

EMPIRICAL RESEARCH REGARDING THE FACTORS THAT INFLUENCE FOREIGN PARTICIPATION IN THE SHARE CAPITAL OF ROMANIAN COMPANIES

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Abstract: *Foreign investment represents an important variable of economic development at global level. According to Romanian National Trade Register Office statistics (ONRC, 2017), the value of subscribed capital (initial registration) in companies with foreign participation in Romania had an oscillatory evolution during 1991 and 2016. It recorded relative small values during 90's and increased slowly from 2001, reaching a peak in 2008 when the value of subscribed capital was 5924,8 million USD. Economic and financial conditions at the global level were reflected in a decrease of the value of subscribed capital due to the lack of financing and restricted access to credit and lack of liquidity. The lowest value recorded from 2001 until present was registered in 2015, i.e. 1428,5 million USD. In terms of number of companies with foreign participation registered, there was an increase from 5.499 in 1991 to 15.720 in 2007, when the highest number was recorded. From 2008 until present, the number of companies with foreign participation registered annually decreased and reached 5.348 in 2016, which represented a level below that of 1991. However, in recent years the mean value of subscriptions has increased compared to the one specific to the period between 1991 and 2004. The aim of this research is to analyze the influence of several factors on the value of subscribed capital in companies with foreign participation in the share capital in Romania, between 1991 and 2015. Using simple regression models, the study reveals that factors such as gross domestic product (GDP), research & development expenditure, exchange rate, labour cost and infrastructure have an important role in explaining the value of subscribed capital in companies with foreign participation in Romania, trade openness has a moderate influence on the value of subscribed capital, while the number of graduates has a weak influence. Between the value of subscribed capital in companies with foreign participation in Romania and research&development, trade openness, infrastructure, GDP, exchange rate, respectively graduates, there is a direct and linear correlation and between the value of subscribed capital (initial registration) and labour cost there is an inverse linear correlation.*

Keywords: *foreign subscribed capital; companies; Romania.*

JEL classification: *F21.*

1. Introduction and theoretical framework

Foreign direct investment (FDI) represents an important variable of economic development at global level, and also a subject that has aroused the interest of many researchers. In this paper we intend to analyze the factors that favour the registration of companies with foreign participation in the share capital in Romania, as a part of FDI inflows to Romania. We believe that this study is relevant because it reflects the

first step of foreign investors regarding investment in Romanian companies. Thus, we won't take into consideration reinvested earnings and other capital (mainly intra-company loans).

According to Romanian National Trade Register Office, the company with foreign participation in the share capital is the company established, partially or fully, with the participation of individuals or legal entities with permanent residence or headquartered outside Romania (ONRC, 2017).

Figure 1 shows the evolution of the value of subscribed capital (initial registration) in companies with foreign participation in Romania and of the number of registrations of companies with foreign participation, during 1991-2016, as shown by Romanian National Trade Register Office statistics.

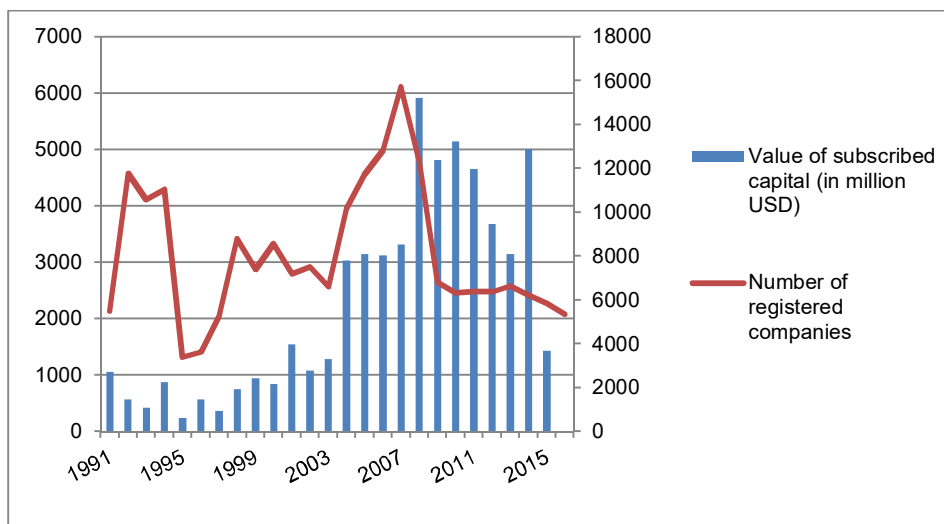


Figure 1: The evolution of the value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania and of the number of registrations of companies with foreign participation between 1991 and 2016.

Source: realized by the author based on statistical reports of Romanian National Trade Register Office statistics, [Online], Available: <http://www.onrc.ro/index.php/ro/statistici?id=254>.

According to Romanian National Trade Register Office statistics (ONRC, 2017), the value of subscribed capital had an oscillatory evolution during 1991 and 2016. It recorded relative small values during 90's and increased slowly from 2001, reaching a peak in 2008 when the value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania was 5924,8 million USD. Economic and financial conditions at the global level were reflected in a decrease of the value of subscribed capital due to the lack of financing and restricted access to credit and lack of liquidity. However, in 2010 and 2014 the values registered exceeded 5000 million USD. The lowest value recorded from 2001 until present was registered in 2015, i.e. 1428,5 million USD.

In terms of number of companies with foreign participation registered annually, their number increased from 5.499 in 1991 to 15.720 in 2007, when the highest number

was recorded. From 2008 until present, the number of companies with foreign participation registered annually decreased and reached 5.348 in 2016, which represented a level below that of 1991.

However, if we make a correlation between the amount of capital subscribed in recent years and the number of registrations, we find that, although the number of registrations decreased, the mean value of subscriptions is much higher compared to the one specific to the period between 1991 and 2004.

The foreign investment theme has an important place in the field literature. Many researches have focused on finding the determinants of FDI and their results revealed a variety of factors. Beer and Cory (1996) identified that market size, growth rate, labor cost, export flows or taxes, influenced FDI of United States in the EU. On the other hand, Bevan and Estrin (2004) found that unit labour costs, gravity factors, market size and proximity influence FDI from Western countries, mainly in the European Union (EU), to Central and Eastern European ones.

Holland et al. (2000) found as driving forces of FDI in Central and Eastern Europe, factors like market size and growth and also stated that factor-cost advantages play a significant role. Sethi et al. (2003) also found that low wage levels represent an attraction factor for foreign investments. Market size, country risk of host economy, labour cost and trade openness were found factors of influence for FDI inflows in CEECs countries (Janicki and Wunnava, 2004). Vijayakumar et al. (2010) showed that variables like market size, labour cost, infrastructure, currency value and gross Capital formation represent potential determinants of FDI inflows of BRICS countries. Mateev (2012) identified a set of traditional variables like population, trade and infrastructure as attraction factors for foreign investments, while credit risk, labour cost, geographical proximity are important factors for certain group of countries. In a recent research, Sehleanu (2016) analyzed the determinants of FDI inflows to Romanian, revealing as influence factors gross fixed capital formation, gross domestic product, exchange rate, inflation rate, trade openness and labour cost. Research&development represents an important variable of FDI as shown by Lansbury et al. (1996) or Goschin et al. (2013). Infrastructure is another factor analyzed in the field literature as determinant of FDI and, in this regard, we can mention the researches of Erdal and Tatoglu (2002), Ang (2008), Dauti (2009) or Ranjan and Agrawal (2011). Aigheyisi (2016), using data from 1981 to 2014 regarding Nigeria, found that net inflow of FDI, domestic investment and stock market development affected in a positive a significant manner economic growth in Nigeria, instead, the effect of the interaction between stock market development and FDI on economic growth is negative and significant.

The aim of this research is to analyze the influence of several factors on the value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania between 1991 and 2015. In this regard we considered factors such as: infrastructure, proxied by the number of kilometres of modernized road; market size, measured by gross domestic product (GDP) nominal value, research&development expenditure by sectors of performance, labour cost, trade openness, number of graduates (percentage of total) and exchange rate. Section 2 of the paper presents the data and the methodology used, section 3 comprises the results of the econometric modelling and the last section of the paper provides the conclusions of the research.

2. Variables, data and research methodology

The aim of our study is to study the correlation between the value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania and some factors of influence.

In order to achieve our purpose, we have collected annual data regarding Romania, over the period 1991 – 2015. We considered the following variables as factors of influence for the endogenous variable, the value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania (expressed in thousands of lei):

- Infrastructure, proxied by the number of kilometres of modernized road;
- Market size, measured by nominal GDP value expressed in millions of lei, current prices;
- Research&Development expenditure by sectors of performance, expressed in millions of lei;
- Labour cost, expressed as the percentage change of average annual net wage;
- Trade openness, expressed as the sum of exports and imports of goods and services measured as a share of GDP;
- Number of graduates (as a proxy for human capital) expressed as percentage of total graduates who have successfully completed secondary upper (upper secondary and vocational) and bachelor studies;
- Average exchange rate, RON/ USD.

Infrastructure is considered to be an important determinant of the foreign firms' initiative to invest in Romania. A good infrastructure facilitates the activity of firms and allows processes to unfold easier, in shorter time and with lower costs. Thus, infrastructure, proxied by the number of kilometres of modernized road, is expected to have a positive effect on the value of subscribed capital (initial registration) in companies with foreign participation in Romania. GDP measures the size of the economy and because companies are interested in greater potential consumption and new opportunities for trade that lead to greater potential profitability, we expect to find a significant influence of this variable. Research&development expenditure reflects the level of technological evolution. Research&development lead to the creation of important intangible assets which represents an attraction factor for foreign firms. Labour costs is an important component of the cost of production and lower values should increase the value of subscribed capital (initial registration) in companies with foreign participation in Romania. The willingness of foreign firms to subscribe to the capital of Romanian firms is expected to be positively influenced by trade openness because this reflects potential new business opportunities. The number of graduates reflects the human capital available as workforce for investors. We are referring to people available to perform activities that require training at a high level or not necessarily. Exchange rate can be a factor that attracts foreign subscription to the capital of Romanian companies because, if the domestic currency is depreciated, then subscriptions made by firms from countries with a stronger currency will reflect a lower cost of capital for them.

Data regarding the endogenous variable, subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania, was collected from Romanian National Trade Register Office statistics. Data regarding de variables infrastructure, proxied by the number of kilometres of modernized road, respectively

the number of graduates, were collected from the website of Romanian National Institute of Statistics, TEMPO Online Database. We have calculated the percentage of total graduates who have successfully completed secondary upper (upper secondary and vocational) and bachelor studies, separately for each year. The annual values of GDP and R&D expenditure by sectors of performance were collected from Eurostat. The percentage change of average net wage was calculated separately for each year based on the data collected from the website of Romanian National Institute of Statistics, TEMPO Online Database. Data regarding the variable trade openness was collected from the website of World Bank, the World Development Indicators. Finally, data regarding average exchange rate RON/ USD was collected from the Interactive Database of the National Bank of Romania's website.

The following hypotheses will be tested with the purpose of verifying the correlation between the endogenous variable and the exogenous ones, presented above:

H1: Infrastructure has a positive influence on the value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania.

H2: Market size, reflected by Gross Domestic Product, has a positive influence on the value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania.

H3: Research&development expenditure has a positive influence on the value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania.

H4: Lower labour cost has a positive influence on the value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania.

H5: Higher openness to trade has a positive influence on the value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania.

H6: Increased number of graduates has a positive influence on the value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania.

H7: The depreciation of domestic currency has a positive influence on the value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania.

The hypotheses mentioned above will be validated based on the results of simple regression models elaborated using the Eviews software.

3. Empirical results

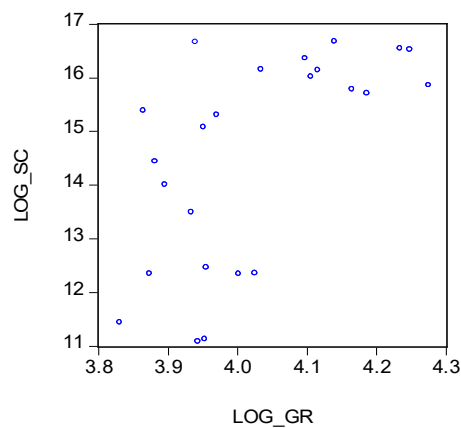
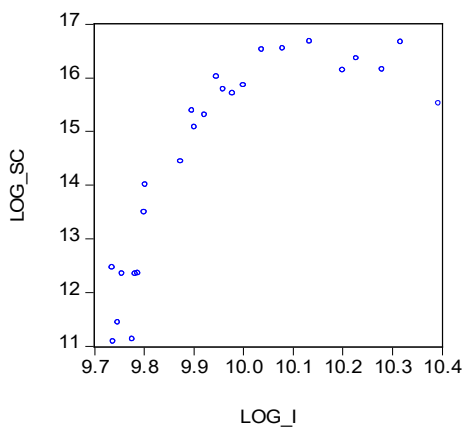
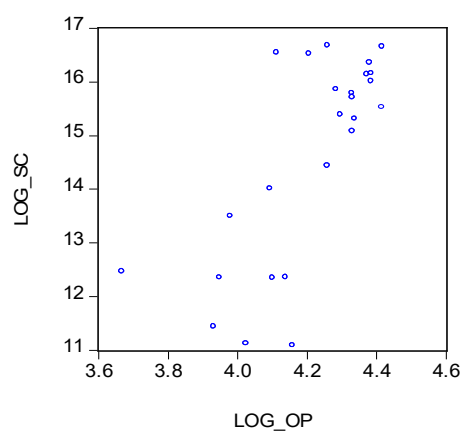
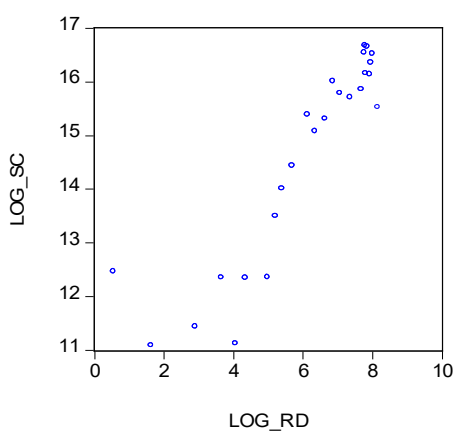
The aim of our research will be achieved by using simple regression models. In this way, we can identify the correlation between the variables described above, we can determine the intensity of the correlation and its shape, we can determine the model parameters, test the hypotheses and thus, we will be able to confirm their validity.

Taking into consideration the exponential evolution of the variables chosen, we transformed the numerical values by logarithm. Table 1 shows the symbol of the new variables, after their logarithms.

Table 1: Variables used and their symbol

Name of the initial variable	Symbol for the initial data series	Symbol for the transformed variable
Value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania.	SC	LOG_SC
Infrastructure	I	LOG_I
GDP	GDP	LOG_GDP
R&D expenditure by sectors of performance	RD	LOG_RD
Labour cost	LC	LOG_LC
Trade openness	OP	LOG_OP
Graduates	GR	LOG_GR
Exchange rate RON/USD	ER	LOG_ER

Source: realized by the author



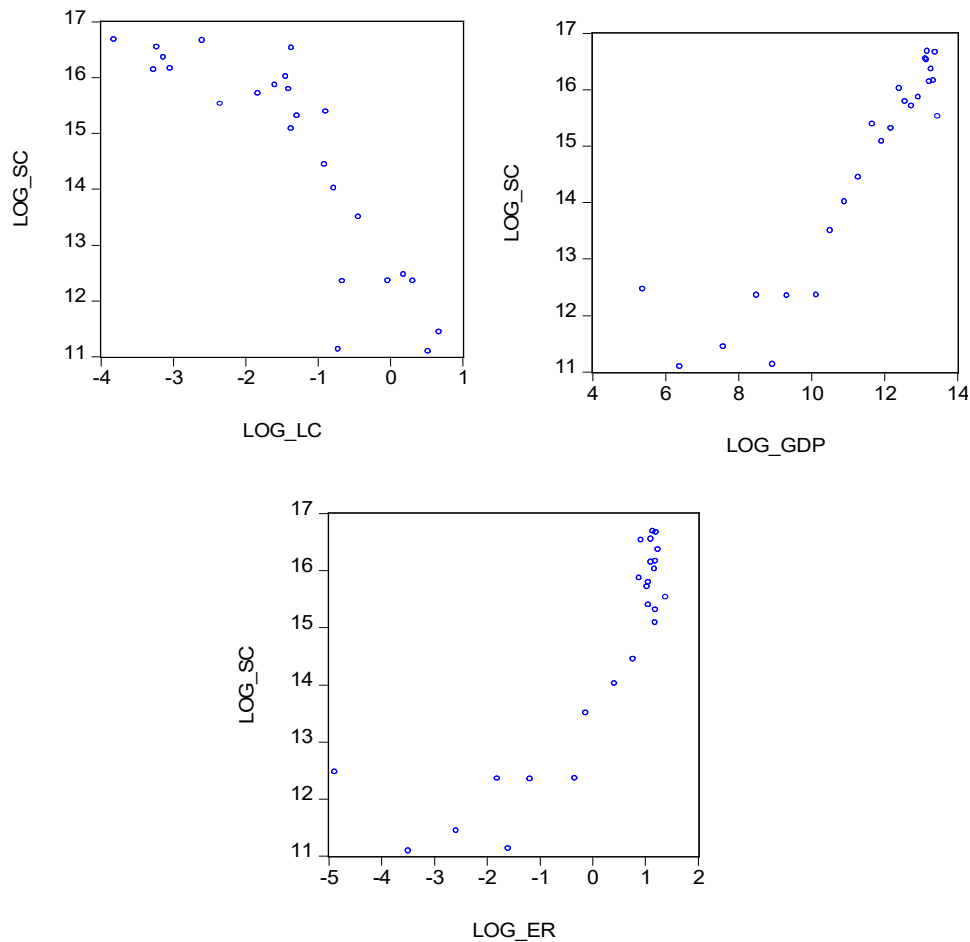


Figure 2: The scatter plot between the value of subscribed capital in companies with foreign participation in the share capital in Romania and the exogenous variables
Source: author calculus using Eviews

The correlation between the endogenous variable, LOG_SC, and the exogenous variables is described by the scatter plot.

Based on the graphical representations, we can state that between the value of subscribed capital (initial registration) in companies with foreign participation in Romania and the variables research&development, trade openness, infrastructure, GDP, exchange rate, respectively graduates, there is a direct and linear correlation and between the value of subscribed capital (initial registration) and labour cost there is an inverse linear correlation.

Next, we will use econometric modelling in order to confirm the research hypothesis mentioned above. Thus, simple linear regression models will be developed between the variable subscribed capital in companies with foreign participation in Romania and the chosen exogenous variables, all the variables being considered in the logarithmic form. The table below presents some of the estimation results:

Table 2: Estimation results of linear simple regression model between the value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania and the exogenous variables

Exogenous variable	R-squared \hat{R}^2	Fisher statistic F_{calc}	P	Coefficient of exogenous variable	t Statistic	P
LOG_I	0.632	39.53	0.000002	7.6654	6.2879	0.00
LOG_GDP	0.844	124.43	0.00	0.7494	11.1550	0.00
LOG_RD	0.825	108.80	0.00	0.8176	10.4307	0.00
LOG_LC	0.719	59.02	0.00	-1.2731	-7.6826	0.00
LOG_OP	0.539	26.92	0.000029	7.4778	5.1886	0.00
LOG_GR	0.381	13.56	0.001304	9.1175	3.6824	0.0013
LOG_ER	0.727	61.38	0.00	0.9578	7.8346	0.00

Source: author calculus using Eviews

The correlation coefficient (R-squared) expresses the intensity of the influence that each exogenous variable has on the endogenous variable LOG_SC. The correlation between de variables is stronger when the value of R-squared is closer to 1. With one exception, it can be observed that the correlation reports are statistically significant.

As we can see in Table 2, the intensity of the correlation regarding the sample of 25 observations is strong and statistically significant between LOG_SC and the variables LOG_GDP, LOG_RD, LOG_ER, LOG_LC and LOG_I. The intensity of the correlation between LOG_SC and the variable LOG_OP is medium the sample level but is statistically significant at population level, while the correlation between LOG_SC and the variable LOG_GR is weak. It is a direct correlation from the LOG_GDP, LOG_RD, LOG_ER, LOG_I, LOG_OP, LOG_GR and reverse from LOG_LC.

Regarding the significance of the coefficients, it can be seen that all of them are significantly different from 0, the probability that they are null featuring in the last column of the table 2 (it can be seen that it is zero in most cases, the only exception is in the case of the variable LOG_GR). The coefficient of labour cost is negative, and this means that a raise of its value has a negative impact on the value of subscribed capital (initial registration) in companies with foreign participation in Romania.

The models are valid and were confirmed by the tests relating to residual variable ε_t . Thus, White test confirmed the homoscedasticity of the errors, Durbin Watson confirmed the independence and Jarque Berra confirmed the normality of errors.

Based on the results that we have obtained by using econometric modelling, we can take the following decisions regarding our research hypotheses:

Table 3: Research propositions and related decisions

Research propositions	Decision
H1: Infrastructure has a positive influence on the value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania.	Validated
H2: Market size, reflected by Gross Domestic Product, has a positive influence on the value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania.	Validated
H3: Research&development expenditure has a positive influence on the value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania.	Validated
H4: Lower labour cost has a positive influence on the value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania.	Validated
H5: Higher openness to trade has a positive influence on the value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania.	Validated
H6: Increased number of graduates has a positive influence on the value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania.	Validated, weak correlation
H7: The depreciation of domestic currency has a positive influence on the value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania.	Validated

Source: author results using Eviews

4. Conclusion

This empirical research reveals that factors such as gross domestic product (GDP), research&development expenditure, exchange rate, labour cost and infrastructure have an important role in explaining the value of subscribed capital (initial registration) in companies with foreign participation in the share capital in Romania, trade openness has a moderate influence on the value of subscribed capital, while the number of graduates has a weak influence. Between the value of subscribed capital in companies with foreign participation in Romania and GDP, research&development expenditure, exchange rate, infrastructure, trade openness, respectively graduates there is a direct and linear correlation and between the value of subscribed capital in companies with foreign participation in Romania and labour cost, there is an inverse linear correlation.

Our study emphasizes that foreign investors are interested in the evolution of economic factors and in the infrastructure in Romania, and that is why policy maker's efforts should be directed towards improving the level of these variables of influence. It seems that human capital, proxied by the number of graduates, doesn't represent an important attraction factor for foreign investors whom are interested more in the economic factors that can lead to obtaining a competitive advantage. Of course, infrastructure is very important, and has also economic consequences, as it facilitates the transport between the production area and the sales area.

References

1. Aigheyisi, O.S. (2016) "Does stock market development play any role in the effect of FDI on economic growth in Nigeria? An empirical investigation", *Oradea Journal of Business and Economics*, vol.1, no. 2, pp. 51-61.
2. Ang, J.B. (2008) "Determinants of foreign direct investment in Malaysia", *Journal of Policy Modeling*, vol. 30, no. 1, pp. 185-189.
3. Beer, F. M. and Cory, S.N. (1996) "The locational determinants of US foreign direct investment in the European Union", *Journal of Financial and Strategic Decisions*, vol. 9, no. 2, pp. 43-53.
4. Bevan, A.A. and Estrin, S. (2004) "The determinants of foreign direct investment into European transition economies", *Journal of Comparative Economics*, vol. 32, pp. 775-787.
5. Dauti, B. (2009) "Determinants of Foreign Direct Investment in South East European Countries- Panel Estimation", *MPRA Paper No. 18273*, [Online], Available: <https://mpra.ub.uni-muenchen.de/18273/>.
6. Erdal, F. and Tatoglu, E. (2002) "Locational determinants of foreign direct investment in an Emerging market economy: evidence from Turkey", *Multinational Business Review*, vol. 10, no.1, pp. 21-27.
7. Goschin, Z., Danciu, A.R. and Serbu, R.R.S. (2013) "Understanding the regional determinants of the FDI in Romania: Evidence from a panel data model", *Revista Economica*, vol.65, no.5, pp. 207-222.
8. Holland, D., Sass, M., Benacek, V. and Gronicki, M. (2000) "The determinants and impact of FDI in Central and Eastern Europe: a comparison of survey and econometric evidence", *Transnational Corporations*, vol.9, no.3, pp. 163-212.
9. Janicki, H.P. and Wunnava, P.V. (2004) "Determinants of foreign direct investment: empirical evidence from EU accession candidates", *Applied Economics*, vol. 36, pp. 505-509.
10. Lansbury, M., Pain, N. and Smitkova, K. (1996) "Foreign Direct Investment In Central Europe Since 1990: An Econometric Study", *National Institute Economic Review*, vol. 156, no.1, pp. 104-114.
11. Mateev, M. (2012) "Country Risk and Foreign Direct Investment in Transition Economies: A Panel Data Analysis", *International Journal of Management Accounting Research*, vol. 2, no.1, pp. 1-30.
12. Ranjan, V. and Agrawal, G. (2011) "FDI Inflow Determinants in BRIC countries: A Panel Data Analysis", *International Business Research*, vol.4, no. 4, pp. 255-263.
13. Sehleanu, M. (2016) "Empirical study on the determinants of FDI inflows to Romania", *The Annals of the University of Oradea. Economic Sciences*, TOM XXV, no. 2, pp. 253-261.
14. Sethi, D., Guisinger, S.E., Phelan, S.E. and Berg, D.M. (2003) "Trends in foreign direct investment flows: a theoretical and empirical analysis", *Journal of International Business Studies*, vol. 34, no. 4, pp. 315-326.
15. Vijayakumar, N., Sridharan, P. and Rao, K.C.S. (2010) "Determinants of FDI in BRICS Countries: A panel analysis", *International Journal of Business Science & Applied Management*, vol. 5, no. 3, pp. 1-13.
16. *** EUROSTAT, [Online], Available: <http://ec.europa.eu/eurostat/data/database>.
17. ***National Bank of Romania, Interactive Database, [Online], Available: <http://bnr.ro/Baza-de-date-interactiva-604.aspx>.

18. ***Romanian National Institute of Statistics. TEMPO Online Database, [Online], Available: <http://statistici.insse.ro/shop/?lang=ro>.
19. ***Romanian National Trade Register Office (2017), *Companies with foreign participation in the share capital. Summary statistics of the National's Trade Register's Data*, February report, [Online], Available: <http://www.onrc.ro/index.php/en/statistics?id=254&lg=en>.
20. *** World Development Indicators Database, [Online], Available: <http://data.worldbank.org/indicator>.