# Expert Journal of Economics

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## EDITORS

Alin OPREANA and Simona VINEREAN

# Expert Journal of Economics

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## Aims and Scope

*Expert Journal of Economics* is an open access forum that attracts, selects, and publishes influential theoretical, empirical or policy related papers in the field of economics. This scientific journal aims to make a genuinely valuable contribution to current understanding of economics, the growth of new ideas in this field, and the impact of particular economic activities and policies.

The targeted audience for this scientific journal of economics consists of academics, policy makers, students, regulators, banking supervisors and business professionals from around the world.

Theoretical and empirical papers are accepted for publication on the basis that they have been submitted exclusively to Expert Journal of Economics and that they have not been already published either partially or entirely. Also, accepted manuscripts can present case analyses, industry reports, book reviews, simulations, teaching notes, and research notes that contribute to and enrich economics thinking and practices.

The submitted manuscripts should exhibit relevancy, value, originality, argumentation, reasoning, and analysis. All articles should reflect original contributions and not be under consideration for publication elsewhere. Expert Journal of Economics is an open access, double-blind refereed journal published quarterly by Sprint Investify.

Area of coverage for *Expert Journal of Economics*, although not exhaustive, can include manuscripts in Economic Theory, Applied Economics, Econometrics, Economic Development, Economic History, General Equilibrium Modeling, Economic Systems (developed, developing, emerging, and transition economies), Environmental Economics, Political Economy, Growth, Comparative Economics, Monetary Theory and Policy, Fiscal Theory and Policy, and International Economics.

## Publisher

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# Editor's Introduction of a New Economics Journal: Expert Journal of Economics

## Simona VINEREAN[*]

Sprint Investify

## 1. Introduction

*It is with great pleasure that I introduce the first issue of Expert Journal of Economics!* This journal adopts an open source approach to publication and promotes research as a cooperative endeavor between authors, editors, referees, and readers. *Expert Journal of Economics* will publish papers covering a range of topics, the common theme being the role of economic policy in economic outcomes.

Economists examine modifications occurring in specific countries or certain sectors of specific economies. Some economists ask crucial questions about the nature of economic decisions, while others choose to address and develop proposals to change government policies.

## 2. Objectives

The purpose of the *Expert Journal of Economics* is to publish studies of economic fluctuations and growth and the role of policy in a particular studied context. This main scope also acknowledges that that research in micro- and macroeconomics interacts closely with and borrows from several other fields, and therefore our journal welcomes papers in other fields that make a contribution to economics.

The peer review process is used with high rates in most scientific disciplines, in order to assess the value of new knowledge presented in journal submissions. Reviewers who are well experienced in certain research domain examine the quality of ideas, empirical rigor, and overall contribution conveyed by an economics journal article.

In order to fulfil the main objective of *Expert Journal of Economics*, there are a number of initiatives that require attention and implementation, such as:
-   openness to innovative research from all over the world,
-   openness to different disciplinary approaches (behavioural, economic, statistical, quantitative, etc.)
-   efficient online peer review process,
-   fast and efficient of editorial decisions
-   development of citations and increasing the journal's impact
-   adequate revisions of the submitted articles,
-   fast time to provide an answer to authors,
-   quick dissemination of findings to a wide audience,
-   promotion of accepted articles among various social media outlets,
-   broaden the audience of authors and readership.

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### 3. Content

The editorial policy of *Expert Journal of Economics* is very broad, with very few constraints on the topics of articles. There are certain questions that should be reflected in accepted and published articles:

- What aspects of poverty, inequality and income distribution are more prominent in different economies?
- How can economic and econometric models of labor market matching be implemented in different countries?
- What are the perils of falling inflations for certain economies?
- What economies will grow and which ones will experience another recession?
- How many payroll jobs will be added in certain countries?
- What will happen with house prices?
- What will happen in Europe and what will be the repercussions for other countries?

I believe that these questions will continue to be relevant in the years ahead. Thus, *Expert Journal of Economics* must attract and publish the valuable articles from the entire spectrum of economics. Finally, it must value interdisciplinary work and the use of multiple research methods.

More specifically, we want to encourage submission of six new types of contributions, as follows:

(1) Empirical papers, consisting of quantitative methods, have the potential to serve as evidence of sustaining or refuting certain hypotheses that which should be clearly defined and answerable. Empirical papers should reflect new models proposed to provide solutions to determine important findings for micro- or macroeconomic issues or policies.

(2) Conceptual and theoretical papers should try to define and develop different economic concepts by providing relevant underpinnings in new disseminations.

(3) Economic reports can reflect in depth analyses, data, trends, and/or forecasts of economic indicators from different industries or economies;

(4) Case studies are highly encouraged and should reflect descriptive, exploratory or explanatory analysis of an economy or policy, while emphasizing certain learning objectives with micro or macro consequences;

(5) Teaching notes will be published in relation to case studies or as theoretical developments for economics business lectures, meant to help educators and academics;

(6) Book reviews should reflect analyses based on content of economics books, by providing subjective opinions and recommendations.

Overall, in terms of promoted content of Expert Journal of Economics, manuscripts can examine microeconomics, macroeconomics, monetary economics, labor markets, investment, central banking, commercial banks, exchange rates, open economy macroeconomics, economic integration and other economic-related topics.

### 4. Emerging Topics

*Expert Journal of Economics* does not restrict authors to any specific subject as long as it relates to the field of economics. Nonetheless, there are certain topics of recent and ongoing focus that we recommend as research basis: applied industrial organisation; the economics of innovation; industrial policy and market regulation; behavioural economics and decision making; public policy; public and private sector risk management; financial economics; structural instability and structural breaks in monetary policy; design and econometric analysis of choice experiments; unemployment; inflation; the organization of production; globalization and international economic integration; development and instability in the world economy.

### 5. Call for More Submissions

As a general journal, *Expert Journal of Economics* welcomes submissions of valuable economic articles, whether they are theoretical or empirical, or orientated towards academics and scholars or policymakers. The journal also appreciates creative and provocative research on economic issues or policy, such as manuscripts meant: to synthesize and integrate aspects learned existing economic research; to

provide economic analysis of public policy issues; to suggest directions for future research; and to address issues relating to the economics profession.

### 6. A Final Thought

On behalf of the *Expert Journal of Economics* Editorial Board, I would like to thank you and extend my deep appreciation in advance for your contributions to the development of the Journal and the wider field of economics, through the submission of your work and reviewing process of articles on behalf of the Journal!

EJ

# A New Approach of Investment for the Future Economic Policies

## Alin OPREANA[*]

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*The investment takes the form of sums of money spent for the acquisition of capital goods, changes in business inventories, and the purchases of new residential housing that are not currently consumed, but will be used in the future for the growth of the wealth. The work covered by this study aims to identify the model that presents, in the best possible way, the method of investment's calculation and to determine the factors of influence. In the first part, the investment is analyzed as a linear function dependent on the interest rate; and the second part implies a new model for determining long-term investments.*

***Keywords****: investment, interest rate, taxes, regression equation*

***JEL Classification****: E22*

## 1. Introduction

According to Keynesian theory, the investment depends on what he called "marginal efficiency of capital" - that is, the expected rate of return for the acquisition cost of the capital goods. This is compared with the market interest rate. If the marginal efficiency of the capital is higher than the interest rate, the investment will increase, and if it is lower, the investment will decrease. Keynes (1936) stated that "the investment rate will increase to the point where the marginal efficiency of capital in general is equal to the market interest rate". Thus, given the "propensity to consume" and "incentive to invest" (determined jointly by the marginal efficiency of capital and the market interest rate), the employment rate is uniquely determined.

This paper aims to identify factors that influence investments in a large economy, like the case of the U.S. economy. In macroeconomic models, the equilibrium condition is given by the equality between savings and investment. Also, in these equilibrium models (IS-LM and Mundell-Fleming), an important relationship is that planned investment depends on the interest rate indirectly.

## 2. Literature Review

Keynes (1936, p.199) defined the marginal efficiency of capital as "equal to the discount rate that would determine that the present value of a series of annuities given by the expected benefits brought by the capital asset over its lifetime to be equal to its price offer".

Starting from this point, Keynes (1936, p.199) defined the function of investment demand as a function meant to link the rate of aggregate investment with the marginal efficiency of the capital determined that the level of the aggregate investment rate.

The size of the investment depends on the relationship between the interest rate and the correlation between the marginal efficiency of capital and the various dimensions of current investments , while the marginal efficiency of capital depends on the relationship between the offer price of a capital good and the future benefits it will bring (Keynes, 1936, p.211) If the marginal efficiency of capital is higher than the interest rate, investment will grow, if it is lower, the investment will decrease. Keynes argued that "the investment rate will increase to the point at which the marginal efficiency of capital is approximately equal, in general lines, to interest rate" (Keynes,1936 p. 314). Given the "propensity to consume" and "incentive to invest" (determined jointly by the marginal efficiency of capital and the market interest rate), the employment rate is uniquely determined.

Classical economists assumed that aggregate demand - production cost in monetary units - adjust quickly and flexibly to changes in expectations of sales profitability, keeping the economy at full employment rate. Keynes's denial that this must happen , is the crux of his denial of Say's Law - that supply always creates its own demand. Assuming that an employer's expected sales arise from N workers hiring, employment falls below the cost of employing that number; in Keynes's model, employers reduce their production costs through layoffs of workers. This reduces total demand in the economy. It is not wage cuts, but the decrease in employment rate that removes excess supply of output. This would be equivalent to the statement that the excess of savings over investment is eliminated by the fall in income (Skidelsky, 2010, pp.154-155).

The amount of work that entrepreneurs decide to employ depends on effective demand, i.e. the sum regarding what the company expects to spend on consumption and what the company expects to be devoted to new investments (Keynes, 2009, p.88). From the definitions of income and consumption provided by Keynes (1936, pp.123), it follows that savings are equal to $A_1 - U$, while net savings are expressed as a surplus of income over consumption equal to $A_1 - U - V$.

Starting from the definition of income, the current investment can defined as "current addition to the value of the technical capital resulting from the productive activity of the period under consideration ... this addition is equal to what we have just defined as savings, because it is that part of the income that has not passed into consumption"(Keynes, 1936, pp.123-124).

In other line of ideas, the excess income, expressed as $A - U$, over the part of income already in consumption, with the value of $A - A_1$, namely $A_1 - U$, is the addition to the technical capital as a result of the productive activity in the timeframe and represents the investment of that period.

Regarding the net investment, this equals $A_1 - U - V$, representing the net addition to technical capital after the normal depreciation of its normal value.

The study of the relationship between investment and interest rate has also been achieved in 2010 and the current research subject of this study is a continuation of that research (Opreana, 2010, pp.227-237). Thus, the research from 2010 has been disproved hypothesis that "investments are expressed by a function dependent on interest rates" and proposed a different function to identify factors that influence investments. These limits of that particular research consisted of the invalidation of the hypothses of homoskedasticity, normality and independence of values.

In this framework, the current research aims precisely to eliminate these limitations and to identify new investment functions to highlight the factors influencing investment in the U.S. economy.

## 3. Research Methodology

The next step implies the testing of the research assumptions in relation to this study's objectives to verify the validity of Keynes's model equations. In this research I will use a multiple linear regression model to test and determine the impact that different independent variables have on the dependent variables.

The general form of the multiple linear regression equation is:

$$Y_t = \beta_t^{X_1} X_{i1} + \beta_t^{X_2} X_{i2} + \cdots + \beta_t^{X_n} X_{in} + \beta_0 + \varepsilon$$

For simple linear models, regression coefficients measure the marginal contribution of the independent variable to the dependent variable, holding all the other variables fixed. If there is a constant ($\beta$), it represents the basic level of the prediction when all the other independent variables are zero. The other coefficients are interpreted as the slope of the relationship between the independent variable and the corresponding dependent variable, assuming all other variables do not change (Quantitative Micro Software, 2007, p.12).

Regression estimated by the method of least squares are determined by the following formula (Quantitative Micro Software, 2007, p.11):

$$\beta = (X'X)^{-1} X'y \tag{2.47}$$

For the inference based on the results of the multiple linear regression to be valid, I will use the following set of tests:

(i)     The *F-Test* for testing the validity of the model. This test measures how well the independent variables explain the evolution of the dependent variable. Under the null hypothesis of normally distributed errors, this test has an *F* distribution with *k-1* degrees of freedom for the numerator and *T-k* degrees of freedom for the denominator. If the *p* value is less than the relevant level that is considered for the research, then at least one of the coefficients of the regression is statistically significant. But if the p-value is higher than the relevant level of the research, then all the regression coefficients are considered statistically insignificant (equal to zero) (Quantitative Micro Software, 2007, p.15).

(ii)    The *coefficient of determination $R^2$* and *adjusted coefficient of determination $\bar{R}^2$* are used to determine the intensity link between values and measure the quality of the adjustment

(iii)   *t-statistic* is used for testing the validity of the coefficients - t-statistic, calculated as the ratio between the estimated coefficient and its standard error, is used to test the hypothesis that a coefficient is equal to zero (Quantitative Micro Software, 2007, p.12).

(iv)    *White test* for testing the hypothesis of homoskedasticity of the residual variable. The White test is a statistical test that determines whether the residual variance of a variable in a regression model is constant (homoskedasticity assumption).

(v)     *Jarque-Bera test* for normality testing of the random variable distribution. Jarque-Bera tests whether a distribution is normally distributed. The test measures the difference between the asymmetry coefficient (skewness) and vaulting coefficient (kurtosis) of the analyzed distribution with that of a normal distribution. The test has the following null hypothesis: the series is normally distributed. If the probability associated with the test is higher than the relevancy level chosen, the test indicates the acceptance of the normality assumption and the fact that the series is normally distributed; otherwise, it indicates the rejection of the hypothesis of normality.

(vi)    *Durbin-Watson test* and *Breusch-Godfrey test* for testing the hypothesis of independence of the residual variable values. The Durbin Watson test (DW) is a statistical test that examines the serial correlation of errors. If errors are not correlated, then the value of DW is about 2, in the same way, if the DW is less than 2, there is evidence of a positive correlation series. If there is a negative correlation, statistical test will show a value between 2 and 4 (Quantitative Micro Software, 2007, p.14). The existence of serial correlation, shown by correlogram errors, is confirmed by the Serial Correlation LM test. To obtain certain results, the *F-Statistic*, $R^2$ and their associated probabilities are analyzed. If the probability associated with the two tests is below the level of relevance chosen for the analysis, then there is a serial correlation of the residuals; otherwise there is no serial correlation (Codîrlașiu, 2007, p.47).

This methodology will be applied using Eviews 6 software on empirical data, in order to attain the research objectives. In the process of the research, the methodology will be applied on time series of the U.S. economy, obtained from the Federal Reserve of St. Louis in the timeframe of 1959-2011.

## 4. Analysis and Results

The Identification of the Linear Regression Theoretical Model and the Verification of the Model's Validity

In the following section the investment equation is presented, based on the equation offered by the model:

$$LI = I_0 + i * LR$$

where $I-$ Investment, $I_0 -$ Autonomous Investment, $i -$ Investment Sensitivity to Interest Rate Change, $r -$ Interest Rate, $LI -$ Logarithm of Investment and $LR -$ Logarithm of Interest Rate

After applying the linear regression model of the historical data, the following investment equation is obtained:

$$LI = 7.069075 - 0.366704 * LR$$

*Table 1.* The Investment Regression Equation

Dependent Variable: LI
Method: Least Squares
Date: 10/15/12   Time: 22:16
Sample (adjusted): 1962 2011
Included observations: 50 after adjustments

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| LR | -0.366704 | 0.380933 | -0.962648 | 0.3405 |
| C | 7.069075 | 0.714306 | 9.896421 | 0.0000 |
| R-squared | 0.018940 | Mean dependent var | | 6.395430 |
| Adjusted R-squared | -0.001498 | S.D. dependent var | | 1.012555 |
| S.E. of regression | 1.013313 | Akaike info criterion | | 2.903505 |
| Sum squared resid | 49.28656 | Schwarz criterion | | 2.979986 |
| Log likelihood | -70.58764 | Hannan-Quinn criter. | | 2.932630 |
| F-statistic | 0.926692 | Durbin-Watson stat | | 0.017955 |
| Prob(F-statistic) | 0.340549 | | | |

After analyzing the equation obtained, the following g conclusions arise:

(i)     Prob (F-statistic) = 0.3405 > 0.05, indicates that the model is not statistically significant.

(ii)     R-squared = 0.0189 and Adjusted R-squared = -0.0015 show a reduced intensity of the connection between interest rate (LR) and investment (LI).

(iii)     t-Statistic for the LR parameter has Prob = 0.3405>0.05, illustrating the fact that the parameter is not significant.

*Table 2.* White test for homoskedasticiy

Heteroskedasticity Test: White

| | | | |
|---|---|---|---|
| F-statistic | 11.60237 | Prob. F(2,47) | 0.0001 |
| Obs*R-squared | 16.52648 | Prob. Chi-Square(2) | 0.0003 |
| Scaled explained SS | 8.816072 | Prob. Chi-Square(2) | 0.0122 |

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 12/29/13   Time: 19:42
Sample: 1962 2011
Included observations: 50

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 1.658087 | 2.501907 | 0.662729 | 0.5107 |
| LR | 0.952836 | 2.758052 | 0.345474 | 0.7313 |
| LR^2 | -0.689024 | 0.741635 | -0.929062 | 0.3576 |
| R-squared | 0.330530 | Mean dependent var | | 0.985731 |
| Adjusted R-squared | 0.302041 | S.D. dependent var | | 1.071363 |
| S.E. of regression | 0.895059 | Akaike info criterion | | 2.674269 |
| Sum squared resid | 37.65310 | Schwarz criterion | | 2.788991 |
| Log likelihood | -63.85673 | Hannan-Quinn criter. | | 2.717956 |
| F-statistic | 11.60237 | Durbin-Watson stat | | 0.149490 |
| Prob(F-statistic) | 0.000080 | | | |

(iv)     Prob. F(2,47) = 0.001 < 0.05 indicates that after applying the White test, the hypothesis of homoskedasticity is verified in the regression function.



Series: Residuals
Sample 1962 2011
Observations 50

| | |
|---|---|
| Mean | 1.25e-15 |
| Median | 0.387728 |
| Maximum | 1.258564 |
| Minimum | -2.085721 |
| Std. Dev. | 1.002920 |
| Skewness | -0.709106 |
| Kurtosis | 2.157664 |
| | |
| Jarque-Bera | 5.668453 |
| Probability | 0.058764 |
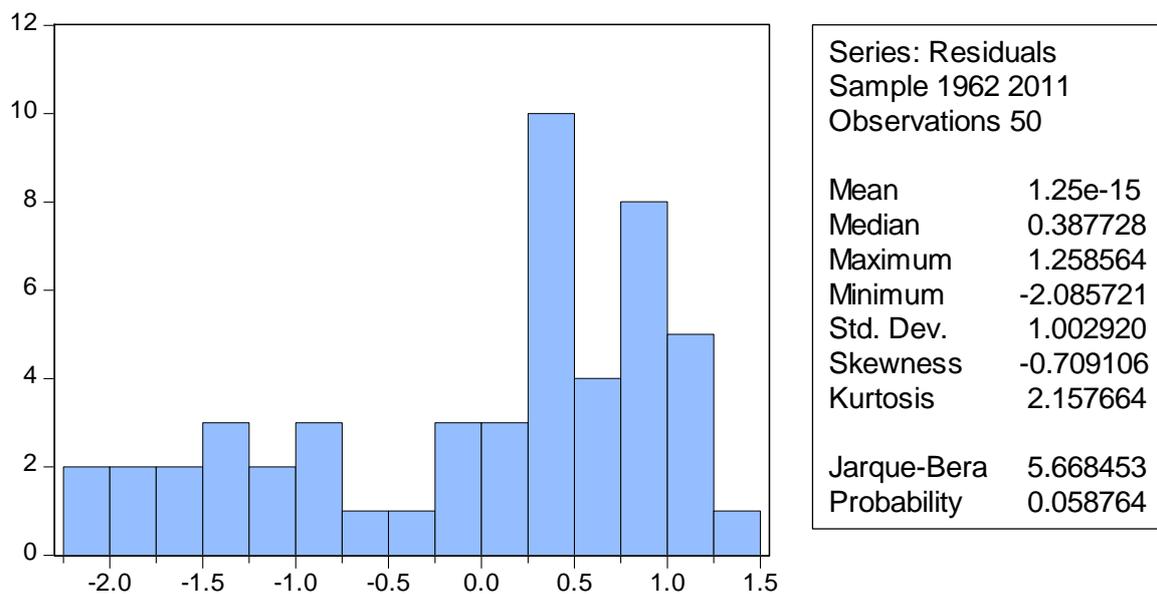
**Figure 1.** *Jarque Berra test for normality testing*

(v)     Prob(Jarque-Berra Test) = 0.0588 > 0.05 indicates that the assumption of normality, checked through the the Jarque-Berra test, is accepted.

**Table 3.** *Breusch-Godfrey Serial Correlation LM Test*

| | | | |
|---|---|---|---|
| F-statistic | 212.7050 | Prob. F(2,46) | 0.0000 |
| Obs*R-squared | 45.12102 | Prob. Chi-Square(2) | 0.0000 |

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 12/29/13   Time: 19:43
Sample: 1962 2011
Included observations: 50
Presample missing value lagged residuals set to zero.

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| LR | 0.213376 | 0.127841 | 1.669080 | 0.1019 |
| C | -0.375669 | 0.238433 | -1.575572 | 0.1220 |
| RESID(-1) | 0.941917 | 0.148031 | 6.362954 | 0.0000 |
| RESID(-2) | 0.019544 | 0.150952 | 0.129469 | 0.8976 |

| | | | |
|---|---|---|---|
| R-squared | 0.902420 | Mean dependent var | 1.25E-15 |
| Adjusted R-squared | 0.896056 | S.D. dependent var | 1.002920 |
| S.E. of regression | 0.323344 | Akaike info criterion | 0.656419 |
| Sum squared resid | 4.809363 | Schwarz criterion | 0.809381 |
| Log likelihood | -12.41047 | Hannan-Quinn criter. | 0.714667 |
| F-statistic | 141.8033 | Durbin-Watson stat | 1.070316 |
| Prob(F-statistic) | 0.000000 | | |

(vi)    The results of the Durbin-Watson test (0.14) and Prob. F (Breusch-Godfrey) = 0.00 <0.05 show that the assumption of independence of the residual variable values is rejected, meaning that the errors of the models have positive autocorrelation, and are not independent.

Thus, after verifying the validity of the model, it can be stated that it is not valid, and that the investment is not a linear function of the interest rate.

Next, in this paper, the investments' function will be achieved, and also factors determining the investments will be identified.

Following the re-estimation model, it results in a new form of the equation according to the type of economy and the influence of external factors. The results yielded the following equation:

$$LI = LI(-1) + \Delta(LD) + LT(-1) + I_0$$

where $LI$ – Logarithm of Investment, $LI(-1)$ – Logarithm of investment in the previous period, $LD$ – Logarithm of Discount Rate, $LT(-1)$ – Logarithm of taxes of the previous period, $I_0$ – Autonomous Investment

***Table 4.** The New Investment Regression Equation*

Dependent Variable: LI
Method: Least Squares
Date: 10/26/12   Time: 21:46
Sample (adjusted): 1960 2011
Included observations: 52 after adjustments

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| LI(-1) | 0.693979 | 0.115135 | 6.027511 | 0.0000 |
| Δ(LD) | 0.150015 | 0.021536 | 6.965871 | 0.0000 |
| LT(-1) | 0.287056 | 0.110573 | 2.596072 | 0.0125 |
| C | 0.330209 | 0.099269 | 3.326397 | 0.0017 |

| | | | |
|---|---|---|---|
| R-squared | 0.996112 | Mean dependent var | 6.317287 |
| Adjusted R-squared | 0.995869 | S.D. dependent var | 1.068041 |
| S.E. of regression | 0.068645 | Akaike info criterion | -2.445939 |
| Sum squared resid | 0.226181 | Schwarz criterion | -2.295843 |
| Log likelihood | 67.59441 | Hannan-Quinn criter. | -2.388396 |
| F-statistic | 4099.371 | Durbin-Watson stat | 1.639700 |
| Prob(F-statistic) | 0.000000 | | |

**The Verification of the Proposed Model's Validity**

After testing the validity, through the F test, the following two conclusions arise:
(i)     Prob (F-statistic) = 0.0000 < 0.05, indicates that the model is statistically significant (valid).
(ii)    Giving the R-squared of 0.6413 and the Adjusted R-squared of 0.6384, leads to the conclusion that there is a strong intensity of the relationship between the endogenous variables and the exogenous variable.
(iii)   t-Statistic for the parameters of the analysis show that these are statistically significant.

***Table 5.** White test for homoskedasticiy*

Heteroskedasticity Test: White

| | | | |
|---|---|---|---|
| F-statistic | 1.739522 | Prob. F(9,42) | 0.1100 |
| Obs*R-squared | 14.11996 | Prob. Chi-Square(9) | 0.1181 |
| Scaled explained SS | 12.56367 | Prob. Chi-Square(9) | 0.1834 |

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 12/29/13   Time: 19:37
Sample: 1960 2011
Included observations: 52

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | -0.088833 | 0.083703 | -1.061294 | 0.2946 |
| LI(-1) | 0.138502 | 0.189585 | 0.730555 | 0.4691 |
| LI(-1)^2 | -0.137750 | 0.119273 | -1.154918 | 0.2547 |
| LI(-1)*(D(LD)) | 0.039933 | 0.033204 | 1.202678 | 0.2358 |
| LI(-1)*LT(-1) | 0.274421 | 0.228206 | 1.202516 | 0.2359 |
| D(LD) | -0.031842 | 0.026327 | -1.209476 | 0.2332 |
| (D(LD))^2 | -0.002228 | 0.002250 | -0.990497 | 0.3276 |
| (D(LD))*LT(-1) | -0.038411 | 0.032379 | -1.186286 | 0.2422 |
| LT(-1) | -0.113906 | 0.179483 | -0.634635 | 0.5291 |
| LT(-1)^2 | -0.138967 | 0.109365 | -1.270674 | 0.2108 |

| | | | | |
|---|---|---|---|---|
| R-squared | 0.271538 | Mean dependent var | | 0.004350 |
| Adjusted R-squared | 0.115439 | S.D. dependent var | | 0.006347 |
| S.E. of regression | 0.005970 | Akaike info criterion | | -7.233199 |
| Sum squared resid | 0.001497 | Schwarz criterion | | -6.857960 |
| Log likelihood | 198.0632 | Hannan-Quinn criter. | | -7.089341 |
| F-statistic | 1.739522 | Durbin-Watson stat | | 2.130446 |
| Prob(F-statistic) | 0.109964 | | | |
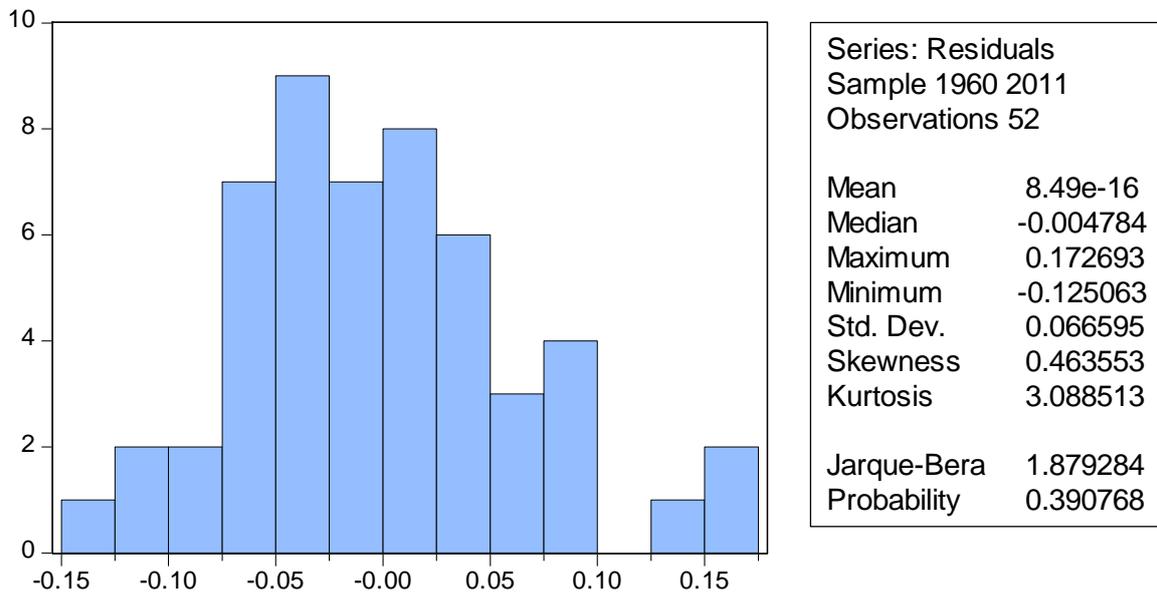


*Figure 2. Jarque Berra test for normality testing*

(iv)    Prob(Jarque-Berra Test) = 0.3908 > 0.05 indicates that the assumption of normality, verified through the Jarque-Berra test, is accepted.

*Table 6. Breusch-Godfrey Serial Correlation LM Test*

| | | | |
|---|---|---|---|
| F-statistic | 1.736657 | Prob. F(2,46) | 0.1875 |
| Obs*R-squared | 3.650702 | Prob. Chi-Square(2) | 0.1612 |

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 12/29/13   Time: 19:41
Sample: 1960 2011
Included observations: 52
Presample missing value lagged residuals set to zero.

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| LI(-1) | -0.030592 | 0.148090 | -0.206579 | 0.8373 |
| D(LD) | 0.000995 | 0.021832 | 0.045574 | 0.9638 |
| LT(-1) | 0.029510 | 0.141223 | 0.208963 | 0.8354 |
| C | 0.021349 | 0.124748 | 0.171137 | 0.8649 |
| RESID(-1) | 0.219687 | 0.182384 | 1.204533 | 0.2345 |
| RESID(-2) | -0.199533 | 0.166376 | -1.199291 | 0.2366 |

| | | | | |
|---|---|---|---|---|
| R-squared | 0.070206 | Mean dependent var | | 8.49E-16 |
| Adjusted R-squared | -0.030859 | S.D. dependent var | | 0.066595 |
| S.E. of regression | 0.067615 | Akaike info criterion | | -2.441808 |
| Sum squared resid | 0.210302 | Schwarz criterion | | -2.216664 |
| Log likelihood | 69.48701 | Hannan-Quinn criter. | | -2.355493 |
| F-statistic | 0.694663 | Durbin-Watson stat | | 2.019578 |
| Prob(F-statistic) | 0.630114 | | | |

(iv)     The results of the Durbin-Watson test (1.64) and Prob. F (Breusch-Godfrey) = 0.1875> 0.05 show that the assumption of independence of the residual variable values are accepted, meaning that the errors of the models are not positively auto-correlated, as the patterns are independent.

By reformulating the equation, we get the following situation:
$$LI = 0.6940 * LI_{n-1} + 0.15 * LD - 0.15 * LD_{n-1} + 0.2871 * LT_{n-1} + I_0$$

An important aspect in the analysis process is to analyze the residual variable, i.e. the differences between the values obtained by applying the model and the observed values are shown in Figure 3.
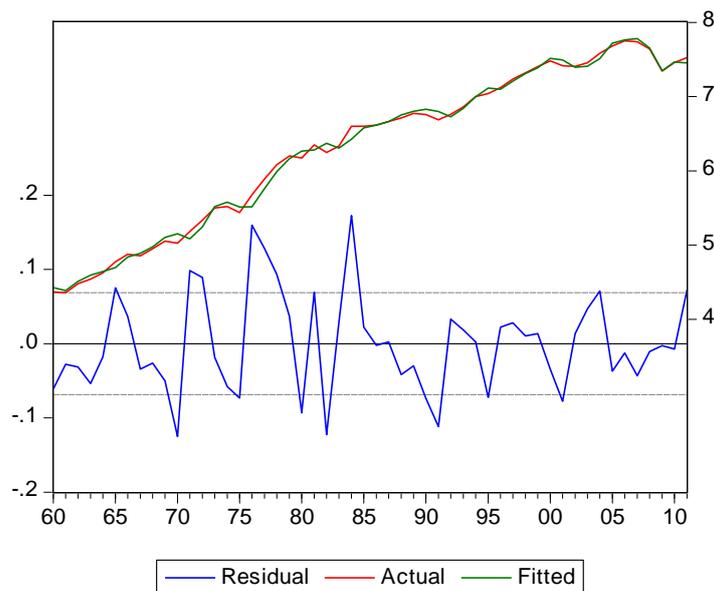


***Figure 3.** Residual variables in the investment functions*

### 5. Conclusion

The short-term model proposed by Mundell and Fleming, in terms of investment as a linear function dependent on the interest rate, is not a valid model in the long term. Long-term investments are expressed with the following equation:

$$LI = 0.6940 * LI_{n-1} + 0.15 * LD - 0.15 * LD_{n-1} + 0.2871 * LT_{n-1} + I_0$$

Thus, we see that the economic developments of the past 50 years have led to major changes in terms of the structure and influencing factors underlying investments. Regarding the U.S. economy, investments are positively influenced by the volume of investments in the previous period, the interest rate (discount rate) of the monetary policy of the current timeframe, and the amount of taxes in the current period, and are negatively influenced by the interest rate of the monetary policy of the previous year.

This change of the investment structure also determined a change in terms of the equilibrium models that rely on the classical investment function. Thus, this new approach to investments directly influences the IS-LM model, and the Mundell-Fleming model.

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# Analysis of European Union Economy in Terms of GDP Components

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*The impact of the crises on national economies represented a subject of analysis and interest for a wide variety of research studies. Thus, starting from the GDP composition, the present research exhibits an analysis of the impact of European economies, at an EU level, of the events that followed the crisis of 2007 – 2008. Firstly, the research highlighted the existence of two groups of countries in 2012 in European Union, namely segments that were compiled in relation to the structure of the GDP's components. In the second stage of the research, a factor analysis was performed on the resulted segments, that showed that the economies of cluster A are based more on personal consumption compared to the economies of cluster B, and in terms of government consumption, the situation is reversed. Thus, between the two groups of countries, a different approach regarding the role of fiscal policy in the economy can be noted, with a greater emphasis on savings in cluster B. Moreover, besides the two groups of countries resulted, Ireland and Luxembourg stood out because these two countries did not fit in either of the resulted segments and their economies are based, to a large extent, on the positive balance of the external balance.*

## 1. Introduction

Keynes placed the consumption function at the center of his theory regarding the economic fluctuations that plays a major role in the subsequent development of macroeconomic analysis. Mankiw analyzed the consumption function starting with Keynes's main ideas from his timeframe, and then he examined it from the perspective of the obtained results when Keynes's ideas were confronted with empirical data (Mankiw, 2010, p. 496).

The relationship between society income and that which is expected that will be spent for consumption depends on the psychological characteristics of society, characteristics that are named 'propensity to consume'. Thus, consumption depends on aggregated income and consequently on employment level, with the exception of the case when there are changes in relation to propensity to consume (Keynes, 1936, p.88). Also, Keynes (1936, p.62) stated that the expenditure on consumption during any period must mean the value of goods sold to consumers during that period, which throws us back to the question of what is meant by a consumer-purchaser. Expenditure on consumption can be defined as $-A_1$ where A is the total sales made during the period and $A_1$ is the total sales made by one entrepreneur to another.

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Starting from the definition of income, we can define current investment as "the current addition to the value of the capital equipment which has resulted from the productive activity of the period… this addition is equal to what we have just defined as saving, for it is that part of the income of the period which has not passed into consumption (Keynes, 1936, p.63).

Macroeconomic equilibrium occurs when aggregate demand of goods and services is equal to aggregate supply of goods and services, which leads to the equation of macroeconomic equilibrium:

$$Y = C + G + I + En$$

where Y represents national income, C - Household and NPISH final consumption expenditure; G - Final consumption expenditure of general government; I - Gross capital formation; En - External balance of goods and services.

This equation is valid for the situation of an open economy which has economic relations with the rest of the world. Moreover, a simplified form of the equation is used for the analysis of macroeconomic equilibrium in a closed economy. In this case, the following expression arises:

$$Y = C + G + I$$

Macroeconomic equilibrium can be rewritten starting from the equality that has to exist between outputs and inputs of money:

$$C + S + T = C + I + G + En$$

Where T represents taxes.

The above relationship becomes:

$$(S - I) + (T - G) = En$$

Where (S − I) represents the net saving from the private sector, (T − G) represents government budget surplus, En represents trade balance surplus.

## 2. Research Methodology

In this section, the current situation in the EU is analyzed based on empirical data, in terms of GDP components: C - Household and NPISH final consumption expenditure; G - Final consumption expenditure of general government; I - Gross capital formation; En - External balance of goods and services.

In this analysis, we will consider as exogenous variables the following four components that characterize the economic situation in the European Union household and NPISH final consumption expenditure (C), final consumption expenditure of general government (G), gross capital formation (I) and external balance of goods and services (En). All four variables are expressed as a percentage of GDP and the data were provided by Eurostat.

The current analysis of this study includes the following two steps:

1. Segmentation of EU countries in groups of countries, according to C, G, I and En.
2. Factor analysis of the segment results.

## 3. Analysis and Results

### 3.1. Segmentation of the European Union

In this first stage of the analysis, several segments were attained, which include groups of countries characterized by similar results of the four variables taken into account (C, G, I and En). To achieve this research objective, we use the Two-Step Cluster method and we obtained the following results regarding the relevancy of the clusters formed:
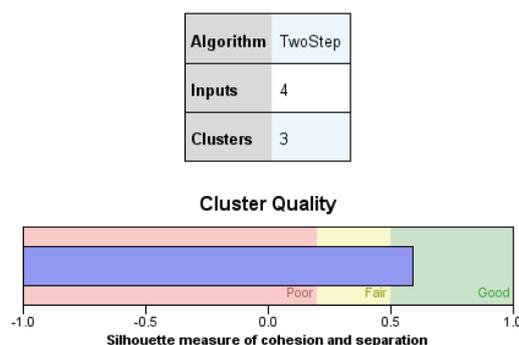


**Figure 1.** *Segmentation Model Summary*

From the figure above (Figure 1), it can be observed that the three clusters resulted, with their forming variables, and the segmentation has a high relevance in terms of the quality of clusters obtained.

Further, the relative and absolute proportions of clusters and the countries that form each segment are presented.



| Cluster | 1 | 2 | 3 |
|---|---|---|---|
| **Label** | A | B | C |
| **Description** | Austria; Bulgaria; Cyprus; Czech Republic; Estonia; Germany; Greece; Hungary; Italy; Latvia; Lithuania; Malta; Poland; Portugal; Romania; Slovakia; Slovenia; Spain, UK | Belgium; Denmark; Finland; France; Netherlands; Sweden | Ireland; Luxembourg |
| **Size** | 71.4% (20) | 21.4% (6) | 7.1% (2) |
| **Inputs** | g 18.88 | g 26.45 | g 17.75 |
| | en 0.95 | en 2.88 | en 26.70 |
| | c 60.55 | c 51.68 | c 39.95 |
| | i 19.45 | i 19.07 | i 16.10 |

*Figure 2. Clusters of EU Countries*

Thus, the analysis displays three segments with following composition:

*Table 1. Clusters of EU Countries*

15

| Cluster | Features | Countries |
|---|---|---|
| A | **60.55%** Household and NPISH final consumption expenditure<br>**18.88%** Final consumption expenditure of general government<br>**19.45%** Gross capital formation<br>**0.95%** External balance of goods and services | Austria, Bulgaria<br>Cyprus, Czech Republic<br>Estonia, Germany<br>Greece, Hungary<br>Italy, Latvia<br>Lithuania, Malta<br>Poland, Portugal<br>Romania, Slovakia<br>Slovenia, Spain<br>United Kingdom |
| B | **51.68%** Household and NPISH final consumption expenditure<br>**26.45%** Final consumption expenditure of general government<br>**19.07%** Gross capital formation<br>**2.88%** External balance of goods and services | Belgium<br>Denmark<br>Finland<br>France<br>Netherlands<br>Sweden |
| C | **39.95%** Household and NPISH final consumption expenditure<br>**17.75%** Final consumption expenditure of general government<br>**16.10%** Gross capital formation<br>**26.70%** External balance of goods and services | Ireland<br>Luxembourg |

Next, Table 2 presents a descriptive analysis of the 3 clusters, as an intermediate stage of transition to the second stage of analysis.

*Table 2. Descriptive Statistics*

| Descriptive statistics | | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|---|
| A | C | 20 | 50.6 | 73.7 | 60.550 | 5.5687 |
| | G | 20 | 15.5 | 21.8 | 18.885 | 1.8196 |
| | I | 20 | 12.8 | 28.2 | 19.450 | 4.4687 |
| | En | 20 | -5.2 | 7.4 | .950 | 3.9501 |
| | Valid N | 20 | | | | |
| B | C | 6 | 45.6 | 57.7 | 51.683 | 4.7831 |
| | G | 6 | 24.7 | 28.5 | 26.450 | 1.7661 |
| | I | 6 | 17.4 | 21.0 | 19.067 | 1.4194 |
| | En | 6 | -2.3 | 8.4 | 2.883 | 4.1825 |
| | Valid N | 6 | | | | |
| C | C | 2 | 32.1 | 47.8 | 39.950 | 11.1016 |
| | G | 2 | 17.5 | 18.0 | 17.750 | .3536 |
| | I | 2 | 10.9 | 21.3 | 16.100 | 7.3539 |
| | En | 2 | 24.2 | 29.2 | 26.700 | 3.5355 |
| | Valid N | 2 | | | | |

### 3.2. Factor Analysis of the Resulted Segments

Further, the study aims to achieve factorial analysis using the Principal Component Analysis as the extraction method and Varimax with Kaizer normalization as the rotation method, for the 2 of the 3 resulted segments. Thus, cluster C is excluded from the analysis because it includes only two countries characterized by contextual circumstances in respect of the indicators of the analysis, and cannot be integrated into a broader analysis of the situation in the EU.

### Factor Analysis of Cluster A

Regarding the results obtained from factor analysis for cluster A, they are represented in the following tables (Tables 3 and 4):

***Table 3.*** *Total Variance Explained for Cluster A*

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 2.123 | 53.078 | 53.078 | 2.123 | 53.078 | 53.078 | 2.080 | 52.010 | 52.010 |
| 2 | 1.552 | 38.793 | 91.871 | 1.552 | 38.793 | 91.871 | 1.594 | 39.860 | 91.871 |
| 3 | .319 | 7.983 | 99.854 | | | | | | |
| 4 | .006 | .146 | 100.000 | | | | | | |

***Table 4.*** *Rotated Component Matrix for Cluster A*

| | Component | |
|---|---|---|
| | 1 | 2 |
| C | -0.902 | 0.427 |
| G | 0.654 | 0.637 |
| I | 0.073 | -0.981 |
| En | 0.914 | 0.209 |

It is observed that cluster A is influenced by two main factors: consumption and investment. Thus, consumption (expressed in C, G and En) explains 52.01% of the cases, and investments explain 32.86% of the cases.

**Factor Analysis of Cluster B**

Regarding the results obtained from factor analysis for cluster B, they are represented in the following tables (Tables 5 and 6):

***Table 5.*** *Total Variance Explained for Cluster B*

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 3.624 | 90.602 | 90.602 | 3.624 | 90.602 | 90.602 | 2.183 | 54.579 | 54.579 |
| 2 | .359 | 8.971 | 99.573 | .359 | 8.971 | 99.573 | 1.800 | 44.994 | 99.573 |
| 3 | .016 | .405 | 99.978 | | | | | | |
| 4 | .001 | .022 | 100.000 | | | | | | |

***Table 6.*** *Rotated Component Matrix for Cluster B*

| | Component | |
|---|---|---|
| | 1 | 2 |
| C | -0.914 | 0.406 |
| G | 0.645 | -0.757 |
| I | -0.384 | 0.922 |
| En | 0.886 | -0.460 |

It is observed that cluster B is influenced by two main factors: consumption and investment. Thus, final consumption expenditure (C) and external balance (En) explain 54.579% of the analysis' situations, and investment (I) and government consumption (G) explain 44.994% of the situations.

## 4. Conclusion

In this conducted study, we main analysis methods were used: Two-Step Cluster in the first stage (for an EU segmentation) and Principal Component Analysis as the extraction method and Varimax with Kaizer normalization as the rotation method, in the second stage of the analysis (for a factor analysis of the segments resulted in the first stage). Thus, through the process of segmentation via Two-Step Cluster, the following the situation at EU level was identified:

***Table 1.*** *Clusters of EU Countries*

| Cluster | Countries | C | G | I | En |
|---|---|---|---|---|---|
| A | Austria | 55.1 | 19.0 | 22.7 | 3.2 |
| | Bulgaria | 64.3 | 15.5 | 23.8 | -3.7 |
| | Croatia | 60.2 | 19.8 | 19.4 | 0.7 |
| | Cyprus | 67.6 | 19.2 | 13.1 | -2.6 |
| | Czech Republic | 50.6 | 20.5 | 23.3 | 5.6 |
| | Estonia | 51.2 | 19.2 | 28.2 | 0.3 |
| | Germany | 57.5 | 19.3 | 17.3 | 5.9 |
| | Greece | 73.7 | 17.8 | 13.6 | -5.0 |
| | Hungary | 54.8 | 20.4 | 17.5 | 7.4 |
| | Italy | 60.9 | 20.1 | 17.9 | 1.1 |
| | Latvia | 62.4 | 16.0 | 25.5 | -3.9 |
| | Lithuania | 63.3 | 17.6 | 18.3 | 0.8 |
| | Malta | 60.0 | 21.2 | 12.8 | 6.1 |
| | Poland | 61.5 | 17.8 | 20.4 | 0.3 |
| | Portugal | 65.7 | 18.2 | 16.7 | -0.6 |
| | Romania | 62.4 | 15.7 | 27.0 | -5.2 |
| | Slovakia | 57.7 | 17.6 | 19.4 | 5.2 |
| | Slovenia | 56.9 | 20.8 | 17.5 | 4.8 |
| | Spain | 59.3 | 20.2 | 19.8 | 0.8 |
| | United Kingdom | 65.9 | 21.8 | 14.8 | -2.2 |
| | **Mean** | **60.55** | **18.88** | **19.45** | **0.95** |
| B | Belgium | 52.9 | 25.0 | 21.0 | 1.1 |
| | Denmark | 49.1 | 28.5 | 17.4 | 5.1 |
| | Finland | 56.4 | 25.1 | 19.8 | -0.8 |
| | France | 57.7 | 24.7 | 19.8 | -2.3 |
| | Netherlands | 45.6 | 28.5 | 17.5 | 8.4 |
| | Sweden | 48.4 | 26.9 | 18.9 | 5.8 |
| | **Mean** | **51.68** | **26.45** | **19.07** | **2.88** |
| C | Ireland | 47.8 | 18.0 | 10.9 | 24.2 |
| | Luxembourg | 32.1 | 17.5 | 21.3 | 29.2 |
| | **Mean** | **39.95** | **17.75** | **16.10** | **26.70** |

From the results of the analysis, it is observed that the economies of cluster A are based more on personal consumption (60.55% of GDP) compared to the economies of cluster B (51.68% of GDP), and in terms of government consumption, the situation is reversed (26.45% of GDP for cluster B compared to 18.88% for cluster A). Thus, between the two groups of countries, a different approach regarding the role of fiscal policy in the economy can be noted, with a greater emphasis on savings in cluster B. Regarding Ireland and Luxembourg, it is apparent that the savings of these countries are based, to a very large extent, on the positive balance of the external balance.

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**EJ**

# The International Monetary System in the Context of the Actual Financial Crisis. Change Proposals

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*The International Monetary System (I.M.S.) has a crucial role in economy, representing the frame for a sustainable development of the economic relationships between states, while contributing at the progress of the world's economies. Nowadays, this system confronts large difficulties, as a consequence of the lack of financial disciplinary instruments, meant at regulation and coordination. The actual economic-financial crisis proved the limits of the present I.M.S., reason why it is now under "reconstruction". In this direction, there is a series of reforms that can be implemented, so that the new architecture of the system is much more solid.*

***Keywords***: *International Monetary System, Bretton Woods, Reforms, Architecture, Special Drawing Rights (S.D.R.), International Monetary Fund (I.M.F.)*

*JEL Classification: E42*

## 1. Introduction

The International Monetary System (I.M.S.) can be defined as the assembly of principles, rules and regulations set at international level, based on the agreements between states. It is meant at developing the payment transactions and the clearance of liabilities existing between countries, determined by international trade, by capital movements and by economic growth. (Petria, 2003)

Another approach towards the I.M.S. is a dualistic one. Consequently, it can be seen either as a "set of conventions, rules and tools, or as an economic, institutional and political environment, which determines the delivery of two fundamental global public goods: an international currency and external stability." (Dorrucci & McKay, 2011)

The first perspective includes rules and regulations in regards to the supply of international liquidity, to the adjustments of external imbalances, to exchange rates and capital flow regimes, to arrangements developed for global and regional surveillance, as well as to preventing crises. Also, the tools needed to sustain that effort are included.

The second perspective refers to free trade, to the authority powerful countries have in the system, to the interdependency of states with different degrees of economic development, as well as to cooperation in the economic and political environment.

Global public goods firstly refer to an international currency that allows public and private sectors from different countries engage in economic activities, by using it as a means of payment or as a means of preserving value. Secondly, they refer to external stability - a cross countries sustainable financial link,

which does not lead to imbalances, as abnormal fluctuations of exchange rates, unreasonable price growth, unemployment or decreases in Gross Domestic Product. (G.D.P.).

Regardless of the definitions that can be attributed to the I.M.S., keywords as principles, rules, regulations, cooperation and development are prerequisites for understanding its role and importance.

The present paper aims at analyzing the actual role of the I.M.S. and at offering solutions for a new system's architecture. In the context of the actual financial crisis, the system proved its limits, reason why new directions are being considered.

As research methodology, I first executed an exploratory research "undertaken to gain background information about the nature of the research problem. " (Burns & Bush, 2008) and the method used was the secondary data analysis, the process of "searching for and interpreting existing information relevant to the research objectives, data that have been collected for some other purpose" (Burns & Bush, 2008). After the literature review, I used the historical comparison and the observation, in order to draw conclusions and come up with ideas for change.

The paper is structured in three large parts. The first one looks at the I.M.S. from a historical perspective, in order to understand the context of its beginnings and its evolution over time. Then, alongside the actual I.M.S., the manner it confronted crisis's difficulties is also analyzed. The last section includes proposals for the system's improvement.

The limits of the paper consist in the difficulty of assessing the degree to which the changes proposed can, in their totally, be implemented into practice. They are rather directions to follow, as they cannot be tested before hand to understand their impact. The proposed measures have been analyzed in terms of advantages, disadvantages, reliability and applicability.

## 2. The beginnings of the International Monetary System

The end of the Second World War created the premises for the development of the I.M.S. Why that? In a context dominated by disorder in all fields, including the monetary one, states saw cooperation as a means for rebuilding their economies, for assuring international monetary stability, monetary cooperation and regulation of international relationships. The common goal was a balanced development of international trade, as a sine qua non condition for the economic progress of the world's economies.

Therefore, between 1 and 22 July 1944, at Bretton Woods, New Hampshire U.S.A., 45 states, among which U.S.A., United Kingdom, France, Soviet Union, China and Australia put the premises of the first International Monetary System.

Negotiations were based on two projects, as it can be seen from the below figure:



| **American Project** — elaborated by Harry Dexter White | **British Project** — elaborated by John Maynard Keynes |
|---|---|
| • free international trade;<br>• free capital movements;<br>• liabilities' clearance with national currencies;<br>• the development of a mutual fund (International Stabilization Fund), with resources from the member states' subscriptions, in order to assure the surveillance and the fluidity of the clearances between countries;<br>• the standard currency at the basis of I.M.S. was the equivalent in gold of $10 ;<br>• U.S.A. was seen as the largest economic and political power. | • rebuilding of economies;<br>• promoting economies' development;<br>• full employment;<br>• the development of an I.M.S. through the emission of an international currency, bancor, as an account currency;<br>• the development of an international central bank (International Clearing Union) in charge of currency emission, with resources from the gold subscribed by member states; the bank had to assure the clearance of payments and liabilities, through a system in 2 levels: at first level - The International Clearing Union and at the second level - members states' central banks;<br>• stability of the balance of payments, through solidarity between creditors and debtors;<br>• a gold - foreign exchange currency based system was seen as a limited one (gold was convertible in bancor, but the other way round was not possible. |

*Figure 1*. *Projects debated at Bretton Woods Conference for the establishment of the I.M.S.*

The negotiations' result was a compromise between the two projects, with a higher contribution from the American one. A gold - foreign exchange currency (American dollar) standard was set. Another result of the Bretton Woods Conference was the development of two international institutions with role in the surveillance and control of the international economy: The International Monetary Fund (I.M.F.) and the International Bank for Reconstruction and Development (I.B.R.D.).

For assuring the I.M.S.'s functionality, a set of principles was established (Petria, 2003).

**Universality** – any state obeying to the regulations from the I.M.F.' statute could adhere to this organism and implicitly, to the I.M.F.'s principles;

**The stability of the exchange rate** - it supposed the fixity of the par of exchange and of exchange rates. For this, the national currency of a state member needed to have a parity value established in gold / dollar. Compared to the official parity, the exchange rate of national currencies could range in the interval ±1%, member states being obliged to interfere on the market to maintain the exchange rate in those margins;

- Par value represents the amount in gold which supports the national currency. Par of exchange is the ratio between the par values of two currencies, depending on their gold content. The real ratio which defines the connection to the market is the exchange rate. It is the effective ratio for exchanging one currency for another, at a given point in time. The exchange rate is different from the par value, taking into consideration the supply and demand for the foreign currency.

**The reciprocal convertibility of currencies** – it supposed that the dollar, as the system's standard, was the only one convertible into gold, and as a transmission currency, it assured the convertibility of other currencies into gold;

**The development of a reserve volume according to the balance needs of the balance of payments** – it referred to the fact that monetary authorities of the I.M.F.' member states were obliged to maintain such reserves, initially form gold and foreign exchange currencies, and afterwards, from Special Drawing Rights (S.D.R.);

**The stability of the balance of payments** – member states were obliged to maintain this balance. For this, in accordance with the I.M.F., the devaluation / revalorization of national currencies were used. The only exception was the U.S.A., which could print its own currency to cover the deficit of its balance of payments. This could happen because of the privilege role the dollar had in the system, the so-called "exorbitant privilege".

*Figure 2. I.M.S. Principles*

In 70s, the I.M.S. confronted a series of crises generated either by the principles which laid at the basis of the system, or by the fact that the system did not answer anymore to the structural changes of the international economy.

As years passed, the principles presented above were abandoned one by one, and this led to the abandon of the system conceived to function on them. The I.M.S. was functional as long as the initial conditions which led to its development were maintained. These included U.S.A.'s ability of assuring dollar's convertibility into gold and of maintaining dollar's stability.

Because the system was pegged to the dollar and each state wanted to consolidate its international reserves, national central banks accumulated large amounts of dollars, which afterwards, were converted into gold. This led to a dramatic drop in the gold reserves of the U.S.A.

Consequently, beginning with 1971, member states of the I.M.S. renounced at the exchange rate fixity. They renounced at dollar's convertibility into gold, national currencies becoming convertibles one another. The dollar remained the reference currency of the system, but the fluctuation margin growth to ± 2.25%. Since 1973, the exchange rates became floating. Moreover, beginning with 1978, along with the I.M.F.' changes established at Kingston – Jamaica Conference in 1976, the gold lost its monetary functions.

Also, the Special Drawing Right (S.D.R.) was introduced as the new standard of the system. Any country could choose its own monetary / exchange rate regime and the possibility of adopting a total / partial convertibility in relation to other currencies.

### 3. The International Monetary System in the context of the actual financial crisis

After Bretton Woods system collapsed, world's currencies faced large fluctuations of the exchange rates. For a higher economic stability, states associate in unions. This was the context in which the European Monetary System, the actual euro area, appeared. Other associations, more or less successful, included the Economic and Monetary West African Union.

The actual I.M.S. was born in the years that followed Bretton Woods's system, being influenced by the Asian crises (1997-1998), by the crashes from South America (Mexico 1994, Argentina 2000-2001), as well as by the euro currency development (1999).

In the latest years, globalization had a large influence on the I.M.S. evolution and functionality. Money free movement from one country to another often led to speculations on national currencies, and implicitly, on the monetary and national financial systems.

The ultimate goal of the I.M.S. is to maintain a disciplined payments' system between countries. For this to happen, an international currency, the assurance of the adequate supply of liquidity, the definition of an exchange rate regime between national currencies, as well as an adjusting mechanism for preventing imbalances at national level, are needed (Constancio, 2011).

With the help of such a mechanism, external stability is possible. Once obtained this stability, inter states linkages stop leading to imbalances, as the highest risk of globalization is reduced - the possibility of a crisis in the system.

Exchange rates and the capital movement regimes are key elements of an adjusting mechanism, as they set the system's degree of flexibility, and its adaptability to the economic changes that occur. In comparison to Bretton Woods, a system with a fixed exchange rate, the actual I.M.S. benefits from a higher degree of flexibility. This can be seen as an advantage of the actual system, as every country can choose the exchange rate and capital account regimes considered appropriate to its needs. Consequently, nowadays, there are countries with a fixed exchange rate regime, with a fixed but adjustable regime, or with a floating regime, in its two versions: controlled and uncontrolled floating.

However, this autonomy of the system also has disadvantages. It determined large amounts of deficits, and led in the end, at crisis. The lack of a strict surveillance from international organisms and of a series of mechanisms and financial discipline instruments represents the main reason of the systems' crisis.

The actual I.M.S. is somehow similar to the Bretton Woods one. Nowadays, as in the past, the American dollar was the main power in the system, with the privilege of currency issuance. The dollar has today over 60% from the world's reserves.

But, besides the dollar, the euro has started to be more and more important in the international context, being the second most preferred currency for holding reserves. Moreover, the yen and the yuan have also started to gain power.

In what concerns the crisis of the actual I.M.S., in comparison to Bretton Woods, it cannot be exclusively assumed by the U.S.A. Today, the problem was not anymore the U.S.A. incapacity of fulfilling the dollar demand, taking into account its reserve currency role.

The main issue was the lack of some political and financial discipline instruments to maintain the external stability. The differences in the actual international financial world, more and more dynamic and sophisticated and the lack of an institutional context to regulate transactions between countries led to the actual crisis of the system.

Along the years, the drawbacks of the I.M.S. were revealed, the crisis emphasizing the globalization's negative effects and the limits of the system. To reduce risks, international organizations, as are the I.M.F., the World's Bank and G20 need to rethink the I.M.S.'s architecture. A more stable system is needed, a system to reduce states' vulnerability towards financial crisis.

### 4. Proposals for change

Nowadays, the I.M.S. is looking for a new identity, which has to take into account the changes that took place at international level.

Considering "the Impossible Trinity" concept when a monetary system is based, a decision has to be taken in regards to the key directions for the system's development, as it is impossible to have a fixed exchange rate, a free capital movement and an independent monetary policy.

The I.M.S. from Bretton Woods had a fixed exchange rate, an independent monetary policy, but the capital movement was not free. When the Eurozone was developed, the monetary policy was abandoned, the

European Central Bank (E.C.B.) being responsible for elaborating the monetary policy of the countries in the Eurozone. Along with a unique currency, the Eurozone also chose the free capital movement.

Which is the proper architecture of the actual I.M.S., taken into consideration that both Bretton Woods and the Eurozone confronted problems which have proven the system's limits?

Given the actual context of globalization and the free capital movement, I consider that limiting this aspect would be quite difficult. The main consequence would be seen in the countries' degree of development, which is already fragile, as a result of the economic-financial crisis. The goal of an I.M.S. has to be the global development, or limiting capital movements would represent a barrier in this strive.

Moreover, creating a unique monetary policy for all states is hard to imagine. National central banks hold a series of instrument, both direct and indirect, they can use to intervene on the market. Decisions are different, being influenced by the macroeconomic and political context. Therefore, it is hard to believe that world's banks interest, and in the end states' interest, would converge at a given point in time, so that decisions be globally applicable. A unique monetary policy includes a unique currency, which at global level, seems utopic.

The Eurozone example, with a single central bank could represent a good practice. However, there are only 17 states, and in crisis moments, it could be seen that E.C.B., although actively involved in the market, did not manage to solve all difficulties.

Therefore, the only thing that can be renounced at, remains the fixed exchange rate. However, a controlled floating would be desirable, because it allows central banks to intervene, if the case, to adjust the national currency supply / demand.

But, which should be the new I.M.S. main currency? Will it remain the dollar? A multipolar system will be created? Is the basket currency a reliable solution, or rather a unique currency would be more appropriate? But which one? And who shall issue it? Who shall regulate it? Here is a series of questions that rise when discussing the rethinking of the actual I.M.S. In what follows, I tried to present the advantages and disadvantages each of these change proposals would have on the system.

### 4.1. Towards a multipolar International Monetary System

A multipolar I.M.S. refers to the existence of more international currencies, and so, the reduction of the role the American dollar has nowadays in world's economies. Therefore, the "exorbitant privilege" would be redistributed to various countries.

Some trials already exist in the direction of minimizing dollar's importance. China has renounced at using the dollar in the commercial transactions it has with B.R.I.C.S. countries – Brazil, Russia, India and South Africa. It only uses local currencies.

A possible version of multipolarity is a tripartite system, with the dollar, the euro and the yuan as main currencies. For this to happen, however, the yuan should become an international currency, because for the time being, China's currency is not convertible. Also, the capital movement is still restricted and China Central Bank is not totally independent and transparent in the decisions it makes. In the future, these issues can be solved, as the yuan has a target to become an international currency around 2015 (Zavaleanu, 2012).

What does a tripartite system involve? First of all, a higher pressure on the exchange rate, as the euro and yuan demand will increase, against the dollar. If it were to restrain the consequences of this proposal at world's central banks and at the international reserves they hold, ceteris paribus, such a system would determine changes in the ratios the three currencies have out of the international reserves. Consequently, the euro and the yuan will have their demand increased, which on the short time will translate into higher exchange rates for these currencies. So, they will appreciate against the dollar, and this would further lead to a competitive reduction of Eurozone's and China's economies, compared to the U.S.A., which is not desirable.

On the other hand, the value reduction of the dollar would lead to important losses for the countries which hold their reserves in the American currency. Those countries could even intervene on the market, in order to stop / reduce its devaluation. In this idea, it is remarkable what John Connally, the secretary of the American Treasury in 1971, sustained "the dollar may be our currency, but it's your problem" (Tamny, 2009)

The dollar's value reduction can also be seen from a different perspective. Even if countries may lose by holding their international reserves in dollars, they may be in advantage if they have a large external debt denominated in dollars. Its value also goes down.

The version of a tripartite system may represent a reasonable solution for the I.M.S. on the long term. But, as on the long run "we are all dead", as Keynes sustained, and we are seeking solutions to apply for the time being, such a configuration is not possible in the present.

### 4.2. The gold's role in a new International Monetary System

Even if years have passed and crisis occurred, the gold has maintained its stability. As a reserves means, for preserving value in time, it is a reliable solution taken into consideration the actual uncertainty. However, an I.M.S. with the gold as reference point would not be reliable today. I consider that it would highly restrict international trade and transactions across countries, limiting their development potential. It was this restriction, determined by the limited gold reserves, which led to the collapse of the systems based on gold and on gold – foreign currencies. Thus, this alternative is not proper for the actual context.

### 4.3. The virtual currency – a reliable alternative?

Recently, a new currency has emerged. Bitcoin is a digital currency, created in 2009 by Satoshi Nakamoto. It is "the first decentralized peer-to-peer payment network that is powered by its users with no central authority" (bitcoin.org).

Nowadays, cash is less and less used in transactions, as digital payments are more flexible, timely and reliable. Although digital money is not new, the innovation Bitcoin brings lays in the fact that it is an independent currency, not controlled by any central bank.

How can Bitcoin be obtained? Some alternatives are to purchase them at a Bitcoin exchange, to earn them by mining, or to receive them as payment for goods or services. Mining refers to process transactions on the network with the help of specialized software "the Bitcoin protocol is designed in such a way that new bitcoins are created at a fixed rate; this makes Bitcoin mining a very competitive business" (bitcoin.org).

However, Bitcoin lacks confidence, as no authority backs it up, and this influences people's perception. Also, it is highly variable. In January, its value was around $18, it reached a maximum point of $220 in April and it is now at $120 (bitcoinchart.com). This type of digital currency represents a threat for the state, as it cannot tax those who have their money converted in bitcoins and it cannot verify transactions generated.

The lack of an institutional framework only brings a bubble which can lead to other crises. The lack of financial discipline rules and regulations was the main cause of the actual crisis. But, if there were a regulated framework, this currency could represent a solution for a future I.M.S.

A supranational authority would be needed to supervise its issue and evolution. In this way, the currency could be firstly used in international transactions. Its main advantages are that it reduces the currency devaluation risk and it has no transaction costs. But how much confidence to have in Bitcoin?

### 4.4. A supranational currency?

Another change proposal for the present I.M.S. refers to developing a new currency, with supranational authority. This would lead to lower transaction fees, to eliminate the risk of currency devaluation, to resolve the inefficiency of uncoordinated national monetary policies and to reduce market volatility. However, this goal is hard to attain. The disadvantages of a unique currency include: high conversion costs, power centralization and the difficulty of establishing organisms to control the monetary and fiscal issues.

A first decision concerns the type of currency to be implemented: a basket currency or a unique currency?

The basket currency refers to conventional money, being formed from several currencies which hold different percentages in the basket. The percentages depend on various factors, one of them being the export volume of goods and services.

A relevant example of a basket currency is the S.D.R. This is the I.M.F.'s account currency, being formed of the American dollar, Euro, British pound and the Japanese yen. Recent discussions concern the introduction of the Chinese yuan.

The S.D.R. fulfills the following functions: international monetary standard, means of reserves, means of payment and credit instrument (Dardac & Vascu, n.d.). However, the S.D.R. did not manage to become a daily use currency, to be utilized in commercial transactions, as a direct means of payment. Its role is mainly restricted to the relation with the I.M.F.

This "failure" of the S.D.R. may lead to the idea that a basket currency is not a reliable solution for the I.M.S. Despite this, using a basket currency means a greater stability of such a currency towards the

currencies which form the basket. By divergently floating between them, one's depreciation is balanced by the other one's appreciation.

A better promotion of the S.D.R. and its introduction as a currency in circulation, in the daily use, can be a proposal reliable to think at. The process, of course, has to be a gradual one. Firstly, the international transactions can be converted in S.D.R., regardless of the settlement currency. Then, a second stage is the parallel use of S.D.R. and national currencies in circulation. This translates in converting the S.D.R. from an account currency to a payment currency, used effectively in daily transactions.

For this to happen, large S.D.R liquidities are needed. Also, the I.M.F. has to bear the role of a central bank, in order to issue and control the currency, and to regulate the monetary policy. In this direction, its attributions need to be rethought and new adequate instruments have to be developed.

Still for consideration can be the change of the S.D.R. structure, not only by introducing the yuan, as already wanted. A possible restructuring may take into consideration the introduction of G20 countries' currencies. This would give S.D.R. more confidence.

Another alternative for the I.M.S. with a supranational currency regards the development of a new currency. This would attract the development of a supranational bank, with issuance and regulation functions. But where to develop such a bank? From where to obtain the resources for its implementation?

This new currency would independently float against national currencies, being used in parallel with them. It would be used mainly in the international trade, in the capital movement related transactions and as a reserve currency used by national central banks. National currencies would be used locally, for the transactions developed within the country. Such a vision is similar with the bancor, the currency proposed by John Maynard Keynes during the negotiations taken place at Bretton Woods.

For this alternative to be reliable, the authority that has to regulate that currency needs to maintain stable its exchange rate, and at a high level, because fluctuations and depreciations against national currencies lead to the lack of confidence in the currency. Analyzed in terms of reliability, I do not consider this alternative to be the proper one for the present context. Having already a system's currency – the S.D.R.- and the I.M.F. as authority, the right thing to be done is to make efforts to consolidate them both.

The last alternative of the supranational currency is the development of a unique currency, which will gradually eliminate national currencies. The reliability of this unique method depends on countries' desire of renouncing at their national monetary control for a supranational authority. It is one of the alternatives I consider to be utopic, as states' interests are so different, that the power balance represents an obstacle. Moreover, the implementation of a unique currency is difficult because of the differences in countries' competitiveness. It will make countries with a low productivity even more unproductive and the countries with a high productivity, more powerful. This will increase inequity at global level, which will eventually end in generalized crises.

Taken into consideration the arguments presented above, I am of the opinion that the proper change proposal is that an enlarged S.D.R. enters the daily circulation.

### 4.5. Reforming the International Monetary Fund

Once made the choice for the system's currency, what follows next it to decide the authority that will fulfill the central bank function.

The actual I.M.S. has its institutions, the I.M.F. and the group of the World's Bank. I do not consider the development of other institutions necessary. It would be better to reform the actual ones, especially the I.M.F., which has a key role in the system.

If accepted the idea of a S.D.R. formed of G20 countries' currencies, the new enlarged S.D.R. needs support and this has to come from an institution. The decisions within the I.M.F. are made by the countries with the highest subscription rates. However, since 2010, a reforming process has started and it is about to be finalized. In the present, the I.M.F.'s Board is formed of 24 directors. 8 of them represent a singular country (U.S.A., Japan, Germany, France, Great Britain, Russia, China and the United Arab Emirates), the other ones representing more countries. The total number of members in the I.M.F. is 188.

What is wanted is to increase the percentages developing countries, especially the B.R.I.C.S. countries, have within the Fund. Less developed states should maintain their percentages, while extremely developed countries should have their percentages diminished. U.S.A.' position as a main contributor to the Fund, allowed it to block de facto this reform. However, in the end it will have to accept it (Enache, 2013).

The objective of this reform is to obtain a more democratic management, which will enlarge the access to the power. It is a first step which supposes openness from the I.M.F. to the present economic

conditions. I consider the next step to be an enlargement of the role G20 countries have within the I.M.F., which corroborated with an enlarged S.D.R. can represent the pillars of a new system.

Why not take into consideration even the possibility that in the future, less developed countries will have their positions increased within the Fund? In the end, they need the most support. It is known that money comes from the Fund proportionally with the percentages countries hold (the S.D.R. and the American dollars each country has contributed to the I.M.F.)

Also, I consider that a rethinking of the principles, rules and regulations which currently govern the I.M.F. is needed. New financial discipline instruments have to be set.  Among them:

> Limits the I.M.F. can impose to national central banks in terms of accumulating international reserves. Although a limited level is not desirable, too high levels can lead to imbalances. At the end of 2012, China's international reserves were higher than 3.3 billion dollars (data.worldbank.org);

> The equilibrium of the balance of payments and national central banks' preoccupation for this balance under the I.M.F. surveillance;

> Mechanism to prevent crisis, as are a stricter market regulation; not for intervening on the market without reason, as this leads to imbalances, but for having a higher control. This allows better problem identification and a faster action taken. For instance, when the market signals unsustainable growths, and this is an indication that the bubbles can explode any time, measures should be taken to limit transactions on that type of market;

> Maintaining a certain level for Key Performance Indicators (KPIs), as are public debt and budgetary deficit. For the beginning, the thresholds used in the Eurozone can be applied. They set a maximum debt level of 60% of the Gross Domestic Product (GDP) and a maximum level of 3% of GDP for the budgetary deficit, while the structural deficit has to have a level of 0.5%

> The I.M.F. has to assume the role of central bank and this includes a series of responsibilities. As monetary policy instruments, it can learn and implement from the good practices of the world's largest central banks: the European Central Bank and the Federal Reserve System, in order to control S.D.R. liquidity on markets and avoid inflation.

*Figure 3. Financial discipline instruments to lay at the basis of a new I.M.S.*

All these would lead to a global authority with enlarged attributions, meant at keeping markets safe. The goal of such a system has to be a stable international framework and worlds' states cooperation and economic growth. Or, to attain such a goal is impossible without the existence of an international currency and the external stability, the two global public goods.

## 5. Conclusions and Recommendations

The International Monetary System, largely affected by the actual economic-financial crisis cannot offer an answer to global markets. The system's lack of consolidation, of a disciplinary control and of adequate instruments meant at keeping the pace with today's changes, put the system in difficulty.

It was enough a crisis to shrink the confidence in its capability of making the system functional. As Taleb sustained "it was enough a black swan to cancel the belief that all swans are white. A single observation can cancel a general assertion" (Taleb, 2010).

The I.M.S.'s rethinking is therefore needed. Reliable reforms need to put the basis of a solid architecture of the system. Assuring an international stable environment to allow economic cooperation among states is a prerequisite for global economies' sustainability. Solutions to overcome the actual crisis, methods to prevent future crashes and real instruments to fight against crisis, if they occur, are needed.

The actual I.M.S. does not have the ability of managing crisis. The present international institutions, as are the I.M.F. and the World's Bank, do not have the required policies and tools. Rethinking their role becomes vital in a new system.

The change proposals presented in the present paper are a few directions, not being restrictive. Constructing on what once again Taleb sustained "we worry too much on a pre-definite segment of what we already know and we generalize to what we do not know", we risk losing perspective on some other factors, because "what we see is not necessarily everything that exists". The reforms developed herein may be too theoretical and hard to implement in practice, with different levels of reliability, as there are numerous factors that can intervene and influence the system.

However, they represent milestones in the effort of building a more stable I.M.S. What are the consequences of reforming the actual system? The most important of them is the assurance of a better international stability, which would promote a sustainable economic growth and states' cooperation, while facilitating international trade, transactions and capital movements.

I personally consider that for the time being, the most reliable solution for a new I.M.S. is the one where the systems' pillars are: an enlarged S.D.R., a global central bank in the authority of the International Monetary Fund and new principles and rules to lay at the basis of a better performing international system.

What does an enlarged S.D.R. stay for? Mainly, for a higher stability, as more currencies would contribute to the basket currency and this translates in maintain currency's balance. As one of the components appreciates, the other one depreciates, and on global, the effect is null.

Efforts need to be taken for introducing the S.D.R. as a currency in circulation. The process should be a gradual one. Firstly, it can be used in the international trade to clear transactions regardless of the settlement currency. Afterwards, it can be used in parallel with the national currencies, which means a change in the present S.D.R.' status, from an account currency to a means of payment, used regularly in the market.

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EJ

# Entrepreneurship – Some General Knowledge

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*The aim of this article is to provide some general information about entrepreneurship and some insights on the early theories about it. A brief overview of the main entrepreneurship measurement programme will provide some facts about the evolution of the entrepreneurial activity in Romania in the last few years.*

***Keywords****: entrepreneurship, entrepreneurial activity, global entrepreneurship monitor, economic impact.*

***JEL Classification****: L26*

## 1. Introduction

Interest in entrepreneurship and its effects on the economy rose in the last years and "entrepreneurship" became a buzzword in the specialized literature.

Even if entrepreneurship re-gained the attention of scholars only in the last decade, the first formal citation about entrepreneurship can be traced back in time to 1755 when Richard Cantillon, an Irish economist of French descent, stated about the entrepreneur that it is an arbitrageur, a person who was bearing the risk, Cantillon was underling the important economic role played by the entrepreneur. Regardless of the attention around this field entrepreneurship as a research field remain elusive for a long period of time.

## 2. Short literature review

Entrepreneurs and the first signs of entrepreneurship are considered by some authors to be as old as the first form economic organization dating back to ancient times, to Mesopotamian and Babylonian merchants and their "enterprises". (Landes D. et al., 2012). But the earliest mention about it in the economic literature dates only from 18th century as presented above.

Ever since Cantillon introduced the term authors from many and various fields have studied the entrepreneurs and entrepreneurship and its effects on the economy and our society in general. Entrepreneurship has been studied from diverse perspectives of economic theory, management, business administration, sociology & anthropology, psychology, political science and history.

Some major (important) early contribution for defining the entrepreneurs and its role from an economic point of view, throughout the time, were made by Cantillon, Say, Marshall, Knight, Schumpeter, Kirzner, Schultz, von Misses and more recently with modern perspectives by Drucker, Casson, Shane and Venkataraman. Many authors from various other fields and disciplines also undertook research and generated new findings and insights about this "phenomena".

In Cantillon view the entrepreneur bear the risk caused by price fluctuations in consumer markets.

Knight (1921) took a step forward the idea about risk and uncertainty and distinguished between these two: risk, which is insurable, and uncertainty, which is not. He considered profit to be a reward for bearing the uninsurable risk and it was the reward of the pure entrepreneur.

Schumpeter (1934) in his vision of "creative-destruction" presented the entrepreneur as someone who creates new industries and thereby triggers important structural changes in the economy. Schumpeter is considered to be the first who outlined what is still considered by most as the "grand" statement of a general theory of entrepreneurship in his Theory of Economic Development (1911) (Cassis Y., Minoglou I. P., 2005).

Marshall (1919) emphasized the importance of small firms and described the role of these firms in some detail, but critically omitted them from his formal analysis of supply and demand. He saw the entrepreneur as a superintendent that organizes the production in a firm.

Kirzner (1973, 1985) emphasised the importance of the entrepreneur as a middleman, who is alert to profitable opportunities that are available to everyone. According to Kirzner, Successful entrepreneurs notice what others overlooked and profit from their exceptional alertness.

The literature review of early theories could continue and we can find more important insights on entrepreneurship but we just wanted to underline the richness and diversity of approaches about what is an entrepreneur and how entrepreneurship is approached.

There is no straight answer when asking how an entrepreneur is defined or what are his characteristics and we could point out that more than 10 roles of the entrepreneur could be found in the economic literature (Hebert and Link, 1989, but also Van Dijk and Thurik, 1995 and Van Praag, 1996) like: the individual that assumes the risk and/or uncertainty, an innovator, decision maker, organizer and coordinator of economic resources, manager, owner of an enterprise, an individual that realizes the start-up of a new business.

Several major themes could be identified according to Simon C. Parker in regards with the characteristics of entrepreneurship in the early theories such as: arbitrage and the bearing of risk and uncertainty, co-ordination of factors of production, innovation and creative destruction, leadership and motivation, personal or psychological traits.

The early theories can be splatted in two major categories (Parker, 2009) - neoclassical tradition (such as Knight, Marshall, Schultz), based on the idea that entrepreneurs lead markets into equilibrium, and those in the Austrian school tradition (such as Kirzner) which sees entrepreneurs as part of an on-going disequilibrium process of indefinite time period.

We agree with the following statement provided by Simon Parker in his book "The economics of entrepreneurship" that none of the theories offers a complete and comprehensive view of entrepreneurship: "To be sure, one can cite selectively from these theories to support a particular viewpoint, but none of them provides necessary or sufficient conditions for entrepreneurship" (Parker, 2009).

Mark Casson did not agree with the dichotomy between the approaches of economic theorists and economic historians, pleading for a convergence between the functional perspective and the indicative perspective. (Casson, 1991). The trend in recent years is to use cross-discliplinary approach in order to define and analyse entrepreneurship and the activity of entrepreneurs.

Entrepreneurship is defined in many ways and to sustain this statement we argue that Morris (1998) identifed a number of 77 definitions and Gartner (1990) after having undertook an extensive literature review identified 90 atributes associated with the entrepreneur.

These facts and figures should point out the multidiscplinary character of entrepreneurship as field of study and at the same time it emphasiez the fact that study of entreprenership has to overcome some challanges like the lack of an unanimousliy accepted defition of what an entrepreneur is and what entreprenuership means.

## 3. Sources of data on entrepreneurship

Even if there is no general agreement about what entrepreneurship is most authors consider it to be an important economic factor (Parker, 2009) and to due to its importance in recent years, different sources of data on "entrepreneurship" were developed.

At international level there are some (both public and private) initiatives to measure the social and economic indicators which constitutes a key action in providing both government and international organizations with valuable information that will help better understanding the evolution of the phenomenon associated with the development and progress of our societies.

Some of the most important are GEM, OECD – Eurostat EIP, Eurobarometer Survey on Entrepreneurship, World Bank Group entrepreneurship snapshots, and Doing business report, World Economic Forum – World competitiveness report, Kaufmann Foundation Entrepreneurship programme.

Probably the most comprehensive effort to collect comparative international entrepreneurship research data is the multi-country annual GEM – Global Entrepreneurship Monitor study (Shorrock, 2008). GEM project is an annual assessment of the entrepreneurial activity, aspirations and attitudes of individuals across more than 80 countries since 1999 and it is consider being largest on-going study of entrepreneurial dynamics.

The main source of data used for the following part of this article was obtain from the Global Entrepreneurship Monitor (GEM) 2007-2012 and its Adult Population Survey database for Romania.

### 4. Entrepreneurial activity in Romania – some facts

In this section we will provide some information about the evolution of the entrepreneurial activity in Romania between 2007 sand 2012 based on data from GEM.

The term "entrepreneur" is defined by GEM as "an adult who is engaged in setting up or operating a new venture which is less than 42 months old" and the main GEM indicator is (TEA) total early-stage entrepreneurial activity, which measures the percentage of the adult population (age 18–64) that is actively involved in entrepreneurship in two populations: nascent entrepreneurs and young (new) owner/manager of a business.

Nascent entrepreneurs are individuals who have, during the last past 12 months, taken tangible action to start a new business, would personally own all or part of the new company, would actively participate in the day-to-day management of the new company, and have not yet paid salaries wages, or any other payments for anyone for more than 3 months.

New business owners are defined as individuals who are currently actively managing a new firm, personally own all or part of the new company, business that has paid salaries, wages, or any other payments for more than 3 months but not more than 42 months old.

Established Business Owners represent the percentage of (18-64) adult population who are currently owner-manager of an established business that has paid salaries, wages, or any other payments for more than 42 months.

In 2011 the early-stage entrepreneurial activity rate registered in Romania in an international comparison indicates a lower level than the average value registered in countries with similar level of development, however the it exceeds the values measured in countries like Hungary or Croatia according to the GEM Romania country report.
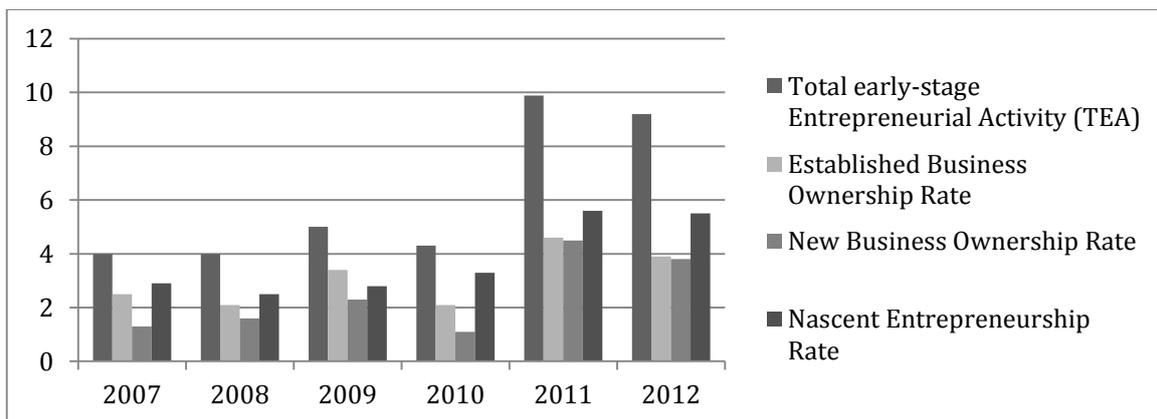


*Figure 1*. *Entrepreneurial activity in Romania*
Source: Global Entrepreneurship Research Association (GERA)

The total early-stage entrepreneurial activity rate (TEA) in Romania in 2012 is 9.2% decreasing from 9,89 in 2011 when it registered the highest value. The peak rate registered in 2011 was a higher rate than that recorded in Central-Eastern European countries, like Hungary, Poland and Croatia. The rate almost doubled in 2011 in respect with the precent form 2010, which indicates a clear increase in the entrepreneurial activity.

In 2011 all phases of the entrepreneurial activity (nascent, new business owner and established business) were marked by an considerable increases in regard with 2010 but in 2012 all rates slightly decrease, so from this point of view 2011 could be considered a year with a stronger entrepreneurial activity in Romania.
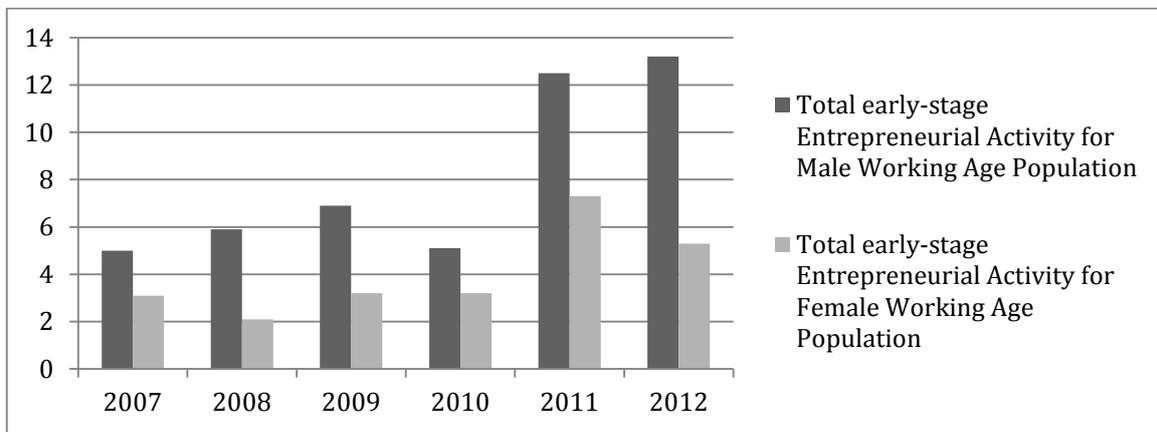
*Figure 2. Female and male entrepreneurial activity in Romania*
Source: Global Entrepreneurship Research Association (GERA)

Both male and female early-stage entrepreneurial activity rate increased in 2011 from 2010 but in 2012 in case of females the rate decreased from 7.33% in 2011 to 5,3% in 2012 and in case of males it increased from 12,5% in 2011 to 13,2 in 2012.

**Figure 3: Opportunity vs. necessity driven entrepreneurial activity in Romania**
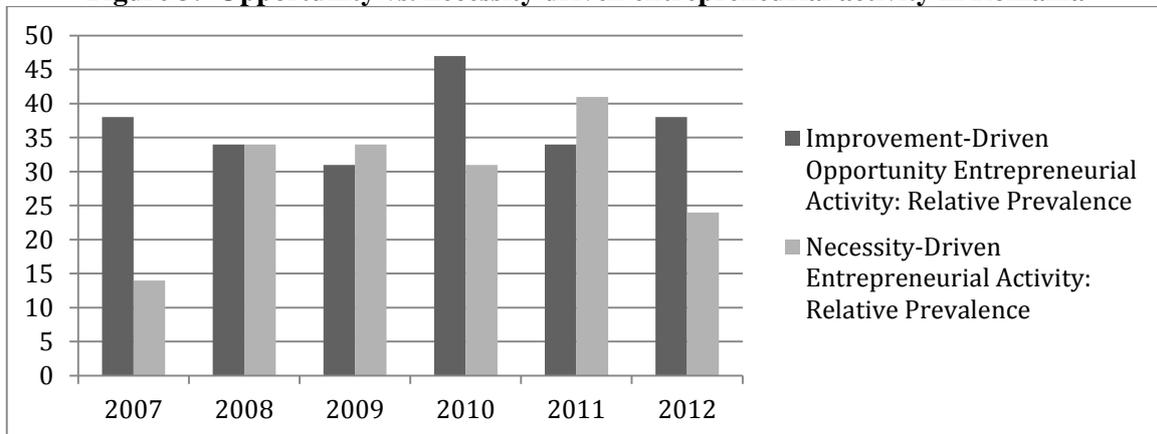


Source: Global Entrepreneurship Research Association (GERA)

Romanian early-stage entrepreneurs motivated by opportunity to start a new business venture increased from 34 in 2011 to 38 in 2012. Romanian early-stage entrepreneurs motivated by necessity decreased from 41 in 2011 to 24 in 2012, reversing the trend from a year earlier when the improvement driven rate decreased and the necessity driven rate increased in respect with 2010.

According to GEM Romania country report our country is situated 23rd out of 54 countries at a global level in 2011, based on the total early-stage entrepreneurial activity rate.

## 5. Conclusions

As shown above the total early stage entrepreneurial rate increased form 2010 to 2011 but had a small decrease in 2012. More female intended to start a new business venture in 2011 in regard with previous years but 2012 the rate of total early stage entrepreneurial rate for female registered a downward movement but still above the rate registered in the period 2007-2010. More Romanians intend to start o business out of opportunity reasons, and as we acknowledged before an entrepreneur is someone who perceives an opportunity, and creates an organization to pursue it (Bygrave and Hofer 1991) but there still is an important percentage of Romanians that start a business because they have no other option for work, but no some many as in the years after the trigger point of the economic crisis. High unemployment and the reduced competition could "push" people to take the self employment path in order to secure a income for them and this may have been the case of Romania too and should be reflected by the evolution of necessity driven entrepreneurial activity rate.

The economic crisis can generate 2 contradictory effects on the entrepreneurial activity: On one hand due to the lack of capital or financing opportunities and declining demand for products and services it is harder to gather the needed resources for starting a new business venture but on the other hand crisis contributes to the growth of unemployment which is an opportunity to find qualified and cheap labour force, and competition is reduced in time of recession compared to periods when economies thrive.

Most new business ventures start as small and medium enterprises and any new firm no matter small or big contributes to the well-being of the community in which it operates by creating new jobs, paying its suppliers, paying taxes and it improves the figures aggregated in the macroeconomic indicators.

Entrepreneurship has an impact at both at local and national level and could have a positive influence on the development and growth of an economy. But despite diverse, and sometimes contradictory results of the research regarding the effects of entrepreneurship on the economy it is considered a very important factor for future development. That is why entrepreneurship education and programs promoting it should be on the agenda of any public institution in our country.

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