20	25	25
24. Sweden	32	5	5	25	8
25. Slovenia	30	20	9	23	15
26. Slovakia	32	9	12	15	11
27. United Kingdom	26	9	9	23	13
EU-27 (average)	36	10	10	23	16

Source: European Company Survey, 2009.

From this table it results that Romania, comparatively to the average of EU countries, exceeds the level for a series of difficulties faced by the human resources management, respectively regarding „keeping the staff in the company”

(20% compared to 10%), need to reduce the staff (25% compared to 23%), finding unqualified personnel (12% compared to 10%); also, a high percentage (30%) related to difficulties in finding well professionally trained personnel and especially the reduced motivation of the personnel (25% compared to 16%).

This study structured the research on the following types of insurance of workforce flexibility:

- 1) Work time flexibility;
- 2) Contractual flexibility;
- 3) Functional flexibility;
- 4) Pay flexibility.

1.1. Working time flexibility can be found in the following forms:

- Work with flexible work schedule;
- Part-time work;
- Overtime work;
- Work beyond normal working hours.

Work with flexible work schedule requires that employees choose either a flexible work schedule, basic (different work schedule start, termination, respectively, but respecting the total daily duration of working time), or even daily work schedule flexibility (given that it provides a total budget of working time per week, month, etc.). Generally, more than 56% of companies analyzed in that study use flexible work schedules.

Part-time work is applied by the management of the companies where there are registered variations of the demand and supply of goods and services. In practice, this form of flexible labor usage is for the benefit of both businesses and certain individuals.

Of the total number of companies analyzed about 67% use this form of employment for their employees (in some countries the values are much higher – Netherlands 91%, Germany 80%, etc.). The part-time schedule can be chosen in different versions: a number of hours on certain days or during normal working hours followed by days off, etc.

Overtime work can emerge especially where there are increased demands for extra-activity, especially due to unforeseen situations, extra orders from customers, etc. At European level, these overtime hours are either financially compensated (35% of the companies), or they are offered days off (23% of the companies) or there is applied the mixed system (37% of the companies – financial compensations and days off).

Work beyond normal working hours (in shifts, night work – hours 23:00 – 06:00, during weekends) is applied in some companies which by their object of activity have a continuous work schedule (metallurgy of iron, petro chemistry, energy, etc.); in some cases it occurs eve to companies which exceptionally have to work beyond the normal schedule: accidental failures of equipment, additional customer orders, savings on electricity costs for motor power (it's cheaper consumption in these periods), etc. From the study carried out by the European Company Survey (2009) it results that 44% of European units practice work outside normal working hours, especially on Saturdays. Schematically, the flexibility of working hours may include the components shown in Figure 1.

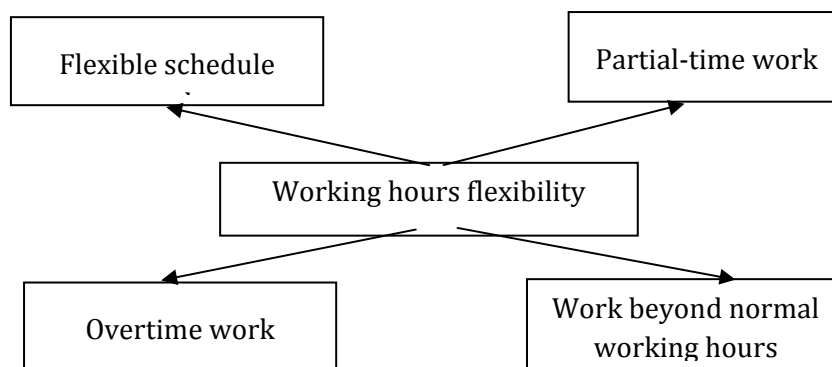


Figure 1. Components of working hours flexibility

1.2. **Contractual flexibility** regarding the employment of workforce

Currently most companies face considerable fluctuations on market demands, which requires that their management uses various flexible agreements for hiring workers: temporary employment contracts, fixed-term contracts, self-employed.

Temporary work agreements are practiced differently from one country to another in the EU, the most significant preoccupations being England, Denmark, France, Belgium, Finland, in relation to the object of activity of the companies, seasonality of market demand, etc.

Fixed-term agreements are increasingly used in the EU countries. From the ECS study made in 2009 it results that approximately 54% from the research companies registered such countries. In some countries – Poland, Holland, the percentage of companies with such agreements was over 70% as in other states – Austria, Malta, Cyprus, the proportion of countries in this case was of 20%. Usually, some workers with fixed-terms agreements can subsequently get continuous agreements.

1.3. Functional flexibility of workers within the organization, which involves the ability of the employees to occupy various positions depending on the needs to fulfill some work tasks specific to each phase. In order to guarantee this internal flexibility of workers, a main role is played by the periodic professional training in relation to current and future needs of the company. An important role in guaranteeing functional flexibility is also played by practicing some modern forms, specific to human resources management, referring to the use of autonomous teams, to guaranteeing teams autonomy and the autonomy of each worker within the working team.

Employees professional training, related to the company's training needs, has to take into account future requirements in the field of labor force. Within the study made by the ECS in 2009, it results that 72% of the companies periodically verify the need to professional training of workers. But there are significant differences between workers hired based on continuous employment agreements (over 50%) and the ones based on fixed-terms employment agreements (approximately 30%) as between employees with a high level of qualification (over 60%) compared to the ones with low level of qualification or unqualified (approximately 50%).

Concerning actual organization of training programs, with or without interrupting the work schedule, most companies (about 60%) give days off to perform training sessions.

Autonomy of work teams enables them to adapt their work organization in relation to the changes that occur. The question is the degree of autonomy, the extent to which team members can decide how and by whom tasks will be fulfilled in the situation in which the tasks are outlined by a hierarchical superior. Work organization based on autonomous teams is widespread in some Scandinavian countries, where the so-called "learning organizations" which have a strong impact on the competitiveness of their work (Kyzlinková et al., 2007). In most states, however, autonomous working teams is practiced in a small proportion (about 22%) usually there is a higher person who distributes the tasks within the teams and then work teams have autonomy only on the organization of fulfilling work tasks.

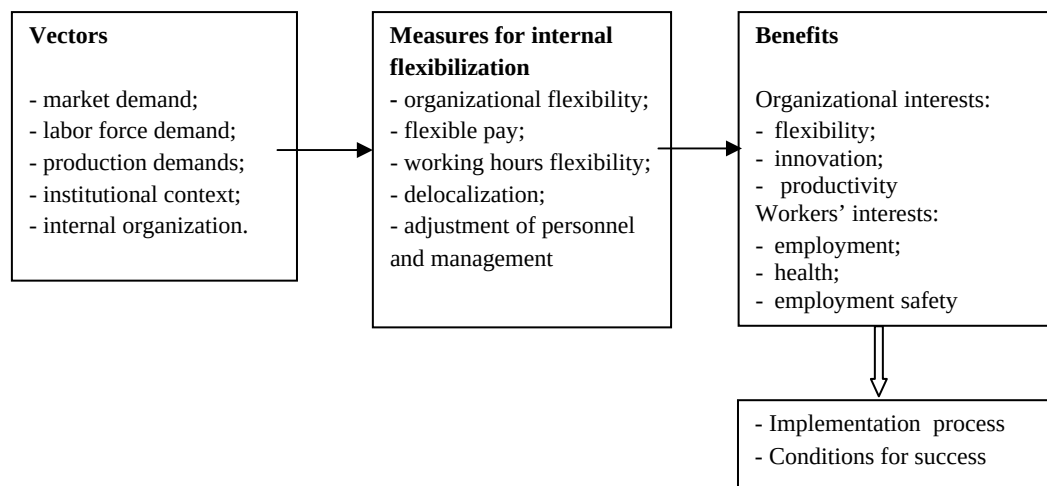
1.4. Wage flexibility which aims to reduce the cost of workforce, balancing the report "effort-reward" in connection with the performance of the company, changes in production activities, internal and external markets situation, etc. Consequently, employees receive cash rewards and other measures relative to company productivity and market demand. Through this flexibilization wage

policy it can contribute to the elimination of rigidities related to automatic indexing of wages, employment taxes, etc.

In conclusion, application of measures of labor flexibilization and promotion of flexible forms of work contribute to the competitiveness of European organizations in the current economic, financial and social situation, characterized by uncertainty and significant changes, while these measures support both employers and workers, thus increasing the chances that they are active in the labor market.

1.5. Good practices on internal flexibility of labor force applied in some European organizations

In 2009 the European Foundation for the Improvement of Living and Working Conditions published "The good practice guide for internal flexibility policies implemented in European companies". In preparing this guide it was carried out a wide research based on questionnaires and interviews too with representatives of European companies; there were presented a series of cases based on the example of companies, and each case takes into account the context in which the company was found, the main measures taken to improve flexibility, the results of these measures. In approaching various cases there was considered the model in Figure 2.



Source: European Foundation for the Improvement of Living and Working Conditions, 2009.

Figure 2. General pattern of internal flexibilization good practices

1.5.1. Work at distance (teleworking) and flexibilization of workplace

This practice of labor flexibility was implemented by "Dexia Group" for enabling those employees to have more freedom regarding the organization and development of work – at home, at the office or in other space. With this possibility for all employees spaces and energy are saved, etc. For practicing telework there was entered a collective agreement with the trade unions, with the purpose to implement an "integrated concept of flexible jobs" including:

- "Teleworking" with four aspects:
 - mobile practical labor especially for sales activities, not involving its development in offices;
 - work at home (structured), the work is done at least one day a week at home;
 - work at home (ad-hoc) practiced occasionally with management approval;
 - "satellite" work - partly performed in an office of the company, near to the residence of the employee;
- Shared workspace, respectively sharing, scheduling activities working space between different employees, with the purpose to reduce office space by 16%;
- Managers training for achieving new managerial skills regarding the teleworking.

The experience of "Dexia Group" through telework organizing led to the increase of labor productivity and the professional and personal reconciliation of employees, along with a number of cost savings (space, power, etc.).

1.5.2. Formation of flexible thinking

The experience of "GKN Autostructures", faced with the need to respond to an increasingly more dynamic and unpredictable market, typical for car industry, led to the need for measures which ensure a more flexible mindset to all employees. For this purpose, there were taken a series managerial of measures for work reorganization, such:

- Structural reorganization and the introduction of autonomous teams responsible for their own performance (business units);
- The introduction of workers' self-evaluation correlated with variable remuneration to encourage use and development of employees' skills;
- Encourage a flexible mindset, involving all employees in an atmosphere of trust and openness to communication, based on strong leadership, including the use of psychological mechanisms for resource mobilization. The experience of this company showed that motivated human resources with the appropriate mindset are essential to overcome the problems caused by the uncertainty of the business environment.

1.5.3. Improvement of the report and balancing "professional life-personal life"

MRW company in Spain, a strong service delivery firm was facing strong international competition. In this context thought to promote small family business to the company's business goals and introduce the "franchise". But with this system there is guaranteed managers' commitment in observing the values imposed by corporate social responsibility (RSC).

In order to ensure flexible working measures they acted in the following directions:

- Structural reorganization by promoting small business franchise, thus the size of the location and size of the business in relation to market demand are adjusted;
- CSR principles promote the adjustment to employees' or entrepreneurs' needs, respectively balancing professional and personal responsibilities;
- The management of the company has developed within the organizational culture, the belief that employees can work properly only if there is ensured a balance between work and their family life, as a result, workers are valued as individuals and not as resources, giving priority to listening to personal needs and understanding the factors that motivate people;
- Other measures of family support (childcare vouchers), of reducing staff fluctuation, etc.

Through these actions, of balancing family responsibilities of employees, there has been achieved an increase in labor productivity and the company as a whole was conceived primarily as a network of social relations in which people help each other in promoting small business franchise.

1.5.4. Negotiated flexibility

"Polfinger", an Austrian engineering company, was forced to adopt greater flexibility in work due to increased international competition, customer pressure, increased costs, etc. To this end, the management of the company took a number of measures of flexibility with the consent of workers' representatives, concerning:

- Forming autonomous teams that can organize themselves for performance of the productive tasks so as to comply with delivery deadlines;
- Introducing a flexible work schedule, by which employees have control over the working hours. Working week was reduced from 38.5 hours to 37.3 hours for those who work in three shifts, the night shift duration was reduced to 35 hours per week. Overtime is considered the time exceeding nine hours a day or 45 hours per week. Difference of overtime – up to 45 hours per week, is

considered flexible time ("flexitime") and is shown in an account of work time (working time account) and will later be used by the employee;

- Introducing a bonus system which rewards work teams performance, productivity, etc.

1.5.5. Flexibility by restructuring

„Saab Microwave Systems” Company, manufacturing high-tech radar equipment faced lower demand on the military market and therefore had to shift to the civil market; this restructuring in order to meet the new requirements imposed shortening production cycles, products adjustment in relation to civil demand, and valorization of highly specialized workforce in the new conditions. To meet these challenges there were been taken a number of flexibilization measures:

- Changes in the organizational structure;
- Adjusting individual professional skills and competencies to meet the new technology for civil products;
- Reduction of hierarchical levels;
- Involvement of all employees in discussions on strategic alternatives to be approached by the company in a climate of confidence, collaboration and transparent communication to ensure that each employee is informed of the changes taking place.

Conclusions

The success of any company in the new conditions depends on the organization's management to develop a workforce that will adjust to the objective changes that occur. To this end, the management of any organization must take into account a number of requirements, such:

- Improvement of the adaptability of the company to be made through its employees, responding to their needs;
- The need to create and sustain a flexible mindset because first there has to take place a change at mental level and then at organizational level;
- For implementing labor force flexibility measures there should be provided information, proper dialogue, in order to exist the support of all employees;
- The process of changing towards organizational flexibilization requires visionary, charismatic and courageous leadership.

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International monetary system – between crisis and reform

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Abstract. *The 2008 global crisis that hit in the heart of the system highlighted main deficiencies and vulnerabilities of the current international monetary system and revived the old concerns about its functioning. The reform of the international monetary system is under discussion again after a long period, during the '90 crises, especially in Southeast Asia, Russia and Brazil. To explain the relation between crisis and reform, this paper identifies some variables and hypotheses. It also analyses the matters that have sparked interest in reforming the international monetary system, in the context of the causes of the crisis and its vulnerabilities, admitting that the current system is not a perfect one. The paper concludes that it is time for a deep reform of the international monetary system.*

Keywords: international monetary system; crisis; reform.

JEL Classification: F33.

REL Classification: 10I.

1. Some interpretations of the relation between crisis and reform

Rodrik (1996, p. 26) believes that is a tautology to associate reform with crisis, the reform naturally becomes a problem when policies do not work, that a crisis is actually an extreme case of failure of the policy and therefore “*reform should follow the crisis*”. The author suggests that one reason why the hypothesis has not been tested empirically is that it cannot be rejected; in its opinion the hypothesis is being nonfalsifiable.

On the other hand, Drazen and Easterly (2001) argue that if one can distinguish between different versions of the argument “reform follows crisis”, then the most sensible version is both non-tautological and testable.

To explain the *relation between crisis and reform*, economic literature identifies a number of *variables*:

- Crisis, which induce reform (Alesina, Drazen, 1991);
- Time, which shows not only the severity of the crisis but also its duration, political actors and interactions between factors (Drazen, 2009);
- Legal framework: Abiad and Mody (2003) find that a financial crisis slows or reverses deregulation, with the reform meaning; Helleiner and Pagliari (2010) emphasize the relation between crisis and international financial regulation reform; Franklin and Carletti (2010) consider the need for reform in the governance and regulation of central banks to minimize the risk of future crises; Dabrowski (2010) stresses the architectural elements missing from EU financial supervision and those that can help strengthen global coordination of policy and regulation;
- National, regional and international institutions: Fischer (2003) examines the role of IMF reforms in crisis prevention and management; Pop-Eleches (2009) explains the IMF's response to economic crises in Latin America and Eastern Europe and demonstrates that an economic crisis triggered economic neoliberal reforms only when the government and the IMF agree on the roots and the severity of the crisis; Petri and Plummer (2009) stress the need for new institutions in policies cooperation; Moshirian (2011) argues that in fact the crisis lead to new national and international institutions (for example, the Federal Reserve System in 1914, in the aftermath of the banking crisis of 1907; the IMF and IBRD in 1944, after de Second World War; the Financial Stability Forum and the G20 Forum of Finance Ministers, after the Asian crisis; G20 and the Financial Stability Board during the current crisis).

Drazen (2009) notes that there are four approaches to the question of whether a crisis triggers reform, which he calls the “crisis hypotheses”:

- Crisis modifies the perception of the need for a change;
- Crisis makes each interest group to be more open to reform;
- Crisis weakens powerful interest groups that block reform;
- An extremely deterioration of the status quo do various groups willing to accept the uncertainty associated with important structural changes.

In response to the question why the financial crisis in 2008 has not led to more structural reforms of the financial sector, Drazen (2009) makes the following arguments:

- The complexity of the crisis;
- Crisis hypothesis must be refined to understand that adoption of structural reforms take time. Once the crisis has passed, financial market reform is an old problem. On the example of the global crisis, if the crisis hypothesis is true, the questions are why there were no major policy changes when it was perceived as a crisis and why if the crisis passed, financial reform legislation is still being discussed;
- Special interests inside and outside government are often responsible for the lack of significant reforms in response to the crisis.

Mircea Malița (2009, p. 49) believes that in fact “the crisis is above all a mental breakdown” and “to say that the system is recovering, but it keeps the ideas, prejudgements and bad practices, means that it take a break waiting for the next crisis”.

When reform does not occur, the explanation given most often is that actually *the crisis has not yet become sufficiently severe* – for instance the ’90s crises – and *probably is expecting the next crisis* – the crisis of 2008 – *to reform the international monetary system*.

On the other hand, for a crisis to justify reform, the reform must be regarded as closely related to solving the crisis. In other words, between the cause of crisis and structural reform adopted must be a strong connection (e.g., adoption of the Securities Act and Glass-Steagall Act in 1933, during the Great Depression, after the Wall Street crash of 1929 and the banking panic of 1933).

In his Nobel Prize speech, Robert Mundell (2000) highlights the role of monetary factors as a determinant of political events, arguing that many of the political changes of the twentieth century were caused by misunderstanding of the international monetary system disturbances, which were consequences of US growth and Federal Reserve System mistakes.

Napoleon Pop (2008, p. 19) states that in the fight to purify the global crisis “- the crisis is the signal of the need for global body recovery – no need to find any winners or losers, but success. Why? Because in the first case may be either the ones or the others, while the success is necessary for all”.

Based on Ivy Baker Priest quote, former Minister of Finance in USA – “The world is round and the place which may seem like the end may also be only the beginning”; Mugur Isărescu (2009, p.11) interprets this idea as “the main lesson arising from today's crisis, unless was the lesson that, probably, humanity had the sensation that it learned every time there was a crisis”.

According to Marin Dinu (2010) actual crisis has become a crisis of choice solutions, the consequence of option for inconsistent approaches, of extreme nature, ideological. The author (Dinu, 2010, p. 9) presents two hypotheses of delayed exit from the current crisis: “the crisis is very persistent turbulence in the bifurcation of the path-specific system for creating wealth; it signals the end of the long cycle of the economy and the emergence of another long cycle of inclusive economy, global; crisis is both of the principles, means and purpose (a crisis of the system), and by appealing to classical solutions is extended the critical unchanged functioning of the system entering into a vicious loop”. In the first case we can talk about “the global opportunity for change that it implies (world is changing in the whole and the efforts to catch the wave are becoming fundamental)”. In the second case, “the change takes the aspect of amplification effort for reinforcement the vicious loop resistance, the crisis worsened cyclical and thus the crisis is not approached as an opportunity for radical change, but as a correction for renewing the paradigmatically continuity”.

There are some authors that deny the need for reform considering that crises are nothing but an inevitable adjustment in response to periodic excesses (Little, Olivei, 1999). They assess that if the crises are the result of national policy mistakes, systemic reform could not be justified.

Sceptic authors emphasize that the agreements regarding major repairs of the international monetary system occurred only in exceptional circumstances, usually as a result of wars, such as the agreement that led to the creation in 1944 of the Bretton Woods system.

The hypotheses that we can outline are:

- *That a crisis is necessary but not sufficient to induce reform.* It was in the '90s crises and is to be seen if it verifies in the context of the current global crisis.

But it happened a reform of the international monetary system without a crisis, talking here about an important moment in the evolution of the international monetary system – the creation of the European Monetary Union in 1999. The Euro adoption led to one of the largest and most powerful trading blocs in the world, although only 17 of the 27 European Union members are now part of the eurozone. Although the Euro has not changed the structure of the Euro area with heterogeneous and independent countries, it undoubtedly strengthened the economic and political ties in the region and its weight in the world economy. From this perspective, the Euro has somewhat modified the global balance of power, redrawing the international monetary landscape. The Euro has become the first real competitor to the US dollar since the American currency exceeded the British pound as dominant international currency in the interwar period, while the Japanese yen continued to play a minor role as an international currency. As the British pound has maintained its role as an international currency beyond the power of the British economy for half a century, the US dollar remains the main currency, the Euro bringing only a slight reduction while maintaining the gap between the US and Europe regarding the international monetary role.

- *That a crisis induces policy change and the reforms taking place in times of crisis.*

The crisis episodes generally determine the question about how the international monetary system is built.

2. Financial crises and the reform of the international monetary system

The relation between crisis and reform of the international monetary system can be understood in the context of the causes of the crisis and its vulnerabilities, admitting the need for reform in this area.

Current international monetary system is not a perfect one, its weaknesses are highlighted and analysed in Romanian and foreign literature in recent years. According to these some directions are emerging today discussing about the reform of the international monetary system and its organizational versions, which are very different, giving rise to a fervent debate and generating reference studies and articles.

Analysing the functioning of the international monetary system in different periods it can be seen that each system had an operating period of no more than 40 years: gold standard system – 40 years; gold exchange standard system – 30 years; Bretton Woods system – 29 years; post-Bretton Woods system – 40 years.

Monetary and financial chronology of events shows that the international monetary system is not static, but is continuously evolving.

Over time, the world economy has been subject of periodic financial crises: before World War I, due to globalization; in the gold standard system – Baring crisis in 1890 and the US banking panic in 1907; in the interwar period – crisis in 1920-1925 and the Great Depression in 1929-1933; in the Bretton Woods system, more rarely, as currency crises; in the post-Bretton Woods system, in the time of liberalization and financial globalization.

Gradually, after the collapse of the Bretton Woods system, a variety of exchange rates, predominantly the flexible one, the free movement of capital, the freedom in the choice of exchange rate regimes, an excessive fluctuation of exchange rates and the dominance of the dollar as a reserve currency were attained, in other words an international monetary system like the current one.

The literature offers a number of typologies, chronologies and analyses of financial crises: Bordo, Eichengreen, Klingebiel and Martinez-Peria (2001), Eichengreen and Bordo (2002), Reinhart and Rogoff (2008), Eichengreen (2008), Bordo and Landon-Lane (2010).

The Great Depression of 1929-1933 was the result of an international monetary system with financial instability, severe imbalances and fixed exchange rates.

By its turbulence and contagion, the financial crises of the '90 in emerging markets – Mexico (1994-1995), South-East Asia (1997-1998), Russia (1998), Brazil (1998-1999) and Argentina (1999-2002) – caused a strong interest in the reform of the international monetary system not seen since the collapse of the Bretton Woods system. These crises have revealed a number of weaknesses in the international monetary system which could justify a fundamental change. They have shown that the integration of emerging economies in the global system poses transformations that were not anticipated. Capital flows generated by capital account liberalization, capital market imperfections, fragility and insufficiently regulated financial systems caused financial, currency and banking crises.

Bordo, Eichengreen, Klingebiel and Martinez-Peria (2001) have shown that since 1973 the frequency of crises has doubled compared with Bretton Woods system or gold standard system and rival with crisis of 1929-1933. In other words, the crises became more frequent, but no more severe.

Eichengreen and Bordo (2002) identified 38 financial crises during 1945-1971 (21 in developed countries and 17 in emerging countries) and 139 in the period 1973-1997 (44 in developed countries and 95 in emerging countries).

The international monetary system has become a global one with new features and questions, its deviations at beginning in a form of functional crises turning into systemic crises.

If the '70s were marked by calling for a “new international monetary order”, the '90 – especially after South-East Asia, Russia and Brazil crises – have brought into question the need for a “new international monetary architecture”.

The '90s emerging market crises were managed by the IMF and the World Bank, in order to avoid global contagion and, in particular, expansion to developed countries. Even if they have not led to a reform of the international monetary system, these highlighted a number of important lessons: caution on liberalization of capital movements in developing countries; increased transparency that contributes to improved surveillance.

After the crisis in South-East Asia the debate has taken another dimension. The phrase “reform the international financial architecture” was many years on the meeting agenda of international bodies, while remaining at the promise of reform.

The global crisis of 2008 revealed the most serious global macroeconomic imbalances that have raised *concerns in the functioning of the international monetary system* and represent *challenges for its reform*. Major deficiencies of the current international monetary system – volatile capital flows, large and persistent imbalances in the balance of payments, volatility and misalignment of the exchange rate, excessive demand for reserve assets in emerging countries, inadequate global adjustment mechanisms – became its vulnerabilities, causing continued volatility in financial markets. The crisis that hit in the heart of the system highlighted the current international monetary system weaknesses that should be addressed through reform, and old fears resurfaced. These deficiencies are likely to be magnified by the rapid transformation of the global economy and growth in emerging economies, while the international monetary system failed to adjust itself.

Economists have various views when considering the relationship between the global crisis and the current international monetary system. The literature on the international monetary system and the financial crisis is reviewed by Lin, Fardoust and Rosenblatt (2012). This relation can be understood in the context of the global crisis causes, where the debate is still on going.

Some believe that global macroeconomic imbalances are the main cause of the crisis (Bernanke, 2009, Dunaway, 2009, Eichengreen, 2009, Krugman, 2009,

Portes, 2009), while others argue that they only facilitate the development of the crisis (Obstfeld, Rogoff, 2009, Roubini, Mihm, 2010, Borio, Disyatat, 2011).

On the other side, there are authors who believe that the current monetary system – through its weaknesses – was a trigger of the financial imbalances that led to the global crisis.

Whelan (2010) explains how European banks have played a major role in external financing of credit expansion in the United States, many of them facing serious financial problems when the toxic nature of the assets was brought out, this representing an important mechanism for widespread transmission of the US problems.

Eichengreen (2011) notes the role of the international monetary system and the US dollar in crisis, identifying causal chains.

Farhi, Gourinchas and Rey (2011) consider the absence of a systematic mechanism for sufficient and coordinated supply of liquidity a major weakness of the current system.

Lin and Treichel (2012) argue that the cause of the crisis was financial deregulation combined with the loose monetary policy, facilitated by the role of the US dollar as the dominant reserve currency.

The US dollar was a world “safe haven” but also benefited from a lack of viable alternatives. The US dollar still retains a dominant position, which was partially influenced by the Euro and, today and especially in the future, it could be influenced by the growing importance of China and other emerging countries. In such a world there is room for more than one currency, as Eichengreen (2007) said.

3. Conclusions

We believe that the current international monetary system, through its shortcomings, fragility and the dominance of the US dollar as reserve currency, contributed to global crisis and threaten the global economic outlook. Basically, the transmission mechanism of global crisis was the global monetary and financial system. On the other hand, the major global economic imbalances reveal also a failure of the functioning of the international monetary system institutions.

The interest in international monetary system reform has intensified since the frequency and size of the financial crises have increased, becoming more severe, more costly and less predictable. Policymakers, financial analysts and academic

economists should focus their efforts on designing an international monetary system compatible with the current power configuration of the world economy, that through the features, principles, operations and institutions to be resilient to shocks in the long term and minimize the risk of another global crisis.

Taking as reference Reinhart and Rogoff's statement (2008) – which believes that most crisis episodes created the illusion among policy makers and investors that “this time is different” – we can only hope that “*this time will be different*” and *there will be a profound reform of the international monetary system*.

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