

## The Gnoseological Crisis

*“We may find ourselves in a system-crisis exactly because the founding vision of the modern context, the structuring of civilization is being affected.”*

It is not hard to realize the fact that today's crisis flows from economic relevance towards other territories, including the one of knowledge. The most peculiar aspect of contagion is related to the model of knowledge, its very intellectual fundamentals, time and causality. This is the sign that we may face a system-crisis exactly because the founding vision of the modern context, the structuring of civilization is being affected.

The most novel implications arrive with the sublimation of the artificial – represented by the virtualization of space and by its dislocation of the empirical. Previous crises have been focused on configuring – with a propensity for the extreme – only the empirical space, such as its exclusively hierarchical arrangement or the violent centrifugation of the periphery. Today the virtual space, invented purely for reasons of efficiency and yield, minimizes the empirical space as a source of added value. Ideally, added value follows the principle of the maximum gain in the short term, being a consequence of combining some virtual factors into the essence.

Fictitious money, for instance, constitutes the preferred instrument of the speculative path, specific to the postindustrial economy. Banking leverage, together with the practices of fictitiously increasing the value of assets, short selling and other instruments sustain the framework of the casino-economy where – as it is well known – success demands the playing of bluffs. Rules in the virtual economic space are invisible or voluntary. The dual banking market, or the frenetic derivative market are the instrumental breakthroughs of the virtualization of value. They are successes of the transformation of the economy into a goal. Winning at any price, including the price of emptying the social finality of the economy, no longer demands the economy's natural condition of being the vehicle of welfare.

The expansion of the virtual-value economy drives the monopolistic configuration of financial markets to paroxysm. The structure of the world economy is arranged antithetically between the reduced center and the ever-growing periphery, the real economy is turned dysfunctional though financial polarization and the elevator of emergence is being blocked. The periphery's chronic dependence on the center accumulates social tensions and exhibits the risk of violent resolution in the positioning regarding the sources for development. The empirical dimension of the postindustrial economic space is the recessive result of the allocative principle after the minimization of the costs of labor. The real fundamentals of the economy are diminished by the expanding virtualization of the means of profit.

The crisis which was started at the heart of the postindustrial economy, following the crisis-waves born almost two decades ago with the bursting of the dotcom bubble, has become a double crisis, of markets and of sovereign states in equal measure. Out of a contagious failure of the markets, which was possible to correct by appealing to the state's fund of historical experience, the world experiences the shock of the state's failure as a rational instrument for managing development. The unusual situation is twice debilitating to the rational attitude: firstly because through the rule of "too big to fail" the markets have trapped the power of the state in the grinding mechanisms of the short-term gain and secondly because the state has retreated by itself in the defensive position of being left to pay the bill.

This is how, through this crisis, time has become a vehicle of inter-generational transfer of costs, in practice being the riskiest of alternatives: passing the cost of the welfare of present generations into the responsibility of the future ones.

Finally, the implications of the crisis on the fundamentals of thought and knowledge can be found in the form of the multiplication of de-correlations between processes or trends, and even in the form of the obscuring of causal links. The financial boom turned speculative bubble is the result of the reversal of relationships between various sectors of the economy. The economic function of the state has been subordinated by the financial market and public sector economy has been subjugated by the private sector economy. This environment made possible the emergence of puzzling trends such as the over-performing financial markets while sovereign debt booms, the rise of inflation while the monetary policy interest rate tends to – or is – zero, after decades of coexisting high unemployment and economic growth.

The causal relationships are strongly perverted by the speculation phenomenon, leading to tears in the evolutionary directions – including the one between productivity and revenue, touching on the dissolution of the rule of social security.

Marin Dinu

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## Modeling the Market Risk in the Context of the Basel III Acord

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**Abstract.** *Basel III revealed new aspects to be considered in terms of risk management and supervision of banking systems. Banks may use internal models to determine minimum capital requirements imposed by new regulations to be adopted gradually in the period 2013-2019. In this context, the implementation of internal models by banks, applying VaR or ES risk measures, is a challenge both in terms of continued growth in the number of methods used and the complexity of practical approaches. This study aims to estimate the market risk by VaR and ES risk measures using parametric methods, nonparametric and Monte Carlo simulations. There will also be implemented stress tests to assess the capital adequacy under stressed macroeconomic environment.*

**Keywords:** VaR; ES; Monte Carlo simulations; GARCH models; kernel smoothing.

**JEL Codes:** C14, C15, G21.

**REL Codes:** 11B, 10Z.

## 1. Introduction

The current global financial crisis has revealed some of the weakness of the banking systems. The globalization and the competition among banks have determined an excessive use of financial innovations and also an increase of the leverage in order to maintain their profitability. The banks' appetite for sophisticated derivatives, difficult to evaluate (such collateralized obligations, mortgaged backed securities and credit default swaps), led to the risks' undervaluation and concentration, subsequently materializing in capital erosion.

Many of the studies analyzing the current financial crisis emphasize as one of the major causes the weakness of the regulatory and supervision framework. Therefore, there is a consensus at the international level regarding the revision of the regulatory and supervision framework for banking activities as demonstrated by the Basel III that will be progressively implemented in the following years 2013-2019.

The document "*Revisions to the Basel II market risk framework*" issued by Basel Committee on Banking Supervision (BCBS) in February 2011 highlights the necessity of enhanced risk coverage, especially related to capital markets activities, and also an increase in the quality and quantity of the capital. Recent studies show that many banks recorded significant losses during 2007-2009, although they have comply with the minimum capital requirements as stated by Pillar I, Basel II. In the absence of an adequate capital and liquidity some banks have failed, while others have to reorganize their activity. In this context, the Basel III amendments for market risk address capital adequacy with respect to the liquidity of the financial instruments, especially for those with high maturities.

Another issue revealed by the current crisis is related to the procyclicality of the capital requirements that imply lower mandatory capital in periods of economic expansion and higher capital in recessions. According to the Minsky (1992) procyclicality is also the effect of the human behavior that amplifies the shocks affecting the financial institutions and markets and the economy as a whole.

Moreover the current crisis has demonstrated that the Basel II requirements lead to the risk sensitivity and coverage of the regulatory capital requirement, as the economic cycles have deteriorated the quality of assets and liabilities from the in and off-balance sheet of the bank. In order to reduce the procyclicality of the regulatory capital for market risk, the new proposals of BCBS include stress tests for one year time horizon in the measurement of the Value-at-Risk.

The implementation of internal models by banks, applying VaR or ES risk measures, is a challenge both in terms of continued growth in the number of methods used and the complexity of practical approaches such as: linear and non-linear parametric approaches (Alexander, 2008), historical simulation (Boudoukh, Richardson, Whitelaw, 1998, Barone-Adesi, Giannopoulos, Vosper, 1999), Extreme Value Theory (McNeil, Frey, 2002), Monte Carlo simulation (Glasserman, 2004), regression quantiles methods – CAViaR (Conditional Autoregressive Value at Risk, Engle, Manganelli, 2004), Markov Switching techniques (Gray, 1996, Klassen, 2002, Haas et al., 2004).

In practice, the complexity and difficulty of implementing VaR models consist in selecting the appropriate specification of the model, given that different methodologies lead to different capital requirements. Several studies on this topic were made by Berkowitz, Christoffersen and Pelletier (2011), Perignon and Smith (2010a, 2010b), Perignon, Deng and Wang (2008), Christoffersen (1998, 2001, 2004), Sarma et al. (2003), Lopez (1998).

In this context, market risk management represents a challenge for supervision and regulatory authorities, banks and also for the researchers.

Basel Committee on Banking Supervision addressed through “*Revisions to the Basel II market risk framework*” (2011) document new issues regarding the measurement of the market risk. In this way, the trading book capital requirements using the internal models approach will be the subject to the general and specific market risk capital charge measured using a 10-day VaR at the 99 percent confidence level and a stressed VaR. One of the most important revisions refers to the incremental risk capital charge, which includes default risk and migration risk for unsecuritised credit products.

A quantitative impact study regarding trading book conducted by Basel Committee on Banking Supervision in 2009 across a sample of 49 banks from 10 countries had as objective the capital requirements under the standardized measurement method for incremental risk exposure, securitization exposures, stressed VaR and the specific risk. The impact study shows an average increase of at least 11.5% of overall capital requirements and of 223.7% of market risk capital requirements. The increase in capital requirements for market risk breaks down as follows: 110.8% stresstesting VaR, 60.4% the incremental risk, 5.4% trading securitization and 0.2% the specific risk.

## 2. The data

The purpose of this study is to estimate the market risk from FX position and from equity position by using Value-at-Risk and Expected Shortfall as a measure of the risk. In this way, we consider one portfolio composed from four

currencies (euro, US dollar, British pound and Swiss franc) and another portfolio composed from five most traded equities on Romanian capital market (SIF1, SIF2, SIF3, SIF4 and SIF5). Historical observations from each portfolio are used in order to determine the returns distribution and therefore to quantify market risk by the means of Value at Risk (VaR) and Expected Shortfall (ES). The data series used for the first portfolio were extracted from the database of National Bank of Romania, representing the exchange rate EUR/RON, USD/RON, GBP/RON and CHF/RON, with daily observations from January 8, 2002 – April 8, 2011 (2267 observations). For the second portfolio, data series were extracted from the Bucharest Stock Exchange database, also, daily observations which covered the same period as in the case of the first portfolio (2267 observations).

The returns of two portfolios considered were determined by using the following formula:

$$R_i = \ln \frac{S_t}{S_{t-1}} \quad (1)$$

where  $R_i$  represents the return of the asset  $i$ ,  $S_t$  represents the exchange rate  $i$  between two currencies or the price of the stock  $i$  at the moment  $t$ . We assumed the following structure of the currency portfolio: a share of 70% for the euro, 10% for US dollar, 5% for the British pound and 15% for Swiss franc. In the case of the stock portfolio we assumed equally weights for the five stocks which we are selected.

To estimate de market risk we proceeded further to analyze the behavior of the data series used, i.e. the return of the currencies portfolio and the return of the stock portfolio. In Table 1 we present some descriptive statistics for the daily returns of both currency and stock portfolios. The two data series are leptokurtic as the Kurtosis is greater than 3. In addition, the Skewness indicates a right asymmetry for the return of the currency portfolio and a left asymmetry for the other one.

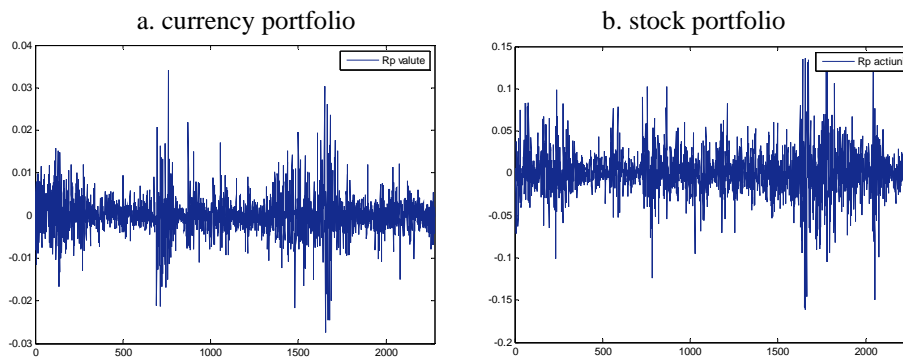
Table 1

**Descriptive statistics for the returns of the portfolios**

Indicators	Currency portfolio	Stock portfolio
Mean	0.0001	0.0010
Minimum	-0.0274	-0.1608
Maximum	0.0340	0.1382
Standard Dev.	0.0048	0.0275
Skewness	0.5337	-0.1108
Kurtosis	8.7594	7.7276



From the evolution of the returns for the selected portfolios depicted in Figure 1 we can draw some conclusions.



**Figure 1.** *The return of the currency and stock portfolio*

First, as expected the portfolios' returns are heteroskedastic, as a result of the volatility clustering: alternating periods of low volatility with those of high volatility. Second, the volatility of the stock portfolio returns is much higher than that of the currency portfolio, implying higher capital requirements for the market risk resulting from the exposure on equities. Thirdly, we noticed that in recent years (2008-2011) the volatility of analyzed returns increased drastically, this period capturing the global financial crisis. In the case of the stock portfolio composed by the SIF's companies stocks the maximum return was 13.83% and the minimum return was reached -16.08%, while for the currency portfolio 3.4% and -2.74% respectively.

### 3. Modeling market risk

The estimation of the market risk by VaR and expected shortfall was realized through models which are established in risk management as parametric models, historical simulations and Monte Carlo simulations. More specifically, in this study we use the following models: a parametric model with a mixture of normal distributions, three nonparametric models based on historical simulation and a model based on Monte Carlo simulation. The computations were performed in Matlab.

#### 3.1. The parametric model with mixture of normal distributions

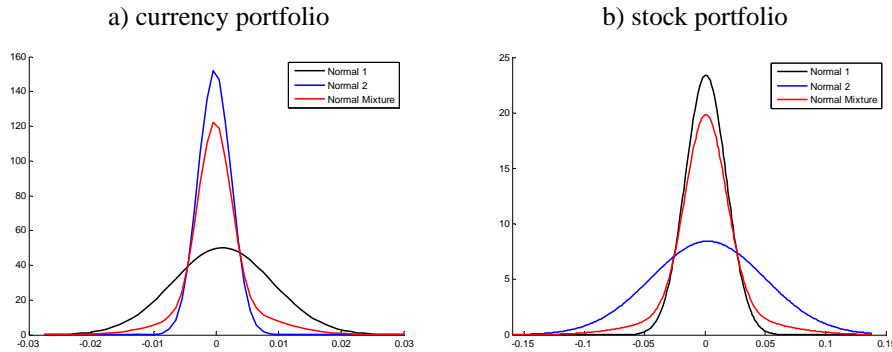
A useful statistical tool for capturing different states of the financial markets is the mixture of normal distributions. In this context, the portfolio

returns are assumed to be generated by two market regimes: one with a moderate volatility and another with a higher volatility. Under each regime the returns are assumed normally distributed, where the more volatile regime has the mean  $\mu_1$  and the variance  $\sigma_1^2$ , while the moderate regime with the mean  $\mu_2$  and the variance  $\sigma_2^2$ . Therefore, we can determine a mixture of the two normal distributions with the following distribution function:

$$G(x) = \pi F(x; \mu_1, \sigma_1^2) + (1 - \pi) F(x; \mu_2, \sigma_2^2) \quad (2)$$

where  $\pi$  represents the probability of the highly volatile market regime,  $F(x; \mu_t, \sigma_t^2)$  is the normal distribution function of the assets  $t$  with the mean  $\mu_t$  and the variance  $\sigma_t^2$  (for  $t = 1, 2$ ).

Figure 2 presented below shows the distribution approximation of the returns by using a mixture of Normal distributions for the two portfolios. It appears that one of the normal distribution has a lower standard deviation corresponding to less volatile market regime and the other distribution has a much higher standard deviations associated to the volatile market regime.



**Source:** Authors' calculations.

**Figure 2.** *Distribution approximation of the returns with a mixture of normal distributions*

The parameters estimation was performed by Expectation Maximization (EM) algorithm (Alexander, 2008). The EM algorithm introduces explicitly a latent variable in the maximization of the likelihood function. In order to compute the parameters of the mixture distribution, EM algorithm consists of iterating between two steps, the E-step and the M-step. The E-step implies the

computation of the expected log-likelihood given the results obtained for the parameters of the function to be optimized and given the distribution of the latent variable. The M-step involves an optimization which is applied to find a new value of the parameters that maximize the likelihood function. The EM algorithm iterates the two steps successively until the convergence is reached. Table 2 presented the estimates obtained for the chosen model by applying the EM algorithm.

Table 2

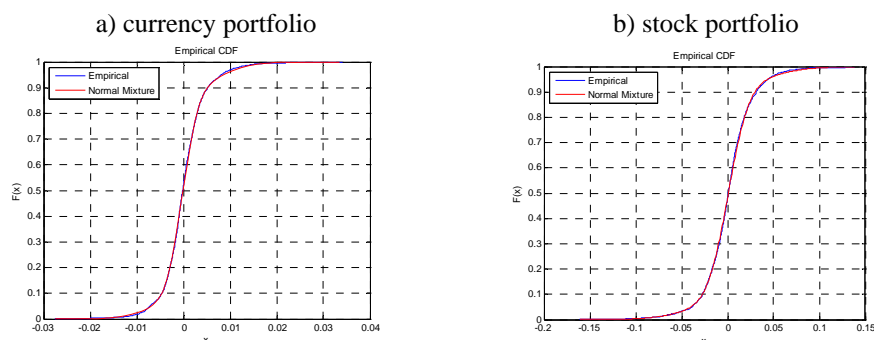
**Estimated parameters of the Normal mixture distributions**

Variable	$\pi$	$\mu_1$ %	$\mu_2$ %	$\sigma_1$ %	$\sigma_2$ %
Currency portf.	0.2901	0.10	-0.02	0.79	0.26
Stock portf.	0.2382	0.23	0.06	4.69	1.70

**Source:** Authors' calculations.

From Table 2 we observe that in the case of the currency portfolio the probability associated to the highly volatile regime is 29.01% (where the daily returns have a mean of 0.10% and a standard deviation of 0.79%) and the probability of the moderate volatility regime is 70.99% (the mean is -0.02% and the standard deviation is 1.70%). In other word, it was given a greater importance to the regime with moderate volatility. Similarly, for the stock portfolio two regimes were determined, where the more turbulent regime has an estimated volatility of 4.69% and an associated probability of 23.82%.

The estimation of the 1 day-VaR measures were realized in Matlab, determining the quantiles of the Normal mixture distribution corresponding to a 99% and 95% confidence levels. We have also calculated the ES indicator that represents the average level of loss, given that the VaR is exceeded.



**Source:** Authors' calculations.

**Figure 3.** Empirical cumulative distribution function (99% confidence level)

Figure 3 illustrates the empirical versus the theoretical cumulative distribution function for the mixture distributions. We observe that the two cumulative distribution functions almost overlap; therefore we conclude that the mixture distribution adequately captures the data series. The estimates of the VaR and ES are presented in Table 4 and will be discussed later in comparison with the results of the other methods.

### 3.2. The historical simulations models

The second category of models that we are using in this study refers to the historical simulations methods, i.e. simulations with equal weights assigned to the portfolio returns (HS), historical simulations with exponential weights (HS EW) and filtered historical simulation (FHS). VaR measures were estimated based on distributions determined through kernel smoothing techniques.

The estimation of kernel density represents a nonparametric method to determine the density function of a random variable. The aim of kernel fitting is to derive a smooth curve for a set of the discrete variables. Thus, using kernel fitting it can be inferred the population density from an empirical density function.

Given a random sample  $\{x_1, x_2, \dots, x_n\}$  on a random variable  $X$ , the kernel approximation to the density of  $X$  is defined by the following relation:

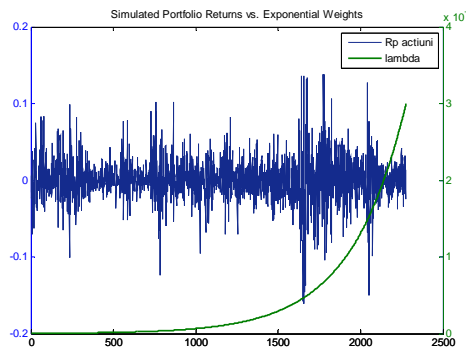
$$\hat{f}_h(x) = (nh)^{-1} \sum_{i=1}^n K(u) \quad (3)$$

where  $u = \frac{x - x_i}{h}$ ,  $K$  is the kernel function and  $h$  is the smoothing parameter representing the bandwidth. The aim of kernel fitting algorithm is to find the optimal bandwidth. The kernel algorithm is of several types such as uniform, triangular, Gaussian, Epanechnikov etc. The algorithm used in this study, kernel Epanechnikov, can be determined using the formula:

$$K(u) = \begin{cases} \frac{3}{4}(1-u^2), & -1 \leq u \leq 1 \\ 0 & \text{else where.} \end{cases} \quad (4)$$

In the first historical simulation (HS) model implemented here, we assume that past and current returns are equally important in the construction of the distribution of the future returns. In other words, in our first HS specification far in the past observed returns are equally likely with recent realized returns to be observed in the near future.

In the second model (HS EW), the returns are assigned different weights. The methodology implemented is the one proposed by Boudoukh, Richardson and Whitelaw (1998). To estimate the final distribution we proceeded by giving lower weights to the past returns and higher weights to the recent returns. The historical simulation depends on the smoothing parameter,  $\lambda$ , which captures the behavior of the data series. Figure 4 shows the historical return of the stock portfolio and how we attribute their weights for the parameter  $\lambda = 0.997$ .



Source: Authors' calculations.

**Figure 4.** The historical return of stock portfolio and the assignment of weights ( $\lambda = 0.997$ )

In the third model we apply historical simulation based on the filtered returns (FHS) according to the methodology developed by Hull and White (1998) and Duffie and Pan (1997). In order to filter the returns, ARMAX-GARCH models were used. Such choice is motivated by the stylized facts discussed in the literature. The returns of both portfolios considered here are heteroskedastic and leptokurtic and present volatility clustering.

The filtered returns are determined as:

$$R_{i,T} = \left( \frac{\hat{\sigma}_T}{\hat{\sigma}_t} \right) R_t, \quad (5)$$

where  $R_t$  is the historical return at the moment  $t$ ,  $\hat{\sigma}_t$  represents the standard deviation at the moment  $t$  estimated by a GARCH model and  $T$  is fixed.

We introduced an AR(1) term in the mean equation of the GARCH model in order to solve the problem of the autocorrelation of the portfolio's returns.

We found relevant the following GARCH models: AR(1)-GJR and AR(1)-EGARCH with normal distribution for the currency portfolio and

AR(1)-GARCH with normal and t distribution for the stock portfolio. Table 3 illustrates the estimation of the GARCH models considered.

Table 3

**The parameters estimated for the GARCH models**

AR(1)-GJR(1,1,1) N		AR(1)-EGARCH(1,1,1) N		AR(1)-GARCH(1,1) N		AR(1)-GARCH(1,1) T	
Currency portfolio				Stock portfolio			
Mean equation		Mean equation		Mean equation		Mean equation	
Variable	Parameters	Variable	Parameters	Variable	Parameters	Variable	Parameters
C	0.0001	C	0.0001	C	0.0012	C	0.0009
	(0.0001)*		(0.0001)*		(0.0004)		0.0003
AR(1)	0.0722	AR(1)	0.0696	AR(1)	0.1094	AR(1)	0.0919
	(0.0212)		(0.0206)		(0.0214)		0.0216
Variance equation		Variance equation		Variance equation		Variance equation	
Variable	Parameters	Variable	Parameters	Variable	Parameters	Variable	Parameters
C	0.0000	C	-0.2123	C	0.0000	C	0.0000
	(0.0000)		(0.0408)		(0.0000)		0.0000
GARCH(1)	0.8754	GARCH(1)	0.9796	GARCH(1)	0.8220	GARCH(1)	0.8125
	(0.0089)		(0.0038)		(0.0112)		0.0189
ARCH(1)	0.0998	ARCH(1)	0.2475	ARCH(1)	0.1736	ARCH(1)	0.1853
	(0.0112)		(0.0161)		(0.0138)		0.0225
Leverage(1)	0.0347	Leverage(1)	-0.0264	Leverage(1)	-	Leverage(1)	-
	(0.0137)		(0.0084)				
Log likelihood	9304.70	Log likelihood	9297.60	Log likelihood	5359.10	Log likelihood	5397.7
Akaike criterion	-8.1728	Akaike criterion	-8.1665	Akaike criterion	-4.7046	Akaike criterion	-4.7373
Schwarz criterion	-8.1576	Schwarz criterion	-8.1513	Schwarz criterion	-4.692	Schwarz criterion	-4.7226

\*The estimated parameter is not statistically significant.

**Source:** Authors' calculations, the probability associated of the parameters is passed in the parenthesis.

It was found that the return of the currency portfolio responds asymmetrically to the shocks that appear on the market since the parameter of the leverage was statistically significant for a 1% confidence level. On the other hand, this was not the case for the returns of the stock portfolio. However, this is a common result in the empirical literature.

### 3.3. Monte Carlo simulation

In this study we used multivariate GARCH models in order to capture the temporal dependence in the second order moments of asset returns. We first estimate the parameters of a multivariate GARCH model and then we generate

by Monte Carlo simulations possible futures evolutions of the returns for the currency portfolio and the stock portfolio.

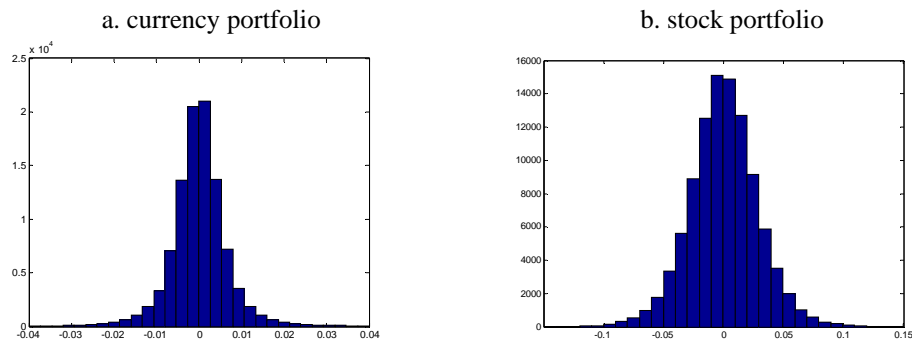
The multivariate model used is CCC GARCH (Constant Conditional Correlation GARCH) introduced by Bollerslev (1990). The CCC GARCH model assumes that the variance-covariance matrix at time  $t$  is:

$$V_t = D_t C D_t \quad (6)$$

where  $D_t$  is a diagonal matrix of the time varying GARCH volatilities at the moment  $t$ ,  $C$  is a correlation matrix that is constant over time. The variance-covariance matrix is positive defined if and only if the associated correlation matrix is positive definite. For example, the estimated correlation matrix for the portfolio of equities is as follows:

$$R = \begin{pmatrix} 1 & & & \\ 0.4413 & 1 & & \\ 0.6176 & 0.5116 & 1 & \\ 0.8156 & 0.4146 & 0.5572 & 1 \end{pmatrix}$$

Once the CCC GARCH model parameters were estimated, we have generated 10,000 possible paths for the next day in order to calculate VaR and ES risk measures. The estimates are presented in Table 4, while Figure 5 shows the distributions generated for the return of the two portfolios.



**Source:** Authors' calculations.

**Figure 5.** Return distributions estimated by Monte Carlo simulation

### 3.4. Empirical results

Results obtained for the 1 day-VaR and 1 day-ES at the 99% and 95% confidence level are illustrated in Table 4. In the case of the currency portfolio, we observed that the highest values of VaR and ES at the 99% confidence level were determined under the Monte Carlo simulation approach, the parametric model and HS model. In the case of the stock portfolio, the highest level of VaR and ES (99% confidence level) was recorded by the parametric model followed by HS and the Monte Carlo simulation approach. Also, as expected, the VaR and ES measures are much higher for the stock portfolio than those obtained for the currency portfolio.

Table 4

**Estimations for 1 day-VaR and 1 day-ES**

Models	1- $\alpha$	Parametric Model	HS	HS EW			FHS		Monte Carlo CCC GARH
				$\lambda=0.95$	$\lambda=0.97$	$\lambda=0.99$	AR(1)- GJR(1.1.1)	AR(1)- EGARCH(1.1.1)	
<i>Currency portfolio</i> (%)									
VaR	95	-0.69	-0.72	-0.63	-0.65	-0.57	-0.65	-0.73	-0.91
	99	-1.34	-1.21	-0.80	-0.80	-0.85	-1.07	-1.19	-2.00
ES	95	-1.01	-1.04	-1.01	-0.99	-0.92	-0.99	-1.05	-1.49
	99	-1.87	-1.73	-1.16	-1.16	-1.26	-1.52	-1.71	-2.98
<i>Stock portfolio</i> (%)									
Models	1- $\alpha$	Parametric Model	HS	HS EW			FHS		Monte Carlo CCC GARH
				$\lambda=0.95$	$\lambda=0.97$	$\lambda=0.99$	AR(1)- GARCH(1.1)	AR(1)- GARCH(1.1)	
VaR	95	-4.03	-3.98	-2.50	-2.48	-3.01	-2.89	-2.87	-4.59
	99	-7.94	-7.86	-3.64	-3.74	-5.26	-4.60	-4.58	-7.44
ES	95	-6.73	-6.60	-4.47	-4.46	-5.23	-5.11	-5.10	-6.25
	99	-10.89	-10.76	-6.05	-6.18	-7.84	-7.22	-7.22	-9.26

**Source:** Authors' calculations.

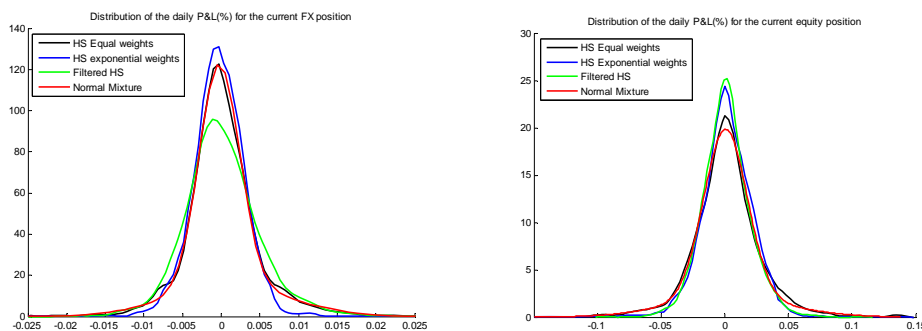
Analyzing HS EW models, we see that the VaR depends on  $\lambda$  and a low value of this parameter reveals a greater importance attributed of recent returns. Regarding FHS models, we observed that the lowest capital requirements were recorded by AR(1)-GJR model.

It is also important to highlight that in the case of the stock portfolio, for a 99% confidence level, values obtained for the ES measure are very high, reaching a maximum of 10.89% for the parametric model with a mixture distribution, implying higher capital requirements.



These results are closely related to the recent financial crises which has generated a very high volatility on the capital market in Romania especially in 2008, a fact confirmed by the Annual Report of the Bucharest Stock Exchange (2008) which reveal the following: “Against the background of the local stock market liquidity much lower than for other markets from US, Europe or Asia, the phenomenon of contagion that have been transformed correlations between BSE indices and those of international stock markets caused extremely high volatility. This situation made possible for some of the most important financial instruments traded on BSE to not be displayed purchase orders in a few trading sessions in recent months of 2008 (...). Therefore, the first time in over a decade of the history of BSE, in 8 October 2008 was necessary to suspend the trading session due to excessively high volatility.”

Figure presented below shows the empirical distribution of the portfolio returns for each model that we implemented (HS, HS EW, FHS, parametric model) and on which we calculated VaR and ES. The distribution for CCC GARCH model was already presented in section 3.3.



**Source:** Authors' calculations.

**Figure 7.** Estimated distributions for the currency / stock portfolio ( $\lambda=0,95$ )

#### 4. Stresstesting VaR

Basel III and the new regulation regarding market risk require to calculate a stressed VaR, which must supplement the VaR based on the most recent one-year observation period.

We chose two methods for implementing the stress tests: the FHS method and the parametric method with mixture distributions. In the first method, the parameter that we stress is the current volatility,  $\sigma_T$ . This parameter can be increased from the estimated value to higher values and adjusting all the past

observation with the stressed value (according to relation 5), resulting a new return distribution with a higher standard deviation.

In the normal mixture method, the parameter stressed is the probability associated to the highly volatile regime,  $\pi$ . In this exercise we can determine the impact in VaR and therefore in the capital requirement of an increase of the probability,  $\pi$ , from the current estimated level.

Table 5 shows the results of the stress tests for different values from the interval 1% - 5% of the current volatility and for four different values of the probability of the highly volatile regime (0.4, 0.5, 0.6 and 0.95).

Table 5

Scenarios	$\sigma_T$ (%)	Stress test VaR			VaR 99%, Parametric Model (%)	
		VaR 99%, FHS (%)		$\pi$	Currency portfolio	Stock portfolio
		Currency portfolio	Stock portfolio			
1	1	-2.42 (EGARCH)	-2.48 (GARCH t)	0.4	-1.45	-9.04
2	2.5	-6.16 (GJR)	-6.23 (GARCH N)	0.5	-1.53	-9.48
3	3	-7.40 (GJR)	-7.47 (GARCH N)	0.6	-1.59	-9.83
4	5	-12.12 (EGARCH)	-12.44 (GARCH t)	0.95	-1.73	-10.68

Source: Authors' calculations.

## 5. Concluding remarks

“Basel III: A global regulatory framework for more resilient banks and banking systems” document highlights the need for more comprehensive treatment of risks, particularly those arising from capital market trading and an increase in the quality of the capital base.

In this paper, we highlight the usefulness of some models for measuring market risk such as parametric models, nonparametric models and Monte Carlo simulations. Estimations resulted indicate higher capital requirements in the case of both portfolios for the CCC GARCH model, the parametric model with mixture distributions and the HS models (99% confidence level). Capital requirements were much higher for the stock portfolio due to an excessive volatility on the capital market in Romania in 2008-2011. In addition, according to new regulation introduced by Basel III, we conducted a series of stress testing scenarios to capture the capital adequacy under crisis conditions.

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## References

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- Alexander, C. (2008). *Market Risk Analysis. Value-at-Risk Models*, Volume IV, John Wiley & Sons Ltd.
- Barone-Adesi, G., K. Giannopoulos, L. Vosper, „VaR without correlations for nonlinear portfolios”, *Journal of Futures Markets* 19, 1999, pp. 583-602
- Basel Committee on Banking Supervision (2011). „Revisions to the Basel II market risk framework”, Bank for International Settlements
- Basel Committee on Banking Supervision (2011). „Basel III: A global regulatory framework for more resilient banks and banking systems”, Bank for International Settlements
- Basel Committee on Banking Supervision (2010). „Analysis of the trading book quantitative impact study”, Bank for International Settlements
- Berkowitz, J., Christoffersen, P., Pelletier, D., „Evaluating Value-at-Risk models with desk-level data”, *Management Science*, Articles in Advance, 2011, pp. 1-15
- Bolerslev, T., „Modeling the coherence in short-run nominal exchange rates: A multivariate generalized ARCH model”, *Review of Economics and Statistics*, 72(3), 1990, pp. 498-505
- Boudoukh, J., Richardson, M., Whitelaw, R., „The best of both worlds”, *Risk* 11(5), 1998, pp. 64-67
- Bucharest Stock Exchange (2008). Annual Report 2008
- Christoffersen, P., „Evaluating Interval Forecast”, *International Economic Review*, 39, 1998, pp. 841-862
- Christoffersen, P., Hahn, J., Inoue, A., „Testing and Comparing Value-at-Risk Measures”, *Journal of Empirical Finance*, 8, 2001, pp. 325-342
- Christoffersen, P., Pelletier, D., „Backtesting Value-at-Risk: A Duration-Based Approach”, *Journal of Financial Econometrics*, 2, 2004, pp. 84-108
- Duffie, D., Pan, J., „An overview of Value-at-Risk”, *Journal of Derivatives*, Spring, 1997, pp. 7-49
- Engle, R., Manganelli, S. (2001). „Value-at-Risk Models in Finance”, *Working paper no. 75*, Bank for International Settlements
- Glasserman, P. (2004). *Monte Carlo Methods in Financial Engineering: Applications of Mathematics, Stochastic Modeling and Applied Probability*, Springer-Verlag
- Gray, S.F., „Modeling the Conditional Distribution of Interest Rates as a Regime-Switching Process”, *Journal of Financial Economics*, 42(1), 1996, pp. 27-62
- Klaassen, F., „Improving GARCH Volatility Forecasts with Regime-Switching GARCH.”, *Empirical Economics*, 27(2), 2002, pp. 363-394
- Haas, M., Mittnik, S., Paolella, M.S., „A New Approach to Markov-Switching GARCH Models”, *Journal of Financial Econometrics*, 2(4), 2004, pp. 493-530
- Hull, J., White, A., „Incorporating volatility updating into the historical simulation method for Value-at-Risk”, *Journal of Risk* 1(1), 1998, pp. 5-19
- Lopez, J.A., „Methods for Evaluating Value-at-Risk Estimates”, *Economic Policy Review*, Federal Reserve Bank of New York, 2, 1999, pp. 3-17
- Minsky, H., „Financial Instability Hypothesis”, *Working paper no. 72*, 1992, The Jerome Levy Economics Institute of Board College

- McNeil, A., Frey, R., „VaR and expected shortfall in portfolios of dependent credit risks: Conceptual and practical insights”, *Journal of Banking & Finance*, vol. 26, 2002, pp. 1317-1334
- Perignon, C., Smith, D., „The level and quality of Value-at-Risk Disclosure”, *Journal of Banking and Finance*, 34, 2010a, pp. 362-267
- Perignon, C., Smith, D., „Diversification and Value-at-Risk”, *Journal of Banking and Finance*, 31, 2010b, pp. 3125-3144
- Perignon, C., Deng, Z.Y., Wang, Z.J., „Do banks overstate their Value-at-Risk?”, *Journal of Banking and Finance*, 32, 2008, pp. 783-794
- Sarma, M., Thomas, S., Shah, A., „Selection of VaR models”, *Journal of Forecasting*, 22(4), 2003, pp. 337-358

## Public Relations as Promotional Activity

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**Abstract.** *Public relations give opportunity to the organization to present its image and personality to its own “public”- users, supporters, sponsors, donors, local community and other public.*

*It is about transferring the message to the public, but that is a two-way street. You must communicate with your public, but at the same time you must give opportunity to the public to communicate easier with you. The real public relations include dialog – you should listen to the others, to see things through their perspective. This elaborate is made with the purpose to be useful for every organization, not for the sensational promotion of its achievements, but to become more critical towards its work. Seeing the organization in the way that the other see it, you can become better and sure that you are giving to your users the best service possible.*

**Keywords:** public; public relations; promotion; business world; communicating.

**JEL Code:** M31.

**REL Code:** 14G.

## Introduction

Many authors consider the public relations as consistent part of the business policy, so they do not put them in promotional activities, but as a function closely related with the managing of the company. Nevertheless, the public relations, seen by the companies' point of view, where each individual is included in making and conducting of the company policy, should be considered significant promotional activity, coordinated with all elements of communication with the market, that is, with the public. Public relations represent significant element of every promotion. They are integral part of the whole promotional effort and they must be coordinated with the rest of the elements of the promotional mix. As separate part of the promotional mix, they have significant influence over the wider public, which consists not only of the buyers but also of the whole surrounding, all interested groups, the competition, the media and the state also.

For presentation of their messages public relations use channels of communication. In order not to be misunderstood, that in this way only the economic aspect is taken into consideration, the specific features of the companies should be emphasized, where the social and economic motives present a whole. In creating such communication directed toward the market and toward the public all promotional activities are included, subsequently the public relations, too. They all complement each other in creating a whole image for the market and for the public. In creating the messages by the public relations it is necessary to be familiar with the communication techniques, which is also important when creating the advertising material. In addition, the public relations can include some other promotional elements, using them in a different way and for different purpose of their usual. For example, economic advertising can be used to demonstrate the company's position considering some controversial issue; or special events can be organized to create good will in the community: publishing in the newspaper can be used to promote certain new product or some changes in the organization etc.

Public relations are present even when they are not organized as separate activity within the companies. They exist and the messages circulate in the public no matter whether the companies want that or not. Each company has its own personal representatives, sales personnel, workers, members of their families, creditors, former and present customers, suppliers etc. They all send messages for the company, good or bad, sometimes they are misinterpreted and sometimes they influence stronger than the advertising messages, which come from the advertising services or agencies. All these messages should be comprised and coordinated with the promotional activities. Rest of the

promotional activities help gain trust by the public, but because of the nature of their activity they can not have big influence.

For example, there is spreading of propaganda “mouth to mouth” misinformation about the work of the company in the public, to give bad, distorted image about the company or to be misinterpreted some company move. It is very difficult to react quickly in such cases if there isn't a department, within the promotional activities, who continuously follows all events in organized and planned manner.

### Defining of the public relations

The term “Public Relations”, the same as the term “marketing” is taken from the English language and means whole strategic communication of the institutions with its social surrounding.

In this modern business world, the organizations with revolutionary products are very rear, with monopoly position on the market or privileged position in the society, which brings them success in the work by itself. The rest of the companies, if they want to succeed, should make friends, should influence the people, that is, they should be developing positive and effective relations with their public. The companies, financial institutions and all the rest that create products and who care about their survival and development in a competitive society should create two way relations, with high quality, with their public. They should build corporate personality. By this it is meant to build positive image, built associations and social acceptance. The PR campaign should come as a result of the company policy by itself, and should be coordinated with the rest of the promotional and marketing activities. The organizations should not be left to the case, but they should create their future continuously and consistently, and to build positive image in the public. Achieving of the wanted results with working, such as increasing of the profit, increasing of the market participation, the positive image, built preferred brand are goal of every organization. In order to realize its goals and for sustainable development, each company should establish communication with its public. Through speech it should be established two way communications with the public, by which the company will realize its goals, and the target group will be convinced that, with the received information, they know more or that they get bigger value. The target group (the public) should be constantly analyzed, to be understood, and according to their needs to make promotional campaign. The primary goal of the PR is to influence the opinion of the public. With creative choice of PR techniques it should create the public opinion and direct it in the positive direction in favour of the organization.

*Good public relations*

Good public relations rest on the well built strategy, with good timing, well planned and efficiently realized. Leading a campaign of Public Relations is complex matter. It requires good knowledge of the company, its separate activities, development possibilities, the problems it faces or it used to face, analysis of the competition, previous activities, everything in order more precise projecting and predicting of the future events. As a complex activity as it is the PR requires professional knowledge of the activity itself, but also social and psychological affinities that are necessary for better knowledge of the public in order to achieve better communication. Nevertheless, there isn't a manager with natural talent who can develop spontaneously and without preparation good and successful relations with the public. It takes a lot of time, thinking, attention and work. Public relations are managing process of the corporative reputation. Organization's personality demonstrated through its perception by the public and built associations represent critical factor for success or failure.

*Better reputation – better market value*

Built personality means built character, credibility in the public and uniqueness. Public relations have goal to build the company's image, which means to increase its immaterial assets. Good reputation means bigger market value, better development conditions and bigger acceptance. And of course, the things the company does should correspond with the things she is saying. An organization can have good and built image when:

- The company is seen as professional and good organized;
- The employees are satisfied and they see their future in the company;
- There are constant investments;
- Brands are built and good positioned, and the customer trust and use them.

When we talk about terms, there is a difference between the categories brand and product. The difference is in their perception and the degree of their perception. The difference is confirmed with the following opinion poll analysis, too. There are organizations which build their corporative reputation for years, and today they are synonyms for quality in their categories. For example, if you hear that the German car manufacturer BMW has decreased their safety standards in order to decrease their production expenses or that Mark & Spenser has lowered the quality of its products, would you believe in that? Surely not. Although we do not know the facts, we already have built perceptions for them. We all hear that Coca-Cola products are not healthy, but we consume them beside this fact, and we do not even think to give up of them.



Those are built brands with developed image and built preference considering their competition and the brand presents company's biggest capital. If we have the public opinion on our side we can do anything, without it absolutely nothing.

*Defining of the target group (public)*

The success of a company, bank or some other financial entity depends on their positive image in the public. Building of corporative identity, that is, certain associations and perceptions, is a process that should be well thought out.

Generally speaking all companies that have built image go through several phases:

- Defining of the public – the target group;
- Analysis of the current state:
  - a) Perception of the attitude toward our company;
  - b) Knowing of the competition;
- Determining of subject to be talked about;
- Defining of the goals of the campaign;
- Making a time-plan;
- Defining the necessary budget and necessary resources;
- Monitoring and evaluation of the effects of the campaign.

These are basic phases which should be considered, but public relations require bigger flexibility, spontaneity, quick reaction in certain situation, beside the necessary discipline, and also possibility of changing the plan if needed.

Bad image is hard to correct, and the good one should be maintained constantly. Here applies the rule that it is easier to spoil the image than to correct it.

Creating and maintaining good reputation and good image in the public is not an easy task. It requires complex engagement of the department for Public relations as well of the top management, and their constant coordination and cooperation. PR is an extraordinary way for realizing of promotional goals. Small expenses, high confidentiality, the possibility of targeting smaller public make the speech with the chosen target entity efficient and also credible way for influence.

Public relations provide way to project the image or the personality of an organization for its "public" – supporters, users, sponsors, donors, local community and other public. It is about transferring of a message to the public, but that is a two way process. We must communicate with our public, but we should also make conditions our public to communicate with us. The real Public Relations include dialog-we should listen to the others, to see things through their perspective.

## Conclusions

Communication has become global, multi cultural, the world becomes global village in which everybody is communicating with everybody, and hence the need for good public relations i.e. for learning of the ways of quick communication without borders, but with the respect of the cultural differences. If we work in home company today, we are no longer part of our small isolated world, tomorrow we can have video-conference with for ex. French partners and we are going to need presentational skills. We must learn the principles of functional leading of a meeting, otherwise we will turn out ridiculous and inefficient. While in the ancient times oratorical skills were mostly applied in the political speeches, law and special occasions (presenting, toast, protocol), today they are used in all new modern global-informational ways of communicating as tools for achieving bigger success, confidentiality and finally for bigger profit.

Preparing the staff for responsible tasks has the same importance as following the next step in technology. Investing in human resources is the most payable factor for successful working of every organization, but only if all techniques for successful business communication are learned.

Modern business living goes in the direction of forming “a team of tomorrow” which consists of individuals who attract the vast masses with their magnetism, with their acquired communicability and charisma. The basic mechanisms for establishing good Public Relations are presented in this work. Further more, the contents draw the path which every successful businessman should follow, but also the paths on which the others go, and which he should know and respect.

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## References

- Belch, G.E., Belch, M.A. (2007). *Advertising and Promotion*, McGraw-Hill
- Cutlip, S., Center, A. (1971). *Effective Public Relations*, Prentice Hall, Inc.
- Dunn W.S. (1986). *Public Relations a Contemporary Approach*, Homewood III Richard L. Irwin
- Mathis, R.L., Jackson, J.H. (2005). *Human resource management: Essential perspectives*, 3<sup>rd</sup> edition, South-Western Educational Publishing
- Robinson, D.F. (1994). Business etiquette: Деловна култура – Правила за убаво однесување во деловниот свет
- “Odnosi so javnosta”, Nada Sekulovska, 3 izdanie, januari 2009

## Forecast Intervals for Inflation in Romania

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**Abstract.** *In this paper I built forecasts intervals for the inflation rate in Romania, using the quarterly predicted values provided by the National Bank of Romania for 2007-2010. First, I used the historical errors method, which is the most used method, especially by the central banks. Forecast intervals were built considering that the forecast error series is normally distributed of zero mean and standard deviation equal to the RMSE (root mean squared error) corresponding to historical forecast errors. I introduced as a measure of economic state the indicator – relative variance of the phenomenon at a specific time in relation with the variance on the entire time horizon. Then, I calculated the relative volatility in order to know the change that must be brought to the root mean squared error in order to take into account the state of economy. Finally, I proposed a new way of building forecasts intervals, when the date series follows an autoregressive process of order 1. In this case the length of forecasts interval is smaller and I got a slightly higher relative variance. I consider really necessary the building of forecasts intervals, in order to have a measure of predictions uncertainty, which is quantified by the National Bank of Romania using the prediction intervals based on a simple methodology. I calculated the forecasts intervals using MAE (mean absolute error), the indicator chose by National Bank of Romania and the MSE (mean squared error) indicator.*

**Keywords:** forecast intervals; historical forecasts errors; root mean squared error (RMSE); relative variance; uncertainty.

**JEL Code:** C32.

**REL Codes:** 8F, 10B.

## 1. Introduction

Economic forecasts are used for a certain purpose, mostly being related to the orientation in taking economic decisions. However, these forecasts are affected by uncertainty for which statistical measures of evaluation are used.

Public perception tends to associate to macroeconomic forecasts published by the government with the precision domain, with no prospect of uncertainty. Crozier shows that the accompanying of forecasts with instruments for measuring the uncertainty provides autonomy to public environment involved in forecasts developing. Simon shows that the government uses various strategies to minimize the uncertainty. Krause (2002) demonstrates how risk management strategies provide recommendations on how to adapt to changing economic conditions. Uncertainty is based essentially on associating probabilities to future events verisimilitude.

Stancu and Mihail (2005) showed that at the beginning of '50s the economic phenomena were analyzed from the deterministic point of view, but the complexity of economic behaviour made necessary the stochastic concepts in describing the evolution of the economic processes and phenomena. Since predicting a variable by providing numerical values implies a high degree of uncertainty, the researchers have focused on the building of intervals where the predicted value might appear with a certain probability.

All the institutions base their forecasts uncertainty on historical errors, but even in this case Knüppel M. (2009) points out that the studies based on this method of quantifying the uncertainty in literature are almost nonexistent, except those of Williams and Goodman.

Chatfield (1993) shows the necessity to accompany the predictions by forecasts intervals, which represent the uncertainty degree of variation. The probabilities of certain events can be given. Fair (2000) emphasizes that the possibility of an economic crisis should be specified within the forecast interval.

After a brief overview of the main achievements in literature related to the construction of prediction intervals, I built forecasts intervals for quarterly inflation rate predicted by the National Bank of Romania in 2007-2010 using the historical errors method, taking then into account the state of the economy. In addition, given that inflation rates series follows an autoregressive process of order 1, I proposed a new method for building prediction intervals. Finally, I compared the quarterly forecasting intervals on horizon 2007-2010 for inflation in Romania using MAE with those using MSE as synthetic indicators of forecasting error.

## 2. Forecast intervals

The problem of building forecast intervals and the determination of distributions was approached quite late in the literature, notable works in this area being written by Cogley, Adolfson, Clark and Jore, Giordani and Villiani. The results showed an important conclusion: in order to build a forecast interval with a certain probability, the model has to include variances deviation in time.

Kjellberg and Villani (2010) numbered the advantages and disadvantages of both types of forecasts, the ones based on models and those built by the experts. Forecast methods based on models describe the complex relationships using endogenous variables by its transparence making easy the identification of mistakes that generated wrong predictions. The disadvantages are related to the difficulty of adapting the model to recent changes in the economy, as well as the too simple form of the models. Chatfield shows that forecast intervals are often too narrow not taking into account the uncertainty related to model specification, problem that is encountered also in the experts' assessment. Unlike the forecasts based exclusive on models, expert assessments modify immediately to any change of information related to the predicted phenomenon. Disadvantages in experts assessments are related just to the low degree of transparency, the difficulty of using many explanatory variables outside an explicit model.

The way to build a forecasts interval is described by Granger, the retrospective presentation of the methods being done by Chatfield (1993). Christoffersen (1998) explains how to evaluate these intervals while the methods for measuring forecasts density are introduced only in 1999 by Diebold, who extends them later for bivariate data. Wallis (2003) is the first one who proposes tests for forecasts intervals, while Otrok and Whiteman (1997, 1998), Robertson (2003) and Cogley (2003) introduce bayesian prediction intervals. Unlike other methods of building prediction intervals that are specified in literature, the Bayesian ones also analyze the impact of estimator error on interval. Stock and Watson (1999, 2003) specify the conditional distribution function for k-steps-ahead forecasts. Their approach is developed by Hansen (2005), who built asymptotic forecasts intervals to include the uncertainty determined by the parameter estimator.

## 3. Building prediction intervals based on historical forecast errors

The building of intervals taking into account the forecasts accuracy is an effective way to highlight the uncertainty that accompanies any forecast made. In the following, I used historical forecast errors to determine the forecast interval for inflation. I also used the projected inflation rates at the end of the year published by the National Bank of Romania for each quarter from 2007 to 2010. Forecast errors are calculated as the difference between expected value and the registered value. Forecast errors for each quarter are calculated by RMSE.

Forecast intervals are built considering that the forecast error series is normally distributed of zero mean and standard deviation equal to the RMSE corresponding to historical forecast errors. For a probability of  $(1-\alpha)$ , forecast interval is calculated:

$$(X_t(k) - z_{\alpha/2} \times RMSE(k), X_t(k) + z_{\alpha/2} \times RMSE(k)), k = 1, \dots, K$$

where:  $X_t(k)$  is punctual forecast for variable  $X_{t+k}$  at time  $t$ ;

$z_{\alpha/2}$  is the  $\alpha/2$  quintile of standardized normal distribution.

The table below displays the RMSE and lower and upper limits of the forecast interval for inflation predicted by the central bank with a quarter before (“one-step-ahead”).

Table 1

**The limits of the inflation rate forecasts intervals in Romania from 2007 Q1 to 2010 Q4 (based on historical forecasts errors)**

Quarter	RMSE	Lower limit	Upper limit
2007 T1	0.67	3.18	5.82
2007 T2	0.51	3.31	5.29
2007 T3	0.19	4.42	5.18
2007 T4	1.99	0.79	8.61
2008 T1	1.65	3.06	9.54
2008 T2	2.36	1.57	10.83
2008 T3	2.72	0.07	10.73
2008 T4	2.51	-0.62	9.22
2009 T1	0.77	4.49	7.51
2009 T2	0.59	4.35	6.65
2009 T3	0.11	4.88	5.32
2009 T4	0.06	4.38	4.62
2010 T1	0.43	3.35	5.05
2010 T2	0.02	4.34	4.41
2010 T3	0.27	7.24	8.30
2010 T4	0.31	7.56	8.78

**Source:** calculations made using data from reports of inflation of National Bank of Romania between 2006-2010 - [www.bnr.ro](http://www.bnr.ro).

The forecast intervals based on RMSE are independent of the state of the economy. Therefore, Blix and Sellin (1998) proposed the change of the method, so that the interval takes into account of changes in the economy, multiplying RMSE by a factor of uncertainty subjective chosen by the expert in forecasting. Another approach uses, for the series of observations, a model in which time varies. The series of quarterly inflation rates follows an autoregressive AR process in which the series has a residual variance of stochastic type. It is assumed the hypothesis that errors are identically distributed and follows a standardized normal distribution. Then, the regression model can be written:

$$ri = m + \sum_{k=1}^K \phi_k (ri_{t-k} - m) + \alpha_t \times e_t,$$

where  $\alpha_t$  is the standard deviation of errors  $\ln \alpha_t^2 = \ln \alpha_{t-1}^2 + \varepsilon_t$ , where  $\varepsilon_t$  follows a normal distribution and  $\ln \alpha_t^2$  is a random walk

We introduce a new statistical measure called the relative volatility or relative variance (variance of T moment in relation with the geometric mean of variances corresponding to the interval used to calculate RMSE), calculated by

the formula:  $\beta_T = \frac{\hat{\alpha}_T}{n^{-1} \prod_{t=t_1}^{t_2} \hat{\alpha}_t^{\frac{1}{n}}}$ ;  $t_1$  and  $t_2$  are the initial moment and the final one

of the period for which RMSE is calculated, the time of the interval bounded of the two moments is:  $n = t_1 + t_2 - 1$ , and  $\hat{\alpha}_T$  is a bayesian estimation.

The new intervals of variation of forecast values will be calculated as follows:

$$(X_t(k) - z_{\alpha/2} \times \alpha_t \times RMSE(k), X_t(k) + z_{\alpha/2} \times \alpha_t \times RMSE(k)), k = 1, \dots, K.$$

The relative volatility is 0,279.

Relative volatility of Q4 of 2010 was 1.279, which means that a 62.1% decrease in the value of RMSE is necessary to take into account the changes in the economy.

#### 4. The proposal of a new way to build forecast intervals for Romania

Between 2007-2010, inflation rates calculated at the end of the quarter may be represented by an AR process of order 1 (AR (1)). To determine the interval of variances of BNR predictions taking into account the state of the economy in each of the periods for which data were recorded, the coefficient which multiplies RMSE is calculated in different way than that recommended in the literature. Inflation is modeled in 2007-2010 as:  $r\_inf_t = 6.917 + 0.714 \times r\_inf_{t-1} + e_t$ .

For an AR process ( $X_t = \phi_1 \cdot X_{t-1} + e_t$ ), the variance is:  $\text{var}(X_t) = \frac{\sigma_e^2}{1 + \phi_1^2}$ ,

where  $\sigma_e^2$  – AR process error variance.

$$\text{The variance of inflation is: } \text{var}(r\_inf) = \frac{\sigma_e^2}{1 + 0.714^2} = \frac{1.232}{1.509} = 0.816$$

I introduce as a measure of economic state the indicator  $\delta$  – relativevariance of the phenomenon at a specific time in relation with the variance on the entire time horizon, which for T moment is calculated as:  $\delta_T = \frac{[e_T - E(e_t)]^2}{\text{var}(r\_inf)} = 0.339$

Table 2

**The limits of the inflation rate forecasts intervals in Romania  
from 2007 Q1 to 2010 Q4 (based on own method)**

Quarter	$e_t$	$[e_t - E(e_t)]^2$	$\delta_t$	RMSE	Lower limit	Upper limit
2007 T2	-0.921	0.849	1.040	0.507	3.267	5.333
2007 T3	0.307	0.094	0.116	0.193	4.756	4.844
2007 T4	1.149	1.320	1.618	1.993	-1.621	11.021
2008 T1	1.195	1.428	1.750	1.653	0.629	11.971
2008 T2	0.905	0.819	1.003	2.363	1.552	10.848
2008 T3	0.029	0.001	0.001	2.720	5.394	5.406
2008 T4	-0.967	0.934	1.145	2.510	-1.333	9.933
2009 T1	-0.071	0.005	0.006	0.770	5.991	6.009
2009 T2	-0.722	0.521	0.639	0.587	4.765	6.235
2009 T3	-1.336	1.785	2.188	0.113	4.614	5.586
2009 T4	-0.980	0.961	1.177	0.063	4.354	4.646
2010 T1	-0.603	0.364	0.445	0.434	3.817	4.575
2010 T2	-0.923	0.852	1.044	0.017	4.342	4.412
2010 T3	2.410	5.808	7.118	0.270	3.999	11.535
2010 T4	0.526	0.277	0.340	0.311	7.960	8.374

**Source:** calculations made using data from reports of inflation of National Bank of Romania between 2006-2010 - [www.bnr.ro](http://www.bnr.ro).

In this case, I obtained a relatively large variance, which means that it is necessary a decrease of RMSE value with 66.1% if one takes into the state of the economy in the last quarter of 2010.

##### 5. The methodology used by national bank of Romania and an alternative to it

Providing an evaluation of uncertainty is related to the effectiveness with which an institution fails to influence the economic activity. The methodology used by BNR is a simple one, like measure of global medium uncertainty for the rate on inflation based on its macroeconomic short-term forecast model is used the mean absolute error (MAE-mean absolute error). This synthetic indicator includes all effects of unanticipated past shocks that led the deviation of the expected values from the registered ones. Based on this type of error prediction, forecasting intervals are built, BNR numbering several advantages of its methodology:

- it considers all the previous shocks that have affected the rate of inflation;
- it determines a classification of the deviations from the actual values in the history of projections: deviations that determined an overestimation of the projected inflation and deviations that generated an underestimation;
- the methodology excludes any arbitrary assumption about the action of individual risk factors;



- it allows the adjustment of intervals of uncertainty, so that they reflect the assessments of different agents regarding the magnitude of the future uncertainty in relation with the one of previous periods.

Unlike the RMSE indicator, the indicator for forecasting error MAE is less sensitive to large prediction errors. If the dataset is small MAE is recommended, but the most institutions use RMSE as its unit of measurement is the same as the one of the indicator which is calculated. RMSE is always at least equal to the MAE. Equality occurs if the errors have the same magnitude. The difference between the MAE and the RMSE is higher, the greater the variability of the data series. RMSE is affected by generalized variance, the interpolation, the errors in the phase and by the presence of outliers.

I proposed a new measure for the prediction error by analogy with the MSE (mean square error). This indicator measures the difference between the estimator and the parameter value of this target. In statistics, MSE is a function of risk, which signifies the expected value of quadratic loss, ie it measures the mean square error. How MSE unit is the unit square of the indicator, the square root of MSE has a concrete significance. By analogy with the reasoning behind the calculation of MSE, we consider the estimator as the expected value for the rate of inflation ( $ri\_p$ ) and the parameter its actual value ( $ri\_e$ ) and it will result:  $MSE(ri\_p) = Var(ri\_p) + [Bias(ri\_p, ri\_e)]^2$ . The resulted forecasting intervals are higher.

Table 3

**Quarterly forecasting intervals for inflation in Romania on horizon 2007-2010  
(calculated using the historical errors method, ex-post technical)**

	li(MAE)	ls(MAE)	li(MSE)	ls(MSE)
2007T1	2.641	6.359	0.787	7.539
2007T2	2.441	6.159	1.414	6.679
2007T3	2.941	6.659	4.266	5.527
2007T4	2.841	6.559	1.902	9.492
2008T1	4.441	8.159	1.032	13.221
2008T2	4.341	8.059	-0.263	15.027
2008T3	3.541	7.259	-0.195	13.715
2008T4	2.441	6.159	1.273	9.837
2009T1	4.141	7.859	3.051	9.719
2009T2	3.641	7.359	3.891	7.696
2009T3	3.241	6.959	4.553	5.533
2009T4	2.641	6.359	3.123	5.940
2010T1	2.337	6.055	2.950	5.876
2010T2	2.518	6.236	2.602	6.135
2010T3	5.907	9.626	3.394	11.869
2010T4	6.308	10.027	3.089	12.935

**Source:** Processing based on data from the BNR and the INS ([www.bnr.ro](http://www.bnr.ro), [www.insse.ro](http://www.insse.ro)) (li (MFA), li (MSE) and ls (MAE), ls (MSE), the lower respectively the upper forecasting interval limit, interval calculated using MAE, respectively MSE).

I built quarterly forecasting intervals on horizon 2007-2010 for inflation in Romania using MAE and MSE as synthetic indicators of forecasting error. I noticed that the length of intervals based on MSE is lower, so the accuracy is higher.

## 6. Conclusions

Based on data of inflation forecasts provided quarterly by the Central Bank, forecast intervals were built using the method of historical forecast errors. For Romania, when inflation rates follows an AR (1), I have improved the technique of building forecast intervals taking into account the state of the economy in each period for which data were recorded. I recommend the use of interval forecasts by the National Bank of Romania based on RMSM or MSE, in order to have forecasts accompanied by an objective degree of uncertainty, fact that improves the decisional process.

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## References

- Blix, M., Sellin, P., „Uncertainty Bands for Inflation Forecasts”, *Sveriges Riksbank Working Paper Series*, 65, 1998
- Chatfield, C., „Calculating interval forecasts”, *Journal of Business and Economic Statistics*, 11, 1993, pp. 121-144
- Hansen, B., „Interval Forecasts and Parameter Uncertainty”, *Journal of Econometrics*, 135, 2005, pp. 377-398
- Kjellberg, D., Villani, M., „The Riksbank’s communication of macroeconomic uncertainty”, *Economic Review*, 1, 2010, pp. 2-49
- Knüppel, M., Schulte Frankenfeld, G., „How informative are macroeconomic risk forecasts? An examination of the Bank of England’s inflation forecasts”, *Discussion Paper, Series 1, Economic Studies*, 1(14), 2008, pp. 3-44
- Krause, A., „Coherent risk measurement: an introduction”, *Balance Sheet*, 10 (4), 2002, pp. 13-17
- Stancu, S., Mihail, N. (2005). *Decizii economice în condiții de incertitudine*, Editura Economică, București
- <http://www.bnr.ro/>
- <http://www.insse.ro/>

## Brief Reflections on the Development of the FDI Theory

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**Abstract.** *In this essay, we intend to review the theory of the FDI, since its origins to the present days, focusing on its corner stones. We present the FDI theory through the lens of the strategic management and try to bring to the forefront the main contributions to this framework. At the same time, we underline the scholars' frequent return to the "springs" of the FDI theory, either those generated by Hymer or the internalization theory or the OLI paradigm, in order to consolidate the theoretical FDI construction.*

**Keywords:** FDI; MNE; strategic management; FSA-CSA matrix; OLI paradigm; LLL model.

**JEL Codes:** F21, F23, F59.

**REL Code:** 10F.

More than half a century before, some academics started to search answers at questions like: Which are the intrinsic characteristics of the multinational enterprises (MNE)?<sup>(1)</sup> Which are the motivations for the extension of the activities of corporations beyond the borders of the country of origin? Where and how do these companies realize their expansion? Is there a critical mass of assets (tangibles and intangibles) of a company or an initial moment  $t_0$  when a company becomes a potential MNE? As scholars found empirically or theoretically substantiated answers at these questions, the theory of international affairs and foreign direct investment (FDI) started to get a definite shape. Shortly named as the theory of the FDI or the theory of the MNE, this is an independent research field and answers today much more questions than initially. It has, like its object of study itself, the MNE, variable and dynamic borders and interact with other research fields such as: international trade, strategic management, financial management, theory of the entrepreneurship and of the firm, the network theory and even the new institutional economics.

The Canadian economist Stephen Herbert Hymer (1934-1974) is among the first theoreticians of the FDI, alongside Edith Penrose and John H. Dunning. He is even considered by some authors, like Christos N. Pitelis, „the father-figure of the theory of the MNE” (Pitelis, 2006, p. 3), which explained the MNEs’ motivations for internalization. In his PhD thesis from 1960, Hymer showed that the main function of the FDI is, together with that of exploiting the monopolist advantages and diversifying the risks that of eluding the structural failures of the market, and the MNEs are the “creatures of market imperfections”. Nevertheless, Hymer doesn’t make the distinction between the structural imperfections of the market and the failures determined by the transaction costs, thus overlooking the *coasian discourse* (Dunning, Rugman, 1985, p. 229). In his opinion, the natural reaction of the MNEs at the market imperfections is the internalization of the market and the development and exploitation of the specific advantages (*firm specific advantages, FSAs*), through strategies that represent nowadays the main instrument of the strategic management. In the light of these arguments, the FDI represents rather a strategic decision at company level than a financial one, the latter being related to the differential of the interest rates at global level (Dunning, Rugman, 1985, p. 230, Kindleberger, 1987, p. 24).

Starting from Hymer’s PhD thesis, it was outlined a school of thought having as axis the FDI theory, centred at the University of Reading and based on the analysis of the FDI through the lens of the strategic management. This point of view is most clearly reflected by John H. Dunning: “the modern MNE is rather a vehicle for the transfer of the entrepreneurial talent than of financial resources” (Dunning, Rowan, 1970, p. 321). Among the exponents of this

school of thought, with or without direct affiliation, we mention: John H. Dunning, Alan Rugman, Mark Casson, Peter J. Buckley, Rajneesh Narula, Alain Verbeke, Richard E. Caves, Jean François Hennart, David John Teece. More recently, it emerged another school of thought related to the FDI theory, based predominantly on the financial management and represented by scholars such as: Alan C. Shapiro, John R. Graham, Campbell R. Harvey, Geert Bekaert, Costea Munteanu and Alexandra Horobeț.

Returning to the FDI theory which incorporates the strategic management we must underline that, from this perspective, the companies that are active beyond the national borders operate in a way that replaces different functions of the market with internal transactions, intra-firm, every time the cost of the internal transactions is lower than that of the market exchanges. This is the essence of the internalization theory, which was conceptualized by Peter J. Buckley and Mark C. Casson in 1976 in the paper “The Future of Multinational Enterprise”, starting from Hymer’s thesis. The two scholars demonstrate that the MNE organises a set of activities at the internal level, so that it could develop and exploit the FSAs. According to this theory, each type of market imperfection can generate pressures on the company so that it should internalize. The same idea, that the MNE can replace the market, has been developed by Oliver Williamson in 1975, completely independently from the research activities undertaken by Buckley and Casson (Rugman, Verbeke, 2008). In subsequent papers, Buckley and Casson underline that internalization, as general principle that explains the borders of the MNE, starts from the premise of the rational choice. However, the authors emphasize that in spite of the MNE’s objective of profit maximization, the rational behaviour is not “necessarily selfish” (Buckley, Casson, 2009, pp. 1566, 1568).

In the early '80s, two new framework-concepts crystallized in the FDI theory. One is that developed by Alan Rugman: matrix of *firm specific advantages* – *country specific advantages* (FSA-CSA) at the MNE level (Rugman, 1981). He underlines that, on the one hand, one of the company’s motivations for going abroad is turning to good account its FSA. The company specific benefits mean the company’s property, *id est*: technologies, knowledge, managerial or marketing abilities etc. On the other hand, the second reason is given by the host country specific benefits, for instance: natural resources, the quality and size of the labour force, cultural factors, tariff and non-tariff barriers, public policies etc. But this matrix has been shaded by the other framework concept, which has dominated the FDI theory for over 30 years and was initiated by John Dunning: the „eclectic” paradigm of the international output OLI – ownership, location and internalization (Dunning, 1981). According to this paradigm, FDI are motivated by three advantages of:

ownership, location and internalization. Between the matrix FSA-CSA and the paradigm OLI there is the following correspondence: FSA=O, and CSA=L, I being in fact the mechanism of tracing the borders of the MNE, based on the company specific advantages and the host-country specific benefits.

Based on this, the FDI typology was gradually defined, having as correspondent four major reasons for MNE to internationalize through FDI: investments in search of resources (natural or cheap and/or highly qualified labour force), investments looking for markets (and for avoiding the trade barriers on those markets), investments searching for effectiveness and investments looking for strategic assets (or *created*, which is the main source of the companies' competitiveness and belongs to the knowledge economy and creative economy) (Dunning, 1993, UNCTAD, 1998, pp. 184-189, OECD, 2002, pp. 39-41). As a matter of fact, starting from the '90s, the interest of the economists concentrated more and more on the companies' competitiveness (Porter, 1990).

Starting with the '80s it was outlined another research direction in the field of FDI, namely related to the effects of the FDI flows, primarily at host countries level and afterwards at home countries level. This direction was reflected by a myriad of studies on this subject (e.g. Lipsey, 2002). If initially these studies were pre-eminently centred upon the analysis of the role of the inward FDI for host countries, subsequently the balance was inclined in the favour of studies examining the impact of the outward FDI on the home countries. The explanation for this change is given by the motivations of such studies. In the former case, the objective was to convince the host countries authorities about the positive role of the FDI upon the national economy, and, as a direct consequence, the necessity for the economic liberalization and the adoption of a permissive legal framework related to the FDI. In the latter case, such studies were located in home countries, most of them developed ones and confronted with a major macroeconomic imbalance on the labour market – the unemployment. The goal of such studies was to obtain a negative correlation between the outward FDI and the own unemployment rate. The problematic of the FDI, alike at host countries and home countries level continues to represent a “hot” topic on the international agenda.

More recently, in the '2000s, the academic discourse related to the FDI is characterized by two distinct features:

- (1) In contrast with the previous period, when starting with Dunning (1958), the studies focused on the FDI analysis at the level of the developed economies, the last decade was characterized by an afflux of analyses focussing on FDI attracted by and originating in the emerging economies (Mathews, 2002, 2006, Buckley, 2010). Even the theoretical discourse highlights conceptual frameworks specific to

this group of economies (Mathews, 2002, 2006). John A. Mathews proposes a complementary model to the *OLI paradigm*, adapted to the level of MNEs from the emerging economies: LLL (linkage, leverage and learning). Mathews (2006d) underlines the following aspect: the fact that MNEs from the emerging economies (especially from Brazil, the Russian Federation, India and China) are the new entrants on the international markets may be, at the same time, a benefit for them, by the access to advanced technology (by imitation), and, based on this, the reduction of property gaps against MNEs in the developed countries. As a matter of fact, this approach is similar to “the evolutionist process” described by Lall (2000) and based on “the technological learning” (Nelson, 2004). Dunning et al. (2008) recognized that emerging MNEs are short of the “O” component (ownership or property benefits), but this doesn’t mean that such benefits are absent. While MNEs in the developed countries make use of FSA based on assets, such as technologies, brands and other intellectual property rights, MNEs from the emerging economies resort to networks, relationships and organization structure (UNCTAD, 2006).

- (2) Also at theoretical level, in the last decade one can remark the scholars’ frequent return to the “springs” of the FDI theory, either those generated by Hymer or the internalization theory or the OLI paradigm, in order to consolidate the theoretical FDI construction (Dunning, 2001a, 2001b, 2003, 2008, Rugman, 2008, Dunning, Pitelis, 2008, Buckley, Casson, 2009, Dunning, Lundan, 2010). For instance, Dunning and Lundan (2010) focus on a new element of the OLI paradigm, namely the institutional advantages, both endogenous and exogenous, that represent the *key of the successfully regeneration of the ownership advantages* (Oi).

As a conclusion, the economists’ interest for the FDI theory hasn’t lost its intensity since its launch, more than half a century before, especially as the MNEs from the emerging economies, particularly from Brazil, the Russian Federation, India and China are nowadays active players in the field of the FDI.

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## Note

- <sup>(1)</sup> The United Nations Conference on Trade and Development (UNCTAD) uses the acronym TNC – transnational corporations – instead of MNE.

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## References

- Buckley, P.J., Casson, M.C. (1976). *The Future of Multinational Enterprise*, Macmillan, London
- Buckley, P.J., Casson, M.C., „The Internalisation Theory of the Multinational Enterprise: A Review of the Progress of a Research Agenda after 30 Years”, *Journal of International Business Studies*, 40, 2009, pp. 1563-1580
- Buckley, P.J. (2010). *Foreign Direct Investment, China and the World Economy*, Palgrave Macmillan
- Coase, R.H., „The Nature of the Firm”, *Economica*, vol. 4, 1937, pp. 386-405
- Dunning, J.H. (1958). *American Investment in British Manufacturing Industry*, Allen and Unwin, London
- Dunning, J.H., Rowan, D.C. (1970). *Inter-firm Efficiency Comparisons: US and UK Manufacturing Enterprises in Britain*, in John H. Dunning, Editor (1970). *Studies in International Investment*, London, George Allen & Unwin, pp. 345-400
- Dunning, J.H. (1981). *International Production and the Multinational Enterprise*, London: Allen & Unwin
- Dunning, J.H., Rugman, A.M., „The Influence of Hymer's Dissertation on the Theory of Foreign Direct Investment”, *American Economic Review*, American Economic Association, vol. 75(2), 1985, pp. 228-32
- Dunning, J.H. (1993). *Multinational Enterprises and the Global Economy* (Wokingham: Addison-Wesley)
- Dunning, J.H., „Location and the Multinational Enterprises: A Neglected Factor?”, *Journal of International Business Studies*, 29 (1), 1998, pp. 45-86
- Dunning, J.H., „The Eclectic (OLI) Paradigm of International Production: Past, Present and Future”, *International Journal of Economics and Business*, Vol. 8, No. 2, 2001a, pp. 173-190
- Dunning, J.H. (2001b). *The Key Literature on IB Activities: 1960-2000*, in Rugman, A.C./ Brewer, T.L. (eds.), 2001, *Oxford Handbook of International Business*, Oxford: Oxford University Press, pp. 36-68
- Dunning, J.H., „The Contribution of Edith Penrose to International Business Scholarship”, *Management International Review*, 43 (1), 2003



- Dunning, J.H., Pitelis, Ch.N., „Stephen Hymer’s Contribution to International Business Scholarship: An Assessment and Extension”, *Journal of International Business Studies*, Palgrave Macmillan Journals, vol. 39(1), 2008, pp. 167-176, January
- Dunning, J.H., Kim, Ch., Park, D., „Old Wine in New Bottles: A Comparison of Emerging Market TNCs Today and Developed Country TNCs Thirty Years Ago”, Department of International Economics, *SLPTMD Working Paper Series*, 11, 2008, Oxford: University of Oxford
- Dunning, J.H., Lundan, Sarianna, M., „The Institutional Origins of Dynamic Capabilities in Multinational Enterprises”, *Industrial and Corporate Change*, Vol. 19, No. 4, 2010, pp. 1225-1246
- Hymer, St.H. (1960). *The International Operations of National Firms: A Study of Direct Foreign Investment*, Ph.D. Dissertation, MIT
- Kindleberger, Ch.P. (1987). *International Capital Movements*, Cambridge University Press
- Lall, Sanjaya (2000). *Technological Change and Industrialization in the Asian Newly Industrializing Economies*, in Kim and Nelson
- Lipsey, R.E., „Home and Host Country Effects of FDI”, *Working Paper 9293*, October 2002, National Bureau of Economic Research (NBER), Cambridge
- Mathews, J.A. (2002a), *Dragon Multinationals – A new model for global growth*, Oxford: Oxford University Press
- Mathews, J.A., „Competitive Advantages of the Latecomer Firm: A Resource-Based Account of Industrial Catch-Up Strategies”, *Asia Pacific Journal of Management*, 19, 2002b, pp. 467-488
- Mathews, J.A., „The Intellectual Roots of Latecomer Industrial Development”, *International Journal of Technology Globalization*, (1) 3-4, 2006a, pp. 433-450
- Mathews, J.A., „Dragon Multinationals: New Players in 21st Century Globalization”, *Asia Pacific Journal of Management*, 23, 2006, pp. 5-27
- Mathews, J.A., „Response to Professors Dunning and Narula”, *Asia Pacific Journal of Management*, 23, 2006c, pp. 153-155
- Mathews, J.A., „Catch-up Strategies and the Latecomer Effect in Industrial Development”, *New Political Economy*, 11 (3), 2006d
- Narula, R., „Globalization, New Ecologies, New Zoologies, and the Purported Death of the Eclectic Paradigm”, *Asia Pacific Journal of Management*, 23, 2006, pp. 143-151
- Nelson, R.R., „Economic Development From the Perspective of Evolutionary Economics Theory”, Department of International Economics, *SLPTMD Working Paper Series*, 01, 2004, Oxford: University of Oxford
- OECD (2002). *FDI for Development, Maximizing Profits, Minimising Costs*, Paris
- Pitelis, Ch., „A Learning-Based Perspective of the Multinational Enterprise”, *Working Paper Series*, 19/2006, Cambridge
- Porter, M.E. (1990). *The Competitive Advantage of Nations*, New York: Free Press, MacMillan
- Rugman, A.M. (1981). *Inside the Multinationals: The Economics of Internal Markets* (New York: Columbia University Press)
- Rugman, A.M. (1996). *The Theory of Multinational Enterprises* (Cheltenham: Edward Elgar)
- Rugman, A.M., „Multinational Enterprises from Emerging Markets”, *Berlin Roundtable meeting on the Role of the G8 in an Endangered Global Economic and Political Climate*, Berlin, June 1-2, 2007

- 
- Rugman, A.M. (2008) (editor). *International Business Scholarship: AIB Fellows on the First 50 Years and Beyond (Research in Global Strategic Management, Volume 14)*, Emerald Group Publishing Limited
- Rugman, A.M., Verbeke A. (2008). *Internalization Theory and Its Impact on the Field of International Business*, in Professor Alan Rugman (ed.) *International Business Scholarship: AIB Fellows on the First 50 Years and Beyond (Research in Global Strategic Management, Volume 14)*, Emerald Group Publishing Limited, pp.155-174
- UNCTAD (1998). *World Investment Report 1998 – Trends and Determinants*, New York and Geneva
- UNCTAD (2006). *World Investment Report 2006 – FDI from Developing and Transition Economies: Implications for Development*, New York and Geneva

## Early School Leaving: Reasons and Consequences

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**Abstract.** *Early school leaving represents a loss of potential that has effects on both social and economic scale (reduced social cohesion, lower financial incomes, increase of social allocations). Early school leaving has various reasons that can be either social or economic. Due to the average statistics of the 27 countries of the European Union, in 2008 78,5% of the populations of these countries went to school regularly, whereas the same statistics applied for Romania showed an extent of 78,3%. The statistics of early school leaving showed some 14, 9% in the countries of the EU, whereas in Romania this index was higher (15, 9%). Sequel to some analyses we can state that there is a strong relationship between the variables named participation in education and early school leaving; more than that, there is a strong relationship between the extent of school studies completion and the rate of unemployment.*

**Keywords:** degree of participation in education; early school leaving; Pearson's correlation coefficient.

**JEL Codes:** C19, E24, I21.

**REL Codes:** 4C, 4D.

## Introduction

Early school leaving represents both an individual and a social problem. There are several reasons for which young people drop out of school very early: difficulties related learning, social problems or lack of motivation, counselling and orientation. Low level education has disastrous consequences not only for the youth; it implies the inefficient use of costs. Besides, considering the aging population of European countries and the current demographic changes, these countries cannot afford themselves the loss of young talents.

While the term “early school leaving” includes all forms of leaving education and training before completing upper secondary education or equivalents in vocational education and training, the term “school drop-out” is used with a much more restricted meaning: it refers to discontinuing an ongoing course in general or vocational education and training.

## Early school leaving in the European Union

According to the definition used in the EU, early school leaving can take several forms. It includes young people who have dropped out of school before the end of compulsory education, those who have completed compulsory schooling, but have not gained an upper secondary qualification, and those who have followed pre-vocational or vocational courses which did not lead to a qualification equivalent to upper secondary level.

On the long run, early school leaving has negative effects on social development and economic growth.

Economic development and growth is based on qualified labour force: the reduction of the rate of early school leaving on European scale would supply European economy with half a million of young people with qualification who have real potential of employment.

The average participation in the processes of education in the 27 member states of the EU was 78.5% (2008) compared to 76.9%, which was calculated in 2003. Thus, the statistics in 2008 show a 2% higher percentage. The lowest one in 2008 was obtained in Turkey (54.3%, which actually was higher than the statistics in 2003, when they had a percentage of 47.3%). In this respect, Malta ranks the second (54.2%), Portugal the third (54.3%), whereas Spain comes the fourth (60%). On the other hand, the highest percentage as far as participation in education is concerned was obtained in Croatia (95.4%), Slovakia (92.3%), the Czech Republic (91.6%) and Slovenia (90.2%).

We have to mention that during the analysis in the case of Turkey there is a difference between the two sexes: male students have a participation of 56.4%, whereas female students participate in educational processes to an

extent of 40.9% (on the level of the EU these values are the following: 75.7% for male students and 81.4% for female students). Male students have a higher tendency to early school leaving than female ones.

On EU level, early school leaving had a percentage of 16.6% in 2003, that is 10.2% lower than in 2008, when there was a rate of 14.9% (from among which 16.9% male students and 12,9% female students). The target of the EU regarding the situation of education until the year 2020 is that the percentage of early school leaving should be reduced to 10%. There are countries within the Union where the rate of early school leaving is under the desired 10% such as: Croatia (3.7%), Poland (5%), Slovenia (5.1%), the Czech Republic (5.6%) and Slovakia (6%).

One can notice that while these countries have a low rate of early school leaving, in the meantime they have a high rate of participation in educational processes. As for the countries where the rate of early school leaving is quite high, they are the following: Turkey (46.6%), Malta (39%), Portugal (35.4%) and Spain (31.9%). There are some other countries where the rate of early school leaving lowered considerably between 2003 and 2008, such as Bulgaria, where this rate lowered from 21.9% to 14,8%, Romania (from 22,5% to 15.9%), Malta (from 49.9% to 39%), Portugal (from 41.2% to 35.4%), and Turkey (from 53% to 46.6%).

Considering the statistics related to participation in educational processes and early school leaving, we can notice an inverted correlation and a powerful relationship between the two variables. This observation is based on the values of Pearson correlation ( $r = -0,880$ ).

Table 1

<b>Correlations</b>			
		Participation in education 2008	Early school leaving 2008
Participation in education 2008	Pearson Correlation	1.000	-.880**
	Sig. (2-tailed)		.000
	N	18.000	18
Early school leaving 2008	Pearson Correlation	-.880**	1.000
	Sig. (2-tailed)	.000	
	N	18	18.000
**. Correlation is significant at the 0.01 level (2-tailed).			

**Source:** programme SPSS.

Considering the analysis described above, we assume that it is very important to re-enter the education system for those who, for some reason, have dropped out of school.

Thus, in 2008 9.6% of the age group 25-64 were involved in lifelong learning on European level. Among the member states, there are some whose rate

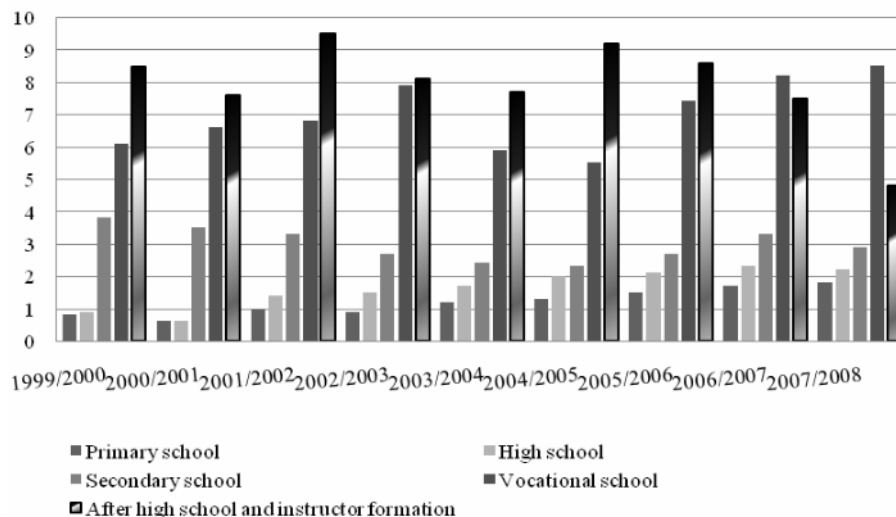
of participation is above the European average, such as: Sweden (32.4%), Denmark (30.2%), Finland (23.1%) and the Netherlands (17%); on the other hand, some states are much below the average such as: Bulgaria (1.4%) and Romania (1.5%).

### Early school leaving in Romania

In our country the reasons of early school leaving have been identified; they create the conditions of the failure of social integration in the respect that they reduce the chances of self – accomplishment significantly. In 2003 Romania had a rate of early school leaving of 22.5% that was reduced to 15.9% in 2008.

There are a lot of reasons for which students drop out of school before completing their studies. One of them might be the students' inability to get used to learning in an institutionalised way, or, on the other hand, it might be the fact that the different compulsory activities at schools do not take into consideration the students' biological and psychological characteristics. We also have to mention some economic and social factors as well. Thus, early school leaving is the result of the combination of different internal and external reasons (immaturity, psychological instability, behaviour disorders, inappropriate economic and financial situation of families, lack of proper clothes, poor living conditions, family problems, lack of help with studying, etc.).

On national level there are worrying signs of early school leaving in pre-university education, especially on primary level, where the rate of participation in education has decreased from 96% to 95%.



Source: [www.insse.ro](http://www.insse.ro)

**Figure 1.** Early school leaving in Romania during the period 1999-2008 represented on educational levels

It is observed that there is a high rate of early school leaving in vocational schools, and so is there during the period of after school studies and while one's attending to become an instructor in a certain domain of education. This tendency is also present during secondary school studies, showing an increasing percentage when compared to those who drop out of school just before the completion of their high school studies. As for high school statistics, there are some differences but the extent of early school leaving varies between 3 and 4%. I would like to add some more data to the already mentioned ones: in school year 2008-2009 the extent of the participation in some forms of education decreased alongside with the growth of age, thus there is a rate of 94.4% among students aged 11-14 (which has been constant for a couple of years), that of 79.2% is characteristic for the age group of 15-18 year-old students, and eventually, there is the age group of 19-23 year-old students whose rate is 63.3%.

### Reasons of early school leaving

Some factors that may lead to early school leaving might be:

One of them is the lack of proper financial means of the family, especially in the case of disorganised families, families with a large number of members, families that lack in resources, and have problems providing the proper clothing for their children, families where children have to help with field work or household chores. Family disruptions draw financial troubles after themselves. Cases of divorce, alcoholism, domestic violence are signs that frequently precede the decision of early school leaving.

Based on statistics, in the year 2008 the average monthly income of families was 1,365.36 RON. 40% of this amount was allocated to food and non-alcoholic drinks, 15-16% for household expenses, 6.2-6.7% for clothing, 6-6.5% for alcoholic drinks and cigarettes, and only 0.8% was invested in education (which means approximately 11 RON/household/a month).

Table 2

**Early school leaving in the central region of the country**

	Early school leaving (%)		Number of divorce cases		Number of moving home		Average net salary			Rate of unemployment (%)
	2006-2007	2007-2008	2007	2008	2007	2008	2007	2008	2011 apr.	2008
<i>Central region</i>	2.2	2.2	4,422	3,802	40,709	39,347	937	1,150		5.2
Alba County	1.5	1.4	530	618	6,249	6,332	933	1,128	1,236	7.1
Braşov County	3.6	2.7	1,630	890	9,922	9,954	984	1,226	1,369	4.3
Covasna County	1.4	2.2	354	326	3,156	2,799	792	987	1,120	7.2
Harghita County	1.0	1.6	364	372	4,541	4,063	814	998	987	6.5
Mureş County	1.7	1.8	784	880	10,103	9,358	950	1,133	1,290	4.7
Sibiu County	2.9	3.5	760	716	6,738	6,841	987	1,230	1,530	3.1

**Source:** www.insse.ro, processed data.

Another factor that can determine early school leaving is entering the labour market. It does not matter whether it is about working as a day labourer or having a regular activity (as a barman for instance), participation during school semesters in such profit-making activities represents a jeopardy that in most cases leads to early school leaving. A solution for those who need to work in order to be self-sufficient would be the promotion of models that have been in use in developed western societies, such as involving high school students in part time activities during holidays, which provide them with financial rewards (for example baby – sitting for a night).

Analysing the data mentioned above we can reach to the conclusion that in the central part, where the rate of unemployment is higher than in any other part of the country, the rate of early school leaving is actually lower as young graduates cannot find any jobs continue to stay within institutionalized forms of education. This phenomenon can be observed in County Covasna and County Alba, where the rate of unemployment is 7.2% (Covasna) and 7.1% (Alba), and where the rate of early school leaving is lower (1.4% and 1.5%). On the other hand, there are some counties where the rate of unemployment is quite low but the rate of early school leaving is quite high: Counties Brasov (3.1% rate of unemployment, 2.9% rate of early school leaving), and Sibiu (4.3% and 3.6%).

Circulating migration does not seem to represent a risk factor on its own, but there are some important problems related to the reintegration of children who leave the system and then they come back at an older age. The same problems can be observed when it is about children getting into institutionalized forms at older ages.

Another factor that influences early school leaving is a social one, that is the educational model shown by parents and siblings. More often than not, children who drop out of school before completing their studies come from families where parents do not have more than eight years of study completed. However, there are exceptions as well. The educational model shown by siblings seems to be more important. If there is an elder child who dropped out of school, there are high chances that the younger brother will ‘repeat’ the same scheme.

Lately, there has been an increase of the rate of participation in education (it was 66.3% in school year 1998-1999, and 79.6% in 2008-2009), therefore we can notice that, besides their families, the youth have other models to follow as well.

Table 3

**Participation in education and rate of unemployment in the period 1998-2008**

School year	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
Participation in education	66,3	67,3	68,9	70,6	72,9	74,2	74,9	76	77,3	79,7	79,6
Rate of unemployment (%)	10,4	11,8	10,5	8,8	8,4	7,4	6,3	5,9	5,2	4	4,4

**Source:** www.insse.ro, Yearly statistics.



Considering the statistics so far, it is necessary to confirm the strong relationship between the number of people involved in the process of education and the rate of unemployment.

The measurement of the intensity of dependence between the two quantity variables (rate of participation in education and rate of unemployment in 1998-2009) can be accomplished with the help of Pearson's correlation coefficient. This one expresses the co-variation between the two variables measured metrically, and it has a value comprised between -1 and +1.

The calculations are made as follows (Lefter, 2004, p. 309):

$$r = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2 * \sum_{i=1}^n (y_i - \bar{y})^2}}$$

Where:

r – correlation coefficient;

x,y – two variables;

$\bar{x}, \bar{y}$  – average of sampling x and y.

The absolute value of the correlation coefficient expresses the intensity of the linear association between variables x and y. The sign of the coefficient reflects the direction of correlation: the positive direction corresponds to variations of the same direction, whereas the negative one corresponds to variations of the opposite direction. As for the intensity of the relationship, it is represented as follows:

$0 \leq r < 0.2$  there is no significant relationship;

$0.2 \leq r < 0.5$  there is a relationship of weak intensity;

$0.5 \leq r < 0.75$  there is a relationship of average intensity;

$0.75 \leq r < 0.95$  there is a strong relationship;

$0.95 \leq r < 1$  there is a perfect relationship.

Table 4

<b>Correlations</b>			
		Participation in education	Rate of unemployment
Participation in education	Pearson Correlation	1.000	-.978**
	Sig. (2-tailed)		.000
	N	11.000	11
Rate of unemployment	Pearson Correlation	-.978**	1.000
	Sig. (2-tailed)	.000	
	N	11	11.000

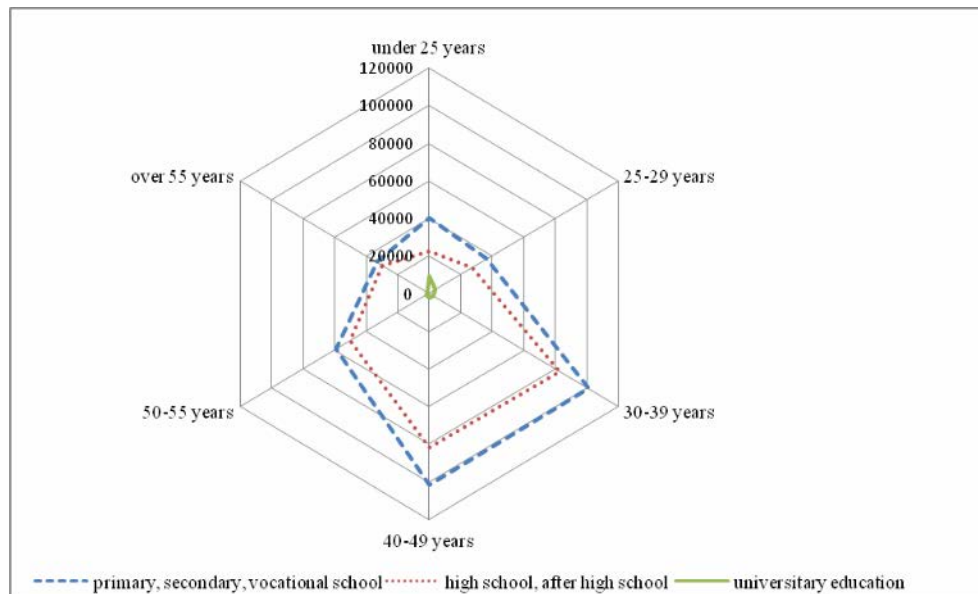
\*\* . Correlation is significant at the 0.01 level (2-tailed).

**Source:** programme SPSS.

Sequel to the analysis, we obtain the value of  $r = -0.978$  that indicates a perfect and inverted relationship. This means that the increase of the percentage of participation in education leads to the decrease of the rate of unemployment on national level, which proves the benefits of institutionalized forms of education.

### Consequences of early school leaving

On 31<sup>st</sup> December 2008, the statistics showing the number of registered unemployed people revealed the fact that 50-55% of them were graduates of the primary, secondary and vocational education; 30-40% those of high school and after school education, whereas 10-20% showed the percentage of unemployed with university studies. Hereby I would like to mention the fact that at the end of the previous year (2007) these statistics showed some slightly modified values: there was a higher percentage of the unemployed aged over 55, graduates from primary, secondary and vocational schools (88%), in comparison with 52.3% (2008). Regarding people with university studies, the percentage given decreased except for the group age of 25-29 year-old-graduates.



Source: [www.insse.ro](http://www.insse.ro), processed data.

**Figure 2.** Registered unemployed people considering the level of their studies and age group (31<sup>st</sup> December 2008)

Analysing the data comprised in the chart drawn above we can reach to the conclusion that along the growth of the qualification level the possibility of becoming unemployed increases in a direct proportion.

There are several possibilities for people who at some point and for some reason dropped out of school, to re-enter the institutionalized educational forms and complete their school studies successfully. One of them is low frequency education, whose rate showed a considerable growth over the past years (in school year 1990-1991 there were 10,884 people, whereas in school year 2008-2009 this number grew to 93,842). Another possibility is represented by courses run at night schools or courses provided by distance learning (in school year 1990-1991 there were 9,946 people involved in these forms, this number grew to 279,172 in school year 2008-2009).

Another possibility available for the unemployed is represented by different professional training programmes and courses. There were 12,758 people registered in this kind of programmes in 1991, from among which there were 10,460 were unemployed, whereas in 2008 this number grew to 59,703 (50,622 unemployed people). From among them only 8,924 people were employed after completing their courses in 2008, which means a decrease of 60% compared to the statistics from the previous year (21,891 people).

### Conclusion

For some years the Romanian state has been offering different social programmes in order to keep students in institutionalized forms of education. Some of these programmes are as follows: the “Euro 200” programme, which helps student with acquisition of personal computers, different types of scholarships, school equipment, refund of transportation costs for students who come from the countryside, etc. According to Law no. 269/2004, in Covasna County in 2010 there were 261 students coming from families with very low budget who were given the “Euro 200” help. There was another kind of national programme named “Bani de liceu”, within which in Covasna County 1,045 students coming from families with very low budget received financial help (total amount paid: 1,575,026 RON). According to the government’s decision no. 1488/2004 that established the criteria of giving financial help through this programme, the gross monthly income earned by a family member during the preceding three month – period should not be more than 150 RON. 1,343 students obtained different types of scholarship (of merit, social, study, etc), the total amount of which was 449,707 RON.

These are only a couple of examples that can contribute to the decrease of the rate of early school leaving, especially when it is about students who come from families with very low budgets. Besides, the infrastructure of schools, teachers, the parents' attitude and the feedback given by society regarding education, they all are of utmost importance.

## References

- Constantin, C. (2006). *Sisteme informatice de marketing*, Editura Infomarket, Braşov
- Lefter, C. (2004). *Cercetări de marketing*, Editura Infomarket, Braşov
- HG nr. 594 din 2009 pentru completarea H.G. nr. 1488 din 2004 privind aprobarea criteriilor și a cuantumului sprijinului financiar ce se acordă elevilor în cadrul Programului național de protecție socială „Bani de liceu” [http://www.dreptonline.ro/legislatie/hg\\_completare\\_criterii\\_cuantum\\_sprijin\\_elevi\\_bani\\_liceu\\_594\\_2009.php](http://www.dreptonline.ro/legislatie/hg_completare_criterii_cuantum_sprijin_elevi_bani_liceu_594_2009.php) [accesed 24.07.2011]
- Legea 269 din 2004 privind acordarea unui ajutor financiar în vederea stimulării achiziționării de calculatoare: [http://www.legestart.ro/Legea-269-2004-acordarea-unui-ajutor-financiar-vederea-stimularii-achizitionarii-calculatoare-\(Njg2MzI-.htm](http://www.legestart.ro/Legea-269-2004-acordarea-unui-ajutor-financiar-vederea-stimularii-achizitionarii-calculatoare-(Njg2MzI-.htm) [accesed 24.07.2011]
- <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/109&format=HTML&aged=0&language=RO&guiLanguage=fr#footnote-1> [accesed 21.07.2011]
- [http://ec.europa.eu/education/school-education/doc2268\\_en.htm](http://ec.europa.eu/education/school-education/doc2268_en.htm) [accesed 21.07.2011]
- <http://www.isjbrasov.ro/> Inspectoratul Școlar Județean Braşov [accesed 22.07.2011]
- <http://www.isjsibiu.ro/> Inspectoratul Școlar Județean Sibiu [accesed 22.07.2011]
- <http://www.edums.ro/> Inspectoratul Școlar Județean Mureş [accesed 22.07.2011]
- <http://www.isj.albanet.ro/> Inspectoratul Școlar Județean Alba [accesed 22.07.2011]
- <https://isj.educv.ro/> Inspectoratul Școlar Județean Covasna [accesed 22.07.2011]
- <https://isjhr.eduhr.ro/> Inspectoratul Școlar Județean Harghita [accesed 22.07.2011]
- [www.insse.ro](http://www.insse.ro/), Anuar statistic 2009 [accesed 23.07.2011]

## Impact of FDI and Trade Openness on Economic Growth: A Comparative Study of Pakistan and Malaysia

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**Abstract.** *This paper examines the role of trade openness and foreign direct investment in relation to economic growth for Pakistan and Malaysia for the period 1980-2010. Johansen co-integration test is used to estimate the nature of relationship and Granger causality test is used to determine the direction of causality in the model.*

**Keywords:** trade openness; foreign direct investment; economic growth; co-integration; Granger causality.

**JEL Codes:** E22, O6, O24.

**REL Codes:** 8E, 10F.

## 1. Introduction

Free trade has been referred as the “engine of economic growth” which is used to accelerate the development process by many economically advanced nations during the early twentieth centuries. Fast expanding trade activities act as a stimulus to growing local demands that led to establishment of large-scale industries and increased the level of exports. In many Asian countries, export growth increased up to 10% per year. Exports have tended to grow fastest in countries with more liberal trade policies, and these countries have experienced the faster growth of GDP.

In emerging and developing nations, the trade policies have been the most debated issues for the last three decades. Even though the trade openness is generally considered as a major factor for economic growth. Blomstorm et al. (1994), in their study, indicate that the neo-classical view FDI is dependable and consistent resource for capital formation in the underdeveloped countries that can augment economic growth. Acemoglu and Zilibotti (1997) indicate that underdeveloped countries can speed up development process by liberalizing their financial markets that in the long run increase the economic development. McLean and Shrestha (2002) account that the FDI play a more important role in economic growth of underdeveloped nations than the developed countries. Ahmed and Emmanuel (2000) study long run dynamics between economic growth and trade liberalization for five South East Asian countries. The results confirm the long-run relationship and bidirectional causality between the variables.

Barlow (2006) indicates that the level of trade liberalization has positive impact on growth rate for the countries nearest to the European Union, particularly in the early part of the transition. Panagariya (2004) found mixed results between countries, while there are countries like Botswana, Malta, Singapore, and Hong Kong enjoying good growth in their economic performance due to trade openness. At the same time, there are countries like Kuwait, Liberia, and UAE with negative growth. Ynikkaya (2003) indicates that trade openness and per capita income growth are significantly related with each other and thus the trade openness can increase the economic growth.

Bornschiefer and Chase-Dunn (1985) assert that foreign investment has a tendency to form a monopoly, which may results in waste of resources and their under utilization. Edwards (1998) states that in poor countries the growth does not depend exclusively on degree of openness, and the skill, knowledge, and cost of production also play a very important role.

Thus, it is not surprising that different measures acquire dissimilar status of openness for different countries

This study aims to determine the impact of FDI and trade openness on economic growth in Pakistan and Malaysia for the period 1980-2010.

## 2. Data and methodology

The variables in this study include “GDP Growth Rate, real exchange rate, trade openness, and FDI Inflow”. The data is collected from IFS CR ROM.

### 2.1. Model specification

We specify an empirical growth model that introduces trade openness, foreign direct investment and their impact on economic growth.

$$\text{Ln}Y = \alpha + \beta_1\text{Ln}(\text{TOP}) + \beta_2\text{Ln}(\text{FDI}) + \beta_3\text{Ln}(\text{EXR}) + \mu_i$$

#### Abbreviations:

Ln = Natural logarithm;

Y = GDP growth rate;

TOP = Trade openness (trade to GDP ratio);

FDI = Foreign direct investment;

EXR = Real exchange rate;

$\mu_i$  = Error term.

The unit root test is used to solve the problem of stationerity and to determine the order of integration between the variables. Johnson co-integration test and the error correction model are applied to test the long run and short run dynamics of the model.

## 3. Calculation and results

“ADF” test has been used to test the order of integration and to solve the problem of non-stationerity of variables. The ADF is conducted at level and at first difference. The results given in Table 1 indicate that all the variables are found non-stationery at level. However, at first difference all the series become stationery, which indicates that all the variables are integrated of order one I(1).

Table 1

ADF unit root test			
Variables	Level	1st Difference	Result
Pakistan			
LN <sub>Y</sub>	-3.467657	-6.961929	I(1)
LN <sub>TOP</sub>	-3.266110	-5.323710	I(1)
LN <sub>FDI</sub>	-2.405349	-4.259954	I(1)
LN <sub>REX</sub>	-0.969799	-4.651089	I(1)
Malaysia			
LN <sub>Y</sub>	-2.935979	-6.208146	I(1)
LN <sub>TOP</sub>	-0.893149	-3.583695	I(1)
LN <sub>FDI</sub>	-2.014157	-4.978357	I(1)
LN <sub>REX</sub>	-2.939630	-3.651606	I(1)

**Note:** the data is stationery at 5% significance level.

Because the variables are found to be integrated of same order, the Johansen co-integration test has been used to determine the long run equilibrium between variables. The optimal lag length is determined by using “VAR” method and The “FPE, AIC AND SC” criterion indicates the optimal lag length as “2”. The Table 2 shows the result of Johansen co-integration test. Both the trace test and maximum Eigen value given in Table 2 indicate co-integrating equations in both Pakistan and Malaysia, at 5% level of significance. This indicates that there is long run equilibrium in the model.

Table 2

**Johansen multivariate co-integration test**

Pakistan				
Trace statistics				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical value	Prob.**
None *	0.857031	91.71025	55.24578	0.0000
At most 1 *	0.639674	39.19178	35.01090	0.0169
At most 2	0.327854	11.63167	18.39771	0.3372
At most 3	0.032967	0.905118	3.841466	0.3414
Trace test indicates 2 cointegrating eqn.(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

**Max-eigenvalues**

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical value	Prob.**
None *	0.857031	52.51846	30.81507	0.0000
At most 1 *	0.639674	27.56011	24.25202	0.0176
At most 2	0.327854	10.72656	17.14769	0.3337
At most 3	0.032967	0.905118	3.841466	0.3414
Max-eigenvalue test indicates two cointegrating eqn.(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

**Malaysia**

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.790046	82.09058	55.24578	0.0000
At most 1 *	0.614009	39.94713	35.01090	0.0137
At most 2	0.397446	14.24474	18.39771	0.1731
At most 3	0.020785	0.567121	3.841466	0.4514
Trace test indicates 2 cointegrating eqn.(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				



**Max-eigenvalues**

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical value	Prob.**
None *	0.790046	42.14345	30.81507	0.0014
At most 1 *	0.614009	25.70239	24.25202	0.0320
At most 2	0.397446	13.67762	17.14769	0.1493
At most 3	0.020785	0.567121	3.841466	0.4514
Max-eigenvalue test indicates 2 cointegrating eqn.(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Table 3 presents the results of the Granger causality test for Pakistan and Malaysia. The results indicate that Pakistan has unidirectional relationship between trade openness and economic growth. And direction of causality runs from trade openness to GDP. It means trade openness Granger cause economic growth in Pakistan while FDI and exchange rate have no significant impact on economic growth in Pakistan. For Malaysia the results indicates different results, unidirectional causality exist between trade openness, exchange rate and economic growth where the direction of causality runs from trade to GDP and exchange rate to GDP. The result also indicates reverse causality between FDI and GDP growth in Malaysia.

Table 3

**Granger causality test**

Null Hypothesis:	F-Statistic	Probability
<b>Pakistan</b>		
LNTOP does not Granger Cause LNGDP	1.89941	0.16066
LNGDP does not Granger Cause LNTOP	0.52624	0.66906
LNFDI does not Granger Cause LNGDP	0.91944	0.44853
LNGDP does not Granger Cause LNFDI	0.35359	0.78700
LNEXR does not Granger Cause LNGDP	0.65228	0.59038
LNGDP does not Granger Cause LNEXR	0.51842	0.67418
<b>Malaysia</b>		
LNFDI does not Granger Cause LNGDP	0.14615	0.93100
LNGDP does not Granger Cause LNFDI	2.49053	0.08820
LNEXR does not Granger Cause LNGDP	2.89325	0.05940
LNGDP does not Granger Cause LNEXR	0.26540	0.84955
LNTOP does not Granger Cause LNGDP	1.54560	0.65651
LNGDP does not Granger Cause LNTOP	0.83503	0.48968

#### 4. Conclusion

This paper examines the causality between FDI, trade openness and economic growth for Pakistan and Malaysia for the period 1980-2010. Result shows that in the long run trade openness positively effects the economic growth in both Pakistan and Malaysia. Indeed, the results oppose the “neoclassical” growth models, where trade openness has no impact on the long-run growth rate of an economy. The impact of degree of trade openness on economic growth proves to be important and significant in the long run period. The result of Granger casualty shows that all the variables except FDI are found to be significantly stimulating growth in Malaysia, where real effective exchange rate and trade openness cause GDP growth but FDI seems to have an opposite casual relationship with GDP where GDP cause FDI in Malaysia. In case of Pakistan, granger causality indicates that trade openness stimulates economic growth in Pakistan but no other variables have any significant casual impact on GDP growth. Trade openness facilitate economic growth by the exploitation of economics of scale, reduce the obligatory constraint to allow increases in the import of capital and intermediate goods enhancing efficiency through increased competition, and promoting the diffusion of knowledge through learning by doing. The results of this study support the argument that trade openness will continue to be viewed as a key determinant of economic growth.

#### References

- Acemoglu, D., Zilibotti, F., “Was Prometheus unbound by chance? Risk, diversification and growth”, *Journal of Political Economy*, vol. 105, 4, 1997, pp. 709-751
- Ahmed, Y., Anoruo, E., “Openness and Economic Growth: Evidence from Selected ASEAN Countries”, *The Indian Economic Journal*, vol. 47, 3, 1999-2000, pp. 110-117
- Barlow, D., “Growth in Transition Economies: A Trade Policy Perspective”, *Economics of Transition*, vol. 14, 3, 2006, pp. 505-514
- Blomstrom, M., Robert, E., Lipsey, R., Mario, Z. (1994a). *What explains the growth of developing countries?*, International Convergence of Productivity. London, Oxford University Press, pp. 243-259
- Bornschiefer, V., Chase – Dunn, C. (1985). *Transnational Corporations and Underdevelopment*, Praeger, New York
- Edwards, S., “Trade orientation, distortions and growth in developing countries”, *Journal of Development Economics*, vol. 39, 1992, pp. 31-57
- McLean, B., Shrestha, S., “International financial liberalization and economic growth”, *Research Discussion Paper 03*, 2002, Reserve Bank of Australia
- Panagariya, A. (2004). *Miracles and Debacles: In Defense of Trade Openness*, Columbia University
- Yanikkaya, H., „Trade Openness and Economic Growth: a cross country empirical investigation”, *Journal of Development Economics*, vol. 72, 2003, pp. 57-89

## Dissolution of the Commercial Companies due to the Passing of Time Established as a Duration of the Company – Theoretical and Practical Aspects

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**Abstract.** *At the creation moment of a commercial company, the partners have the obligation, according to Law of commercial companies, to establish its functioning duration. This duration can be limited or unlimited. The fulfillment of the time for which the company was established imposes its legal dissolution. This kind of dissolution produces specific effects that, during the time, have made the object of theoretical and practical controversial debates that we try to explain here.*

**Keywords:** dissolution de jure; voluntary winding up; commercial companies; duration of the company's existence; duration prolongation.

**JEL Code:** K22.

**REL Codes:** 5D, 14K.

Active participants to the economic circuit, the commercial companies do not have, however, an eternal existence, although, at their creation, the associates decide that they shall function for an unlimited period of time.

But, as the associates have the freedom to establish the creation of the company, they can, also, decide its winding up, including the limitation of its duration of existence. This is why, the first general dissolution cause regulated by the provisions of law regarding the commercial companies is the expiration of the term established as a duration of the company (art. 227 letter a).

According to the provisions of New Civil Code, and of art. 7 and 8 from Law 31/1990, within the constitutive act of the company, the associates shall establish very clear the period of time for which it was created. The lack of such a provision does not, however, represent a reason to reject the incorporation of the commercial company. In connection with this aspect, the juridical doctrine considered that the lack of express provision regarding the duration of the company is equal with the will of the partners to grant an indefinite (unlimited) life period to the company, and this decision is the attribute of those that are creating a company and not of the Director of the Register of Trade Office or of the court of law (Roş, 1996, p. 58)

Lengthways the time, this dissolution cause was considered by the juridical doctrine as being the only situation when the dissolution of a trade company occurs *de jure*, while all the others causes provided by law have defining elements that include them in other forms of dissolution (we do not refer here to the situation when the dissolution occurred due to the non-changing of the incorporation certificate, only because this was a state intervention, at a particular moment, a solution imposed to the associates).

Thus, some authors have asserted that the fulfillment of the time for which the company was created leads to its dissolution *de jure* without the court or the partners' intervention (Căpăţână, 1996, p. 371). The fulfillment of the time for which the company was created is, as such, considered "the typical dissolution case that operates automatically" (Băcanu, 1997, p. 18.), without being necessary the adoption of a decision of the General Assembly of the partners, a court decision or the fulfillment of any formality for that.

The reason for which there is no need to achieve special formalities in order to declare the dissolution of the company for the fulfillment of its functioning duration is the fact that the dissolution publicity was carried-out from the very creation of the company through the publication in the Official Gazette of the constitutive act that comprised the clause regarding the company's duration. Thus, the dissolution must not be notified to third parties because, since the constitutive act was published, it is presumed that they

know the period for which the company was created, and, consequently, they were aware about the limitation of the period of time for which the company was established, implicitly of the moment when this one expires (Băcanu, 1997, p.18).

A special situation is that when, through the constitutive act, the partners establish that the duration of the company is indefinite and, later, their General Assembly decides to limit it. Of course, the mention to modify the term is submitted to the same publicity procedure as the incorporation and has the same effects as the latter, and the dissolution *de jure* will also apply in this case (Georgescu, p. 710)

Taking into account the aforementioned issues, we must understand that, although through the limitation of the functioning duration, the dissolution appears, somehow, pre-established from the creation moment of the company, it is not the essence of the commercial company to be created with the view to be dissolved. Nevertheless, when the dissolution occurs, it appears as culminating point of the company's life, where the main object will be the patrimony liquidation and the erase of the company from the Register of Trade (Georgescu, 1948, p. 725).

Thus, by reaching the term, the company will be dissolved, and the administrators will have to start the liquidation procedure. As a consequence, the administrators will not be allowed to carry-out new operations on behalf of the company, otherwise, they will be severally and jointly liable for the operations they have carried-out.

In principle, after the expiration of the term for which the company was created, the associates can not extend its duration, and a contrary decision leads to the creation of a new commercial company. But, in reality, there were some cases, especially in the middle of '90s, when the courts of law admitted the extension of the company duration, although this decision of associates appeared after the expiration of the term provided by the constitutive act. This non-unitary practice gave rise to many debates within the Romanian doctrine regarding the interpretation of the provisions related to the extension of the company duration (Băcanu, 1997, p. 17).

If, after the expiration of the duration, the company is still functioning, it was considered, in one opinion (Cărpenaru, 2011), that we deal with a company irregularly created. According to another opinion, it was asserted that it would not be about a company irregular created, but about the engagement of the directors' liability for the operations committed by these ones (Șcheaua, 2002, pp. 461-462).

If, in the light of the provisions of the former Commercial Code, it could also be taken into consideration the hypothesis of a company irregularly established, at present, after the modifications of the provisions related to the consequences of the breach of the legal requirements for the creation of a company, such an hypothesis is excluded, incurring the situation provided by art. 233 line 2 of Law no. 31/1990 according to which “from the dissolution moment, the directors, managers, respectively the board of directors must not carry-out new operations, otherwise, they will be severally and jointly liable for the operations they have accomplished”.

Some authors (Vâlceanu, 1997, p. 35) have even laid down possible solutions to continue the activity or to transform the company that functions after the expiration of the initial duration. Among the solutions proposed there are mentioned the extension of the duration through the decision of the General Assembly of the partners and the merge followed by acquisition. It is obscure why only the merger followed by acquisition was accepted as dissolution modality without liquidation, when Romanian legislation, as well as EU legislation provide other forms that have the same effects. The same author (Vâlceanu, 1997, p. 35) upholds that this “cancellation cause” may be rectified “upon the request of the party concerned, either until the beginning of the liquidation procedure or until the delivering of the judicial decision”, accepting clearly that this eventual prorogation should be carried-out after the expiration of the duration, but before the erase of the company from the trade Register.

We believe that these two explanations (respectively, that of the company irregularly established and that of continuing the activity after the expiration of the company duration through the prorogation of the term) cannot stand because they do not comply with the principles stated by Law no. 31/1990.

But, for this situation, the majority of courts ruled that the application for registration of mentions regarding the extension of the functioning duration of the company is inadmissible if at the date when the General Assembly decided the extension the functioning duration had expired, the company being dissolved *de jure* (Lupașcu, 1999). Thus, it was held that, the only modality to prevent the company’s dissolution is the express prorogation of its duration, under the condition that such a decision is taken before the fulfillment of the company functioning term.

It is obvious the fact that the prorogation of the company duration must comply with the publicity rules provided by the law for its incorporation. Thus, according to art. 204 from Law no. 31/1990, the modification of the period for which the commercial company was established must comply with all conditions regarding the modification of the constitutive act.

Within the doctrine, there are divergent opinions related to the moment when the operations regarding the prorogation of the commercial company duration are considered accomplished. Thus, a majority opinion upholds that “the prorogation of the company duration produces effects only if it was accomplished before the duration of the company provided by the constitutive act has expired” (Cărpenu, 2011, p. 137). However, other authors (Băcanu, 1997, p. 22) assert that „in the situation when the resolution of the statutory organs or, as the case may be, of the associates occurred, was published and remained final before the dissolution term, it should not be admitted that the decision of the court could be subsequent to the dissolution date”.

We have to admit that a very restrictive interpretation of the legal provisions regarding the accomplishment of the formalities related to the prorogation of the company duration would lead to the creation of a negative trend that might affect the good functioning of commercial company and would sanction some situations of normality. A rigorous but correct interpretation of the above mentioned principles leads to the conclusion that all formalities regarding the extension of the commercial company duration must be registered in the Trade Register before the expiration of the company duration provided by the constitutive act.

In order to avoid an unexpected dissolution, the law imposes that the associates should be consulted regarding a possible extension, with at least three month before the expiration of the company duration. The aforementioned provision influenced by French law (art. 1844 - 6 paragraph (2) French Civil Code) must not be understood in the sense that it establishes a deadline, after which the extension of the company duration can not be decided. On the contrary, we consider that the prorogation of the company duration may be decided anytime, until the fulfillment of the term for which the company was created. Thus, we understand that the provision of art. 227 paragraph (2) of Law no. 31/1990 is meant especially to prevent the company dissolution due to the fact that the associates had not the time to extend its duration. It is, therefore, about a prevention measure meant to protect the partners and the creditors.

If the company's directors fail to organize the consultation, upon the request of any associate, the court can order its performance. We shall mention the fact that the organization of the consultation does not prevent the company dissolution at the expiration of the duration provided by the constitutive act.

In addition to that, according to the legal provisions in force, the creditors of the associates within a partnership, limited partnership company or limited liability company can make opposition against the decision of the associates to

extend the company duration above the term initially established, if they have rights established through a writ of execution previous to this decision. The opposition is made within 30 days from the date the decision or the amending addendum is published within the Official Gazette of Romania and is submitted to the Trade Register Office.

Within our old doctrine (Fințescu, 1929, p. 289) it was asserted the idea that in the situation when the memorandum of association does not establish the duration for which the company is created, any associate can claim the dissolution of the company considered to be unlawful created. In the light of Law no. 31/1990 this conclusion cannot stand, since the company may be created for an indefinite duration.

Regarding the prorogation of the company duration, even during the liquidation phase, there are controversial opinions that deal with this issue. Within one opinion (Băcanu, 1997, p. 20), it is considered that the associates may overturn, even during the liquidation phase, their decision about the dissolution and liquidation and may extend the company duration or may decide the merger with another company, unless the dissolution occurred due to the expiration of the term. Thus, the return concerning the dissolution is understood as a decision to create another company. A contrary opinion (Cărpenaru, 2002, p. 504) argues that, the rule according to which the company ceases on the dissolution date must not be understood *ad literam*, because otherwise it would not be seen how the operations of the company are continued on its behalf by the liquidators and how the associates could decide, during the liquidation period, a measure opposite to the liquidation. In addition, any party concerned may claim the establishment of dissolution, meaning the company's partners, the creditors or the personal creditors of the associates. The latter ones can claim the liquidation of the part owned by the associate, if they held claims previous to the expiration of the company duration, according to art. 66 paragraph (1) from Law no. 31/1990 (which stipulates that, during the company duration, the partner's creditors may exercise their rights only on the part of the corresponding benefits owned by the associate according to the balance sheet, and after the company dissolution, on his part resulting through liquidation). Another opinion (Tăbăltoc, 1993, p. 110) holds the fact that, the court will not grant dissolution before the fulfillment of the term for which the company was created if this brings prejudice to public order, such as the interests of the associates or of the creditors. Moreover, such a prejudice can not be alleged for in case of partnerships and limited partnership companies "that must last as long as the associates survive", because the company duration cannot



depend on the whims of one of the associates that has, anytime, the freedom to claim for to be discharged of his contribution to the company's capital through selling or cession of his social parts (Vivante, 1929, p. 629).

Once the liquidation procedure started, the legal personality of the company survives only with the view to complete this procedure, without allowing the realization of operations that are not under way or related to the liquidation procedure.

The final stage of liquidation is the erase of the company from the Register of Trade and the liquidators are liable to apply for that. Within the doctrine (Băcanu, 1997, p. 18), it was alleged the fact that, in reality, the legal personality of the commercial company does not cease on the erase date, as, theoretically, it would be normally to happen, similar to the incorporation in the Register of Trade. In fact, the legal personality ceases on the publication date in the Official Gazette of the closure writ regarding the liquidation procedure, the erase having the mere role of evidence.

As a conclusion, we can assert that the dissolution of the commercial company upon the expiration of the term established for its duration (art. 227 letter a) of Law no. 31/1990) is, however, the only case of dissolution *de jure*. As far as the voluntary winding up, the dissolution for the fulfillment of the functioning duration appears as a decision of the partners taken through the memorandum of association or through the statute. The associates have established that the company should last a pre-established period of time and have agreed that, upon the expiration of this term, it should be wound up. According to the legal provisions, the interdiction to carry-out new operations applies from the dissolution moment, without distinguishing between dissolution *de jure*, voluntary or judicial dissolution.

The major difference resides in that fact that, as far as the voluntary winding up is concerned, the liquidation belongs to the associates' will, while in case of the dissolution *de jure*, the liquidation occurs automatically without the statutory organs or, as the case may be, the associates may decide otherwise after it has produced its effects.

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## References

- Băcanu, I., „Dizolvarea de drept a societății comerciale. Condiții de validitate a prelungirii duratei societății”, *Revista de Drept Comercial*, nr. 1/1997
- Căpățână, O. (1996). *Societățile comerciale*, ediția a II-a, Editura Lumina Lex, București
- Cărpenaru, S.D. (2011). *Tratat de drept comercial*, ediția a II-a, Universul Juridic, București
- Cărpenaru, S.D. (2004). *Drept comercial român*, ediția a VI-a, Editura All Beck, București
- Cărpenaru, S.D. (2002). *Societățile comerciale*, Editura All Beck, București
- Fințescu, I.N. (1929). *Curs de drept comercial*, vol. I, București
- Georgescu, I.L. (1948). *Drept comercial român*, Editura Socec, vol. II, București
- Georgescu, I.L., *Societăți comerciale*, vol. II
- Lupașcu, D. (1999). *Culegere de practică judiciară în materie comercială a Tribunalului București pe anii 1990-1998*, Editura All Beck, București
- Roș, V., „Dizolvarea societăților comerciale. Particularități ale dizolvării pe cale judiciară. Lichidarea societăților comerciale. Momentul în care intervine. Rolul instanței de judecată în cursul lichidării societății”, *Revista de Drept Comercial*, nr. 1/1996
- Șcheaua, V.M. (2002). *Legea societăților comerciale*, Editura Rosetti, București
- Tăbăltoc, D.M., „Contribuții la clarificarea unor probleme ivite în aplicarea de către instanțele judecătorești a Legii nr. 31/1990”, *Revista de Drept Comercial*, nr. 6/1993
- Vâlceanu, Gh.C., „Unele aspecte privind dizolvarea societății comerciale la împlinirea termenului stabilit pentru durata acesteia”, *Revista de Drept Comercial*, nr. 6/1997
- Vivante, C. (1929). *Tratato di diritto commerciale*, ediția a V-a, Vallardi, Milano
- \*\*\* Tribunalul București, Secția comercială, Decizia nr. 4717/12.12.1997

## National and Regional Competitiveness in the Crisis Context. Successful Examples

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**Abstract.** *The paper addresses the issue of national and regional competitiveness in the context of socio-economic and financial crisis. Competitiveness is a complex concept which can be studied at both the firm and the local and national level.*

*Thus, in economic terms the competitiveness is most often associated with the productivity or efficiency with which inputs are transformed into goods and services. As for the regional competitiveness it should be analyzed in terms of results (revenue, employment) and in relation to its determinants: ranging from the classical production factors (capital, labour, technological progress) to the “soft” factors (human capital, research and development, dissemination of knowledge).*

*The current economic environment has revealed that countries such as China, India, Brazil and also the Czech Republic and Poland, following prudent economic policies, have managed to make from macroeconomic stability, investment in education and research some of their major drivers of economic growth.*

**Keywords:** competitive advantage; competitiveness; labour productivity; economic growth; determinant factors.

**JEL Codes:** J24, O18, O47.

**REL Code:** 8E.

## 1. National and regional competitiveness. Definitions and main features

From the launching of “competitive advantage” paradigm by Porter, the notion of competitiveness has gained importance and new meanings, being related to terms such as productivity and welfare.

Currently, it can be noticed the researchers in this field interest in highlighting the specific features of competitiveness compared to a more established concept – competition.

Thus, Turok (2004), in his paper entitled *Cities, Regions and Competitiveness*, emphasizes the importance of the competition for firms development:

- It acts as a *selection mechanism*. Only certain companies survive on the market (those which have better products and more efficient production processes);
- It acts as a *mechanism that stimulates* firms to improve the technology and organization.

Moreover, the author mentioned above underlines the difference between the competition at firm level and the competition that exists between regions, which does not operate by the same rules: *cities and regions can not fail if they are not competitive and, at the same time, they don't have as main objective the profit*.

Summarizing these aspects related to competition and competitiveness, Kitson, Martin, and Tyler (2004) define competitiveness as “a complex concept which focuses more on the indicators and dynamics of region or town long-term prosperity, rather than on more restrictive notion of competition on market shares and resources”, “being a concept which recognizes that, ultimately, competitive regions and cities are places where both firms and people wish to settle and invest”.

Meanwhile, the specialists interest shifted from defining and understanding the national competitiveness to its regional dimension, taking into account the main drivers: Porter (1998-present), Cambridge Econometrics (2003), Budd and Hirmist (2004), Kitson, Martin and Tyler (2003, 2004), Huggins (2004), Boddy and others (2005), Van Ark (2006) etc.

However, studying the regional competitiveness implies understanding the notion of national competitiveness. But, defining this latter concept has proven over time to be a difficult task because of the complexity of the term, its many facets and the perspectives from which it can be viewed. Therefore, a great number of researchers from public or private institutions have formulated definitions of the competitiveness' notion (Table 1):

Table 1

<b>Defining national competitiveness</b>	
Definition	Source
Competitiveness is the ability of a nation to produce, under free and fair market conditions, goods and services which meet the test of international markets, while simultaneously maintaining and expanding the real incomes of its people over the long term.	OECD
A field of Economic theory which analyses the policies and facts that shape the ability of a nation to generate and maintain an environment that sustains more value creation for its enterprises and more prosperity for the its people.	IMD - World Competitiveness Yearbook, 2003
The ability to achieve success on international markets in order to raise the living standards of the entire nation.	National Competitiveness Council - Ireland
The set of factors, policies and institutions that determine the productivity level of a country.	World Economic Forum, Global Competitiveness Report, 2007
The sustainable growth of the living standards of a nation or region while achieving the lowest level of involuntary unemployment.	European Competitiveness Report 2007

**Source:** Our processing after Garelli, S., *Competitiveness of nations: the fundamentals*, IMD World Competitiveness Yearbook – 2006, <http://www.gcr.weforum.org/>: Explore the Report, \*\*\*Commission of the European Communities, *Raising productivity growth: key messages from the European Competitiveness Report 2007*, Commission staff working document, accompanying document to the Communication from the Commission, Brussels, 2007.

Indeed, policy makers at all three levels: national, regional and local have set competitiveness as major objective of their activity. Thus, competitiveness is an important criterion of the assessments of advanced economies made by the international institutions, a concern of the European Commission in the context of the increasing gap between EU and US performances and a measure used by Member States to compare their performance with those of their competitors (Cambridge Econometrics, 2003).

Gradually, the specialists attention shifted from the competitiveness of nations to regional competitiveness, with an increasingly broad consensus on the role of regions as “key location for organizing and managing economic growth and wealth creation” (Kitson, Martin, Tyler, 2004).

The easiest way to define regional competitiveness is to relate it to “the success with which regions and cities compete with each other in order to gain some shares of the domestic or international markets” (Kitson, Martin, Tyler, 2004).

The same approach which focuses on export business performance can be found in Storper's definition of urban competitiveness and in the European Commission definition of regional competitiveness, being determined by the regions feature to be more open to trade than the nations.

From these definitions of regional competitiveness it can be drawn the main features of this concept (Sepic, 2005, Sala-i-Martin et al., 2008):

1. It is a concept that includes both a *static dimension* (regional competitiveness represents the ability to maintain a high level of income and employment) and a *dynamic* one (determines the investment return, a central element for a lasting economic growth);
2. It implies in the first place the growth of the real income but it can not be underestimated the importance of the *sustainable development*, the environmental and social problems;
3. It involves the *creation of jobs* being important not only the number of the new jobs but also their quality and the capacity to contribute to the rise of the living standards;
4. It entails the production of goods and services in free and fair market conditions, which means providing an environment where there is *real competition* between domestic and foreign products;
5. It supposes creating a *regional environment* (the specific features of a region) which becomes a determinant of competitiveness, because it influences the performance of all businesses located there.

Therefore, in the paper entitled *A Study on the Factors of Regional Competitiveness* (Cambridge Econometrics, 2003) the definition of regional competitiveness is approached from two different perspectives, being emphasized the assumptions and limitations of each approach (Table 3).

Table 3

#### Defining regional competitiveness

Definition	Hypothesis	Limits
Regional competitiveness – microeconomic perspective	The firms located in a region, capable to produce goods in a consistently and profitably manner which can face the demands of an open (free) market regarding the prices, quality and so on, would bring identical profits to those of the region.	Companies are striving to make profits and increase productivity, while regional competitiveness must include certain levels of employment.
Regional competitiveness – macroeconomic perspective	Regional Competitiveness is seen as a result of macroeconomic competitiveness.	Certain laws governing international trade does not work at sub-national level. Indeed, the exchange rates are not functioning properly or do not exist at regional level and the capital and labour international migration can be a real threat to the region prosperity.

**Source:** Cambridge Econometrics, *A Study on the Factors of Regional Competitiveness*, A final report for The European Commission Directorate-General Regional Policy, University of Cambridge, 2003.

For Porter, the first author who has proposed a model of competitiveness, this is the only source of productivity or efficiency with which inputs are transformed into goods and services.

Summarizing, to give a comprehensive understanding of the competitiveness concept, this must be defined both in terms of:

- *results* – competitive regions are those that ensure the maximization of the objectives of individuals and businesses located here: high income (wages, profits), employment, environmental quality, etc.;
- *drivers* for these outcomes: labour force, physical and human capital, technological progress, etc.

This way the relevant factors for certain regions can be identified and their impact on economic performance can be quantified.

## 2. Measurement possibilities

One of the indicators most commonly used in studies and researches that are intended to assess the competitiveness is GDP per capita. This indicator can be used alone or by factorial split into several components, following the formula (Cambridge Econometrics, 2003):

$$GDP/Total\ population = GDP/Total\ hours\ worked \times Total\ hours\ worked/Employment \times Employment/Working\ age\ population \times Working\ age\ population/Total\ population$$

Per capita gross domestic product (GDP/capita) – as a measure of social welfare – is considered the main result of competitiveness factors. Among these, labour productivity and employment are the main drivers, but interesting is the impact of others factors (eg. hours worked and age structure of population).

Other ways of decomposition of the indicator GDP per capita, which capture the influence of different factors, can be:

$$GDP/Total\ population = GDP/Employment \times Employment/Work\ resources \times Work\ resources/Total\ population$$

or:

$$GDP/Total\ population = GDP/Employment \times Employment/Active\ population \times Active\ population/Total\ population$$

or, in a form that summarizes the main sources of competitiveness:

$$GDP/Total\ population = GDP/Employment \times Employment/Total\ population$$

Factors decomposition is not completely independent and a number of correlations can be highlighted between them. For example, a link between labour productivity and employment rate: there are regions which use a qualified workforce and are highly productive, achieving at the same time higher and higher rates of employment (Kitson, Martin, Tyler, 2004).

Regarding the economic productivity this represents the efficiency by which goods and services are produced, based on a given set of inputs such as labour and capital. Labour productivity can be measured at the individual level, firm level and for different geographical areas as output per person employed. It depends on factors such as technical efficiency of capital and labour endowment.

Even if labour productivity is considered a useful indicator to characterize the regional competitiveness, however, accurately measuring it raises a number of issues relating to (Kitson, Martin, Tyler, 2004):

- Choosing between two indicators: the labour productivity, which can be corrected to take into account the number of hours worked and total or multifactor productivity (TFP);
- Measuring the output obtained in services and government sector;
- Estimating and interpreting regional TFP, giving that the necessary data are not available at sub-national level and to estimate regional production functions is often difficult;
- Using together with productivity the regional employment rate, another important indicator of regional competitiveness.

Currently it is worth noticing that more and more specialists propose in order to assess competitiveness through its main source – labour productivity, to quantify the impact of different types of inputs on the production process. Some of these factors can be measured easily, but for others the lack of the necessary data requires a multifactor analysis of performance.

### 3. Competitiveness's main drivers

As shown in the definitions of competitiveness, this concept can be seen in terms of results and main drivers.

Under the second approach, it should be noted that empirical studies conducted on regional competitiveness can be organized around two distinct approaches: first analyzes *regional competitiveness as the result of the cumulative action of several factors* (European Commission, 1999-2007, ECORYS-NEI, 2001, IMD, 2005-2007, WEF, 2005-2008) and the second focuses on *specific determinants of competitiveness*: clusters, demography, migration, hard/soft factors of the location, the business environment and



inter-firm relations, institutional capacity and government quality, innovation/ regional innovation systems (Constantin, Banica, 2007).

From the viewpoint of the first approach it is relevant the *Competitiveness tree model* proposed by ECORYS Groups, which associates the determinants of competitiveness with the following items: special skills, innovation, connectivity and entrepreneurship (tree roots), industrial structure and productivity (trunk). These components are support for achieving competitiveness and achieving results such as: employment and income, investment, profit, taxes and contributions (the tree's braches).

Moreover, with the development of the new theory of economic growth – endogenous growth theory – based on assumptions different from those of the neoclassical model of growth (technological progress is endogenous to growth process, the accumulation of knowledge determines increasing returns, human capital is another factor of production together with physical capital and labour, markets do not automatically generate the optimum and so on), the vision on the determinants of competitiveness has changed gradually, from the importance attributed to the classical production factors to so-called “soft” factors.

Factors identified as *key drivers* in this theory: expenditure on research and development, innovation (patents), education level, expenditure on investment in human capital (education, lifelong learning), effective dissemination of knowledge (knowledge centres) have significant implications on regional competitiveness (Cambridge Econometrics, 2003):

- Regional differences in terms of productivity and economic growth can be considered as resulting from the differences in technology and human capital.
- Improving technology and human capital is the engine of economic growth.
- Investment in research and development is crucial.
- Improving human capital (through education and training) is a measure of great importance.

Thus, the European Union has focused on increasing its economic performance through the goal of creating an environment capable to create added value and welfare. This has become a key determinant of competitiveness by features such as: availability of financing, quality of administrative and legislative framework, the opening and functioning of markets, entrepreneurship, human capital, innovation and knowledge dissemination, information and communications technology, sustainable development.

Thus, innovation has become, in the context of knowledge-based economy, a key element being considered the main driver of sustainable economic growth (Table 4).

Therefore, the theories of economic growth in general and the neoclassical model and endogenous growth model in particular offer the necessary scientific support to identify the combination of factors that determine the success of regions. Among these of great interest are the drivers of the knowledge economy: investments in education, innovation capacity, upgrading information infrastructure, etc.

Table 4

**Competitiveness factors in the EU Member States**

EU States	Competitiveness factors	Source
Great Britain	Productivity, investment, innovation, skills, enterprise, competition	Department for Business Enterprise & Regulatory Reform, <i>UK Productivity and Competitiveness Indicators</i>
Ireland	Adequate physical infrastructure, highly educated population, lifelong learning and research, a legal and a tax system that encourages the entrepreneurship, competition and innovation.	Annual Competitiveness Report 2006, Volume 1: <i>Benchmarking Ireland's Performance</i> , National Competitiveness Council
Czech Republic	Five pillars of competitiveness: the quality of institutions, structural competitiveness, innovation performance, the quality of human resources, macroeconomic performance and stability.	Czech Republic Competitiveness Yearbook 2006 -2007
Hungary	Basic conditions of regional competitiveness: income, labour productivity, employment and openness; Factors driving the improvement of competitiveness: research and technological development, infrastructure and human capital, FDI, SMEs, institutions and social capital; Determinants of success: social structure, decision-making centres, environment, regional identity, economic structure, innovative activity, regional accessibility, employment qualification.	Lengyel, I., <i>Economic growth and competitiveness of Hungarian regions</i> , RSA Conference, Pisa, Italy, 2003
Poland	Two categories: goods and institutions, competitiveness depending on the availability of resources (labour and capital, technology and innovation), their allocation (productivity) and factors quality: political, social, business environment and economic policy.	Maryenna A., W., (editor), <i>Poland Competitiveness Report 2006. The roll of innovation</i> , World Economy Research Institute, Warsaw School of Economics

EU States	Competitiveness factors	Source
Romania	Infrastructure (prerequisite of sustainable development), human resources (higher qualifications and lifelong learning are essential to develop the knowledge economy: research and development, innovation, entrepreneurship), PPP (indispensable for the implementation of the results of research and development and the absorption of structural funds), industrial clusters (engine of growth and high technology utilization).	IER, <i>The competitiveness of the Romanian economy: adjustments for achieving the objectives of Lisbon Agenda</i> , Strategy and policies studies, 2006

#### 4. Successful examples

Currently, most developed countries are struggling to overcome the recession, being forced to face the problem of accumulated debt sustainability and the need to ensure stability and efficient functioning of the financial markets. These problems are accompanied by a rising unemployment and the reduction of domestic and external demand for goods and services. These problems could jeopardize the chance for a sustainable recovery and a long-term competitiveness.

On the other hand, the emerging states have a different situation. For the year 2010 the International Monetary Fund has predicted a growth rate of 6.25%, compared with only 2.25% for developed countries (Sala-i-Martin et al., 2010).

These states which managed to cross the crisis with growth rates between 5.5 and 10% are considered the future engines of global growth: Brazil, China and India (WEF, 2010).

In the meanwhile in the Competitiveness Report 2010-2011, published by the World Economic Forum, the most competitive countries proved to be Switzerland, Sweden and Singapore. The drivers of these countries success include the special capacity for innovation and sophisticated business culture. For example, in *Switzerland* research activity is included in processes and products very well anchored in the market.

*Sweden* has enjoyed the benefits of the most efficient and transparent public institutions and the lowest levels of corruption. In addition, *Singapore* is

on the first place in terms of efficiency of goods and labour markets and second place in terms of financial market sophistication.

*China* is among the countries whose performance remained stable in 2010 ascending two positions in the overall ranking. The main competitive advantages are the country's market size, the macroeconomic stability and the business environment increasingly innovative and complex.

A similar situation has *India* and *Brazil*, the latter bearing positive transformation in terms of macroeconomic stability, openness and liberalization of economy, income inequalities reduction etc.

Among the countries of Eastern Europe, the *Czech Republic* and *Estonia* remain the most competitive. Their successful model is based on a high-performing system of education, very well developed markets and a good preparation for adopting high technologies.

Another successful example is *Poland*. It has ascended seven places in this year ranking. Its strategy for dealing with the crisis was a success based on prudent economic policies and increasing the size of the internal market. Among the strengths it can be mentioned the high standards established for the education system and the development of the financial sector.

## Conclusions

The economic and financial crisis has forced the states and the regions to find solutions adapted to the global economic climate characterized by uncertainty, risk and fragile macroeconomic equilibrium and to develop strategies to ensure a sustainable economic growth.

In this context, the knowledge of the factors and mechanisms that determine the higher competitiveness of some countries even in the current global climate can be a source of learning for countries in difficulty.

Thus, in 2010 in terms of competitiveness Romania remains deficient, being forced to solve a series of problems which affect the ability of the national and regional business environment to ensure long term growth: access to finance, poor infrastructure, bureaucracy, government inefficiency and tax system.

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## References

- Boddy, M. et al., „Regional Productivity Differentials. Explaining the Gap”, Paper provided by University of the West of England, School of Economics in its series, *Discussion Papers* with number 0515, 2005
- Budd, L., Hirmis, A.K., „Conceptual Framework for Regional Competitiveness”, *Regional Studies*, Vol. 38.9, 2004, pp. 1015/1028
- Cambridge Econometrics, „A Study on the Factors of Regional Competitiveness”, A final report for The European Commission Directorate-General Regional Policy, University of Cambridge, 2003
- Constantin, D.L., Bănică, G.C., „The Romanian Regions’ Competitiveness in the New European Context. A Human Resource Perspective”, *International Workshop „The Path of Internationalisation and Integration in the Europe of Regions”, 25-28 aprilie 2007, ASE- București*
- ECORYS-NEI, *International Benchmark of the Regional Investment Climate in Northwestern Europe*, 2001
- European Commission, *Sixth Periodic Report on the Regions*, 1999
- Huggins, R., „Creating UK Competitiveness Index: Regional and Local Benchmarking”, *Regional Studies*, Vol. 37.1, 2003, pp. 89-96
- Garelli, S., „Competitiveness of nations: the fundamentals”, *IMD World Competitiveness Yearbook – 2006*, <http://www.gcr.weforum.org/>: Explore the Report
- IER, „Competitivitatea economiei românești: ajustări necesare pentru atingerea obiectivelor Agendei Lisabona”, *Studii de strategie și politici*, 2006
- Kitson, M., Martin, R., Tyler, P., „Regional competitiveness: an elusive yet key concept?”, *Regional Studies*, 2004
- Lengyel, I., „Economic growth and competitiveness of Hungarian regions”, *RSA Conference*, Pisa, Italia, 2003
- Maryenna, A.W., (editor), *Poland Competitiveness Report 2006. The roll of innovation*, World Economy Research Institute, Warsaw School of Economics
- National Competitiveness Council, *Annual Competitiveness Report 2006, Volume 1: Benchmarking Ireland’s Performance*
- Porter, M.E. (1990). *The Competitive Advantage of Nations*, The Free Press, New York
- Sala-i-Martin, X. et al., „The Global Competitiveness Index 2010-2011: Looking Beyond the Global Economic Crisis”, WEF, *The Global Competitiveness Report 2010-2011*
- Sala-i-Martin, X. et al., „The Global Competitiveness Index: Measuring the Productive Potential of Nations”, WEF, *The Global Competitiveness Report 2007-2008*

- Sepic, D., „The regional competitiveness: some notions”, *Project funded by the EU and implemented by the Bureau of economic management and legal studies*, Moscova, 2005
- Scott, A.J., Storper, M., „Regions, Globalization, Development”, *Regional Studies*, vol. 37, 2003, pp. 579-593
- Storper, M. (1997). *The regional world: territorial development in a global economy*, New York, Guilford Press
- Turok, I., „Cities, Regions and Competitiveness”, *Regional Studies*, vol. 38, 2004
- Van Ark, B., “Does the European Union Need to Revive Productivity Growth?”, în Mundschenk și alții (ed.) *Competitiveness and Growth in Europe. Lessons and Policy Implications for the Lisbon Strategy*, Edward Elgar Publishing, Inc., 2006
- WEF, *Global Competitiveness Report 2010-2011*

## The Global Crisis and Cyclical Theory

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**Abstract.** *The dynamics of social development shows that, throughout history, economies have experienced periods of boom and crisis, which were repeated at short, medium and long term, which induces the idea of cyclicality. The effects of the crisis were experienced in terms of investment, output, aggregate demand.*

**Keywords:** crisis; boom; cyclicality; stagflation; recession; anti-crisis measures.

**JEL Codes:** B26, E12, E61, F44.

**REL Codes:** 8H.

In the evolution of the society, crises can be defined as a situation characterized by pronounced instability, accompanied by volatility and uncertainty growing, contradiction (economic, political, ideological, military, etc.). The economic crisis is a phase of economic cycle in which a relative surplus of goods is formed in relation to the limited purchasing capacity of the population, leading to decreased production, bankruptcies, unemployment. In crisis situations we are in a constant state of anxiety and uncertainty of the future, fear or even panic, disorder state of the economy, the expression of a breach of the necessary correlation of the business. Its onset marks the start of qualitative changes in the economy for a new upturn in economic activity. By the early nineteenth century were typically underproduction crisis caused by natural phenomena (drought, floods) or socio-political special circumstances (epidemics, wars).

Market economies are characterized cyclical crises of overproduction, consisting in the fact that the offer is greater than demand, the goods produced not finding creditworthy buyers, which requires bidders to reduce output.

National Bureau of Economic Research (NBER) defines crisis as “a significant decline in economic activity for several months reflected in lower GDP, lower individual income, reduce employment levels, reducing industrial production and consumption.” Economic crises can take the form of stagflation, a recession or economic depression, and sometimes can lead to economic collapse.

The economic depression is a severe economic crisis, a sustained drop of one or more national savings, a rare but extreme form of recession, characterized mainly by an increase in “unusual” unemployment rate, restricting credit, major restriction of industrial output and investment, evaporation of liquidity, price deflation, hyperinflation, numerous bank failures, significant trade reduced, a highly volatile and unpredictable exchange rate, mainly the trend of devaluation and is considered to arise when there is a decline in gross domestic product (GDP) of more than 10%. We are talking about an economic depression when we face a negative growth of gross domestic product (GDP) for at least two quarters. Some experts classify these crises in the social crisis (inflation, growth, unemployment, poverty), financial crisis (sharp volatility in capital markets, falling stock markets and their spectacular return), political crisis (which may degenerate into wars), local or international crises, crises caused by natural disasters or generalized economic crisis.

It is difficult to make judgments when a financial crisis becomes an economic or an economic crisis generated a financial crisis or vice versa. In



principle we always talk about an economic crisis generated by financial, political or social reasons. The financial crisis is a manifestation of the economic crisis which reflects distrust in the financial system, a significant decrease in the volume of transactions on stock exchanges, disruption of market mechanisms, stock market is the business barometer of the economy dealing business in different sizes and from different sectors. The financial crisis is a situation in which money demand is greater than the supply of money (available), ie low liquidity is readily available because the money is withdrawn from banks, thus forcing banks to either sell their assets and investments to cover their needs or to collapse.

Financial crisis can lead to an economic crisis.

When the market suffers from disturbances or major corrections these are reflected in the profitability of listed securities business and consequently the price of financial assets (stocks or bonds) that depend directly on investor expectations. Panic increase the magnitude of these corrections and to induce new uncertainties in the economy. From here and until the reduction of appetite for savings and investments and then to increased market interest is only one step.

We speak about a crisis when its effects are manifested on a large number of people/companies. But crisis may exist in a latent state. Crises are not hard to predict (their causes are quite clear).

Economic crises do not fall into a certain pattern. Modern economic theories reject the idea of a general theorizing financial and economic crisis, according to which they can be incorporated into a valid general model, considering that each financial crisis is unique, in fact, each representing a historical accident, caused by specific factors in a particular socio-economic and political conjuncture. According to these theories crises can not be anticipated, so that their negative effects to be brought to a minimum. However, history shows that while financial and economic crises do not arise within the parameters and they do not produce identical effects, they are closely related to the cyclical nature of economic processes.

### The business cycle and its phases

Cyclical form is a natural, normal form of evolution of economic activity. Economic life is a cyclical trend, undulating, generally upward. There is not a general pattern of business cycle or two cycles identical in length and configuration phases, even in the same country or in different countries. Cyclical developments (fluctuations) are nuanced and complex.

Cyclical evolution has an objective determination, but traders and governments promote measures to mitigate the economic cycle and in particular

waves of recession and the negative effects it generates. Cyclical causes are numerous, but the decisive role has the specific mode of development effectiveness (efficiency) use of production factors.

The business cycle is the period from the beginning of a contraction of overall economic activity until the beginning of next.

In the cyclic movement takes place the following phases:

- expansion (boom) characterized by increased production, national income, employment level of employment, wages and profits, businesses thrive and cheap credit, growth of rate securities. In the expansion phase has been an increase of economic efficiency resulting from the introduction in the economic cycle of significant technological innovations.
- depression, state of the economic climate characterized by economic imbalances (supply > demand), reduced productivity, reduced rate of profit, turnover and lower rates of securities, higher credit, restricting loans and investments.

Overcoming the crisis takes place by modernizing the capital stock, increasing the capital which increases the rate of employment in industries that produce goods production, implicitly leading to increased demand for consumer goods. It initiates a new phase of expansion, followed by another contraction marking the transition to a new economic cycle, representing an improvement from the previous one.

Economic cycles can be short, medium and long term.

Short cycle is a wave motion for a period of about three years, falling within the environmental cycle, and includes two phases: expansion and contraction is influenced by the formation mechanism stocks, specif of the market, and by offer for agricultural products.

Long cycle synthesise long wave, 40-60 years periods, development of economic life and has two phases: ascending, descending. The first phase is characterized by the predominance of years of prosperity and relatively high growth rates of national income, investment, production and sales, including sustained rise in living standards. In the downward phase there is an economic slowdown and emphasizing the persistence of negative phenomena in the economy due to profound changes in the behavior of economic agents, branches and sub-structure, in the structure of consumption. The main cause of the secular cycle is the cyclical evolution of scientific research and technological innovation.

Dean cycle with a duration ranging from 4-10 years to 5-12 years consists of four phases: expansion, the upper turning point of the recession (depression) and recovery. Dean cycles are carried out amid the secular cycles.

Over the time the global economy has faced numerous economic crisis.

The economic crisis of 1929, as the territorial scope, duration and economic and political effects, also known as the Great Depression, proved to be most severe. Initiated in the United States of America, preceded by a period of 9 years (between 1920 and 1929) of economic development, had the support the increasing on money supply in circulation by the Central Bank of America Federal Reserve (FED) and a relaxation of credit policy and interest rate reduction. Following this monetary and financial policies of the FED, the population has bought massive action, which saw a steady increase the stock market, until September 1929, when occurred the great stock market crash on Wall Street. FED occurs by tightening monetary and credit restrictions, and the result was the production of bankruptcies in all sectors: agriculture, industry, banking. National production has fallen by half and the unemployment increased. United States of America has adopted a policy to restrict imports through protectionist measures, which led to the spread of the crisis in Europe. In return, European states have adopted measures against US exports prohibitive. After World War II until the early 70 years for 25 years industrialized economies have experienced strong growth, due to favorable economic and political factors (maintaining a correct ratio between demand and supply, by promoting economic policies of full employment of labor, creating a stable international institutional framework).

After this period of strong economic development of most countries of the world in the early 70s, began a period of recoil, which lasted 10 years, known as big stagflation, characterized by rising inflation and falling economic growth and gross domestic product. Underlying these economic troubles have spent a number of circumstantial factors specific to these period: the adoption by the US inflationary macroeconomic policies, in 1973 triggering the first oil crisis. During this period labor productivity in industrialized countries has declined and unemployment rose, which had the effect of reducing revenues and easing inflationary increase in prices. Rebound period ended with the triumph of central banks (US, German and Japanese) that have passed stringent anti-inflation policy.

Another major international financial crisis occurred in the late 90s in Southeast Asia. The determining factor of this economic and financial crises with devastating effects was the massive withdrawal of capital by foreign investors, who in the early 90's invested billions of dollars in this market due to weakening investor confidence in the banking and financial system of countries in this area. The effects were devastating for all countries in the region: in 1998, for example, South Korea's GDP decreased to 33% of the GDP in 1997, the GDP per capita in 1998 decreased by 42% in Indonesia, 21% Thailand.

Crisis from Russia (1998): was induced, according to experts, by the crisis from South Asia, occurred due to the drastic decrease of oil and gas

exports (and other raw materials) to this region (which Russia was strongly dependent) and also due to non-payment of taxes by a significant proportion of companies in the energy and manufacturing industry.

All these examples show that there is a history of seizures. Moreover, the current crisis differs in his magnitude from other crises because she is currently affecting a large number of countries. If until now were mainly affected developing countries, now they have been involved in the current crisis the developed countries.

Lack of understanding and consensus of views in the majority of professional economists on the issue of financial and economic crisis explains why they could not anticipate the financial turmoil in Southeast Asia from 1997, especially how was possible the current financial crisis.

Some economists have studied how the crises occur.

Milton Friedman, Nobel Laureate in Economics in 1976, promoter of the theories about the market economy and to minimize the state's role in coordinating economic, argued that as economic actors are always rational in a market economy speculation are not possible, and so-called "speculation" is trying to protect investors against irrational actions of governments.

Charles P. Kindleberger in his book "Anger, panic and crisis: a history of financial crises" shows that even if we would accept the rationality of individual investors, history has repeatedly demonstrated that markets sometimes behave irrationally, the best explanation of "mania" being offered by financial "crowd psychology": although the individual economic actors may be rational, financial speculation is a mass phenomenon, the rational action of several individuals irrational consequences.

Kindleberger considers financial crisis as an inherent feature of international capitalism.

Hyman Minsky argues the theory of "financial instability" as a factor in producing the financial crisis. According to this theory, financial crises are an inevitable feature of the capitalist system and follows a predictable course. The first sign of a future financial crisis is an external shock on the economy. This powerful exogenous factor leads to increased profit opportunities in one of the major sectors of the economy and reduces economic opportunities in other fields. Increase the chances of profit in a particular economic sector attract funding sources, creating an explosion of investment. The investment fever is driven by substantial growth of bank credit and also by attraction private funds and investment firms. The expansion of credit increase the impulse to speculate, manifested by higher assets and property of high demand. In the next stage, some investors notes that the market reached a maximum and seek to transform their overvalued assets in cash or as assets. Subsequently, more and more

investors notes the risks and seek to sell their overvalued, risky assets, leading to a collapse in prices. After the crisis in investment follows a credit crisis caused by the fact that banks are not extending credit. Bankruptcies are triggered in a chain, and the economy may enter recession or even depression. In the final the state of panic calms down, the economy recovers and the market returns to a state of balance, but with a very high price.

The current financial crisis, which started in the USA, erupted in 2007, ten years after the last major financial crisis in Southeast Asia. She represent the end of a decennial cycle (environment) or business.

The effects of the international financial crisis extended to the Romanian economy.

However, in terms of direct impact, the banking system was less affected because it was not exposed to toxic assets, and because National Bank of Romania adopted some prudential and administrative measures over the time.

Indirectly, however, the international financial crisis and its obvious consequence – recession in developed countries – has expanded in the romanian economy. Commercially, we note that exports decreased, and on the financial plan we observe the restriction on foreign funding, who is generating difficulties in the private external debt service. Reduction of external funding was reflected in the national currency's depreciation.

### **Keynesian philosophy and anti-cyclical fiscal policy**

In essence, the objective of anti-cyclical fiscal policy is to stabilize the economy by managing aggregate demand so as stated by John Maynard Keynes, a british economist who lived in early twentieth century. Turmoil in the housing sector, transferred in the financial sector led to a decrease in investments and the anticipation of a low level of demand has led to reduced industrial production. As a result of this situation, consumption fell and unemployment rose, events who exacerbated the fall in aggregate demand. When economic activity falls below its normal, Keynesian theory argues that in the absence of government intervention the downward spiral will increase until it reaches an equilibrium point lower than the level at which previous work. For this reason, some governments, from developed economies and from emerging economies who had entered in the recession or affected by a slowdown in economic growth, considered that the efforts of anti-cyclical monetary policy interventions should be coupled with robust fiscal level. Accordingly, they adopted a series of programs designed to stimulate consumption and investment, either through public spending (financed by increasing budget deficits), or by a temporary reduction in tax burden.

The overall impact of financial crisis on the real economy was strongly felt, and the economy as a whole was affected by a substantial slowdown in growth, which affected people, businesses and jobs.

After bursting US housing bubble, the economic development of the euro area decreased by approximately 8% per year, the largest decrease from 2001 to present. As credit conditions have become more stringent, europeans also became more cautious, reducing consumption and investment; being threatened by unemployment, they preferred to save and protect their income by keeping them out from the financial and banking system. One of the main promoters of economic development, capital investment, was stopped abruptly.

The crisis started in America in 2007 had complex effects on european economies, strongly felt on the capital market and labor market. Financially they were materialized by:

- direct effects on financial institutions: bankruptcies, restructurings, companies and financial institutions, takeovers and mergers, direct financial support to large funds.
- effects on volume and stock quotes: volume of stock transactions decreased, but the biggest impact the crisis had on the volatility (risk) and over the stock yields most closely associated with variable income instruments.
- effects on the market investors, who have left more and more from the capital market by radically changing their investment options, which had direct impact on the cost of capital and financial interest.
- effects on capital market regulations (enhanced control over the remaining areas outside the jurisdiction of central banks or supervisory committees of the capital markets).

On the labor market we are witnessing a global crisis of jobs, a dramatic decrease in wages, according to report published by the International Labour Organisation (ILO) in late January 2010. Among the macroeconomic indicators, unemployment is directly reflected in the daily lives of people affecting their living standards.

Consumer and investor confidence has been affected, which led to the adoption of measures to stimulate domestic demand and stabilize the labor market, respective stopping the increase in the number of people laid off, aiming to support disadvantaged groups.

In support of national economies, many countries have resorted to borrowing on domestic and foreign markets, which boosted the public debt. The debt burden press at the same time on public finances and on the capacity of banks to lend private sector. Although in the present moment the popularity the expansionary fiscal policy among government authorities is hard to contest,

their foundation and their chances of success are extremely questionable. The explosive growth of budget deficit reduction fund due to the cutbacks of tax revenues requires massive funding from private sector. This funding of public deficit was achieved through state loans, internal or external, which would increase the public debt-an increase in future tax burden on taxpayers. Payment of loans in the future will mean a reduction of funds for investment and lower economic growth.

Regarding monetary policy, central banks have sought to protect the payment system and to prevent deflation as a result of the collapse of banks and financial lending institutions. A crisis in the banking system as a result of bankruptcy of major financial institutions would have the effect of loss of depositors' savings, which is why most countries have increased state guarantees on deposits. Excess money is only one monetary policy errors made by central banks in the current crisis.

Avoiding a monetary deflation means in terms of monetary equation  $MV = PQ$ ,  $M$  maintaining the level of money supply  $M$  in terms of a decrease in money velocity,  $V$ . Monetary stabilization is the subject of monetary policy in conditions of crisis, and its exercise must not mean rewarding inefficiency of a financial institution or another. A particular bank may go bankrupt and its assets to be taken up by other shareholders, without monetary circulation to be affected. The stability of the monetary system is not ultimately dependent on the fate of any company/private bank and the competitiveness of financial institutions should not depend on the exercise of discretionary monetary policy. These should be the framework in which the relations of production and exchange from real economy takes place.

The most important effect of fiscal interventions is blocking the waste of capital made in the pre-crisis period. The solution to overcome the crisis is the microeconomic adjustment made by governmental authorities, based on optical aggregated macroeconomic models.

Anti-crisis measures are based on:

- conclusions made by economic science;
- knowledge of economic interdependence;
- prompt and effective information on developments in business.

They concern monetary, budgetary and fiscal policy, based on their differentiated application in the two phases (states) of the economic cycle. Under conditions of extended boom, monetary policy aims braking consumer demand and investment by raising interest rates, restrictions on credit, and by making a more rigorous control of money supply. In the recession phase is intended to stimulate production and investment by reducing interest rates, increasing the amount of credit and money supply growth.

Public expenditure policy seeks to allocate funds from the budget, during the recession in order to boost production, global demand, allowing the recovery of economy. Public expenditures are focused on state purchases, cultural and social investment, investment in public enterprises. The investments made allow to overcome depression and moving to a new upward phase of the economic cycle. In the boom phase the public expenditure is reduced. As for the fiscal policy, the state reduce the tax burden during the recession, thus stimulating consumption and investment, and during the boom phase, increased taxation, in order to build up funds to the national budgets.

### Conclusions

In order to minimize the effects of crisis, states have designed countercyclical programs called “mix policy”, based on promotion of differentiated monetary measures (who concern the dynamics of prices and inflation) and budgetary measures (which aims business volume and the coverage of the budget deficit by issuing credits and not money). Thus, depending on the economic situation through fiscal, monetary and fiscal policy the state stimulate or reduce demand and supply. Anti-cyclical economic policies provide a stability to the business processes and also the reduction of the negative effects of economic cycles, because they are based primarily on influencing aggregate demand and supply.

Global economic growth will not reach the level of recent years too soon, because it is necessary massive rebalancing of the balance of payments. Simultaneously, credit conditions remain restrictive despite improving liquidity in money markets and the massive bond issue. Tightening financial conditions is affecting economic growth and weak economic activity led to an increase in bankruptcies.

Very severe negative consequences crisis has especially for export-oriented economies. Many emerging economies have been unprepared to absorb the structural shock of low demand for export.

Currently the majority of world states are facing a crisis that respects the canons of large-scale rotation.

### References

- Anghel, F. (2010). *Economie mondială*, Editura Universitară, București
- Căprărescu, Gheorghiuța (2006). *Fundamentarea strategiei macroeconomice*, Editura Universitară, București
- Fota, D., Băcescu, M. (2009). *Criza economică din România anului 2009 – Cauze, efecte, soluții*, Editura Universitară, București
- Socol, C., Angelescu, Coralia, Socol, Aura Gabriela (2009). *Politici economice*, Editura Economică, București