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Foreign Direct Investment drivers in Romania

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# Foreign Direct Investment Drivers in Romania

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Foreign Direct Investment (FDI) represents a condition sine qua non for a sustainable development of Romania, taking into consideration the fact that the domestic capital is not enough to assure a positive and significant growth. The present study uses the multiple linear regression to determine the main factors which influence FDI level in Romania. The international reserve and the capital market index BET have a direct and positive impact on the foreign investment flow, while the short, medium and long private and public external debt proved to influence direct, but in a negative way, the FDI.

**Keywords**: Linear multiple regression, Foreign Direct Investment (FDI), International reserve, Capital market index BET, Short, medium and long term public and private external debt

#### 1. Introduction

According to the National Bank of Romania (NBR), the foreign direct investment is seen as a "long term investment relation between a resident and a non-resident entity, which implies that the investor has a significant managerial influence in the company he has invested in." Are considered to be FDIs: the paid-up capital and the reserves owed by a non-resident investor, who holds at least 10% of the subscribed capital of a resident company, the loans given by this investor to the organization he has invested in, as well as the reinvested profit.

According to the contribution foreign investors bring in a company, FDIs classify as:

- Greenfield: starting a business from zero by/with foreign investors;
- Mergers and acquisitions: the total/partial takeover of a company by foreign investors from residents;
- Companies' development: foreign investors hold the majority in the company.

The subject of FDIs, and more precisely of the factors influencing their level, remains extremely debated in the specialized literature. Economists from all over the world have tried to identify the reasons behind FDI flow in their countries, in order to help increase their level.

FDIs are extremely important for the economic growth of any country, especially of a developing one. The lack or the insufficiency of the domestic capital is balanced by such FDIs. Romania is no exception. For our country as well, FDIs represent the development leverage.

The present study aims at identifying the specific factors that determine FDIs in Romania and the extent to which FDI level depends on them. In this direction, we analyzed a series of 16 factors considered important in terms of their influence on the FDIs. However, after significance tests have been conducted, especially the t-Statistic test, only three of them proved to influence FDIs: the international reserve, BET and the external debt.

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#### 2. Literature review

Specialized literature distinguishes two categories of factors that influence FDIs, external and internal. External factors, the so-called "push factors" (Tapsoba, 2012), include the economic conditions in the countries from where FDIs come and reflect the opportunity cost of investing in a specific country. Internal factors, the "pull factors" (Tapsoba, 2012), refer to the macroeconomic conditions and the institutional environment in the countries towards which FDIs are directed.

A low inflation rate determines a favorable climate for investments and puts the basis of a sustainable economic development. (Fischer & Modigliani)

Shamsuddin (1994) analyzed in his paper FDIs' drivers in 36 less developed countries during the year 1983. The conclusions were that the highest influence on FDI is the host's country (the country where the foreign capital flow enters) Gross Domestic Product (GDP)/capita, followed by the workforce cost and the investment climate, represented by the public debt/capita, price volatility and resources' availability in the host country. The exports, the imports, the national infrastructure and various types of risk (country risk, political risk, interest rate risk) are other factors that influence FDI levels.

Balasubramanyam's study (1996) concludes that host's country trade policy represents a crucial factor in attracting FDIs. The explanation lays in the fact that the foreign capital flow has a higher impact on the economic development of countries promoting the exports, against those promoting the import.

Borenzstein (1998) shows that FDIs support the economic development of the host country by the technology transfer from the higher developed countries. Moreover, the study explains the differences in terms of FDIs' influence on the host's country economic development, based on the different capacities to absorb newly introduced technologies.

In his paper "FDI and inflation: theory and evidence", Sayek (1999) sustains that the relation inflation-FDIs is a negative one. Thus, he concluded that a 3% inflation growth in Canada determined a reduction of the USA's FDIs in Canada with 2%, and that a 7% inflation growth in Turkey determined a reduction of the USA's FDIs in Turkey with 1.9%. Price stability is an indicator of the economic stability. Usually, high inflation rates translate in a reduction of the FDI's Return on Investment (ROI).

Nnadozie (2000) reveals that the most important factors which trigger USA's FDIs in Africa are GDP, public debt, natural resources, inflation rate and political risks. Asiedu's (2002) study confirms that FDIs in Africa are influenced by its natural resources, low inflation rates and market dimension, adding two more factors: a good infrastructure and a general framework which favors investments. On the other hand, corruption and political instability represent two barriers.

Niels and Robert (2003) realized a study on 67 less developed countries between 1970 and 1995, concluding that FDIs contribute to a host country economic growth only if the financial system of that country is a developed one.

Bushra, Hussain and Chaudhary (2003) sustain that countries which aim at attracting a high investment flow need to make efforts for increasing their trade's openness and for diminishing external debt and the imbalances on the internal and external markets.

Kiat's (2007) study, which analyzed FDI's evolution in 30 countries between 1981 and 2007, concluded that inflation does not directly affect FDIs. It influences the unemployment, population's wages and the economic growth, factors considered to be important in the investment decision making process. Also, the study shows that high inflation rates have a negative effect on FDIs.

Duasa (2007) examined FDI and GDP in Malaysia and it proved to be no clear evidence of a relation between them. Consequently, FDI does not influence country's economic growth. It only contributes to its stability.

Abbas (2011) realized a study on the countries forming the South Asian Association for Regional Cooperation on the period 2001-2010, whose conclusions were that there is a positive and significant relation between GDP and FDI and an insignificant relation between the inflation rate and FDI.

Tapsoba's empirical study (2012) realized between 1980 and 2007 on 53 developing countries shows that central banks' monetary policy of inflation targeting determines a high level of FDIs. Why this? Because it increases country's credibility and economic environment stability.

A recent paper of Saleem, Zahid, Shaoib, Mahmood and Nayab (2013) on Pakistan economy in the period 1990-201 argues that FDIs are in a direct and positive relation with inflation rate and GDP. Another paper of Shahzad and Al-Swidi (2013) analyzed Pakistan between 1991 and 2011, and it concluded that political stability, GDP, exchange rate and exports positively influence FDIs, while inflation rate has no significant impact on FDIs.

If at global level there is a series of studies analyzing FDIs' drivers, in Romania, the subject was not enough "exploited", even if it is of a real interest. This explains the reduced number of studies debating this issue.

A study of Pirtea and Miloş (2009) analyzed FDIs' influence on the economic growth in Romania between 2000 and 2007, using the simple linear regression. The dependent variable was considered to be GDP's real growth rate, while the independent variable was FDIs' growth rate. Study's conclusions were that FDI variation has a moderate impact on the economic growth.

Bakos, Sisak, Vlad and Voica (2010) realized in their paper a number of correlations: GDP-FDI, inflation-FDI, unemployment-FDI, exports-FDI and imports-FDI. The conclusion was, on one hand, that there is a strong correlation between GDP, exports and imports and the FDI growth. On the other hand, there is a low correlation between inflation rate, unemployment and GDP.

Other factors that foreign investors take into consideration when they take the investment decision in Romania include the relative low cost of workforce and resources, as well as a high educational preparation level of the workforce.

Ludoşean (2012) shows, with the help of Value at Risk (VaR) model, that between Romanian economic growth and FDI level, there is a negative relation. Consequently, FDI level does not determine economic growth in Romania. However, it represents an important factor in attracting FDIs in Romania.

## 3. Study motivation

Observing the existence of numerous studies at international level regarding FDIs' drivers, we concluded that the specifics of each country make different factors influence the foreign investment flow. The present study aims at identifying, using the multiple regression, the factors which determine the foreign investment flow in Romania.

The paper's objective is to analyze and test new hypothesis. Also, as it took into consideration macroeconomic coordinates from 2000 to 2012, it allows highlighting some conclusions to date.

## 4. Methodology and data used

Prediction is the process of forecasting the value of one variable using a variable whose value is known. Although there are no perfect relations in the real world, such forecasts can be done using regression. Regression refers to a quantitative estimation of the causality relations between economic variables. It is mainly based on probability theory and statistics inference.

First regression models date from 1877, the method being introduced by Francis Galton, who tried to determine to what extent children' height is influenced by parents' height. Even if he did not apply the method in economy, regression was rapidly embraced by economists. George Udny Yule in 1895 and Reginald Hawthorn Hooker in 1901 were among the first to use correlation to analyze the relation between economic variables.

The relation between variables is described by a linear equation, the regression equation, which has as geometric correspondent the regression line. Depending on the number of factors involved, the regression can be:

- Single/simple factor regression, which can be linear or curved;
- Multi factor regression, with the two alternatives: linear and curved.

The objective of multiple regression is to highlight the relation between a dependent variable (explained, endogen, resultant) and a variety of independent variables (predictors, explicative, exogenous). Linear multiple regression was first used in economy in 1901, by the Italian statistician Rodolfo Benini.

The usage of the regression function in prediction involves several phases: choosing the shape of the function, determining the parameters, validating the function through statistical tests and in the end, establishing the prediction. Also, the partial determination coefficients need to be computed, as they show each independent variable contribution to the dependent variable.

The equation of the multiple linear regression is practically an extension of the simple linear regression, with the following format:

$$\hat{y}_t = a + b_1 x_{1t} + b_2 x_{2t} + \dots + b_k x_{kt}$$

where:  $\hat{y}$  – estimated value for the dependent variable

a – origin of the line (constant)

 $b_k$  – parameters for the k predictor variables

 $x_k$  – independent variables

t – time variable, t = 1, n

Real observed values will know a deviation from the theoretical values, expressed as:  $Y_t = \overline{Y}_t + \varepsilon_t$ Where  $\varepsilon_t$  – estimation error represented by a random variable normally distributed from average, 0 and the constant variable.

For computing the parameters a and b, the following equation system is used:

$$n * a + b \sum_{1} x_{1} + c \sum_{1} x_{2} + d \sum_{1} x_{3} = \sum_{1} y$$

$$a \sum_{1} x_{1} + b \sum_{1} x_{1}^{2} + c \sum_{1} x_{2} x_{1} + d \sum_{1} x_{3} x_{1} = \sum_{1} y x_{1}$$

$$a \sum_{1} x_{2} + b \sum_{1} x_{1} x_{2} + c \sum_{1} x_{2}^{2} + d \sum_{1} x_{3} x_{2} = \sum_{1} y x_{2}$$

$$a \sum_{1} x_{3} + b \sum_{1} x_{1} x_{3} + c \sum_{1} x_{3} x_{2} + d \sum_{1} x_{3}^{2} = \sum_{1} y x_{3}$$

For the easiness of calculations, the two parameters can be automatically computed using Excel, Eviews, Spss or other similar software. Interpreting such variables represents the second stage from the regression process. The coefficient "a" shows the value Y has when X is zero. The coefficient "b" (regression slope) shows the extent to which Y is influenced when X increases with a unit.

The prediction for the period n+1, if we consider n to be the present moment, is realized:

$$\hat{y}_{n+1} = a + b_1 x_1, n+1 + b_2 x_2, n+1 + \dots + b_k x_k, n+1$$

To determine the prediction threshold, maximum and minimum limits will be computed, as follows:

Inferior limit:  $\hat{y}_{n+1}^i = \hat{y}_{n+1} - \Delta y$ 

Superior limit:  $\hat{y}_{n+1}^s = \hat{y}_{n+1} + \Delta y$ 

where:  $\Delta y$  - admitted deviation compared to the predicted level of the dependent variable. Its level is computed:

$$\Delta y = t_{q/2}^{s} \sqrt{\frac{\sum_{t=1}^{n} (y_t - \hat{y}_t)^2}{n - (k+1)}} \sqrt{1 + C(X'X)^{-1} C}$$

y-admitted deviation compared to the predicted level of the dependent variable

 $t_{\alpha/2}^s$  - statistics t value with Student distribution related to a level of significance  $\alpha/2$ 

n – number of historical observations

C – coefficient's matrix

X' - transposed matrix of independent variables

q – significance level (risk, the probability for the real value to be outside the thresholds), q = 1- p

P – confidence level (the probability for the real value to be in the predicted threshold). The higher the P value, the wider the prediction threshold. Most used values are: 0.90; 0.95; 0.99.

#### 5. Results

To develop the regression equation, a number of 16 variables was used, including: GDP (m lei), Minimum wage (euro), Exports (b euro), Tax revenues to the state budget (b euro), Short, medium and long term public and private external debt (b euro), Inflation rate (%), BET (leu), Official exchange rate leu-dollar (annual average), Unemployment rate (%), International reserve (b lei), Real interest rate (%), Electricity consumption (b kWh), Budgetary deficit (%), Budgetary expenses (b lei), Market capitalization (b lei) and Workforce with tertiary education (according to the World's Bank methodology, tertiary education includes the faculty) (%).

The period considered was between 2000 and 2012. The selection of the independent variables introduced in the model was done through the regressive method, as follows:

- the linear multiple regression equation was generated including all the 16 independent variables;

- taking into consideration the results of the statistics significance test, variables with a p>0.05 were eliminated, beginning with the maximum value;
- this procedure was repeated for the variables left in the model;
- in the end, in the model were only left three variables: capital market index BET, international reserves and the short, medium and long term public and private external debt, each of them with a p>0.05.

BET is the reference index of the capital market in Romania, being the first index developed by the Bucharest Stock Exchange. It is a free float weighted capitalization index of the most liquid 10 companies listed on the Bucharest regulated market. The Romanian international reserve is formed from gold and foreign currencies, being administered by NBR. The short, medium and long term public and private external debt indicates Romanian indebtedness on the international market.

These three variables were afterwards analyzed in terms of descriptive statistics, whose results are presented in the table below:

Table 1. Descriptive Statistics

Foreign Direct Investments (b euro) (y)		BET (leu)		International reserves (b euro)		The short, medium and long term public and private external debt (b euro)	
Mean	3.787923077	Mean	4330.998462	Mean	20.90007692	Mean	40.34615385
Standard Error	0.613727738	Standard Error	766.9521451	Standard Error	3.486639925	Standard Error	7.96965089
Median	5.183	Median	4364.71	Median	22.935	Median	28.6
Standard Deviation	2.212826829	Standard Deviation	2765.285285	Standard Deviation	12.57125903	Standard Deviation	28.73498493
Sample Variance	4.896602577	Sample Variance	7646802.707	Sample Variance	158.0365536	Sample Variance	825.699359
Kurtosis	- 1.650952875	Kurtosis	0.211412705	Kurtosis	1.705944062	Kurtosis	0.663690822
Skewness	0.057271811	Skewness	0.45684352	Skewness	0.105865067	Skewness	0.779399767
Range	6.353	Range	9281.38	Range	33.608	Range	86.2
Minimum	1.147	Minimum	544	Minimum	3.643	Minimum	11.7
Maximum	7.5	Maximum	9825.38	Maximum	37.251	Maximum	97.9
Sum	49.243	Sum	56302.98	Sum	271.701	Sum	524.5
Count	13	Count	13	Count	13	Count	13
Confidence Level (95.0%)	1.337197868	Confidence Level (95.0%)	1671.045172	Confidence Level (95.0%)	7.596735793	Confidence Level (95.0%)	17.36437759

Source: Own calculations

The **mean** indicates the average of each indicator values. The **median** divides the series in two equal parts. If the mean were equal to the median, the distribution would be a normal one. However, there are differences between the two indicators, which express an abnormal distribution. FDI's mean is 3.79b euro, while the median is 5.18b euro. BET has a mean of 4330.90 lei and a median of 4363.71 lei. The international reserve is of 20.9 b euro and the median of 22.93 b euro, while the external debt has a mean of 40.34b euro and the median of 28.6b euro.

The fact that the distribution is not a normal one is also expressed by the two indicators **Kurtosis** and **Skewness**, which show the flattening and the inclination of the distribution. A normal level for the two indicators would have been 3 for Kurtosis and 0 for Skewness. The four factors have a flat distribution, as Kurtosis has levels of -1.65, -0.21, -1.70 and -0.66. In what concerns the inclination, the distribution is inclined to the left in the case of the international reserve, as Skewness has a negative value (-0.105). For the other factors, the distribution is inclined to the right, Skewness having positive values (0.057 for FDIs, 0.456 for BET and 0.77 for the external debt).

**Standard error** refers to the average of each factor's errors, the so called " $\epsilon$ " in the model. FDIs have a level of 0.613, BET – 766.95, international reserve – 3.486 and the external debt – 28.74. The quite high level of this indicator can be explained by the high variation of the variables in the observed period.

In what concerns the indicators for measuring dispersion, **sample variance** indicates the relative spread of the data and **standard deviation** shows the values' distribution around the mean. Standard deviation is the square root of the variance, and its levels are of 2.21b euro for FDIs, of 2765.28 lei for BET, of 12.571 b euro for the international reserve and of 28.73 b euro for the external debt.

The **range** is the difference between the **minimum** and the **maximum** levels for each observation. FDIs have a range of 6.353b euro, BET - 9281.38 lei, the international reserve - 33.61b euro and the external debt - 86.2b euro.

The **confidence level** shows with a probability of 95%, that FDIs can deviate from the mean with  $\pm$  1.34b euro, BET with  $\pm$  1671.04 lei, international reserve with  $\pm$  7.59 euro and the external debt with  $\pm$  16.36b euro.

The next step was to obtain the results of the regression analysis, results that are presented in the table below:

Table 2. Regression Analysis

stics							
0.924199 957 0.854145							
56							
414 0.673842							
839							
13							
df	SS	MS	F	Signific ance F			
3	50.188	16.72	17.56	0.0004			
9	8.570	0.95					
12	58.759						
Coefficie nts	Standard Error	t Stat	P- value	Lower 95%	Upper 95%	Lower 95.0%	<i>Upper</i> 95.0%
1.0771	0.6493	3.077	0.0131	0.2854	1.8687	0.2854	1.8687
0.0003	0.0001	2.784	0.0212	0.0001	0.0006	0.0001	0.0006
0 2037	0.0401	5 073	0 0004	0.1128	0 2945	0.1128	0.2945
0.2037	0.0401	5.075	0.0000	0.1126	0.2343	0.1120	0.2943
-0.0831	0.0137	4 773	0.0010	-0 1667	-0.0595	-0 1667	-0.0595
	957 0.854145 56 0.805527 414 0.673842 839 13  df  3 9 12  Coefficie nts 1.0771	0.924199         957         0.854145         56         0.805527         414         0.673842         839         13         3       50.188         9       8.570         12       58.759         Coefficie nts       Standard Error         1.0771       0.6493         0.0003       0.0001         0.2037       0.0401	0.924199       957         0.854145       56         0.805527       414         414       0.673842         839       13         13       50.188       16.72         9       8.570       0.95         12       58.759         Coefficie nts       Standard Error       t Stat         1.0771       0.6493       3.077         0.0003       0.0001       2.784         0.2037       0.0401       5.073	0.924199         957         0.854145         56         0.805527         414         0.673842         839         13         3       50.188         9       8.570       0.95         12       58.759            Coefficie nts       Standard Error       t Stat value         1.0771       0.6493       3.077       0.0131         0.0003       0.0001       2.784       0.0212         0.2037       0.0401       5.073       0.0006	0.924199           957         0.854145         56           0.805527         414         0.673842         839           839         13         13           3         50.188         16.72         17.56         0.0004           9         8.570         0.95         12         58.759           Coefficie nts         Standard Error         t Stat         value         95%           1.0771         0.6493         3.077         0.0131         0.2854           0.0003         0.0001         2.784         0.0212         0.0001           0.2037         0.0401         5.073         0.0006         0.1128	0.924199         957       0.854145         56       0.805527         414       0.673842         839       13         3       50.188       16.72       17.56       0.0004         9       8.570       0.95         12       58.759            Coefficie nts       Standard Error       P- Lower value       Upper 95%         95%       95%         1.0771       0.6493       3.077       0.0131       0.2854       1.8687         0.0003       0.0001       2.784       0.0212       0.0001       0.0006         0.2037       0.0401       5.073       0.0006       0.1128       0.2945	0.924199           957         0.854145           56         0.805527           414         0.673842           839         13           3         50.188         16.72         17.56         0.0004           9         8.570         0.95         0.95         0.0004         0.0006         0.0001         0.0006         0.0001         0.0004         0.0004         0.0004         0.0004         0.0004         0.0004         0.0004         0.0004         0.0004         0.0004         0.0004         0.0004         0.0

**Multiple R** represents the correlation coefficient between the dependent variable observed (y, effective FDIs in the period 2000-2012) and the dependent variable calculated ( $\hat{y}$ , FDIs computed based on the regression equation). In this case, the indicator has a level of 92.41%, which expresses a strong correlation between effective FDIs and the calculated FDIs, computed with the help of the regression equation.

**R Square** represents the variance percentage in the dependent variable (criteria) determined by the simultaneous variation of the independent variables (predictors). The analysis indicates a level of 85.41% for  $R^2$ , which translates into the fact that FDIs' variation in Romania is influenced by 85.41% by BET, international reserve and external debt variations.

**Adjusted R Square** is practically R Square corrected for the number of predictors. In this case (13 observations) to compute this indicator, the division is done by 12. The obtained value, 80.55%, higher than the

minimum level considered compulsory for a strong relation between variables (75%) reveals a 80.55% FDIs' dependency on the independent variables. **Standard Error** represents the errors' average and it has a level of 0.67.

R statistics significance is computed with a variance test (F), which in this case has a value lower than 0.0004. This emphasizes the validity of the regression model, as it is below 0.05.

As aforementioned, **P-value** has for each variable, levels below 0.05, the highest level being 0.021 for BET. The international reserve has a P-value of 0.00067 and the external debt of 0.0010.

Thus, the regression function has the following format:

## $Y = 1.077106526 + 0.000342628 \times X_1 + 0.203726121 \times X_2 - 0.083153003 \times X_3$

where Y' – estimated value for FDIs

 $X_1 - BET$ 

X<sub>2</sub> – international reserve

 $X_3$  – short, medium and long term public and private external debt

Computing FDIs' values in the period 2000-2012, based on the regression equation, leads to the following results:

Table 3. Residual Output

Observation	Predicted Foreign Direct Investments (billion euro) (y)	Residuals
1	1.032780174	0.114219826
2	1.335500783	-0.041500783
3	1.84279855	-0.63079855
4	2.041863231	-0.095863231
5	4.539944765	0.643055235
6	5.007357996	0.200642004
7	6.729604746	0.770395254
8	6.580662639	-0.880662639
9	4.664272307	0.835727693
10	4.632384072	0.767615928
11	4.219216632	0.980783368
12	2.89064678	-1.07564678
13	1.915159353	0.222840647

Source: Authors' calculations

The quality of the model is facilitated by the Residual Plot graphs for each of the independent variables, presented as follows:

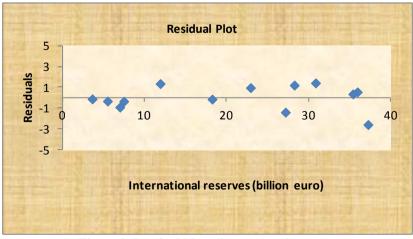


Figure 1. Residual Plot – International reserves Source: Authors' calculations

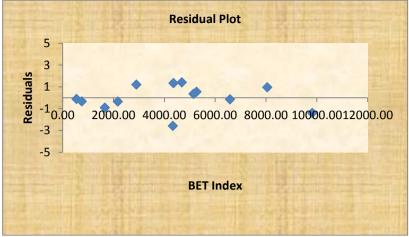


Figure 2. Residual Plot – BET Index
Source: authors' calculations

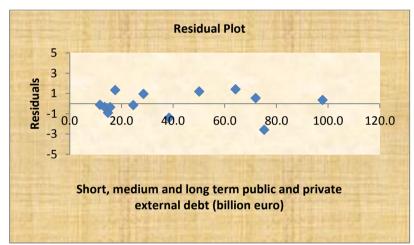


Figure 3. Residual Plot –Short, medium and long term public and private external debt (billion euro)

Source: authors' calculations

It can be observed that for each independent variable, residuals' graphic representation can be translated into a horizontal line that does not contradict the hypothesis of the errors' normality. The uniform line reflects the constant dispersion of the residuals all over the independent variable domain.

#### 6. Conclusions

Thus, we can assert that there is a direct and positive relation between FDIs, the capital market index BET and the international reserves. This is indicated by the positive coefficients of 0.00034 and 0.203726 that exist between these variables. On the other hand, FDIs are negatively influenced by external debt level, the coefficient related to this variable being -0.08315.

What do these numbers indicate? That in order to attract a higher level of the foreign investment flow in Romania, the external debt level should be a reduced one, corroborated with high levels of the capital market index BET and of the international reserves. A reduced level of the external debt reflects a better asset management and it expresses the country's ability of auto finance. A high level of the international reserves indicates prudence and the capacity of facing crisis, while a high BET level reflects a financial market in expansion.

All this data in nothing else but signals regarding the country's economic stability, its capacity of overcoming crisis, as well as the financial market maturity level.

#### 7. References

- Abbas, Q., Akbar, S., Nasir, A. S., Ullah, A. H. & Naseem, M. A., 2011. Impact of Foreign Direct Investment on Gross Domestic Product. *Global Journal of Management and Business Research*. 11(8). p. 1-7. Available from: http://globaljournals.org/GJMBR\_Volume11/5-Impact-of-Foreign-Direct-Investment-on-Gross-Domestic-Product.pdf, accessed on: 28.11.2013.
- Asiedu, E., 2002. Foreign Direct Investment in Africa: The role of natural resources, market size, Government policy, institutions and political instability. Available from: http://papers.ssrn.com/sol3/papers.cfm?abstract\_id=717361, accessed on: 28.11.2013.
- Bakos, V., Sisak, K.-M., Vlad, A. & Voica, O., 2010. Foreign Direct Investments' evolution and drivers in Romania and European Union. Available from: http://mastermrufeaa.ucoz.com/s2/Sisak\_Mira.pdf, accessed on: 28.11.2013.
- Balasubramanyam, V. N., Salisu, M. & Sapsford, D., 1996. Foreign direct investment and growth in EP and IS countries. *Economic Journal*. 106(1). p. 92-105. Available from: http://www.jstor.org/discover/10.2307/2234933?uid=3738920&uid=2476438553&uid=2&uid=3&uid=60&sid=21102983369381, accessed on: 28.11.2013.
- Borensztein, E., De Gregorio, J. & Lee, J.-W., 1998. How does foreign direct investment affect economic growth. *Journal of International Economics*. 45(1). p. 115-135. Available from: http://www.olemiss.edu/courses/inst310/BorenszteinDeGLee98.pdf, accessed on: 30.11.2013.
- Bucharest Stock Exchange, 2013. *Capital indices*. Available from: http://www.bvb.ro/TradingAnd Statistics/GeneralStatistics.aspx? tab=2&m=0, accessed on 03.12.2013.
- Bushra, Y., Hussain, A. & Chaudhary, M., 2003. Analysis of factors affecting foreign direct investment in developing countries. *Pakistan Economic and Social Review*. 41(3). p. 59-75. Available from: http://pu.edu.pk/images/journal/pesr/PDF-FILES/5%20YASMIN%20Analysis%20of%20Factors%20Affecting%20FDI%20in%20Developing-V41-2003.pdf, accessed on 30.11.2013.
- Chowdhury, A. & Mavrotas. G., 2005. *FDI and Growth: A Causal Relationship*. Available from: http://www.wider.unu.edu/stc/repec/pdfs/rp2005-25.pdf, accessed on: 30.11.2013.
- Directorate-General for Economic and Financial Affairs, European Commission, 2013. *Economic European forecast: Autumn 2013*. Available from: http://media.hotnews.ro/media\_server1/document-2013-11-5-15962611-0-prognoza-toamana.pdf.
- Fischer, S. & Modigliani, F. (n.d.) *Towards an understanding of the real effects and costs of the inflation*. Available from: http://mitpress.mit.edu/sites/default/files/titles/content/9780262561631\_sch\_0001.pdf, accessed on: 30.11.2013.
- Kiat, J., 2008. The effect of exchange rate and inflation on foreign direct investment and its relationship with economic growth in South Africa. Available from: http://upetd.up.ac.za/thesis/submitted/etd-03172010-140315/unrestricted/dissertation.pdf, accessed on: 03.12.2013.
- Ludoşean, B. M., 2012. VAR analysis of the relation between FDIs and the Romanian economic growth. *Theoretical and applied economy*. 10(575). p. 102-117. Available from: http://store.ectap.ro/articole/789\_ro.pdf, accessed on: 03.12.2013.
- Hogaș, E., 2013. *How has the minimum wage evolved in Romania of the 14 years*. Available from: http://legestart.ro/cum-a-evoluat-salariul-de-baza-minim-brut-in-romania-ultimilor-14-ani/, accessed on: 03.12.2013.
- National Bank of Romania & National Institute of Statistics, 2012. Foreign Direct Investments in Romania in 2012. Available from: http://www.bnr.ro/files/d/Statistica/seturi%20de%20date/ISD/ISD\_2012.pdf, accessed on: 30.11.2013.
- National Institute of Statistics, 2013. *Gross Domestic Product*. Available from: http://www.insse.ro/cms/ro/content/pib-trimestrial\_accessed on: 30.11.2013.
- Niels, H. & Robert, L., 2003. Foreign direct investment, financial development and economic growth. Available from: http://som.eldoc.ub.rug.nl/FILES/reports/themeE/2000/00E27/00e27.pdf, accessed on: 05.12.2013.
- Nnadozie, E., 2000. What determines US direct investment in African countries. Available from: http://www.csae.ox.ac.uk/conferences/2000-OiA/pdfpapers/nnadozie.PDF, accessed on: 28.11.2013.
- Omankhanlen, A. E., 2011. The effect of exchange rate and inflation on foreign direct investment and its relationship with economic growth in Nigeria. Available from: http://www.ann.ugal.ro/eco/Doc20011\_1/Alex\_Ehimare\_OMANKHANLEN.pdf, accessed on: 28.11.2013.

- Sayek, S., 1999. *FDI and inflation: Theory and evidence*. Available from: http://ejbe.org/EJBE2010Vol03 No06p27AZAM.pdf, accessed on: 30.11.2013.
- Saleem, F., Zahid, A., Shaoib, B., Mahmood, M. & Nayab, S., 2013. Impact of inflation and economic growth on foreign direct investment: Evidence from Pakistan. *Interdisciplinary Journal of Contemporary Research in Business*. 4(9). p. 236-244. Available from: http://journal-archieves27.webs.com/236-244.pdf, accessed on: 03.12.2013.
- Shahzad, A. & Al-Swidi, A. K., 2013. Effect of macroeconomic variables on the FDI inflows: The moderating role of political stability: Evidence from Pakistan. Available from: http://www.ccsenet.org/journal/index.php/ass/article/download/28617/17124, accessed on: 06.12.2013.
- Shamsuddin, A. F. M., 1994. Economic Determinants of foreign Direct Investment in Less Developed Countries. *The Pakistan development Review*. 33(1). p. 41-51. Available from: http://www.pide.org.pk/pdr/index.php/pdr/article/viewFile/1269/1242, accessed on: 06.12.2013.
- Pirtea, M. & Pilos, L., 2009. *Foreign Direct Investments:* The main determinant in the sustainable growth in Romania. *Annals of the University Constantin Brâncuşi, Economy Series.* 3. p. 265-279. Available from: http://core.kmi.open.ac.uk/download/pdf/6300268.pdf accessed on: 06.12.2013.
- Tapsoba, R., 2012. Does Inflation Targeting Matter for Attracting Foreign Direct Investment into Developing Countries. Available from: http://www.cerdi.org/uploads/ed/2012/2012.03.pdf, accessed on: 06.12.2013.
- Zamfir, C., 2013. European Commission about Romania: The positive evolution determined by the exceptional export level cover the investment drop. The three risks of the Romanian economy. Available from: http://economie.hotnews.ro/stiri-finante-15962589-despre-romania-evolutia-pozitiva-determinata-exportul-stelar-mascheaza-scaderea-investitiilor-cele-3-riscuri-ale-economiei-romanesti.htm accessed on: 06.12.2013
- World Bank, 2013. World development indicators. Available from: http://data.worldbank.org/country/romania, accessed on: 06.12.2013