

Available online at www.sciencedirect.com**ScienceDirect**

Procedia Economics and Finance 15 (2014) 577 – 582

Procedia
Economics and Finance

www.elsevier.com/locate/procedia

Emerging Markets Queries in Finance and Business

FDI and economic growth, the case of Romania

Paula Nistor^{a,*}^a*Petru Maior University of Tirgu-Mures, Nicolae Iorga 1, Mures County, 540088, Romania*

Abstract

The importance and the effects of FDI attracted, rightly, the interest of all the states and resulted in a fierce competition for the foreign capital. The impact of FDI inflows on the host country can be traced to the macro and microeconomic level. The impact of FDI on host economies, is often positive, manifesting differently depending on the area and the region of the foreign investment. The impact of foreign investment on host countries depends largely on the quality and quantity of the inflows. In the Romanian economy, until 2000, the foreign direct investment level has been reduced. Apparently Romania attracted less FDI inflows than other emerging economies or EU economies. This paper aims to research if in the Romanian economy, there is a link between FDI inflows and GDP growth, more if the FDI have a positive impact on economic growth namely GDP growth.

© 2014 The Authors. Published by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/3.0/>).

Selection and peer-review under responsibility of the Emerging Markets Queries in Finance and Business local organization

Keywords: foreign direct investment; economic growth

1. Introduction

FDI are generally considered to have a major contribution to the economic development of emerging economies. On the other hand, FDI are also important for developed economies. Apparent both developed economies and emerging economies have a common interest in encouraging FDI flows, although their goals are different Resmini, 2000; Estrin and Meyer, 2004; Coe et al. 1997. The positive externalities of FDI are

* Corresponding author. Tel. +40-745-963-359

E-mail address: paula.nistor@ea.upm.ro

important for host economies, while corporate profits and growth is a typical goal for multinational companies that are globally oriented.

A positive impact of FDI on economic growth has been confirmed by a number of studies by researchers such as Lunn 1980, Schneider and Frey, 2005 Carkovic and Levine, 2002. FDI contributes to the economic growth through several channels. First, it is expected to achieve the economic development through capital accumulation more inputs being incorporated into the production process and the existence of a wider range of intermediate goods Carkovic and Levine 2002; Buckley et al. 2002; Feenstra and Markusen 1994. Secondly, FDI is an important source of technological change and improving human capital and have the effect of promoting modern technology in the host country Borensztein et al.1998.

FDI are particularly important for transition economies because these economies have insufficient reserves and the technology and the capital are needed in order to stimulate economic growth Billington, 1999; Bevan and Estrin, 2000. The international capital flows, through the magnitude of their composition and stability are important for the transition to a market economy Garibaldi et al. 2002, Neuhaus, 2006. After receiving foreign capital, Romania has recorded high growth rates for the period 2005-2008. In a considerable way, this growth can be explained by the FDI that contributes by using new technologies, knowledge, and employment in the host country and opening new markets for them.

The FDI phenomenon raised the question of the interest that the host countries have in promoting and attracting them. Thus, the multinational companies contribute to the improvement of technologies, the training and labor force qualification, provides access to external markets. But their most important influence is the fact that it stimulates the capital formation through savings and investment process. Considered in a generally background, the need for FDI appears as a consequence of the structural diversification of the global economy, competition which is manifested on this, but mostly due to the different level of development of the national economies. Less developed economies, developing or in transition economies, they need foreign capital to accelerate economic growth.

First, the impact of FDI on economic growth manifests itself differently depending on the type of foreign direct investment. In the case of greenfield investment the economic growth achieved due to FDI is reflected by the creation of new production capacities, additional jobs the increase in consumption of the population and an increase in revenues from the contributions taxes and fees. In the case of FDI which take the form of privatization, they essentially influences the host country technological progress. Most of the times, in the case of the FDI from privatization, this is followed by a revamped company. After retrofitting, the FDI enterprises is becoming a strong competitor in the market of the host country, so motivating the local businesses.

The FDI inflows are stimulating the domestic investment because the domestic producers will be motivated to improve the quality of the goods and services produced in order to be competitive on the market. In most cases, foreign direct investors use raw materials, auxiliary materials or services from the host country and therefore have a positive impact on local businesses.

In Romania, the FDI had a significant role in the privatization process. Most privatizations after 1990 were made through FDI. Unfortunately, in Romania have been some negative experiences related to privatization through FDI. In some cases, after privatization, the foreign direct investors took the decision to cease operation of the company, have used its assets and repatriated earnings. However, not all experiences were negative, the largest and most important companies in Romania today, are companies which are owned by foreign direct investors.

2. Methodology

Durbin-Watson test is a statistical test which determines the autocorrelation using the regression. Using the Durbin-Watson test, we tried to determine whether there is a link between FDI inflows and GDP in Romania. For the calculations we used the "Statistical Product and Service Solution" (SPSS); regression

analysis method that calculates a measure of representativeness, called coefficient of determination. The coefficient of determination r^2 , measures the percentage of variation of the independent variables based on the deviation of the dependent variable. The values obtained for the Durbin-Watson, are generally between 0 and 4. Indicator value 2 indicates that there is a autocorrelation between variables. Values between 0 and 2 show a positive autocorrelation and a value of the between 2 and 4, shows the negative autocorrelation.

To study the impact of FDI inflows in Romania, we started from the relationship, according to which foreign direct investment, along with other independent variables are affecting the GDP for the Romanian economy.

$$GDP = \alpha_0 + \alpha_1 \cdot FDI + \alpha_2 \cdot GE + \alpha_3 \cdot GFCF + \varepsilon \quad (1)$$

The Durbin -Watson test, applied is based on a relationship where, the gross domestic product is a dependent variable and inflows of foreign direct investment, government expenditure and gross fixed capital formation are independent variables, namely, the gross domestic product depends on macroeconomic variables. We started from the linear relationship between the dependent variable gross domestic product (GDP) and the independent variables, foreign direct investment inflows (FDI), government expenditure (GE) and gross fixed capital formation (GFCF).

3. Data

In order to determine the impact using econometric models, we used data regarding the annual evolution of variable gross domestic product (GDP) and the independent variables, foreign direct investment inflows (FDI), government expenditure (GE) and gross fixed capital formation (GFCF). Data were taken from the World Bank database and are expressed in millions. By gross domestic product, we understand total value of goods and services produced by all economic agents operating within the borders of a country, irrespective of their nationality. It is calculated as the difference between the total value of goods and services produced in a given period (gross global product) and total value of intermediate consumption (economic goods and services produced in order to achieve other economic goods and services); Vasilescu, 2003. Public expenditure expresses social and economic relations in cash, which occurs between the state, on the one hand, and individuals and businesses, on the other hand, when the allocation and use of financial resources of the state to fulfill its functions Văcărel, 2007. Gross fixed capital formation represents the value of durable goods acquired by units resident in order to be used later in the production process NBS 2013. Current account balance expresses the effects resulting from exports and imports, foreign income and net current transfers Voinea, 2008.

In the 1990s the FDI inflows in Romania were very low. The period 1990-2000 was characterized by a legislative framework and institutional formation. Since 2000, the investment framework has become more consistent and stable; this led to an increase in foreign investments in Romania. During 1990-1998, the FDI inflows increased in the Romanian economy, being 2.040 million in 1998. In 1999, the FDI inflows decreased by 49% compared to 1998 due to the global economic slowdown.

As can be seen from the data presented in Table 1, starting with 2002, FDI inflows increased, with growing annual values. In 2004, FDI inflows increased by 249% since 2003. In 2005 the law was changed, it was introduced the flat tax rate of 16% and the progressive tax was eliminated. In 2006, the FDI inflows in Romania reached 10.971 million dollars. In 2007-2008, Romania has passed another significant step in economic terms because starting with January 1, 2007, became a member state of the European Union, and had

to align with the European Union standards.

Table. 1. Evolution of FDI inflows, GDP, government expenditure, gross fixed capital formation and current account balance in Romania during 1990-2011

Year	1990	1991	1992	1993	1994	1995
Foreign Direct Investment	0,01	40,00	77,00	94,00	341,00	419,00
Gross domestic product	38299,11	28846,86	25090,30	26361,16	30072,62	35477,06
Government Expenditure	5102,68	4370,42	3583,44	3254,00	4139,81	4857,62
Gross fixed capital formation	7580,36	4149,22	4813,98	4715,09	6099,75	586,14
Year	1996	1997	1998	1999	2000	2001
Foreign Direct Investment	263,00	1224,00	2040,00	1025,00	1048,00	1174,00
Gross domestic product	35333,68	35285,89	42115,49	35592,34	37052,64	40180,75
Government Expenditure	4630,47	4324,81	2990,90	2025,30	2671,06	2668,59
Gross fixed capital formation	8109,55	7469,43	7652,47	6302,20	7004,52	8298,23
Year	2002	2003	2004	2005	2006	2007
Foreign Direct Investment	1128,00	1805,00	6373,00	6512,28	10971,01	9647,00
Gross domestic product	45824,53	59507,35	75489,44	98913,39	122641,51	169282,49
Government Expenditure	3124,69	6016,36	7403,63	9770,01	15852,48	22392,65
Gross fixed capital formation	9766,50	12738,83	16328,86	22774,38	28866,81	48735,95
Year	2008	2009	2010	2011	2012	
Foreign Direct Investment	13606,00	4934,00	2963,00	2713,00	2242,08	
Gross domestic product	200071,06	161110,32	161628,75	179793,51	169396,05	
Government Expenditure	31011,02	24444,54	24901,57	28450,86	11161,69	
Gross fixed capital formation	62256,91	48876,91	50341,69	57804,62	45247,56	

Source: World Bank http://databank.worldbank.org/ddp/home.do?Step=2&id=4&hActiveDimensionId=WDI_Series

From the dates related Table No.1, it can be observed that the maximum level of FDI inflows in Romania was reached in 2008, being 13.606 million dollars, following a decrease in 2009. The FDI inflows decrease continued for the period 2010-2012. In 2012, the inflows of foreign direct investment in Romania were low, being 2.242 million dollars. The data presented in the table. 1 shows a similar pattern for FDI, GDP, public expenditure, gross fixed capital formation in Romania, 1990-2012. All four indicators showed similar developments in the same period.

Starting from the hypothesis that FDI inflows influence the growth or increase of the gross domestic product to determine whether there is a correlation between FDI inflows and the gross domestic product we used data on FDI inflows, public expenditure, gross fixed capital formation and gross domestic product the World Bank annual series for the period 1990 - 2012, presented in Table No. 1.

Table 2 Estimated statistics for the dependent variable coefficients gross domestic product

Indicator	Estimated Coefficients	Standard Error	t Test	The Level of Significance	Durbin-Watson Test
Constant	1.218E10	2.135E9	5.705	0.001	
FDI	2.299	0.482	4.771	0.001	1.168
GE	-1.451	1.610	-901	0.379	
GFCF	3.434	0.806	4.260	0.001	
			R 0.995, R ² 0.990		

Source: author's contribution using SPSS software

Based on the equation (1), the relationship that expresses an aspect of macroeconomic balance, the calculations above, resulted:

$$GDP = \alpha_0 + \alpha_1 \cdot FDI + \alpha_2 \cdot GE + \alpha_3 \cdot GFCF + \varepsilon$$

$$GDP = 1281 \cdot 10^{10} + 2.299 \cdot FDI + 1.451 \cdot GE + 3.343 \cdot GFCF \quad (2)$$

$$t \quad \quad \quad 5.705 \quad 4.771 \quad -0.901 \quad 4.260$$

$$R^2 = 0.995 \quad \quad F = 608.663 \quad \quad \quad \quad D.W. = 1.168$$

The results presented above show that FDI inflows have a positive impact on the gross domestic product, with a coefficient of 2.299. The coefficient is positive, and highlights the positive impact of FDI inflows on GDP. Significant coefficient of 0.001 indicates that the coefficient is statistically significant. From the econometric approach the impact of public expenditure on gross domestic product, has resulted in a negative coefficient of -1.451, which indicates a negative influence of public expenditure on gross domestic product in the Romanian economy for the analyzed period. Our results show that this coefficient is not statistically significant due to the significance of the coefficient value that has a value of 0.379, is higher than the threshold of significance 0.05.

The econometric results revealed that, gross fixed capital formation had a positive impact on gross domestic product. The value of 3.434 obtained from the analysis show its positive impact on GDP. The significance coefficient, as in the case of FDI inflows, has the value 0.001, which shows the coefficient is statistically significant.

4. Conclusion

After applying the Durbin-Watson test, based on data from the World Bank for the period 1990-2012, we surveyed whether the FDI inflows influences for the GDP in the Romanian economy. From the calculations made, it revealed that there is a correlation between FDI and economic growth. Moreover, FDI inflows had a positive influence on GDP. From the analysis, we can affirm that FDI inflows in Romania, influenced the economic growth. As a result of the research, we support the fact that FDI can be considered an active factor in the development and adaptation to the market economy and competitiveness. In the case of Romania FDI are an element which conditions the achievement of the proposed restructuring program of economic reform.

References

- Bevan, A.A., Estrin, S., The Determinants of Foreign Direct Investment in Transition Economies. Discussion paper No. 2638. Centre for Economic Policy Research, London, 2000, p. 1-57;
- Billington N., The Location of Foreign Direct Investment: an Empirical Analysis. *Applied Economics*, nr. 31, 1999, p. 65-76;
- Carkovic M., Levine R., Does Foreign Direct Investment Accelerate Economic Growth? Institute of International Economics Press, Washington DC, p. 195-221, 2002;
- Buckley P, Clegg J, Wang C, Cross A, FDI, Regional Differences and Economic Growth: Panel Data Evidence from China. *Transnational Corporations* 11, 2002, p. 115-135;
- Feenstra R, Markusen I., Accounting for Growth with New Inputs. *International Economic Review*, nr. 35, 1994, p. 429-447;
- Resmini L., The Determinants of Foreign Direct Investment in the CEECs: New Evidence From Sectorial Patterns. *Economics of Transition* 8, 2000, p. 665-689;
- Coe D.T., Helpman E., Hoffmaister A.W., North-South R&D Spillovers. *Economic Journal*, 107, 1997, p. 133-151;
- Lunn J., Determinants of U.S. Direct Investment in the E.E.C.: Further Evidence, *European Economic Review*, 13, 1980, p. 93-101;
- Schneider F, Frey B., Economic and Political Determinants of Foreign Direct Investment, *World Development* 13(2), 1985, p. 161-175;
- Carkovic M., Levine R., Does Foreign Direct Investment Accelerate Economic Growth? Institute of International Economics Press, Washington DC, p. 195-221, 2002;
- Estrin S., Meyer K., *Investment Strategies in Emerging Markets*, Edward Elgar, Chetenham, 2004;
- Borensztein E., De Gregorio J., Lee J.W., How does foreign direct investment affect economic growth? *Journal of International Economics*, 45, 1998, p. 115-135;
- Garibaldi P, Mora N. Sahay R., What moves capital to transition economies? Working Paper 02/ 64, International Monetary Fund, Washington, DC, 2002, p.1-47;
- Neuhaus M, The impact of FDI on Economic Growth: an Analysis for Transnational Countries of Central and Eastern Europe. *Physica, Heidelberg*, 2006, p.96;
- Durbin, J., Watson, G. S., Testing for Serial Correlation in Least Squares Regression III. *Biometrika* 58, p. 1-19, 1971;
- Durbin, J., Watson, G. S., Testing for Serial Correlation in Least Squares Regression, II. *Biometrika* 38, p. 159-179, 1951;
- Vasilescu I., Românu I, *Dicționar de investiții*, Ed. Lumina Lex, București, Romania, 2003, p. 243.
- Văcărel I., coordonator, *Finanțe Publice*, Ediția a VI-a, Ed. Didactică și Pedagogică, 2007, Romania, p. 127.
- Biroul Național de Statistică, <http://www.statistica.md/pageview.php?l=ro&idc=351&id=2252>.
- Voinea G., *Relații valutare-financiare internaționale*, Ed Univ. Alexandru Ioan Cuza, Iași, Romania, 2008, p.252
- World Bank, <http://databank.worldbank.org/data/views/reports/tableview.aspx>