

Foreign Direct Investment And Economic Growth In Transition Economies

LYROUDI KATERINA^{*a}, PAPANASTASIOU JOHN*,
VAMVAKIDIS ATHANASIOS^{**}

^{*}University of Macedonia, Dept. of Accounting and Finance, Greece

^{**}International Monetary Fund, USA

Abstract

Empirical research on the effects of Foreign Direct Investment (FDI) on economic growth mainly focuses on the US and the western European countries. The objective of this paper is to investigate the existence and the nature of the effect of FDI on the rate of growth of a panel of transition economies. We apply Bayesian analysis. Our results indicate that FDI does not exhibit any significant relationship with economic growth for the transition countries.

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P2: Socialist Systems and Transitional Economies

Keywords: Foreign Direct Investment (FDI), economic growth, transition economies.

1. Introduction

Many researchers [Ragazzi (1973), Rugman (1976), Agmon and Lessard (1977), Stulz (1981), Doukas and Travlos (1988) Pfaffermayr (1994), Rivoli and Salorio (1996)] have examined thoroughly the consequences of foreign direct investment (hereafter FDI) from the viewpoint of the company's stockholders, either the parent, or the target company, or both.¹ Based on the literature, it is most likely that a foreign firm (usually a multinational corporation) that decides to enter into another market through FDI, enjoys lower costs and higher productive efficiency than its domestic competitors.

^a *Corresponding author:* 156, Egnatia str., P.O. Box 1591, 540 06 Thessaloniki, Greece
e-mail: lyroudi@uom.gr

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The effects of FDI from the viewpoint of the target country have also been examined thoroughly, but the empirical results are contradictory. Foreign direct investments (FDI) as transmitted by the multinational corporations, have several welfare implications, one of which is the effect of FDI on the economic growth of the recipient country. Most researchers examining the effects of FDI on economic growth have focused on the U.S. and on Western European economies. The effects of FDI on the target's growth have significant policy implications. If FDI has a positive impact on economic growth, then a host country should encourage FDI flows by offering tax incentives, infrastructure subsidies, import duty exemptions and other measures to attract FDI. If FDI has a negative impact on economic growth, then a host country should take precautionary measures to discourage and restrict such capital inflows. FDI is one of the three major private capital inflows along with bank loans and portfolio capital to host countries. In 2000 private capital flows to emerging market economies were almost \$ 200 billions and FDI accounted for 60 % of that amount [Carkovic and Levine (2002)].

The empirical evidence on FDI and economic growth is ambiguous, although in theory FDI is believed to have several positive effects on the economy of the host country (such as productivity gains, technology transfers, the introduction of new processes, managerial skills and know-how, employee training) and in general it is a significant factor in modernizing the host country's economy and promoting its growth. Especially for the developing countries, the recent global changes in the 1990's, have led them to look favourably at the various FDI's because it is believed that they can contribute to the economic development of the host country. Hence, we focus on this subject in our present study to investigate further the effects of FDI on the host country's growth.

Early studies on FDI, such as Singer (1950) and Prebisch (1968) claimed that the target countries of FDI receive very few benefits, because most benefits are transferred to the multinational company's country. One view about the negative effect of FDI on the host country's economic growth, is that although FDI raises the level of

1. The results for the target companies shareholders in case of FDI have indicated positive wealth effects, [Picou (1992)]. On the other hand, the parent company shareholders do not always benefit from FDI. There are negative wealth effects in cases where the target is in a competitive foreign market [Senchack and Beedles (1980), Fatemi (1984), Doukas and Travlos (1988)]. There are zero wealth effects according to Jacquillat and Solnik (1978), Brewer (1981), Fatemi (1984), Fatemi and Furtado (1985). There are positive wealth effects in cases where the multinational companies take advantage of target imperfections in real goods and services markets and when there is an initial entry in the target country [Ragazzi (1973), Hughes, Lague and Sweeney (1975), Agmon and Lessard (1977), Miller and Pras (1980), Lunn (1980), Scaperlanda and Balough (1983), Fatemi and Furtado (1985), Doukas and Travlos (1985), O' Sullivan (1985), Madura and Whyte (1990), Pfaffermayr (1994)].

investment and perhaps the productivity of investments, as well as the consumption in the host country, it lowers the rate of growth due to factor price distortions or misallocations of resources. Bos, Sanders and Secchi (1974) examined the effects of FDI by U.S. companies on the host country's growth. Their results revealed a negative relationship between these two variables. The explanation offered was that the outflow of profits back to the U.S. exceeded the level of new investment for each year for the period examined 1965-1969. In the new investment there were also included the reinvested earnings, causing the outflows to exceed the inflows even more. Hence, most FDI was coming through capital raised in the host country instead of the U.S. which led FDI to cause a redistribution of capital from labor intensive countries to capital intensive countries. Bos, Sanders and Secchi (1974) identified another factor that caused the negative effects of FDI on growth, the price distortions due to protectionism and monopolisation and, finally, natural resources depletion.

Saltz (1992) examined the effect of FDI on economic growth for the third world countries. The results of his empirical tests revealed a negative correlation between the level of FDI and growth during the period 1970-1980. His explanations agree with those of Bos, Sanders and Secchi (1974), that the level of output of a host country will stagnate in cases of FDI where there might occur monopolisation and pricing transfers, which will cause under-utilisation of labor, that will cause a lag in the level of domestic consumption demand and eventually will lead growth to stagnate.

Barrell and Pain (1999) explored the benefits of FDI by U.S. multinationals in four European Union countries and found that FDI may affect the host country's performance positively in cases where there are transfers of technology and knowledge through the FDI to the host economy.

Carkovic and Levine (2002) tried to reassess the relationship between FDI and economic growth for 72 countries over the period 1960-1995. They used the Generalized Method of Moments (GMM) panel estimator to determine the impact of FDI inflows on economic growth. Their results indicated that for both developed and developing economies FDI inflows did not exert an independent influence on economic growth. Specifically the exogenous component of FDI did not exert a reliable positive impact on economic growth, even allowing for the level of education, the level of economic development, the level of financial development and trade openness of the recipient country.

Our study focuses on the Eastern European and Balkan countries. Since the fall of the Iron Curtain foreign direct investment grew slowly in these regions due to cultural influences and differences and high political risks for the entering western European or U.S. firms.

Our objective is to investigate the effect of foreign direct investment on economic growth and vice versa in selected transition economies. The methodology we are going to apply is Bayesian analysis on panel data.

Borensztein, De Gregorio and Lee (1998), examined empirically the relationship of FDI and economic growth in developing countries. They showed that FDI allowed for transferring technology and for higher growth when the host country had a minimum threshold stock of human capital. Their results indicated also that the main way that FDI increases economic growth is by increasing technological progress, instead of increasing total capital accumulation in the host country. They used the gross FDI which refers only to inflows, reported in the "International Financial Statistics", and for economic growth they used the growth rate of income as the average annual rate of per capita real GDP over each decade. Their results indicated that for host countries with very low levels of human capital the direct effect of FDI on growth is negative, otherwise it is positive.

Bosworth and Collins (1999) evaluated the implications of capital inflows in the form of FDI, portfolio investment and bank loans for 58 developing countries during the period 1978-1995, and the uses made of these flows. These countries were in Latin America, Asia and Africa. Most of the inflows were concentrated in Asia and Latin America for the period 1990-1995. In the 90's, the composition of these capital inflows had shifted from loans towards FDI and only in the last decade were there inflows as portfolio capital (equities and bonds). Prior to 1982 most capital inflows were bank loans. The authors used regression analysis on panel data. They examined the effect of capital inflows, as a total and separately as percentages of GDP, on investment and saving, measured also as percentages of GDP. Their results indicated that total capital inflows had a positive effect on investment, while they had an insignificant negative effect on the saving rate. When the capital inflows were separated into the three types, the results indicated that FDI had the strongest positive relationship with investment, portfolio inflows had the smallest and least significant relationship and loans were in between. This result was more pronounced for the sub-sample of the emerging market economies, which had most of the portfolio capital inflows. Regarding saving, FDI had a significant positive effect on saving, while the other two types of capital inflows had a negative impact on domestic saving.

Alfaro, et al. (2002) examined whether economies with well developed financial markets are able to benefit and increase their economic growth with the attraction of FDI. They argued that the lack of development of the domestic financial markets can reduce the domestic economy's ability to benefit from potential FDI spillovers. They used the net FDI inflows reported in the IMF publication, the "International

Financial Statistics" (2000), and for economic growth they used the growth rate of output measured as the growth of real per capita GDP in constant dollars, obtained from World Development Indicators (2000). Their results indicated that for most of the 71 developing countries of their sample FDI had a negative effect on their growth, confirming their hypothesis that insufficiently developed financial markets and institutions can diminish the positive effects of FDI.

Campos and Kinoshita (2002) examined the effects of FDI on growth for the period 1990-1998, for 25 Central and Eastern European and former Soviet union transition economies. In these countries FDI was pure technology transfer. Their main results indicated that FDI had a significant positive effect on the economic growth of each selected country. These results were consistent with the theory that equates FDI with technology transfers that benefit the host country. Similar results were found by Madura and Picou (1990), La Follette (1990) and Hooley et al. (1996).

Brouthers and Bamossy (1997) explored the role of Central and Eastern European transition governments as key stakeholders and how they influenced the international investment negotiations. They found that these governments intervened at different stages of the negotiations' process. The targets' governments could influence the process directly and indirectly and had the ability to change the balance of power in the negotiations. These led to an increase in the political risk involved with FDIs. The entrants wanted full-control modes of FDI such as wholly owned subsidiaries, while the host countries wanted shared control modes such as joint ventures. As Brouthers, et al. (1998) recommended after their analyses, managers should be willing to use shared control modes to minimise their investment risk in entering these markets. Most of this risk is due to the governments and political instability in this region.

Based on these recent results and the existing conditions in the transition economies of Europe, we anticipate a positive relationship between FDI and the host country's growth, despite the results of the major body of literature, since mostly they refer to third world countries. However, we understand that each country of this selected region has its own particularities and the FDI conditions could be different. For example, there is a growing chasm between Russia and the Central Europe countries regarding FDI trends. According to the U.N. Conference on Trade and Development (UNCTAD) in 1999, Eastern Europe showed a 26% surge in FDIs, while Russia recorded a 65% year-on-year decline, while GDP growth was not found critical. International investors in Eastern Europe are analysing specific countries of the region and not grouping them all together as was the tendency in the past decade. Poland has emerged as the region's most economically stable country and, probably because of that, the main recipient of FDI flows.

According to the United Nations (2001) the countries that usually attract large amounts of FDI are those with good economic conditions, a certain high level of education, a high level of macroeconomic and political stability, favourable growth prospects and favourable investment environments. Regarding the economies in transition, this report determined a distinction between those countries chosen as candidates for EU membership in the first wave of EU accession (Czech Republic, Hungary, Poland, Slovenia and Estonia) and those that will follow in a second wave (Bulgaria, Romania, Latvia, Lithuania and the Slovak Republic). The first group has received almost 60 % of the total annual flow of FDI. They have policy decisions that attract even more FDI and their location and growth prospects are favouring them. Those countries in the second group are less fortunate, either owing to distant location from developed markets, or to unfriendly policies for foreign investors, or to high political risk. Bulgaria and Romania were characterised for years by policy immobility and economic crises. However, after significant policy changes and accelerated privatisation programmes, they have been accepted in the second wave of EU accession. On the other hand, the SFR of Yugoslavia, Bosnia and Herzegovina and Croatia have received large amounts of foreign aid but have not been able to attract FDI due to slow economic reform and political instability. Azerbaijan, Kazakhstan, Turkmenistan and Kyrgyzstan are countries with many natural resources (oil and gas the first three and gold the fourth) but have attracted large amounts of FDI only into the extracting industries. In the early 1990's, Hungary and Estonia and Latvia later showed signs of FDI- led growth. On the other hand, in Poland, the economic recovery (starting in 1992) preceded the FDI wave. In Croatia, Slovakia and Slovenia there were periods of rapid growth without the attraction of FDI. Finally, this report examined whether there were any productivity spillovers in Central and Eastern Europe. It was found that although there were significant technology transfers through FDI there were no positive productivity spillovers and actually in some cases there were negative intra-industry spillovers (Czech Republic, Slovenia, Estonia).

Based on the above studies, it can be inferred that the impact of FDI on a transition economy's growth, compared to the impact of FDI on a developing economy's, where the latter had a long established market system, could be different. Hence, this study becomes more interesting in investigating this relationship of FDI on growth for the transition economies.

In order to achieve our objective, the structure of our paper is as follows: the next section contains the testable hypotheses, the data and the methodology, the third section presents and analyses the results and the final section presents a summary and concluding remarks.

2. Testable Hypotheses Data and Methodology

Based on the above studies we have formed our testable hypotheses. Our first testable hypothesis concerns the assumption that FDI represents a transfer of technology and knowledge to the host country, therefore it enhances that country's growth. Hence:

H_0 : There is expected to be a positive relationship between FDI and the host country's growth, as measured by the GDP.

The alternative hypothesis is based on the assumption that FDI causes factor price distortions, monopolisation, transfer pricing and worse terms of trade for the host country, therefore it reduces that country's growth.

H_1 : There is expected to be a negative relationship between FDI and the host country's growth, as measured by the GDP, or not any relationship at all.

We employ data on GDP and net inflows of foreign direct investment (FDI) in constant U.S. dollars for the years 1995 to 1998. The final sample contains the following transition countries: Albania, Azerbaijan, Belarus, Bosnia, Georgia, Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, Moldova, Mongolia, Romania, Russia, Slovenia, Tajikistan, Turkmenistan, Uzbekistan. All data have been obtained from the World Development Indicators of the World Bank and the International Financial Statistics of the IMF².

Then a simple proportional model has been applied to our data set. Specifically we have estimated the statistical equation:

$$Y_{it} = \beta X_{it} + E_{it} \quad (1)$$

where Y_{it} is country's i percentage growth in year t , X_{it} is country's i FDI as a percentage share of GDP in year t and E_{it} is country's i disturbance term in year t . The parameter of Equation (1) was estimated by using the Bayesian regression analysis package. The estimation procedure as well as the statistical properties of Equation (1) are presented in detail in Zellner (1971, ch. 3).

The average growth rates and the FDI for all countries are presented in Table 1.

2. Unfortunately it was not possible to include all 27 transition countries. The selection was based on the data availability for these countries, since there are not available data for certain variables that we need for our present research purposes. The final sample contains 17 countries.

Table 1. Average Growth rates and FDI

Name of country	Average growth rate: 1996-98 (%)	Average proportion of net FDI in GDP: 1996-98 (%)
1. Albania	3.35	2.30
2. Azerbaijan	5.70	22.60
3. Belarus	7.17	0.58
4. Bosnia	46.19	67.73
5. Georgia	8.07	0.21
6. Kazakstan	0.10	2.99
7. Kyrgyz Republic	6.37	8.28
8. Latvia	5.28	-21.06
9. Lithuania	5.70	4.33
10. Moldova	-3.60	11.51
11. Mongolia	3.30	0.003
12. Romania	-2.52	0.52
13. Russia	-2.47	0.62
14. Slovenia	3.97	0.63
15. Tajistan	0.87	20.99
16. Turkmenistan	-3.67	0.60
17. Uzbekistan	2.87	3.65

· Pearson correlation coefficient: 0.787 significant at the 0.01 level (P – value 0.000)

· Outlier of Bosnia (taking out that observation)

· Pearson correlation coefficient: -0.095 insignificant (P – value 0.726)

As we can see from the estimates of the Pearson correlation coefficient if we remove the country Bosnia there is not any significant relation between growth and FDI. We use the data for the 17 countries to estimate Equation (1) with diffuse priors. The results are presented in Table 2.

Table 2. Analysis with Diffuse Priors and Normal Likelihood Function

i. Including all countries		
Parameter	Posterior Mean	Standard deviation
β	0.23	0.04
ii. Excluding Bosnia		
β	0.05	0.07

3. Analysis of Results

According to the results in Table 2, we see that the posterior mean and standard deviation for the parameter β are 0.23 and 0.04 respectively. This implies that FDI influences positively the growth of the transition countries, supporting the first testable hypothesis.

However, if we exclude Bosnia from our data set the posterior mean of β is 0,05 with its standard deviation equals to 0.07. Furthermore, a 95 % Bayesian confidence interval for β is 0.19 to -0.09 which reflects the ambiguity characterizing the coefficient $\hat{\alpha}$ in that case. Therefore, if we remove the outlier related to Bosnia, we conclude that there is not any evidence of a positive impact of FDI on growth.

Excluding Bosnia as an outlier, we try to analyse further our data by splitting the sample in two ways: first into countries with high GDP and those with low GDP, and second, into countries with high growth rates and countries with low growth rates. The countries are classified as those with high GDP or high growth rates if their respective values are above the sample median values which are given in Table 3. We present estimates for splitting the sample by using again diffuse priors.

Table 3. GDP and Growth Median Values

Year	1996	1997	1998
(a)	GDP		
	4.2	4.8	5.5
(b)	Growth		
	2.8	4.0	3.9

Note: All the entries for GDP are to be multiplied by 10^9

Table 4 presents the results of estimating Equation (1) for high and low income transition countries.

Table 4. Splitting the sample, Diffuse Prior and Normal Likelihood Function

	High GDP countries	High GDP countries	Low GDP countries	Low GDP countries
Parameter	Mean	Std dev.	Mean	Std dev.
β	-0.07	0.09	0.14	0.11
	High Growth countries	High Growth countries	Low Growth countries	Low Growth countries
	0.09	0.10	-0.10	0.13

Based on Table 4 results, we observe that FDI has an insignificant effect on growth, thereby supporting the second hypothesis. Finally, since the parameter β for the transition countries (excluding Bosnia) was not precisely estimated we re-estimate Equation (1) given that we have some information about possible value of the parameter β . Then we can formulate a prior probability density function (pdf) to represent the prior beliefs by the so-called informative prior probability density function.

Here we use two types of prior pdf, let's say P and N, where the P prior probability density function represents the beliefs that FDI has a positive influence on income, that is parameter β is positive. On the other hand, the prior pdf N is consistent with the beliefs that β is negative. The values of these prior pdfs and g , the prior precision parameter, are given in Table 5.

Table 5. Values of β and g in Prior Probability density functions (pdf)

Prior pdf	β	g		
		(i)	(ii)	(iii)
P	0.05	0.3	0.5	0.7
N	-0.05	0.3	0.5	0.7

Three values, namely 0.3, 0.5 and 0.7, were assigned in both prior pdfs. Posterior estimates based on prior N and P are shown in Table 6.

Table 6. Posterior Values of β for Transition Countries (excluding Bosnia)

(i) $g=0.3$

Prior P	β
Mean	0.05
Std Dev.	0.06
95% CI.	-0.07 to 0.17
Prior N	
Mean	0.03
Std Dev.	0.06
95% CI.	-0.09 to 0.15

(ii) $g=0.5$

Prior P	β
Mean	0.05
Std Dev.	0.06
95% CI.	-0.06 to 0.16
Prior N	
Mean	0.02
Std Dev.	0.06
95% CI.	-0.09 to 0.13

(iii) $g=0.7$

Prior P	β
Mean	0.05
Std Dev.	0.05
95% CI.	-0.06 to 0.16
Prior N	
Mean	0.01
Std Dev.	0.05
95% CI.	-0.10 to 0.11

The results from Table 6 reveal that the precision of the estimate for the parameter $\hat{\alpha}$ does not improve under any prior probability density function. Although a 95% Bayesian confidence interval for $\hat{\alpha}$ is larger under prior probability density function P than one under prior probability density function N, we cannot conclude that FDI has a negative effect on the growth of transition countries. Therefore, our results indicate that FDI does not exert any influence on growth for our sample.

4. Summary and Concluding Remarks

This study examined the relationship of FDI and economic growth for selected transition economies. The selection was based on data availability. The evidence from the statistical analysis suggests that foreign direct investment (FDI) does not have any significant relationship with economic growth for transition countries. We derive the same conclusions after splitting our sample into low and high income/growth countries. Finally, the use of informative priors did not change the results. Therefore, we conclude that after removing outliers effects from our data set, FDI does not exert any robust influence on growth. This result is in accordance with the findings of Carkovic and Levine (2002).

Future research, when more data become available, could examine possible causality effects between FDI and the host country's growth. We can also investigate other factors that might affect or determine these two variables for the transition economies. The same research as this study could also be applied to the developed countries (as host countries) to investigate the relationship of FDI and growth and the factors affecting them. Furthermore, future research can investigate the effects of FDI on the level of human capital, since FDI is a means for the adoption and implementation of new technologies and therefore, there will be required training to prepare the labour force to work with the new technologies. Also one might examine whether the growth effects of FDI depend on the level of education of the host country, the levels of economic and financial development of the host country and its trade openness.

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