
THE RELATIONSHIP BETWEEN THE FOREIGN DIRECT INVESTMENTS AND THE ECONOMIC GROWTH: THE CASE OF THE REPUBLIC OF MACEDONIA

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Abstract: The inter-relationship between the foreign direct investments (FDI) and the economic growth in recipient economies is one of the most discussed topics among the economists, experts, researchers and policy-makers. Almost all economists agree that FDI have wide positive effects on local economy, since they trigger the economic development, they reduce the unemployment, increase the export, bring new technologies, managerial behavior, knowledge and many other positive effects. However, the previously conducted studies have not shown the same results about the relationship between the FDI inflows and the economic development. As confirmed in the literature, many studies support the claims that the economic growth has impact on FDI, and vice versa, but some do not. The results differ between the countries, and in different time periods.

FDI are very import for the economic development of the Republic of Macedonia, since the country faces shortage of domestic capital for investment. Actually, the country compensates the gap between the requested and available domestic capital for investment with FDI. Hence, FDI are crucial for the economic prosperity of the country. The policymakers have introduced many measures in order to attract more foreign investments. However, it is very important to investigate the relationship between the FDI and the economic growth in the Republic of Macedonia.

The main objective of this paper is to discover whether FDI have impact on the economic growth, and vice versa. We have used FDI inflows and GDP per capita for the period 1995-2016 as variables, in order to determine the inter-relationship. The data were provided from the National Bank of the Republic of Macedonia, as well as from the World Bank database. Granger Causality Test was carried out, using the contemporary econometric software EViews, in order to determine the inter-relationship between the variables. Unit root test was conducted in order to determine whether the variables are stationary.

The results from the Granger causality test have confirmed the null hypothesis that FDI does not Granger cause GDP per capita, and vice versa – GDP per capita does not Granger Cause the FDI inflows in the Republic of Macedonia.

The results from this research can be used by the policymakers, who can be able to see the outcomes from the certain policies, and use their positive experience in order to escape the adoption of ineffective policies.

Keywords: FDI, GDP per capita, inter-relationship, Granger Causality test.

INTRODUCTION

The majority of developing countries are facing the gap between the national saving and the requested investment capital, needed for supporting the economic growth. Hence, they are forced to use external saving in order to overcome the gap between the available and requested domestic capital. Engaged in desired condition, foreign capital will contribute in reducing the gap between the capital requirements and national saving, will raise skill level in the host country, will improve the market access, will contribute for the transfer of technology and good governance, will improve the export and balance of payment position, etc.. Undoubtedly, FDI are the most desired model of entrance of foreign capital. As it is widely believed, FDI bring many positive impulses, which later spread around the whole economy. As postulated in the theory, FDI are among the greatest drivers of the economic development. Therefore, almost all developing countries have introduced many incentives in order to attract more FDI.

Currently, there is a “global war for FDI”, especially among the developing countries. They believe that FDI are the best way to reach economic growth and prosperity in a short time. Although all believe in the favorable effects of FDI, there are some countries in which FDI does not seem to provide economic growth. Besides that the empirical evidences of positive effects of FDI in recipient country lagged behind.

As a developing country, Macedonia also faces shortage of capital for investment. The country struggle to provide requested capital in order to provide desired economic growth, to reduce the unemployment rate, to increase the export, to reduce the technology gap, and finally to assure future economic prosperity. The country has introduced many measures in order to attract more FDI. Many incentives have been promoted, and according to many economists, the country is among the leaders in promoting beneficial business climate for foreign investors. However, the real effects of such policies on economic growth, are not fully empirically tested.

The main objective of this paper is to explore the effects of FDI inflows on Macedonian growth. We have used FDI inflows and GDP per capita, as variables in order to determine the causal link between the FDI and economic growth over the period 1995 - 2016. The data were provided from the National bank of the Republic of Macedonia, as well as from the World Bank database.

In order to get the most reliable results we have made an empirical research using the contemporary econometric software EViews 9.5. First, we have conducted unit root test, with the help of Augmented Dickey–Fuller (ADF) unit root test and Phillips-Perron unit root test (PP), in order to determine whether the variables are stationary. Then we performed a Granger causality test, in order to determine whether the variables are inter-related.

The paper is organized as follows. First part is devoted to literature review. In the second part we will look at the trend in FDI and GDP per capital in the Republic of Macedonia. In the third part we will discuss the methodology and we will present the empirical results from the research. The paper finishes with the final conclusions where we will sublimate the results from our study.

1. LITERATURE REVIEW

In the theory mainly exist three hypotheses, which explain the causal link between the FDI and the economic growth. The first hypothesis is the FDI led growth hypothesis, which argues that FDI inflows stimulate the host country economic growth by increasing the capital stock, creating new jobs and easing the transfer of technology. This hypothesis is supported by the findings of many researches. Nair – Reichert et al. (2001)¹¹⁶ in his study made on 24 developing countries found that FDI on average have significant and positive impact on economic growth. Borensztein et al. (1998)¹¹⁷ proofed that FDI inflows have positive effects on growth. The authors have tested the effects of FDI on economic growth in a context of panel regression, using the data about 69 industrialized countries. Their results suggest that FDI is an important vehicle of the economic growth. Baharamushah et al. (2006)¹¹⁸ used a dynamic panel model in order to examine the inter-relationship between the FDI and the economic growth in East Asian economies. The authors have confirmed the states that FDI promote growth and their impact is in the short, as well as in the long term. Their research has shown that the FDI recipient countries which have succeeded in attracting more FDI are in a position to rapidly increase the economic growth. The states of this hypothesis have been also confirmed by Sothans (2017),¹¹⁹ who has conducted a research on impact of FDI on Cambodia’s economic growth. The findings of his paper, confirm that FDI help boost Cambodia’s economic growth by augmenting physical capital, which is needed in the country. However, growth itself is not found to play a crucial role in attracting more inward FDI. Unidirectional causality from FDI to economic growth was also found by Abbes et al. (2015).¹²⁰ The authors have analyzed the inter-relationship between the FDI and the economic growth in 65 countries, using the co-integration and panel Granger Causality Tests.

The second hypothesis is the market sized hypothesis, which argues that generally the interaction is from the economic growth to FDI. Namely, the proponents of this hypothesis consider that a rapid GDP growth is creating new investment opportunities in the host country, and at the end cause larger inflows of FDI. Chakraborty and Basu(2002)¹²¹ utilize the technique of co-integration and error-correction modeling to examine the link between FDI and growth in India. The results suggest that GDP in India is not Granger caused by FDI, and the causality runs more from GDP to FDI. With the analysis of vector autoregressive type (VAR), Ludosean (2012)¹²² found that FDI did not have causal impact on growth in Romania, but causality runs from economic growth to FDI.

¹¹⁶Nair-Reichert U., Weinhold, D. *Causality tests for cross-country panels: A new look at FDI and economic growth in developing countries*. Oxford Bulletin of Economics and Statistics 63, (2001),pp153–171

¹¹⁷Borensztein E., De Gregorio J. and Lee J.-W. *How does foreign direct investment affect economic growth?* Journal of International Economics 45. (1998), pp115–135

¹¹⁸Baharumshah A. and Thanoon M. *Foreign capital flows and economic growth in East Asian countries*. China Economic Review. Vol. 17. Issue 1, (2006), pp. 70-83

¹¹⁹Sothan S. *Causality between foreign direct investment and economic growth for Cambodia*, Journal Cogent Economics and Finance, Vol.%, Issue 1, (2017)

¹²⁰Abbes S. M., Mostéfaa M., Seghir G. M. and Zakarya G. Y. *Causal Interactions between FDI, and Economic Growth: Evidence from Dynamic Panel Co-Integration*. Procedia Economics and Finance, (2015), 276-290

¹²¹Basu P., Chakraborty C. and Reagle D. *Liberalization, FDI, and growth in developing countries: A panel cointegration approach*. Economic Inquiry, 41, (2003), pp510–516

¹²²Ludosean, B. M. A *VAR analysis of the connection between FDI and economic growth in Romania*. Theoretical and Applied Economics, 19, (2012). pp115–130

Despite the two previously mentioned hypothesis in the theory also exist the neutral hypothesis, whose proponents claim that there is not any causal relationship between the FDI and the economic growth. Carkovic and Levine (2005)¹²³ found no significant relationship between the two variables. Herzer et al. (2008)¹²⁴ in their paper challenges the wide spread belief that FDI have a positive effect on FDI. Using the co-integration techniques on 28 developing countries, the authors found that in the most of the country exist neither a long-term, neither a short-term effect between FDI and economic growth. Kakar and Khilji(2011)¹²⁵ examined the causal link between FDI and economic growth in Malaysia. They do not find strong evidence on the growth impact of FDI in this country, confirming that FDI does not cause economic growth and vice versa.

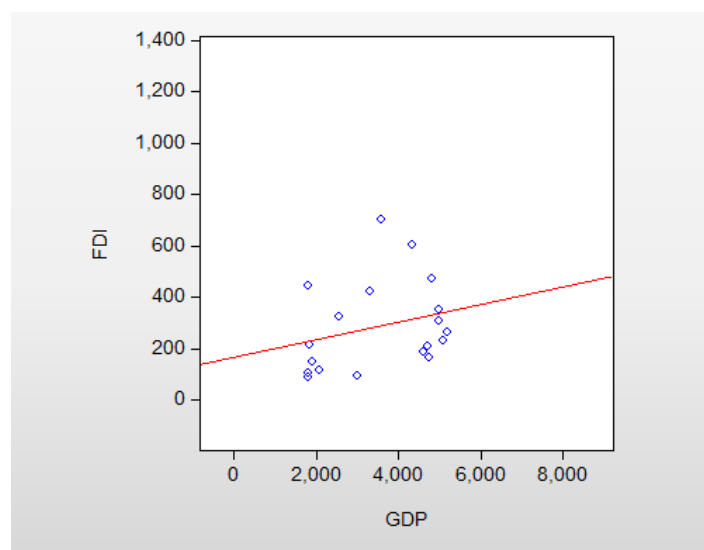
It is useful to mention that there are some studies which found bidirectional causal link between the FDI and the economic growth. Herzer (2008)¹²⁶ argued that there is a long-run bidirectional effects between the FDI and the economic growth. His study was performed on 14 industrialized countries over the period 1971 – 2005, using the panel data analyses. Basu et al. (2003)¹²⁷ also found bidirectional inter-relationship between FDI and the economic growth in 23 developing countries over the period 1978 – 1996. The authors further argue that for more open economy causality runs in both directions, while in relatively closed economy long-run causality mainly runs from economic growth to FDI.

The above discussions show that a general conclusion about the causal link between the FDI and economic growth cannot be reached. That means that findings on the impact of FDI on growth, and vice versa are still debatable.

2. FDI AND GDP PER CAPITA IN THE RESPUBLIC OF MACEDONIA IN THE PERIOD 1995-2017

Before we present the methodology and the empirical results, we will elaborate the data about FDI inflow in the Republic of Macedonia and the GDP per capita in the period 1995-2017.

Graph 1. FDI and the GDP per capita in the Republic of Macedonia in the period 1995-2017



Source: Research computation

On the graph is presented the scatter plot of the data about GDP per capita and FDI inflows in the Republic of Macedonia, in the period 1995-2016. The red line on the graph is the regression line, and as the graph indicates the distribution of the variables suggests that, although not very strong, still there is a positive association between the GDP per capita and the FDI.

¹²³Carkovic M. Levine, R. *Does foreign direct investment accelerate economic growth?* Institute for International Economics. Washington D.C., (2005).

¹²⁴Herzer D.,Klasen S., Nowak-Lehmann F. D. *In search of FDI-led growth in developing countries: The way forward. Economic Modelling*, (2008) pp. 793–810

¹²⁵Kakar Z. Kand Khilji B. A. *Impact of FDI and trade openness on economic growth: A comparative study of Pakistan and Malaysia. Theoretical and Applied Economics*, 11, (2011), pp53–58

¹²⁶Ibidem.

¹²⁷Ibid pp. 2

2. METHODOLOGY AND EMPYRICAL RESULTS

The data, which are used in the analysis in this paper, are provided from the National bank of the Republic of Macedonia and the World Bank database. We have used the logarithms of the GDP per capital, as well as for the FDI inflows. In order to get reliable results about the causal relationship between the GDP per capita and FDI in the country, we will make a Granger causality test, using the contemporary econometric software Eviews 9.5. However, the Granger causality test is eligible, only if the time series variables are stationary, which suggests that first we need to do the unit root test.

3.1.UNIT ROOT TEST

As we mentioned previously, Granger Causality test which explores the causal relationship between time series variables, is eligible only if the series are stationary. In order to explore whether the time series variables used in our research are stationary, we will make the unit root test using the Augmented Dickey Fuller Test (ADF) as well as Phillips-Perron (PP) unit root test. We have used Schwarz Info Criterion for determining the number of legs in ADF test and Barlett Kernel for bandwidth selection in PP unit root test. The null hypothesis is that the time series has unit root and the alternate hypothesis is that the time series does not have unit root.

Table 1. ADF Unit root test for FDI – level form

Augmented Dickey-Fuller Unit Root Test on FDI_MILL_US\$		
Null Hypothesis: FDI_MILL_US\$ has a unit root		
Exogenous: Constant		
Lag Length: 0 (Automatic - based on SIC, maxlag=4)		
		t-Statistic Prob.*
<hr/>		
Augmented Dickey-Fuller test statistic		-4.345167 0.0030
Test critical values:	1% level	-3.788030
	5% level	-3.012363
	10% level	-2.646119

Source: Research computations

The results from the ADF unit root test have shown that FDI are stationary on its level form. We have the same results from the PP unit root test. Considering the results from the unit root test, we can make the conclusions that we can reject the null hypothesis on its level form and accept the alternate hypothesis.

Table 2. ADF Unit root test for GDP per capita – second difference

Null Hypothesis: D(GDP_PER_CAPITA_US\$,2) has a unit root		
Exogenous: Constant		
Lag Length: 0 (Automatic - based on SIC, maxlag=4)		
		t-Statistic Prob.*
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Augmented Dickey-Fuller test statistic		-7.191654 0.0000
Test critical values:	1% level	-3.831511
	5% level	-3.029970
	10% level	-2.655194

Source: Research computations

As for the second time series –GDP per capita, we found that we failed to reject the null hypothesis on its level and 1st difference form, but we can reject the null hypothesis on its second difference, which means that we can accept the alternative hypothesis, that the variable is stationary. We have considered critical values for 5% level of significance.

Since the both time series are stationary, we can now continue our analysis with the Granger causality test, because the condition that time series are stationary is accomplished.

3.2. GRANGER CAUSALITY TEST

As the results from the unit root tests are eligible, we can now investigate the impact of FDI on GDP per capita in the Republic of Macedonia and vice versa, using the Granger Causality Test. The null hypothesis is that FDI inflow does not Granger Cause GDP per capita, and GDP per capita does not Granger Cause FDI inflows. The alternate hypothesis is that FDI inflow Granger Cause GDP per capita and GDP per capita Granger Cause FDI inflow. The results from the Granger Causality Test are presented in the Table 3. The Schwarz's criterion was used in order to determine the lag lengths. We found that the optimal lag length is 6.

Table 3. Granger Causality Test

Pairwise Granger Causality Tests			
Date: 11/23/17 Time: 15:28			
Sample: 1995 2016			
Lags: 6			
Null Hypothesis:	Obs	F-Statistic	Prob.
FDI_MILL_US\$ does not Granger Cause GDP_PER_CAPITA_US\$	16	0.84834	0.6065
GDP_PER_CAPITA_US\$ does not Granger Cause FDI_MILL_US\$		2.81606	0.2123

Source: Research computations

The Granger Causality Test indicates that we failed to reject the null hypothesis that FDI inflow does not Granger Cause GDP per capita.

Concerning the impact of GDP per capita on FDI inflows we also failed to reject the null hypothesis, that GDP per capita does not Granger Cause FDI inflows. We consider critical value for 5% level of significance, which is usually set as mostly acceptable. Since in all 6 lags p value is bigger than the accepted value of significance of 5%, we will accept the null hypothesis and conclude that the past values of FDI inflows cannot be used as a credible base for forecasting the future value of the GDP per capita, and vice versa.

If we consider now the three hypotheses, which were mentioned in the part about the literature review, we can conclude that the results from these analyses are in accordance with the neutral hypothesis, which argue that there is not any causal link between the FDI and the economic growth.

CONCLUSION

The majority of the developing countries are facing the shortage of capital for investment, due to the low level of domestic saving. In order to reduce the investment gap, the developing countries are forced to import external accumulation. Almost all economists agree that FDI are the most preferable model of entrance of foreign capital. They believe that FDI bring many benefits for the recipient economy, which later spillover through the whole economy. FDI are especially important for the economic growth in the recipient country. At the end, the reason why countries prefer FDI is the widespread believe that FDI stimulate the economic growth. Republic of Macedonia is among the developing countries, which faces the shortage of investment capital. In order to reduce the gap between the available – domestic and required investment capital, the officials have introduced many measures in order to attract more FDI inflows in the country. However, the real output of this policies are not fully examined.

Both theoretically and empirically, there is voluminous literature on the impact of FDI on economic growth across countries. Although most theoretical studies confirm a positive relationship between FDI and economic growth, these claims are not supported by empirical studies, in all the cases. Namely, there are some empirical researches which did not find causal relationship between the two variables. Additionally, findings on the growth impact of FDI are not fully discovered in the Republic of Macedonia. Therefore, this study is carried out with an attempt to examine the causality between the FDI and the Macedonian economic growth. The Granger Causality test was performed in order to determine the inter-relationship between the FDI and the economic growth.

Based on the findings of this paper, FDI did not help much in boosting Macedonian economic growth. Additionally, growth itself is not found to play a crucial role in attracting more inward of FDI. The results from the research showed that the two variables – FDI and economic growth are not inter-related, and that the past values of FDI cannot be used as a credible base for forecasting future values of economic growth, and vice versa – the past values of economic growth cannot be used as a credible base for forecasting future values of FDI.

If we consider the three hypothesis which explain the causal relationship between the FDI and the economic growth, we can conclude that the in the case of Macedonia we should agree with the neutral hypothesis, which claims that there is not any inter-relationship between the FDI and the economic growth.

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