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Relationship between Foreign Direct Investment and Domestic Investment in Selected Countries of Central and Eastern Europe

Zuzana Szkorupová [a]*

[a] Silesian university in Opava, School of Business Administration in Karvina, Univerzitní nám. 1934/3, Karviná 733 40, Czech Republic

Abstract

Effects of foreign direct investment on domestic countries have been one of the most discussed topics in post-communist countries. Privatisation started in the 90s in countries of Central and Eastern Europe. From this point of view the foreign direct investments played an important role in region. Foreign direct investments are generally considered as one of the factors with positive influence on the economic development of countries in which this investments flow. In evaluating the impact of foreign direct investment on development, however, a key question is whether foreign direct investment crowd in domestic investment, or foreign direct investment crowd out domestic investment. This paper focuses on research of foreign direct investment effects in Central and Eastern Europe. The aim of the paper is to examine the effect of crowding in or crowding out of the domestic investments by foreign investors in host countries. Annual data were tested with panel regression for the period 1993 – 2012. Detected results indicate that in specified areas, the effect of extrusion of domestic investments prevails.

1. Introduction

Foreign direct investment (hereinafter FDI) are debated on scientific, empirical, political and others levels. Generally we speak about positive and negative effects of FDI that might be expressed indirectly or directly. Geršl et al., 2007 pointed to the fact that attracting foreign direct investment brings benefits to the host economy in terms of higher investment, employment and output of these firms, with a resulting effect on overall GDP growth – the so-called direct effects. Mišun and Tomšík, (2002) highlight that the main positive direct effects are impact of foreign direct investment on economic growth of host country, availability of modern technology, managerial know how or better access to financial fund. Foreign direct investment implement on green field are the ones that create new work opportunities. Considering transitive economy, an important role plays fiscal income from foreign direct investment

* Zuzana Szkorupová. Tel.: +420-596-398-236
  E-mail address: szkorupova@opf.slu.cz

performed by method of privatization. In addition, Mišun and Tomšík, (2002) point out negative direct effects of foreign direct investment. It involves basically pressure on appreciation of domestic currency, enforced increase of money supply and related inflation pressure increase of foreign trade deficit in the area of new technologies import and increase of deficit of current account payment balance as a consequence of profit repatriation by multinational companies. According to Blomström and Kokko, (1998) next to these direct effects, FDI can have indirect effects on the host economy, mainly through technology or productivity spillovers from foreign-owned firms to domestic firms. More than 30 years ago was published the first paper on productivity spillovers to host country firms from multinational companies. The author of this paper was Richard Caves. According to Caves, (1974) foreign investment may also impel higher technical efficiency in competing domestic firms and speed the transfer of new technology to them. Mišun and Tomšík, (2002) refer to positive indirect effect of foreign direct investment on domestic companies when positive effects from foreign companies transfer on domestic market and increase competition on market due to fact that they become business partners of foreign companies. Reverse effect, it means negative indirect effect of foreign direct investment on domestic market id dual economy, the situation when on the one hand there are foreign companies operating in domestic economy with prospect and on the other hand there are domestic companies with inefficient economy and consequently are pushed out from the market by stronger foreign companies.

Foreign direct investment is generally considered to be an instrument how to stimulate economic growth of any country. For this purpose governments of countries try to encourage the inflow of foreign direct investment by various measures. The volume of inflow foreign direct investment in Central and Eastern Europe countries has been increasing during last twenty years. Tyttell et al., (2007) highlight the fact that FDI is widely considered an important catalyst of economic development. Economist and policy makers believe that FDI can improve host countries`technological capacities and managerial style, both at companies receiving FDI (through direct effects and at companies working in the same industry (through indirect spillover effects) or in upstream industries (through backward linkages). Christl, (2007) pointed to the fact that transition economies might benefit from FDI when innovative technologies or, in general, knowledge introduced by a foreign investor spill over to the domestic firms.

The main aim of this paper is to examine effects of foreign direct investment on domestic investment in selected countries of Central and Eastern Europe; and specifically, the effects of crowding in domestic investment and crowding out domestic investment by FDI. Countries of Central and Eastern Europe are selected according to the highest value of foreign direct investment per capita. The selected countries are Czech Republic, Estonia, Hungary and Slovakia. These countries are close not only from the geographical point of view but also from the pint of the development of economic situation after the totalitarian regime disintegration. This paper is divided into five parts, two of which are the introduction and conclusion. Second part deals with literature overview dealing with this issue. Third part pays attention to model specification and data. Fourth part deals with testing the effects of crowding in and crowding out of domestic investment by foreign direct investment.

2. Literature overview

There is a series of empirical studies examining foreign direct investment effects on domestic investment in host countries. Such effects are examined by various approaches. The results of individual studies vary, which depends on the period selected, data processed, other variables included in the model or it depends on the econometric methods. A model, used to perform research in this paper, is formulated by Agosin and Mayer. Agosin and Mayer, 2000 examined effects of crowding in and crowding out of domestic investment in three regions, including Africa, Asia and Latin America. They performed research with 32 countries for the period 1970 – 1966. In this period they proved effect of crowding in of domestic investment in Asia, effect of crowding out of domestic investment in Latin America and neutral effect of foreign direct investment on domestic investment in Africa. Time period subsequently divided two sections, from 1976 – 1985 and 1986 – 1996. In these periods authors confirmed results reported for the whole time period in Asia and Latin America region. Africa, in both periods showed effect of crowding in of domestic investment by foreign direct investment. Mišun and Tomšík, (2002) performed similar research. They examined crowding in effect in Poland, Hungary and Czech Republic for time period 1990 – 2000 (Poland and Hungary) and period 1993 – 2000 (Czech Republic). Results of their research proved the effect of crowding in of domestic investment by foreign direct investment in the Czech Republic and Hungary and the effect of crowding out of domestic investment by foreign direct investment in Poland. Backer and Sleuwaegen, (2003) researched the

impact of foreign direct investment on domestic investment in field of manufacturing industry in Belgium. Authors performed the research for time period 1990 – 1995. They show that the proved crowding out effect from the short term point of views might become positive crowding in effect from the long term point of view due to arising business relations between domestic and foreign companies. Agosin and Machado, (2005) examined effects of crowding in and crowding out of domestic investment by FDI in developing countries. Research was done in 12 countries in Latin America, Africa and Asia for time period 1971 – 2000. Result of their research is that FDI have crowding out effect mostly in Latin America. Titarenko, (2006) examined FDI effect on domestic investment in Lithuania. The author conducted research for time period 1995 – 2004. His research proved that FDI have negative influence on domestic investment and consequently the crowding out effect was approved. Mutenyo et al., (2010) examined effects of crowding in and crowding out of domestic investment by FDI in 34 countries from region of Sub-Saharan Africa. Research was done for time period 1990 – 2003. This research proved negative effects of FDI on domestic investment, which means that FDI crowd out the domestic investment. Szkorupová, (2013) examined effects of foreign direct investment on domestic investment in the Baltic States. Research was done in time period 1993 – 2009. Her research proved that foreign direct investment has negative impact on domestic investment and the crowding out effect was approved in the Baltic States.

Effects of foreign direct investment on domestic investment can be researched by microeconomic data. Kosová, (2010) examined effects of foreign direct investment on domestic investment in the Czech Republic. She used a model, which combines a dominant firm –competitive fringe framework and a model on firm and industry dynamics. In her model, foreign firms as a group are represented by the dominant firm and domestic firms form a competitive fringe. She used a firm-level panel dataset from the Czech Republic during 1994 – 2001. Her results show evidence of both technology spillover and crowding out effects. She pointed to the fact that crowding out appears to be a short-term or static phenomenon. Subsequently, however, the growth of the foreign industry segment is accompanied by increases in both the growth rate and survival of domestic firms. Kosová, 2010 highlight that the primary beneficiaries of technology spillovers are firms in technologically advanced industries. Mullen, 2010 examined crowding out and displacement effects of bi-directional FDI. He used disaggregated industry-level data for U.S. manufacturing industries from 1997 to 2007. Empirical results of research show that inward FDI has a stimulative impact on both domestic capital stocks and investment expenditures within the same industry. On the other hand, outward FDI stocks are associated with a reduction in both domestic capital stocks and flows in a particular industry.

3. Data and model specification

Estimation of positive crowding in effect and negative crowding out effect shall be performed with the model Agosin and Mayer, 2000. This model was modified by Mišun and Tomšík, 2002 on condition of transitive economies. Equation used for the purpose of research has the following form:

$$I_{i,t} = \alpha_i + \beta_1 F_{i,t} + \beta_2 F_{i,t-1} + \beta_3 F_{i,t-2} + \beta_4 I_{d,it-1} + \beta_5 I_{d,i,t-2} + \beta_6 I_{d,i,t-3} + \beta_7 G_{i,t-1} + \beta_8 G_{i,t-2} + \beta_9 G_{i,t-3} + +\varepsilon_i$$
$$(1)$$

Individual variables in an equation are:

- I_d = domestic investment/GDP ratio
- F = FDI/GDP ratio
- G = growth of GDP
- i = country in panel
- ε = serially uncorrelated random error
- α = fixed country effects
- t = time

Model is test on annual data for the period 1993 – 2012. Data about growth of GDP and gross fixed capital formation were acquired from the World Bank. Data about foreign direct investment were acquired from UNCTAD

database. Estimation was performed on the basis of Panel Regression Model in Eviews 7. To assess the crowding in or crowding out effects of domestic investments by foreign direct investment was used the coefficient in the following form:

$$\pi = \frac{\beta_1 + \beta_2 + \beta_3}{1 - (\beta_4 + \beta_5 + \beta_6)}$$

(2)

Criterion used to determine the crowding in or crowding out effect of domestic investment is the value of π coefficient. In this case arise three possibilities:

- Coefficient $\pi = 1$. This fact means that from the long term point of view the increase of foreign direct investment by one unit leads to increase of entire investments equally by one unit.
- Coefficient $\pi > 1$. This fact means that foreign direct investment crowd in domestic investment. From the long term point of view it implies that one additional unit of FDI shall be reflected by more than one additional unit of total investment.
- Coefficient $\pi < 1$, it is the evidence that domestic investments are crowded out by foreign direct investment. From the long term point of view it implies that one additional unit FDI leads to growth of total investments by less than one unit.

If the long term effect of foreign direct investment displays crowding in of domestic investment, we speak about positive side effects of FDI. Side effects of FDI are negative if FDI from the long term lead to the crowding out of domestic investments.

4. Testing for crowding in or crowding out

Estimation of crowding in and crowding out effects by foreign direct investment has been performed on the basis of equations specified in the above chapter. Regression analysis based on the equation (1) was performed for selected countries of the Central and Eastern Europe (Czech Republic, Estonia, Hungary and Slovakia). Selection of countries was performed according to inflow foreign direct investment per capita ratio. Four countries were selected with the highest value of inflow foreign direct investment per capita ratio.

According to results of Hausman test was used panel regression with fixed effects. In order to perform panel regression it is necessary for the time series being stationary on its own values I(0). For this purpose was used Levin, Lin, Chu test (LLC test). According to test was identified that data are stationary. One can see in Table 1 results of panel regression. Figures in parenthesis are t-ratio. Index "a" means significantly different from zero at the 1 per cent level. Index "b" means significantly different from zero at the 5 per cent level. Index "c" means significantly different from zero at the 10 per cent level.

Table 1. Investment equation for selected countries of Central and Eastern Europe

Variable	Countries CEE
F_t	-0.062
	$(-1.663)^c$
F_{t-1}	0.098
	$(2.189)^b$
F_{t-2}	-0.048
	(-0.878)
I_{t-1}	0.847
	$(5.323)^a$
I_{t-2}	-0.417

	$(-2.004)^{b}$
I_{t-3}	0.239
	$(1.595)^{c}$
G_{t-1}	0.179
	$(1.737)^{c}$
G_{t-2}	0.063
	(0.623)
G_{t-3}	-0.047
	(-0.611)
Adj. R-square	0.771
DW-statistic	2.036

Testing of crowding in and crowding out effect is realized on the basis of coefficient π stated in equation (2). Test was performed for four selected countries of Central and Eastern Europe for the period 1993 – 2012. In selected countries of Central and Eastern Europe was proved negative FDI effect on domestic investment for a given period – CO effect. Result is shown in Table 2. CO is an abbreviation for crowding out effect.

Table 2. Effect of FDI on domestic investment

Region	Coefficient π	Long – term effect
Selected countries of CEE (Czech Republic, Estonia, Hungary, Slovakia)	0.109	CO

This negative effect we can explain by the fact that foreign companies do not cooperate with domestic companies in a higher degree. Foreign companies use services from the same suppliers as their mother companies. Foreign companies take components necessary for production from foreign manufacturers who are brought into a host country by foreign companies themselves. Another fact is that companies owned by a foreign owner are in individual industries so strong and effective that for a domestic company it is a problem to enforce and conduct business, or cooperate with a multinational company in individual industries.

5. Conclusion

The aim of this paper was to examine effects of crowding in and crowding out of domestic investment by foreign direct investment in the selected countries of Central and Eastern Europe (Czech Republic, Estonia, Hungary and Slovakia). Selection of countries was performed according to inflow foreign direct investment per capita ratio. Four countries were selected with the highest value of inflow foreign direct investment per capita ratio. Researched has been performed for time period 1993 – 2012 according to the annual data obtained from World Bank and UNCTAD database. A model Agosin and Mayer, 2000 and Mišun and Tomšík, 2002 was used in order to examine particular data. Panel regression was used for calculations necessary to obtain results of the research. Subsequently the effect of crowding in and crowding out was tested by coefficient π.

Negative crowding out effect of domestic investment by foreign direct investment was proved. There are several explanations of negative crowding out effect domestic investment by FDI. During the transformation process was performed foreign direct investment by way privatization. The foreign investors acquired share in strategic companies in strategic industry (telecommunication, gas industry, manufacturing industry etc.). These companies crowd out domestic investment. Domestic companies are unable to conduct business effectively and be competitive multinational companies. Another reason is the policy of national governments that promote business of foreign investors and on the other hand, domestic companies without the benefit of business. Domestic companies do not

fulfil global standards for quality of supplies therefore suppliers from host countries are not attractive for cooperation with multinational companies.

Acknowledgements

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