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DOES INWARD FOREIGN DIRECT INVESTMENT INFLUENCE MACROECONOMIC PERFORMANCE? A CASE OF SLOVAKIA

Abstract:

Foreign direct investments (FDI) are generally considered as key drivers of economic development of the country. However, studies confirming significant effects of inward FDI on macroeconomic performance especially in conditions of the Central European countries are rather scarce. The present paper investigates effects of different types of inward FDI, namely cross-border mergers and acquisitions and greenfield investment projects on the macroeconomic performance measured by GDP per capita in conditions of Slovakia. The results of regression analysis for the period of 2003-2018 show rather negative impact of greenfield investments allocated in Slovakia as well as cross border sales of local companies on the level of GDP per capita of the host country.

Keywords:

foreign direct investment, macroeconomic performance, mergers and acquisitions, greenfield projects

JEL Classification: F21, F23, F43

Introduction

Foreign direct investment (hereinafter also “FDI”) has been generally considered as important drivers of productivity and economic growth of the countries and many scholars have found that benefits of FDI outweigh its side effects (Tintin, 2013). As concluded by Zhang (2001), although FDI is expected to boost host economic growth, it was shown that the extent to which FDI is growth-enhancing appears to depend on country-specific characteristics. However, the empirical evidence regarding FDI and economic growth/performance relationship is mixed, hence further single-country studies are desirable.

Studies analysing effects of inward FDI on macroeconomic performance specifically in conditions of the Central European countries are rather scarce. The present study is aimed to enrich the existing empirical literature with analysis of inward FDI – macroeconomic performance relationship in conditions of Slovakia for the period of 2003-2018. From the types of FDI point of view, the study distinguishes between cross-border mergers and acquisitions (hereinafter also “M&As”) and greenfield investment projects as the types of FDI with different nature and effects. In this regard Davies et al. (2018) point to the significant differences between the two, i. e. M&As involve transfer of ownership for integration or arbitrage reasons while greenfield investments rely on firms’ own capacities, which are linked to origin country attributes. Hence, it is assumed that distinct types of inward FDI influence the macroeconomic performance differently. The rest of the paper is organized as follows: part 2 presents literature review on the studied topic, part 3 introduces data and methodology, part 4 brings own empirical results and their discussion followed by conclusion.

1 Literature Review

The effects of inward foreign direct investment on macroeconomic development and performance have been studied by plenty of authors with ambiguous findings. Most studies were conducted in conditions of developing economies, however, FDI is mainly received by developed countries (Gourinchas and Jeanne, 2013).

Several studies have found that inward FDI has a positive impact on the host country’s economic development. In this regard Li and Liu (2005) concluded that FDI not only directly promotes economic growth by itself but also indirectly does so via its interaction terms (the interaction of FDI with human capital exerts a strong positive effect on economic growth in developing countries). Basu and Guariglia (2007) found that FDI is the engine of growth in 119 developing countries. The analysis by Batten and Vo (2009) supports the view that FDI has a stronger positive impact on economic growth in countries with a higher level of education attainment, openness to international trade and stock market development, and a lower rate of population growth and lower level of risk. Similarly, Alguacil et al. (2011) argued that FDI has a positive effect on output growth but the impact depends on internal and external macroeconomic stability as well as quality of institutions. Authors also emphasized the role played by the absorptive capacities

within host economies in their ability to grow and to exploit FDI efficiently. The empirical analysis conducted by Pegkas (2015) revealed a positive long-run cointegrating relationship between FDI stock and economic growth in Eurozone countries. One of the few studies conducted in conditions of Central and Eastern European countries by Hlavacek and Bal-Domanska (2016) revealed that statistically significant relations exist between economic growth, FDI and investment growth.

On the other hand, there are studies proving no, negative or contradictory impact of FDI on economic performance. In this regard, Azman-Saini (2010) reports that FDI by itself has no direct (positive) effect on output growth. Instead, the effect of FDI is contingent on the level of economic freedom in the host countries. Similarly, Herzer (2012) examined the effect of FDI on economic growth for 44 developing countries and found that FDI has, on average, a negative effect on growth in these countries, but there are large differences in the effect across countries explained mainly by cross-country differences in the level of economic freedom. Jude and Levieuge (2017) on a large sample of developing countries proved that FDI alone has no significant effect on growth, the growth-enhancing effect is obvious only beyond a certain threshold of institutional quality. The recent single-country study by Carbonell and Werner (2018) conducted in conditions of Spain showed that FDI had no significant positive effect on Spanish GDP growth, despite both high FDI and economic growth and ideal conditions for FDI to boost growth.

However, these studies evaluated the influence of FDI in general, without strict distinguishing between M&As and greenfield investment projects. While, there are also some studies that examine the effect of the two types separately. Using disaggregated FDI data on 12 new member states of the European Union Eren and Zhuang (2015) showed that mergers and acquisitions and greenfield investment do not on their own have significant growth effects in these economies. In both cases, the availability of absorptive capacity plays an important role in stimulating their growth effects. Ashraf et al. (2016) within their large study of 123 developed and developing countries showed that greenfield FDI and M&As both appear to be ineffective in increasing total factor productivity in the subsample of developing countries. In contrast, M&As have a strong and positive effect on total factor productivity in the subsample of developed countries. On the other hand, Harms and Méon (2018), based on study of 127 industrialized, emerging, and developing countries concluded that greenfield FDI should have a stronger impact on growth than M&As, because M&As partly represent a rent accruing to previous owners, and do not necessarily contribute to expanding the host country's capital stock. A study by Zvezdanovič Lobanova (2018) conducted in conditions of 22 European transition countries showed that cross-border M&As have a negative effect on GDP per capita in the year of merger or acquisition, while their lagged level shows a positive impact. From long-term perspective, this type of FDI has negative and significant effect on GDP per capita.

To sum up, there is no empirical consensus on an existence, strength and direction of relationship between inward FDI and macroeconomic performance. The majority of studies pointed to existence of cross-country differences in this regard. Hence, further single-country studies can enrich the existing literature.

2 Data and Methodology

A present single-country study on an influence of inward FDI on macroeconomic performance is conducted in conditions of Slovakia over a period from 2003 till 2018. As a key dependent variable macroeconomic performance is considered, measured through GDP per capita, similarly as in the study by Zvezdanovič Lobanova et al. (2018). The primary data on GDP per capita were taken from Eurostat. Independent variables considered as potential determinants of macroeconomic performance are inward FDI and their major types. As a source of the data, the FDI/TNC database of UNCTAD is used. Data on FDI flows are constructed on a net basis (capital transactions' credits less debits between direct investors and their foreign affiliates). FDI flows with a negative sign indicate that at least one of the three components of FDI (equity capital, reinvested earnings or intra-company loans) is negative and not offset by positive amounts of the remaining components.

Different types of inward foreign direct investments (*Inward FDI*), namely cross-border mergers and acquisitions (*M&A*) and greenfield investment projects (*Greenfield*) allocated in Slovakia are analysed separately as potential drivers of macroeconomic performance (*GDP per capita*). Table 1 presents simple statistics of studied variables followed by correlation matrix showing Pearson and Spearman correlation coefficients among all pairs of studied variables (table 2).

Table 1: Simple statistics of studied variables

Variable	Mean	Std Dev	Median	Minimum	Maximum
Inward FDI	2224	2000	2626	-604.08009	5803
M&A	110.02581	164.28301	43.86350	-2.36300	541.24000
Greenfield	3816	2463	3198	1093	9255
GDP per capita	12494	1983	12750	8900	15600

Source: own processing

Table 2: Correlation matrix

	Inward FDI	M&A	Greenfield	GDP per capita
Inward FDI	1	0.04398	0.62103**	-0.54112**
M&A	0.34879	1	0.00677	-0.40954
Greenfield	0.60294**	0.16924	1	-0.56974**
GDP per capita	-0.54746**	-0.56112**	-0.66372***	1

Note: The asterisks denote the statistical significance of coefficients on a level of 10% (*), 5% (**), and 1% (***), based on p-values. The Spearman's rank correlation coefficients are below the diagonal, while the Pearson's correlation coefficients are above the diagonal.

Source: own processing

The values of Pearson correlation coefficients show negative statistically significant relationship between macroeconomic performance and total volume of inward FDI as well as volume of greenfield investment projects. Moreover, Spearman rank correlation coefficients prove even stronger negative statistically significant relationships between macroeconomic performance and all other studied variables including volume of cross-border mergers and acquisitions that

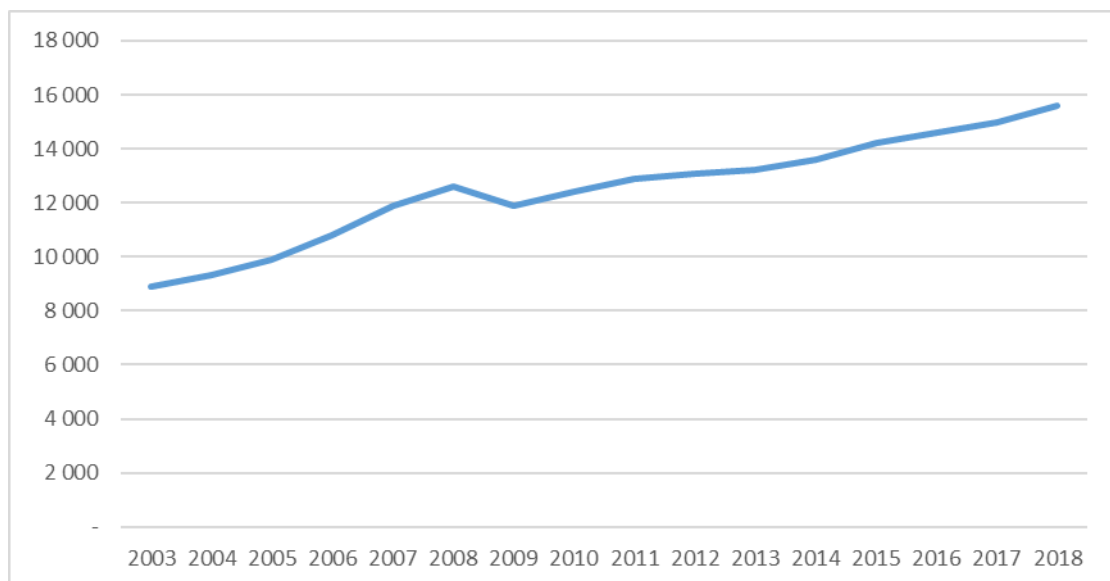
indicates existence of rather non-linear relationships between dependent and independent variables.

Influence of inward FDI and their types on macroeconomic performance is analysed more deeply by regression analysis using OLS technique. Two linear regression models are constructed. In the model (1) the dependent variable – GDP per capita is supposed to be influenced by volume of inward FDI, value of cross-border M&A by economy of seller, e.i. Slovakia and by value of announced greenfield projects allocated in Slovakia. In the model (2) using stepwise regression procedure the independent variable with the highest p-value is removed from the model (1) based on the significance test. The regular diagnostic tests, including normality, heteroscedasticity and collinearity tests, are performed to analyse validity of the models.

3 Results and Discussion

The development of the dependent variable within the observed period is shown in the figure 1. It is obvious that the macroeconomic performance of Slovakia has increased gradually, with the exception of the 2009 crisis year. Despite the subsequent continuous growth, the Slovakian GDP per capita of 15,600 Euros in the last observed year is still far below the EU average that reached in 2018 the value of 28,200 Euros.

Figure 1: Development of GDP pre capita in Slovakia (in Euros)

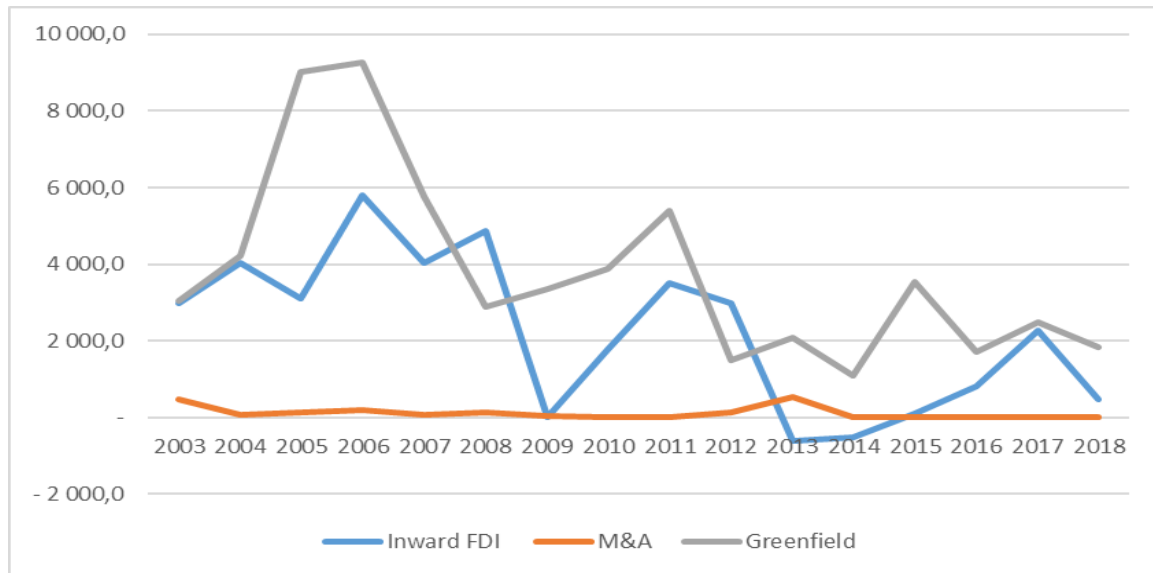


Source: Eurostat

The following figure 2 shows development of inward foreign direct investments and their types, namely cross-border mergers and acquisitions and greenfield investments. Volume of cross-border mergers and acquisitions is calculated on a net basis as follows: sales of companies in the host economy to foreign entities (-) sales of foreign affiliates in the host economy. The data cover only those deals that involved an acquisition of an equity stake of more than 10%. Data refer to

the net sales by the economy of the immediate acquired company, i. e. the Slovak economy. Data on greenfield investments refer to estimated amounts of capital investment in millions of dollars.

Figure 2: Types of inward FDI in Slovakia (in mill. USD)



Source: FDI/TNC database of UNCTAD

The total volume of inward foreign direct investments in Slovakia was in the observed period most significantly influenced by greenfield investment projects located in the Slovak republic. On the other hand, the volume of cross-border M&As was significantly lower and developed more constantly. In regard to the relation between M&As and greenfield investments Davies et al. (2018) state that while the developed countries receive the majority of M&As, developing countries host the bulk of greenfield investments. It seems that in case of Slovakia the catching-up process with Western economies is still ongoing. Hence, it is important to identify the role of different types of inward FDI in influencing macroeconomic performance of the country.

The results of analysis of the relationship between macroeconomic performance on one hand and inward FDI and their types on the other hand are shown in the following tables.

Table 3: Model 1 - Dependent variable: GDP per capita

	Coefficient	Std. Error	t-ratio	p-value	
Const	14842,7	759,006	19,56	<0,0001	***
Inward FDI	-0,276860	0,248716	-1,113	0,2874	
M&A	-4,76230	2,37382	-2,006	0,0679	*
Greenfield	-0,316849	0,201818	-1,570	0,1424	

R-squared 0.536995 Adjusted R-squared 0.421244
 White's test for heteroskedasticity p-value 0.660
 Test for normality p-value 0.266

Durbin-Watson test	1.146729	p-value 0.020
RESET test for specification		p-value 0.396
VIF		no collinearity problem

The first model shows statistically significant negative impact on macroeconomic performance only in case of cross-border mergers and acquisitions. Inward FDI as well as greenfield investment projects seem to have no significant impact on macroeconomic performance. In order to study the impact of the types of FDI more deeply, the variable with the lowest significance, e.i. total volume of FDI is removed from the model. The results of reduced model 2 are shown in the table 4.

Table 4: Model 2 - Dependent variable: GDP per capita

	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-ratio</i>	<i>p-value</i>	
Const	14774,5	763,449	19,35	<0,0001	***
M&A	-4,89639	2,39246	-2,047	0,0615	*
Greenfield	-0,456439	0,159579	-2,860	0,0134	**

R-squared	0.489185	Adjusted R-squared	0.410598
White's test for heteroskedasticity		p-value	0.465
Test for normality		p-value	0.414
Durbin-Watson test	1.124737	p-value	0.016
RESET test for specification		p-value	0.498
VIF			no collinearity problem

The reduced model showed that both types of inward FDI have negative and statistically significant impact on GDP per capita and this impact is higher in case of cross-border mergers and acquisitions. Neither new investment projects allocated in Slovakia nor sales of Slovak companies to foreign investors are boosting macroeconomic performance of Slovakia. The opposite is most probably true. It seems that foreign direct investors are allocating to Slovakia rather projects that are cost-cutting and from current comparative advantage benefiting, but not truly developing. Similarly, as Carbonell and Werner (2018) in case of Spain, the present study shows that FDI is not a determinant of Slovak macroeconomic performance. Moreover, from a detailed perspective on the types of inward FDI it is obvious that they have negative effect on GDP per capita, similarly as it was shown in case of M&As in the long-term in the study by Zvezdanovič Lobanova et al. (2018). The negative effect of M&As as well as greenfield projects on macroeconomic performance can be attributed to insufficient absorptive capacity of the host economy, as it has already been pointed out in previous studies, e.g. by Eren, Zhuang (2015). They also pointed out that domestic investment is revealed to be a consistent contributor to economic growth. Thus, factors other than inward FDI, possibly domestic investment, seem to be beneficial for Slovakian economic performance. These issues should form agenda of future research.

Conclusion

This paper contributes to the existing discussion on the role played by the inward FDI in influencing macroeconomic performance of the particular country, namely Slovakia. The results of the regression analysis for the period of 2003-2018 show rather negative impact of greenfield investments allocated in Slovakia as well as cross-border sales of local companies on the level of GDP per capita of the host country.

The further study of the nature of greenfield investment projects and characteristics of acquired companies by foreign investors in Slovakia would shed more light into the issue. However, the departure of many investors, who had allocated production facilities in Slovakia to lower-cost countries, shows that primary investments did not have the character of development investments with positive effect of macroeconomic performance.

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References

- ALGUACIL, M.; CUADROS, A. and ORTS, V. (2011) Inward FDI and growth: the role of macroeconomic and institutional environment. *Journal of Policy Modelling*. 2011, Vol. 33, No. 3, p. 481-496.
- ASHRAF, A.; HERZER, D. and NUNNENKAMP, P. (2016) The effects of greenfield FDI and cross-border M&As on total factor productivity. *The World Economy*. 2016, Vol. 39, No. 11, p. 1728-1755.
- AZMAN-SAINI, W. N. W.; BAHARUMSHAH, A. Z. and LAW, S. H. (2010) Foreign direct investment, economic freedom and economic growth: International evidence. *Economic Modelling*. 2010, Vol. 27, No. 5, p. 1079-1089.
- BASU, P. and GUARIGLIA, A. (2007) Foreign direct investment, inequality, and growth. *Journal of Macroeconomics*. 2007, Vol. 29, No. 4, p. 824-839.
- BATTEN, J. A. and VO, X. V. (2009) An analysis of the relationship between foreign direct investment and economic growth. *Applied Economics*. 2009, Vol. 41, No. 13, p. 1621-1641.
- CARBONELL, J. B. and WERNER, R. A. (2018) Does foreign direct investment generate economic growth? A new empirical approach applied to Spain. *Economic Geography*. 2018, Vol. 94, No. 4, p. 425-456.
- DAVIES, R. B.; DESBORDES, R. and RAY, A. (2018) Greenfield versus merger and acquisition FDI: Same wine, different bottles? *Canadian Journal of Economics*. 2018, Vol. 51, No. 4, p. 1151-1190.
- EREN, M. and ZHUANG, H. (2015) Mergers and acquisitions versus greenfield investment, absorptive capacity, and economic growth: Evidence from 12 new member states of the European Union. *Eastern European Economics*. 2015, Vol. 53, No. 2, p. 99-123.
- GOURINCHAS, P. O. and JEANNE, O. (2013) Capital flows to developing countries: The allocation puzzle. *Review of Economic Studies*. 2013, Vol. 80, No. 4, p. 1484-1515.

- HARMS, P. and MÉON, P. G. (2018) Good and useless FDI: The growth effects of greenfield investment and mergers and acquisitions. *Review of International Economics*, 2018, Vol. 26, No. 1, p. 37-59.
- HERZER, D. (2012) How does foreign direct investment really affect developing countries' growth? *Review of International Economics*. 2012, Vol. 20, No. 2, p. 396-414.
- HLAVACEK, P. and BAL-DOMANSKA, B. (2016) Impact of foreign direct investment on economic growth in Central and Eastern European Countries. *Engineering Economics*. 2016, Vol. 27, No. 3, p. 294-303.
- JUDE, C. and LEVIEUGE, G. (2017) Growth effect of FDI in developing economies: The role of institutional quality. *The World Economy*. 2017, Vol. 40, No. 4, p. 715-742.
- LI, X. and LIU, X. (2005) Foreign direct investment and economic growth: An increasingly endogenous relationship. *World Development*. 2005, Vol. 33, No. 3, p. 393-407.
- PEGKAS, P. (2015) The impact of FDI on economic growth in Eurozone countries. *The Journal of Economic Asymmetries*. 2015, Vol. 12, No. 2, p. 124-132.
- TINTIN, C. (2013) The determinants of foreign direct investment inflows in the Central and Eastern European Countries: The importance of institutions. *Communist and Post-Communist Studies*. 2013, Vol. 46, No. 2, p. 287-298.
- ZHANG, K. H. (2001) Does foreign direct investment promote economic growth? Evidence from East Asia and Latin America. *Contemporary Economic Policy*. 2001, Vol. 19, No. 2, p. 175-185.
- ZVEZDANOVIĆ LOBANOVA, J.; KRAČUN, D. and KAVKLER, A. (2018) Effects of cross-border mergers and acquisitions on GDP per capita and domestic investment in transition countries. *Journal of Business Economics and Management*. 2018, Vol. 19, No. 1, p. 124-137.