

## **THE RELATIONSHIP BETWEEN FOREIGN DIRECT INVESTMENT AND ECONOMIC GROWTH IN BULGARIA, ROMANIA AND CROATIA DURING THE RECENT ECONOMIC CRISIS<sup>1</sup>**

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### **Abstract**

*The main aim of this research was to identify the relationship between economic growth and foreign direct investment (FDI) inflows during the recent global crisis in the last three countries that entered European Union (EU): Bulgaria, Romania and Croatia. The Bayesian regression models were used for this short period and the results indicated that during 2008-2015, in Bulgaria and Romania the increase in real GDP rate attracted more FDI, but these FDI did not generate economic growth. On the other hand, even if higher GDP attracted more FDI, in Croatia, FDI was an engine of economic growth since 2008.*

**Keywords:** *FDI, economic growth, Bayesian models, crisis*

**JEL Classification:** *C51, C53*

### **1. Introduction**

There are many studies that analyzed the relationship between FDI and economic growth in the context of sustainable development. The economic development is one of the pillars of sustainable development and for ensuring economic growth the government decision factors try to attract more FDI. The type of relationship between economic growth and FDI depends on the conditions in each country. There are empirical evidences that show that FDI did not really ensured economic growth.

This relationship between the two variables is analyzed in this study for Bulgaria, Romania and Croatia, that recently entered EU during the

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recent economic crisis. It is an unstable period and it is important to analyze it in order to anticipate the foreign investors' behaviour in such periods.

The article continues with the presentation of a literature review and an empirical application is proposed for the three countries using Bayesian models. The last part of the study summarized the main conclusions.

## **2. Related literature**

In general, it is considered that foreign direct investments are an engine of economic growth. FDI have the ability to influence the causes of economic growth: human resources, domestic investment and technological progress. Empirical Perspectives analyzed also inverse relationship between foreign direct investments and economic growth: in economies with rapid economic growth was also observed an increase in FDI because of the increased attractiveness of that economy to foreign investors. Several studies have been conducted in the literature regarding the relationship between FDI and economic growth: studies that have revealed that FDI positively affects economic growth through productivity, technology transfer and employment growth: Soto (2000), Alfaro et al. (2001), Liu et al. (2002), Hansen and Rand (2004), Nath (2005), and Somwaru Makki (2005); studies that have revealed that FDI is positively impacted by economic growth due to conditions in the host country: Bloomstrom et al (1994), De Mello (1997), Borensztein et al (1998), Bengo and Sanchez Robles (2003), Basu et al. (2003).

After 90's, several studies have appeared about the determinants of economic growth, given that the former communist countries still managed to attract greater FDI flows.

The country's efforts to attract FDI are made, according to Caves (1996), because of the potential positive effects on the states hosts economy level (reduce unemployment, access to foreign markets, optimal allocation of resources, stimulating trade, higher productivity, improving management skills , technology transfer, know how). It was created an attractive climate to potential investors, as given the positive effects of FDI (superior training of human resources, increasing competitiveness in the business environment, technology transfer). Most studies in the literature of the past 20 years have analyzed the effects of FDI on the host economy, but also the relationship of FDI inflows-economic growth only if the host country. In the neoclassical model it is considered that FDI is a factor of economic growth because it increases the volume of investments and their efficiency. In the endogenously model, FDI determines economic growth as the developed technologies are applied in the host country, as it is indicated by Borensztein et al. (1998).

Blomstrom (1994) finds that FDI have positive effects on economic growth, because they are related with the income levels. Under a certain amount of income, these positive effects are canceled. Only countries with a certain level of income have capacity to absorb new technologies and only they can have benefits from the positive effects of FDI. The quality of human resources greatly influences the ability to absorb new technologies. Quality employment has a big influence on how new technologies are mostly absorbed.

Markusen et al. (1999) studied the effects of FDI on domestic companies in their secondary sector. Foreign investors increased demand for domestic intermediate goods, which determines the integration of local firms in the intermediate goods sector. In this way, the prices are reduced and final goods manufacturers gain advantages.

Lipsey (2002) does not negate the positive effects of FDI on economic growth but indicates that there is still not a stable link between economic growth and size of FDI stock. The causality link between the two variables has been studied also by Chowdhury and Mavrotas (2005) for three emerging economy countries (Malaysia, Chile and Thailand). In Chile economic growth is attracting FDI. In contrast, in the other two countries relationship is bidirectional (FDI generates economic growth but consistent economic growth also attract more FDI). So there are specificities of each economy in influencing attracting FDI.

Although FDI positively affects growth of the host country, Bengoa and Sanchez-Robles (2003) found that there are necessary also liberalized market, economic stability and human capital prepared, so the positive impact of FDI to maintain long-term. The same idea is reinforced by Alfaro (2003), who considers that host countries need quite developed financial markets.

Studies in the literature provide conflicting results that cannot be generalized. Therefore, the assumption that FDI has a positive impact on economic growth is checked only for some specific countries or regions.

In Romania, Romania's business environment requires economic freedom, but also an acceptable tax for companies, including those affecting foreign investment. Must be provided suitable conditions to attract more foreign investors: protection against unlawful expropriation, non-discrimination, fair and equitable immediate appeal to international arbitration, the existence of an attractive fiscal environment in Romania. In recent decades, worldwide, countries have tried to create a climate favorable to foreign investors, these efforts being essential conditions for attracting as many possible foreign investors.

ISD provides economic development after market principles. For developing countries, such as Romania, FDI strengthens the economy and

integrate it into the global economy. By upgrading local economy as a result of FDI through the use of modern technology and equipment more efficient by raising quality standards that switch to a new type of economic growth. FDI efficiency is conditioned by their quality, but also by the beneficiary sectors. It was established that FDI is the most important factor that determines economic growth in countries like Malaysia, China, South Korea and Hong Kong.

Following the model of the international literature, and for Romania in special, it has studied the impact of foreign investments entrance on economic growth, but also on the economy as a whole. Some Romanian authors analyzed these topics, but the results are not relevant. The causes of irrelevance are multiple: the selected variables are not the most suitable; time series used have a small length and are not suitable for the development of traditional econometric models, as observed by Vintila and Zaharia (2012), the analysis is only descriptive Andrei (2012). From this perspective, Romanian literature has many poor points of view. Therefore it is considered that the issue deserves to be examined, especially to highlight the link between FDI and economic growth during the recent economic crisis. The data series are having in this case small length but it is useful utilisation of Bayesian econometric techniques that solves this problem.

Some studies for Romania emphasize the powerful effect of FDI on the economic environment. For example, Ulian et al. (2014) obtained that FDI had a strong positive impact on economic growth in Romania and Moldova in the period 2006-2012 based on a simple linear regression. Nistor (2012) showed that in the regions of Romania there is a positive correlation between GDP per inhabitant and FDI stocks. In the Northeast region, there is the smallest stock of FDI, and the lowest GDP per inhabitant. Based on other methods, Roman and Padureanu (2011) achieved a positive effect of FDI on economic growth in Romania. The authors used a neoclassical model with production function Cobb-Douglas type. Pelinescu and Radulescu (2009) showed that FDI had a positive and quite weak impact on economic growth during the first quarter: first quarter 2000- first quarter 2009. There are also indirect effects of FDI on GDP, such as higher labor productivity.

The growth rate of GDP is an indicator of the potential of a market. For foreign investors in the transition countries of Central and Eastern Europe, the growth rate of GDP is an important milestone, as observed by many authors, including Tondel (2001), Garibaldi et al. (2001), Addison and Heshmati (2003), Busse and Hefeker (2007), Dang (2009), Bock and Tuschke (2010). In Romania, the empirical evidence shows a weak influence on FDI growth. In studies for other countries, GDP has proved to be an important factor for attraction of FDI, as obtained Garibaldi et al.

(2002), Bevan and Estrin (2000), Globerman and Shapiro (2002), Bevan et al. (2004), Bénassy-Quéré et al. (2007), Bellak et al. (2007), Olofsdotter and Hansson (2010). Talking about Romania, Ludosean (2012) built a VAR model, getting on base of Granger causality test that FDI does not generate economic growth. On the other hand, the author has shown that a higher economic growth attract more foreign investors in Romania. The same conclusions about the relationship between FDI and GDP were obtained by Carp and Popa (2013) for Romania. Based on a VAR model for the period 1990-2011, authors obtained that GDP is the factor who determines FDI flows in Bulgaria and Romania.

Based on a simple linear regression model, Moraru (2013) explained the GDP based on FDI in 2003-2011. However, time series is very small and the result should be regarded with a big reserve.

### **3. Empirical relationship between FDI and economic growth**

In this study, the relationship between real GDP rate and foreign direct investment (FDI) inflows (% of GDP) is analyzed for the three new members of European Union (Bulgaria, Romania and Croatia). Romania and Bulgaria entered EU in 2007, while Croatia is member of EU since 2013. The host countries are interested in attracting FDI, because these investments might bring economic growth, which is essential in the context of sustainable development. On the other hand, there are some countries for which the increase in GDP will attract more FDI. The specific causality between the two variables depends on the conditions in each country. Our objective is to check if all the analyzed countries have the same type of causality, knowing that these are the last countries that entered in EU. The type of relationship between economic growth and FDI was analyzed only in since the beginning of the crisis (since 2008) until 2015. The short set of data makes unsuitable the models of Frequentist Econometrics. Therefore, some linear Bayesian regression models were estimated for each country over the period 2008-2015. The effects of global crisis were met in these countries since 2009. The estimation algorithm for Bayesian models is Random-walk Metropolis-Hasting, the estimations being made in Stata 14. The prior distributions for coefficients are normal of average 0 and variance 1. A normal likelihood function is considered of variance equalled to 1. A number of 12 500 MCMC iterations is considered and 2 500 iterations for burn-in. We have self-conjugated prior, the posterior distribution being also normal. The variables will be denoted with growth and FDI.

Table 1. A linear Bayesian model for explaining real GDP rate in Bulgaria

Growth	Mean	Standard deviation	Equal-tailed (95% confidence interval)	
FDI	-0.0131336	0.1383948	-2.006748	1.947571
Constant	-0.0297814	0.3502097	-1.95248	1.939772

In Bulgaria, the FDI had a negative impact on economic growth during the analyzed period. An increase in FDI inflows (as % from GDP) with one percentage point determined a decrease in real GDP rate with 0.013 percentage points. It is a low impact of FDI on economic growth, but it is clearly stated that FDI was not an engine of economic growth in Bulgaria during the crisis period.

Table 2. A linear Bayesian model for explaining FDI (% of GDP) in Bulgaria

FDI	Mean	Standard deviation	Equal-tailed (95% confidence interval)	
Growth	1.070142	0.1383948	0.804351	1.34888
Constant	4.235378	0.3502097	3.549533	4.91267

In Bulgaria, the GDP increase had a positive impact on FDI during 2008-2015. An increase in real GDP rate with one percent increased, in average, the FDI with 1.07 percentage points.

Table 3. A linear Bayesian model for explaining real GDP rate in Romania

Growth	Mean	Standard deviation	Equal-tailed (95% confidence interval)	
FDI	-0.022353	1.031667	-1.977393	2.011686
constant	-0.0015886	1.04477	-2.058073	1.983908

In Romania, like in Bulgaria, it seems that the increase in FDI inflows did not positively affected economic growth. Real GDP rate decreased with 0.02 percentage points when FDI inflows increased with one percentage points during 2008-2015.

Table 4. A linear Bayesian model for explaining FDI (% of GDP) in Romania

FDI	Mean	Standard deviation	Equal-tailed (95% confidence interval)	
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growth	0.1950518	0.0874561	0.0212291	0.3599137
constant	1.966591	0.3717643	1.2389919	2.704845

For Romania, the increase in real GDP rate positively influenced the FDI attraction during the crisis. When the real FDP rate increased with one percentage point, the FDI as percent from GDP increased with 0.19 percentage points.

Table 5. A linear Bayesian model for explaining real GDP rate in Croatia

growth	Mean	Standard deviation	Equal-tailed (95% confidence interval)	
FDI	0.1424588	0.1336955	-0.1250861	0.3993892
Constant	-1.663491	0.6209098	-2.876039	-0.4375972

In Croatia, FDI inflows had a positive impact on economic growth in crisis period since 2008. The real GDP rate increased with 0.14 percentage points when FDI inflows as percentage from GDP grew with one percentage point.

Table 6. A linear Bayesian model for explaining FDI (% of GDP) in Croatia

FDI	Mean	Standard deviation	Equal-tailed (95% confidence interval)	
growth	0.0202954	0.9848089	-2.027121	1.936545
Constant	0.017228	0.9937951	-1.916654	2.009962

On the other hand, it seems that a higher GDP attracted more FDI in Croatia. The FDI inflows grew with 0.02 percentage points when real GDP rate increased with one percentage point.

#### 4. Conclusions

The empirical relationship between economic growth and FDI has been previously studied in various researches, but a special attention was not attributed to this relation in the period of recent crisis. Therefore, this study brings as novelty the analysis of the relationship between FDI and real GDP rate since the recent crisis beginning in 2008 for the last entered members of EU.

The results indicated that in Bulgaria and Romania the increase in GDP attracts more FDI. So, the foreign investors are interested in investing in these host-countries when economic growth is registered during economic crisis. On the other hand, for these countries during the economic crisis, FDI did not generated economic growth. A different situation was observed in Croatia who entered EU in 2013. The increase in GDP attracted

more investors here, but the FDI increase was an engine of economic growth. Indeed, this successful objective followed by Croatia contributed to the country's receiving in the EU.

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