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The Impact of FDI on the Economic Growth of Serbia

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This paper analyzes the impact of foreign direct investment on the economic growth of the Republic of Serbia. The aim is to analyze the effects of the economic crisis on foreign direct investment impact on the economic performance of the Serbian economy. This paper analyzes the period of 2000 - 2014, using the Inward FDI Performance Index and Pearson's coefficient of simple linear correlation. The period before the economic crises (2000-2007) and the period after the beginning of the economic crisis (2008-2014) are analyzed separately, in order to observe the linear correlation between FDI and economic growth. The results of the research speak in favor of the existence of a strong and statistically significant correlation between FDI and observed macroeconomic indicators in the period of 2000-2007. The second sub-period was characterized by an absence correlation between FDI inflows and all the observed macroeconomic indicators. The results for the period of 2008-2014 can be explained by the effects of the global crisis on the Serbian economy and the deterioration of all macroeconomic indicators in the given period. Effects of the crisis on the Serbian economy were very strong.

Keywords: foreign direct investments, economic growth, gross domestic product, exports, imports, unemployment, the Republic of Serbia

1. Introduction

The global macroeconomic trends indicate a growth of the public debt and the reduction of investments in other countries. This is characteristic of both developed countries and developing countries. The financing economic development through borrowing is especially difficult for developing countries. A low credit rating of developing countries leads to interest rates being at a higher level. Further additional borrowing increases above financial liabilities in the form of even higher interest rates and loan installments due for repayment. Attracting foreign direct investment (FDI) can be a good alternative for developing countries to overcome the gap between the need for accelerated economic growth, on the one hand, and the lack of capital, on the other.

The recent empirical studies confirm the positive effect of foreign direct investment on economic growth in developing countries. Foreign direct investments (FDI) are recognized as an important channel of international technology transfer and large scale production achievement. However, studies in European transition economies do not show such a consistent result. The cause can be found in the transition process itself, but also in the effects of the economic crisis. Economic and political instability may not only slow down; sometimes it may also stop the capital flow. Certain economic and political circumstances are the key determinants that establish the inflow of foreign direct investments into a host country (Kragulj, 2003). Various research explore the correlation between foreign direct investment and GDP. Some of the studies show a positive correlation between those two variables (Borensztein et al., 1998; Campos and Kinoshita, 2002; Makki and Somwaru, 2004; Alguacil et al., 2011; Giroud et al., 2012), while others show a negative correlation (Hermes and Lensink, 2003; Stanisic, 2008; Doytch and Uctum, 2011).

Achieving economic growth, increasing productivity and employment, social cohesion and reducing pressure on natural resources is the aim of both the EU and Serbia. As an EU candidate member, Serbia is trying to adjust its strategies and policies to meet the EU regulations (Jednak and Kragulj, 2015). The aim of

this paper is to analyze the impact of foreign direct investment on the economic growth of the Republic of Serbia. The research has been conducted as an analysis of the influence of FDI on GDP, exports, imports and unemployment rate in Serbia in the period 2000-2014. The method used is a linear correlation conducted on the World Bank data.

2. Overview of the Serbian Economy (2000-2014)

Year 2000 is determined as the real beginning of economic reforms in Serbia and at the very start economic growth was present. Production growth in Serbia has been explained by the following factors: a) before 2000 Serbia already had a market-based economy, b) there was macroeconomic stability present, which improved business environment and helped achieve economic growth, c) the country received foreign support and donations (at the end of October 2000), and d) the UN sanctions had been lifted (Begovic *et al.*, 2005). The reforms were implemented quickly. An expansionary fiscal policy and a tight monetary policy were the main tools for developing a more favourable economic environment. A large number of enterprise privatizations was performed. The banking system, as a sector with a large inflow of foreign capital, was reformed as well. In addition, Serbia received numerous foreign grants and aid. The lack of savings and domestic capital slowed down further reforms and the ability to finance consumption and investment. In such a situation, the solution was the inflow of foreign capital, especially foreign direct investments. Foreign capital had an important role in achieving Serbian economic growth. Since then, FDI has been considered an essential factor in starting production and realizing economic growth.

According to the Development Report of Serbia 2010 (2011), the economic growth of Serbia is based on domestic demand, imports and the need for foreign funds. In the period 2001-2008 the average rate of economic growth was 4.9%. The achieved economic growth was a consequence of the process of undergoing economic and social policy changes, institutional reforms and a favorable environment in the international capital market (Orđević and Veselinović, 2010). However, Serbia established a new model of growth. The new growth model was changed to pro-investment strategy and export-oriented economic growth. The new growth is based on the reform of the public sector, restructuring and infrastructure development. The main objectives of this model are correlated with the EU's goals – reduction in unemployment rate, human capital improvement, investing in knowledge and technology, export-based growth, rational energy use and poverty reduction. Accomplishing such objectives depends on – fixed investment increase, reducing the share of public consumption in the GDP, raising the share of exports in the GDP and reducing the current account deficit (Jednak *et al.*, 2013). Although Serbia implemented the new model of economic growth, the rise in production output was not achieved. The possible reasons could be the lack of domestic capital, fewer foreign investments in comparison with the 2000s due to the global economic crisis, a previously unstable political and business environment, insufficiently developed institutions, small domestic market or the distance from investing countries (Erstin and Uvalic, 2013). Further on, the exports are not high enough because the most investments are made in the service sector which does not have a large share in Serbian exports. During the time period 2000 – 2014, the FDI in Serbia differed in volume and trend. The majority of inflows of FDI were through the privatization and acquisitions in the banking sector, while the greenfield investments were very low.

Merlevede and Schoors (2009) analyzed the FDI inflow in 10 transition economies and found that the FDI inflow in those countries is primarily affected by the models of privatization implemented. The study demonstrated that the countries which mainly used models of internal privatization and free distribution of stock to their citizens, attracted significantly less investments than the countries whose privatization was largely based on the external model.

The highest inflows of FDI were recorded at the beginning of the analyzed period and in 2006 (mostly due to FDI in the telecommunications sector), while the declines in FDI were in 2004, 2008 and 2009. The total net FDI during the entire period amounted to about €33.6 billion (2000-2014). Foreign investors invested in Serbia in the following sectors - services sector (trade, banking, telecommunications, distribution of petroleum products, tourism) and production sector (beer, beverage, tobacco, food and metal and non-metals industry). The highest inflows of FDI came from Austria, Norway, Germany, Luxemburg, Greece, the Netherlands, Italy, Russia, Slovenia and Hungary. The highest foreign investments in Serbia (2001-2011) are Telenor (€ 1,602 EUR mil), Gazprom Neft – NIS (€ 947 mil), Fiat Serbia (€940 mil), Delhaize (€933 mil), Philip Morris

DIN (€733 mil), Stada – Hemofarm (€650 mil), Mobilkom – VIP Mobile (€633 mil), Agrokor (€614 mil), Banca Intesa (€508 mil), Salford Investment Fund (€500 mil), Eurobank EFG (€500 mil), Raiffeisen bank (€500 mil), Mercator (€500 mil) and StarBev – Apatin Brewery (€487 mil) (Business info group, 2012). Even though the inflows of foreign capital have been present in Serbia, the country's economy has not always had a good economic performance. FDIs had a direct and an indirect impact on economic activities in Serbia. Moreover, various investments had a different time of realization and influence on the output increase. Due to this fact, there is some difference between FDI and the GDP. Based on this overview, the correlations between FDI and the GDP, exports, imports and unemployment will be analyzed in the following sections of the paper.

3. Methodology and Data

This paper is based on applied methodology and research carried out in the previous period in the Republic of Serbia (Šabić et al., 2012; Jaćimović et al., 2013). A survey conducted in 2012 (Šabić et al., 2012) found a high correlation between FDI inflows and GDP and between GDP inflows and exports, while the linear correlation between FDI inflows and the unemployment rate was very low for the time period of 2000 to 2010.

Jaćimović et al. (2013) conducted a linear regression analysis of the dependence of imports and exports of goods and services and the growth of the GDP per capita from FDI inflows. The time period taken into consideration by this research is from 1995 until the end of 2011. The inflow of FDI was the independent variable, while the dependent variables were the import and export of goods and services and the GDP per capita. This study led to several conclusions: 1) There is a strong linear correlation between these variables; 2) Albania has the highest influence of FDI on the dependent variables; 3) Bosnia and Herzegovina has the lowest degree of correlation between variables; 4) The impact of FDI inflow on the GDP per capita is lowest in Macedonia. However, the shortcoming of the research lies in the low statistical reliability of the used method. This is due to the fact that the only reliable correlation between the variables is identified in the case of Albania, where we can see that €1 million of FDI inflow leads to an increase in exports of €3.56 million, the growth of imports of €5.73 million and the growth of GDP per capita by \$4.3. In all other cases, R^2 is lower than 0.5 which makes it impossible to analyze the remaining SEE countries. The authors detach themselves from the results and suggest different effects of the global economic crisis on the analyzed countries as the reason for these results.

In this paper, the Inward FDI Performance Index was calculated for the period from 2000 to 2014. Subsequently, the linear correlation between FDI inflow and GDP per capita, FDI inflow and exports of goods and services, FDI inflow and imports of goods and services and FDI inflow and the unemployment rate for the same time period were analyzed.

The inward FDI Performance Index ranks countries according to FDI inflows based on their economic strength (measured by GDP level). The index is calculated using Equation 1:

$$I_i = \frac{FDI_i/FDI_w}{GDP_i/GDP_w} \quad (1)$$

where FDI_i represents the FDI inflow for the observed country, FDI_w represents the total amount of FDI in the world, GDP_i represents the GDP of the country observed and GDP_w the total world GDP.

If the index value is higher than one, it indicates that the country attracted more FDI than it contributed to the total global production (measured by GDP) and vice versa in the case when the index is lower than one. The Inward FDI Performance Index measures the country's attractiveness for foreign direct investment according to its market size, while other factors are considered to be of equal importance. Other factors may be various: political and economic stability, the presence of natural resources, development of infrastructure, business environment, opportunities for participation within the privatization process and similar (Bandura, 2005).

Pearson's coefficient of simple linear correlation will be used for measuring the degree of concurrence between: (1) FDI (x) and GDP per capita (y); (2) FDI (x) and exports of goods and services (y); (3) FDI (x) and imports of goods and services (y), and (4) FDI (x) and the unemployment rate (y) in Serbia for the time pe-

riod 2000-2012. The standard formula for calculating Pearson’s coefficient is used:

$$r = \frac{n * \sum xy - \sum x * \sum y}{\sqrt{n * \sum x^2 - (\sum x)^2} * \sqrt{n * \sum y^2 - (\sum y)^2}} \quad (2)$$

To simplify the interpretation, the coefficient of determination R², which represents the squared value of Pearson’s coefficient, will also be used. The determination coefficient measures the degree of the variance of the two variables which is common; in other words, we examine the common part of the FDI variance and a) GDP per capita, b) exports of goods and services, c) imports of goods and services, and d) the unemployment rate in Serbia for the observed period 2000-2014.

The data on macroeconomic indicators are downloaded from the database of the World Bank. The data were analyzed using the statistical software package IBM SPSS Statistics 22. It was used to calculate the previously explained Pearson’s coefficient of linear dependence. The Inward FDI Performance Index for Serbia for the period 2000-2014 was calculated based on the data obtained from the World Bank.

4. Results and Discussion

The Inward FDI Performance Index for the observed period demonstrates different values by years (Table 1), so it cannot be claimed that a trend in FDI inflows exists. The index has the minimum value in the first year (2000), as well as in 2001. In all the other observed years, the index exceeds the value 1, indicating that Serbia attracted more FDI in relation to its economic strength in global terms, measured by the domestic GDP share in the world GDP. The highest value of the index is realized in 2003 (4.51) and 2006 (3.95).

Table 1: Inward FDI Performance Index for the Republic of Serbia (2000-2014)

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Inward FDI Performance Index	0.20	0.66	1.92	4.51	2.51	2.44	3.95	2.12	2.18	3.12	1.61	3.50	1.23	1.76	2.27

Based on the data, Pearson’s correlation coefficient was calculated and the results are shown in Table 2.

Table 2: Correlations between FDI net inflow and GDP per capita, unemployment rate, exports of goods and services, and imports of goods and services (2000-2014)

		FDI net inflow	GDP per capita	Unemployment rate	Exports of goods and services	Imports of goods and services
FDI net inflow	Pearson Correlation	1	.663**	.386	.519*	.664**
	Sig. (2-tailed)		.007	.156	.048	.007
	N	15	15	15	15	15

** . Correlation is significant at the 0.01 level (2-tailed).
 * . Correlation is significant at the 0.05 level (2-tailed).

Based on the obtained results, it can be concluded that there is a statistically significant correlation between FDI and imports of goods and services (R²=0.441) and FDI and GDP per capita (R²=0.440). The correlation between FDI and exports of goods and services is statistically significant at p<0.05. These results imply that there is no influence of FDI on the unemployment rate.

To comprehend whether the global economic crisis had an impact on the relationship between FDI and the economic growth in the Republic of Serbia, the analyzed period of 2000-2014 was divided into two sub-periods: the period before the global economic crisis, from 2000 to 2007, and the period after the global economic crisis, from 2008 to 2014.

The obtained results for the first sub-period are shown in Table 3. The results are considerably different from the results for the whole given period.

Table 3: Correlations between FDI net inflow and GDP per capita, unemployment rate, exports of goods and services, and imports of goods and services (2000-2007)

		FDI net inflow 2000-2007	GDP per capita 2000-2007	Unemployment rate 2000-2007	Exports of goods and services 2000-2007	Imports of goods and services 2000-2007
FDI net inflow 2000-2007	Pearson Correlation	1	.881**	.755**	.923**	.876**
	Sig. (2-tailed)		.004	.030	.001	.004
	N	8	8	8	8	8

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

The correlation between FDI and the observed macroeconomic indicators is statistically significant at $p < 0.01$. At the same time, FDI and exports of goods and services share 85.19% common variance ($R^2 = 0.852$); FDI and imports of goods and services share 76.74% common variance ($R^2 = 0.767$); FDI and GDP per capita share 77.62% common variance ($R^2 = 0.776$) and FDI and the unemployment rate share 57% of explained common variance ($R^2 = 0.570$). It is evident that in the period of 2000 to 2007, the highest linear correlation is present between FDI and exports and imports of goods and services, which may indicate that the FDI were mainly foreign-oriented.

However, there is a positive correlation between FDI and the unemployment rate, which confirms that the increase in FDI inflow raises the unemployment rate. This can be explained by the fact that FDIs were mainly the result of the privatization process, which implied rationalization of business operations, which in this way found a new owner.

The obtained results for the sub-period of 2008 to 2012 are presented in Table 4.

Table 4: Correlations between FDI net inflow and GDP per capita, unemployment rate, exports of goods and services, and imports of goods and services (2008-2014)

		FDI net inflow 2008-2014	GDP per capita 2008-2014	Unemployment rate 2008-2014	Exports of goods and services 2008-2014	Imports of goods and services 2008-2014
FDI net inflow 2008-2014	Pearson Correlation	1	.699	-.340	-.151	.363
	Sig. (2-tailed)		.080	.455	.746	.424
	N	7	7	7	7	7

* . Correlation is significant at the 0.05 level (2-tailed).

It is evident that there is no linear correlation between FDI and the observed macroeconomic indicators. The consequences of the economic crisis strongly affected the Serbian economy. Pearson's correlation coefficient for the relationship between FDI and the GDP per capita is 0.699, while the coefficient of determination is 0.486, which indicates a weak connection between FDI and GDP per capita for the period 2008-2014. However, due to the shortcomings of Pearson's coefficient and its sensitivity to the size of the

sample, this relationship is not statistically significant, i.e., it cannot be confirmed with how much trust the obtained results can be accepted. There is a moderate inverse linear correlation between FDI and the unemployment rate (Pearson's coefficient equals -0.340), which confirms that there is no statistically significant correlation between these variables. The inverse correlation between FDI and the unemployment rate can be explained by the creation of new jobs through the inflow of investments by slowing down the privatization process in the period 2008 to 2014.

Conclusion

For the developing countries, the transition economies and the countries which carry out economic reforms, foreign direct investments are the key factor for achieving better economic performances. Those countries have a lack of domestic capital. Thus, their model of economic growth is based on the foreign capital. However, some of the countries could not obtain output increase.

This paper analyzes the Serbian economy and the impact of FDI inflow on the economic performances - GDP, exports, imports and unemployment rate for the period 2000-2014. The results show that in the analyzed period 2000-2014, there was a statistically weak correlation between FDI and macroeconomic indicators (GDP per capita, exports of goods and services, imports of goods and services). There is no effect of FDI inflow on the unemployment rate.

In order to comprehend the effects of the economic crisis, the analysis was divided into two sub-periods: the period before the economic crisis, from 2000 to 2007 and the period after the financial crisis, from 2008 to 2014. In the first sub-period, the results show that there is a strong linear connection between FDI inflows and the observed macroeconomic indicators. The most important is the relationship between FDI inflows and the exports of goods and services. However, there is a strong and statistically significant linear correlation between FDI inflows and the imports of goods and services. Those results do not speak in favor of reducing the constant balance of trade deficit. There is also a high correlation between FDI and the unemployment rate, which is primarily the consequence of the fact that FDI was attracted through the privatization process, which included restructuring and downsizing in order to increase efficiency as well as a small number of greenfield investments.

The second sub-period was characterized by the absence of correlation between FDI inflows and all the observed macroeconomic indicators. The results for the period 2008-2014 can be explained by the effects of the global crisis on the Serbian economy and the deterioration of all macroeconomic indicators in the given period. Similar results for this period were obtained for the other SEE countries. The period 2008-2014 is characterized by the absence of linear correlation between FDI and economic growth in all analyzed countries except for Croatia. A significant positive effect of FDI has been accomplished only in Romania and Bulgaria regarding the reduction of unemployment rate, while positive effects have been sublimated in the growth of the GDP per capita in Croatia (Kragulj and Parežanin, 2015). Impacts of economic crisis significantly disturbed the flows of capital in the analyzed countries and reduced their influence on economic growth. Given the fact that Serbia is one of the last European countries to enter the transition process, it has the advantage of the experiences of other countries at its disposal in terms of FDI inflow.

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