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Foreign Direct Investment and Growth in Transition Economies: New Evidence from Central and Southeastern Europe

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ABSTRACT

This paper examines the major determinants of Foreign Direct Investment (FDI) flows in Central and Southeastern European countries. The previous research reports two groups of explanatory factors: gravity factors (distance, market size) and factor endowments (infrastructure, human capital). Other factors that are found to have significant effect are geographical proximity, barriers to trade, tax policy and tax incentives, labor costs and regional integration. According to Demekas *et al.* (2005) gravity factors explain a large part of FDI inflows in transition economies, including Southeastern European countries, but policy environment also matter for FDI. Using an econometric model based on panel data analysis this paper shows that a consistent modeling of FDI flows needs to take into account not only the determinants traditionally considered in research literature, including the recent developments on gravity models, but also variables linked to political and institutional environment in which FDI is undertaken. The results are in line with previous research and show that both traditional factors (such as distance, population, and GDP) and transition specific factors (such as risk, wages and corruption) can explain, to a large extent, the size of FDI flows in transition economies. The evidence about the role of privatization in explaining the scale of inward investment is ambiguous.

Keywords: transition economy, foreign direct investment, multinational enterprise, gravity model

JEL classification: C33, F21, F23

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Introduction

Perhaps the most prominent face of globalization is the rapid integration of production and financial markets over the last decade: that is, trade and investment are the prime driving forces behind globalization. Foreign Direct Investment (FDI) has been one of the core features of globalization and the world economy over the past two decades. More firms in more industries from more countries are expanding abroad through direct investment than ever before, and virtually all economies now compete to attract multinational enterprises (MNEs). The inflow of foreign investment is widely thought to be an important channel for the diffusion of new ideas, technologies and business skills across national borders. It can improve the prospects for growth by increasing the total level of capital investment in the economy and by introducing more productive technology and techniques.

Foreign direct investment (FDI) has gained significant importance over the past decade as a tool for accelerating growth and development of economies in transition. It is widely believed that the advantages that FDI brings to the standard of living and prospects for economic growth of the host nation largely outweigh its disadvantages. FDI's importance lies in its fundamental difference from other forms of capital investment: the nature and duration of the commitment it involves (Barrell & Holland, 2000). Its purpose is to establish cross-border commercial relations and at the same time exert a noticeable managerial influence over a foreign company. Specifically, FDI is a tool, which enables these countries to break with their objective and organizational gaps through the introduction of new techniques, both managerial and technological. The long-term nature of FDI fosters a high sensitivity to risk perception. Political and macroeconomic stability, as well as transparent legal regulations concerning foreign ownership and profit repatriation, are all important determinants of foreign investment decision making (Demekas *et al.*, 2005; Resmini, 2000).[1]

The transition from socialism to capitalism in Central and Eastern European (CEE) countries is both a political and an economic process (Bevan & Estrin, 2000; Demekas *et al.*, 2005). An important aspect of the former is the possibility of reintegration into Europe symbolized for many countries by prospective membership of the European Union. Integration into the world economy, notably through trade and capital flows, is a crucial and related element of the latter. Foreign direct investment (FDI) is a particularly important element of economic integration, because it opens possibilities for accelerated growth, technical innovation and enterprise restructuring, as well as capital account relief (Garibaldi *et al.*, 2002; Holland & Pain, 1998). Thus European Union (EU) membership can be viewed as a determining element of

[1] Joong-Wan Cho (2003) points out three key determinants and factors associated with the extent and pattern of FDI in developing host countries: attractiveness of the economic conditions in host countries; the policy framework towards the private sector, trade and industry, and FDI and its implementation by host governments; and the investment strategies of MNEs

the operating business environment, and this may directly influence the rate of FDI flows in transition economies (Bevan & Estrin, 2000; Bos & De Laar, 2004).

FDI enables CEE countries to raise investment levels above those of domestic savings, so inflows of foreign capital are vital to accelerating growth and development in Central and Eastern Europe. The importance of FDI is clear from the proportion it represents of total gross fixed capital formation. Typically, FDI comprises 4-17% of total investment in developed economies; but for CEECs, it accounts for up to 44% (Bevan, Estrin, & Grabbe, 2001). FDI has further benefits beyond providing much more capital than would be available from domestic sources alone. Typically, FDI brings with it technology transfer, managerial and other skills (such as marketing and distribution, which are often lacking in the early years of post-communist transition), access to markets, training for staff, and lower environmental impact. Foreign direct investors are actively involved in one of the most important aspects of the transition process - the restructuring of firms. Indeed, there is some evidence that foreign direct investors in the transition economies are more effective than domestic owners in improving the performance of firms after privatization.[1]

Soon after the start of the transition period, it became clear that there was a large deviation in the amounts of direct investment received by the various transition countries; a few countries receive a large proportion of the total inflows whereas most other countries in the region received very low amounts of FDI inflows. Although many studies (see e.g., Bevan & Estrin, 2000; Brenton, Di Mauro, & Lücke, 1999) show that the size of the FDI inflows can largely be explained by a limited number of basic country characteristics the question remains whether FDI flows to these transition countries can be explained in the same manner.[2] Specifically, an announcement effect or a catch-up effect may explain the relatively high FDI flows to those transition countries that have been selected first for accession in the European Union (EU). The more integrated the accession countries are with the EU, the smoother the accession to the EU is expected to be. Thus, the stage of and relative position in the accession process influences net investment flows to the different countries entering the EU (Bos & De Laar, 2004).[3]

Tables 1 to 3 provide a comparative view of FDI flows in some Central and Southeastern European countries over the period 2001 – 2006. Table 1 presents a brief overview of the state of the transition in these countries as of end of

[1] There is growing evidence that enterprise productivity, R&D expenditure, innovation and company performance are higher in foreign owned firms - both in the transition economies and in the West countries (see e.g., Barrell & Pain, 1999; Holland & Pain, 1998).

[2] In addition, the pattern of the operations undertaken in the CEECs by multinational firms is far from being homogeneous: most of the surveys have, implicitly or explicitly, recognized the heterogeneity of FDI in the regions, in terms of project characteristics and investment determinants at the sectoral and geographical level (see Altomonte, 1998).

[3] Moreover the prospect of EU membership might be viewed by potential investors as reducing country risk, both because meeting the requirements for EU admission represents an external validation of progress in transition, and because ultimate EU membership implies guarantees in terms of macroeconomic stability, institutional and legal environment and political stability.

2006. Most of the foreign investment goes to Poland, the Czech Republic and Hungary, which are the three largest CEECs and also among the countries that have been selected first for accession in the European Union (EU). Consequently, investment in one of these countries guarantees access to all of their markets and to the nearby EU member states. Moreover, these countries are characterized by a low country risk and a high private market share (around 80 percentage of GDP). Hence, the countries having a large market, that is, high GDP, and a stable, advanced market economy perform well in terms of attracting FDI.

However, when we account for FDI as a percentage of GDP, countries such as Bulgaria and Croatia have attracted significant FDI. These counties, together with Romania, have the lowest labor costs of all CEE countries. Based on these data, we make a distinction between the Central European Countries, namely, Czech Republic, Hungary, Poland, Slovak Republic and Slovenia, and the Southeastern European Countries, namely, Bulgaria, Romania and Croatia, in our analysis.

[Insert Table 1 here]

Table 2 shows the evolution of FDI inflows into the same Central and Southeastern European countries. The transition to market economies in CEECs has been accompanied by a surge of FDI inflows. However, the CEEC group is not homogeneous and, as noted by Carstensen & Toubal (2004), countries with favorable initial conditions have attracted more FDI than their more risky and poorer performing neighboring countries in the years preceding the EU accession (2001 - 2004). Hence, FDI flows to these countries may reflect a deeper phase of integration. However, in 2006, countries such as Bulgaria and Romania, which belong to the second group of accession countries, have attracted more FDI than the more advanced countries from Central and Eastern Europe (the only exception in this group is Poland).

[Insert Table 2 here]

The origins of FDI flows to CEECs as of December 2006 are reported in Table 3. Foreign investment comes mainly from the EU, with Austria, Germany, and the Netherlands as the main investors. Proximity to the EU stimulates market-seeking investment of EU-based multinationals but also, to a smaller extent, Greenfield investments (Carstensen & Toubal, 2004). The latter benefit from few large privatization projects mostly in the late 1990s. The position of the US is non-negligible, particularly in countries such as Hungary, Poland, Czech Republic, Romania and Bulgaria. These five countries account for about 96% of the US investment in the region.

[Insert Table 3 here]

There is a growing research literature that provides empirical evidence about the factors determining the pattern of FDI across the transition economies. The

majority of previous work in this area reports two groups of explanatory factors: gravity factors (proximity, market size) and factor endowments (infrastructure, human capital). Other factors that are found to have significant effect in this region are geographical proximity, barriers to trade, tax policy and tax incentives, labor costs and regional integration. According to Demekas *et al.* (2005 & 2007) gravity factors explain a large part of FDI inflows in CEECs, including Southeastern Europe, but policy and institutional environment also matter. Using an econometric model based on panel data analysis this paper shows that a consistent modeling of FDI flows needs to take into account not only the determinants traditionally considered in research literature, including the recent developments on gravity models, but also variables linked to political and institutional environment in which FDI is undertaken. We focus on bilateral FDI between eight transition economies and twelve EU source countries. The panel covers the six year period of 2001 to 2006. Inclusion of the more geographically distant economies allows us to examine any effects arising from proximity and contiguity to the European Union.

The rest of the paper is organized as follows. The next section presents a literature review of the theory on the determinants of foreign direct investment. Section 3 details on the FDI determinants in transition economies. The econometric model and data panel analysis are presented in section 4. Section 5 presents econometric results from bilateral FDI cross-section regressions. Some concluding remarks are offered in the final section.

Literature Review

Foreign direct investment (FDI), its determinants, and its effects have been extensively studied. It has long been recognized that the benefits of FDI for the host country can be significant, including knowledge and technology transfer to domestic firms and the labor force, management improvement, productivity spillovers, enhanced competition, and improved access for exports abroad, notably in the source country (Demekas *et al*., 2005). Moreover, since FDI flows are non-debt-creating, they are a preferred method of financing external current account deficits, especially in developing countries, where these deficits can be large and sustained. At the same time, the growing liberalisation of FDI and other financial markets, while offering additional opportunities to which much attention is given in the literature, also pose significant risks and hazards to developing countries.

In small economies, for example, large foreign companies can-and often do-abuse their dominant market positions and, especially in developing countries, attempt to influence the domestic political process. FDI can also give rise to potentially volatile balance of payment (BoP) flows, due, for example, to an increase in the imports of inputs by subsidiaries and payments of dividends and royalties abroad. Other acknowledged drawbacks are non-competitive pricing because MNEs are able to exercise considerable market power, possible FDI withdrawal that may lead to financial instability and discourage other investors, and potential decrease of know-how development by local firms (Vavilov,

2005). On balance, however, the consensus view in the literature is that the benefits of FDI tend to significantly outweigh its costs for host countries.

The literature on the determinants of foreign investment has identified both policy and non-policy factors as drivers of FDI (Fedderke & Romm, 2006). Non-policy factors include market size, distance, factor proportions and political and economic stability. Policy factors include openness, product-market regulation, labour market arrangements, corporate tax rates and infrastructure. Non-policy related factors relevant to FDI fall into a number of categories. First, market size of the host country, usually measured by GDP, is considered an important determinant of horizontal FDI, because the returns from such investment depend on economies of scale at the firm level. Second, the effect of distance and transport costs on FDI is viewed as ambiguous. While they imply transaction costs for the investors, FDI may also carry advantages over trade when dealing with distant countries.

Third, differences in factor endowments between countries are often held to encourage vertical FDI because they make possible the exploitation of comparative advantage. Horizontal FDI by contrast is discouraged by differences in factor endowments because they make production of the same good in different countries difficult.[1] Finally, political and economic instability are predicted to deter FDI since they creates uncertainty which raises the risk premia on the returns to FDI (see e.g., Barrell, Gottschalk, & Hall, 2004). In general, it might be expected that that FDI is more likely to flow from developed countries into developing economies that are politically stable and have access to large, regional markets.[2]

Policy related factors determining FDI also fall into a number of categories. First, openness of the domestic economy is influenced by direct FDI restrictions as well as trade barriers. FDI restrictions clearly raise barriers to FDI and are likely to influence the choice MNEs make with regards to the investment location. Two alternative views of the motives for FDI give contradictory predictions regarding the effects of trade liberalization on FDI (see Fedderke & Romm, 2006). The view of FDI and trade being substitutes sees 'tariff-jumping' as a motive for FDI, and hence trade liberalization should negatively affect FDI. In a liberalized

[1] Horizontal multinationals produce the same product in multiple plants so that they serve local markets from local production. Horizontal multinationals arise if proximity advantages outweigh concentration advantages. Given the dominance of developed countries as source and as host countries, horizontal models have received somewhat more attention than vertical models of FDI. The latter explain the existence of MNEs by large differences in factor endowment across countries because different parts of the production process have different input requirements. Since input prices vary across countries, it becomes profitable to split the production process according to the factor intensities of its different stages. Hence, the vertical model allows the separation of the knowledge-generating activities from production.

[2] Early studies of FDI in developing countries have put particular stress on the indicators of economic and political risk (see e.g., Lucas, 1993; Singh & Jun, 1996). This comprises three main elements: a) macroeconomic stability, e.g. growth, inflation, exchange rate risk; b) institutional stability such as policies towards FDI, tax regimes, the transparency of legal regulations and the scale of corruption; and c) political stability, ranging from indicators of political freedom to measures of surveillance and revolutions.[2]

trade environment, exporting goods from the home country is relatively more attractive than FDI as a way to serve the regional market. The alternative view sees the motive for FDI as MNEs having different affiliates specializing according to the locational advantages of the host country. This applies, in particular, to vertical FDI where a liberal trade environment is a prerequisite for the international division of labour at the firm level.[1]

Second, countries where domestic product-market regulations impose unnecessary costs on business and create barriers to entry discourage FDI. Third, labour market conditions that impose extra costs on investors will tend to curb the inward FDI position of a country. Strict employment protection legislation and high labour tax wedges will discourage inward FDI in the host country, when the costs of job protection and labour taxation are not fully shifted onto lower after-tax wages. Strict employment protection legislation not only lowers the returns expected from FDI, but also their variability, since it makes it more difficult for MNEs to respond to supply and demand shocks. This increases the risk that investors face in the host country (Nikoletti *et al.*, 2003).

Fourth, the impact of corporate tax rates is straightforward. Since higher tax rates applied to corporate profits lowers FDI returns, it will discourage inward FDI. Although the evidence on tax incentives is not conclusive, there are some indications that transparent and simple tax systems tend to be most attractive for FDI. For example, Devereux, Lockwood, & Redoano (2008) show that OECD countries do indeed compete with each other over corporate taxes in order to attract investment.[2] Finally, the availability and quality of infrastructure (transportation, communications and energy supply) may positively affect inward FDI, because good infrastructure lowers transaction costs thereby affecting comparative and absolute advantage.[3]

Recent research literature affirms that policy environment does matter for FDI (see Demekas *et al.*, 2005 & 2007; Lipschitz, Lane, & Mourmouras, 2002; Witkowska, 2007). At a very general level, a predictable policy environment that promotes macroeconomic stability, ensures the rule of law and the enforcement of contracts, minimizes distortions, supports competitiveness, and encourages private sector development can be expected to stimulate private- including foreign- investment. But when empirical studies attempt to estimate the impact of individual policies on FDI, the results are often ambiguous.

[1] Trade policies, for example, and, more broadly, trade costs (tariffs, non-tariff barriers, and transportation costs) are generally found to have a significant impact on FDI flows, but in aggregate regressions their sign is ambiguous. This is probably due to the different effect the barriers to trade can be expected to have on horizontal and vertical FDI; they tend to attract horizontal FDI, which aims at penetrating the domestic market, but repel vertical FDI.

[2] They develop a model in which multinational firms choose their capital stock in response to an effective marginal tax rate (EMTR), and simultaneously choose the location of their profit in response to differences in statutory tax rates.

[3] Nicoletti *et al.* (2003) show the effect of infrastructure on FDI in the OECD not to be very large – although this may simply demonstrate that the level of infrastructure across OECD countries to be sufficiently high, so as no longer to exercise a significant influence on FDI location decisions.

Though there has been considerable theoretical work on foreign direct investment (for a literature review see Alfaro *et al.*, 2006; Nonnemberg & Mendonça, 2004; Vavilov, 2005), there is no agreed model providing the basis for empirical work. Rather, the eclectic paradigm, also known as OLI framework (Dunning, 1988 & 1992), has been largely employed in research literature as a general tool of reference for explaining the FDI patterns of multinational enterprises. Dunning proposes that FDI can be explained by three categories of factors: ownership advantages (O) for firms to operate oversees, such as intangible assets; locational advantages to investment in the host rather than the donor country (L), and the benefits of internalisation (I). The work on FDI into transition economies has focused primarily on locational advantages of the region (see e.g., Resmini, 2000).

However, there is a growing awareness that FDI operations are driven by determinants not necessarily expressed by the pure, static, economic advantages of the OLI framework. Among the approaches which try to overcome the drawbacks of the eclectic paradigm, a promising (in terms of theoretical soundness and empirical evidence) line of research which is being explored recently, is the application of the so-called *gravity models* to the theory of international production, via the inclusion of the OLI set of variables into general equilibrium models of international trade and investment. Gravity models were originally conceived in order to explain bilateral trade flows as dependent, in analogy with the law of gravitation, by the attraction of two countries' masses (sizes) weakened by the distance (transport costs) between them and enforced by preferential arrangements they eventually belong to.[1] The gravity model is of a highly applied nature. Much of its success can be attributed to its remarkable predictive power and its intuitive appeal.[2]

Another well known model that complements the OLI framework comprises the ideas on the motives of foreign investors and, thus, which of three types of FDI they are undertaking (Bevan & Estrin, 2000). One type of FDI is called market-seeking FDI, whose purpose is to serve local and regional markets. It is also called horizontal FDI, as it involves replication of production facilities in the host country. Tariff-jumping or export-substituting FDI is a variant of this type of FDI. Because the reason for horizontal FDI is to better serve a local market by local production, market size and market growth of the host economy play important roles. Impediments to accessing local markets, such as tariffs and transport costs, also encourage this type of FDI.

A second type of FDI is called resource-seeking when firms invest abroad to acquire resources not available in the home country, such as natural resources, raw materials, or low-cost labor. Especially in the manufacturing sector, when

[1] In economic terms, the size of exports flows from country *i* to country *j* is dependent by a) the size of the total potential supply of the exporting country, b) the size of the total potential demand of the importing country, and c) factors representing the resistance to a trade flow between the two countries (Altomonte, 1998).

[2] Virtually all empirical studies find that gravity factors (market size and proximity to the source country) are the most important determinants of FDI. Just as with trade flows, the gravity model consistently explains about 60 percent of aggregate FDI flows, regardless of the region. Since gravity factors are exogenous, this finding puts into perspective the efforts of policymakers in host countries to attract FDI (Demekas *et al.*, 2005).

multinationals directly invest in order to export, factor-cost considerations become important. In contrast to horizontal FDI, vertical or export-oriented FDI involves relocating parts of the production chain to the host country. Availability of low-cost labor is a prime driver for export-oriented FDI. The third type of FDI, called efficiency-seeking, occurs when the firm can gain from the common governance of geographically dispersed activities in the presence of economies of scale and scope.[1] At aggregate level, the factors attracting each type of FDI suggest that the countries with a large market, low-cost labor, abundant natural resources, and close proximity to the major developed markets would attract larger amounts of FDI inflows. FDI would thus go to countries with favorable initial conditions.

Determinants of FDI in Transition Economies

Considerable attention has been paid to the level of FDI flows in transition economies, based on the widespread assumption that foreign investments are essential for economic restructuring and development of these countries. The case for FDI in transition economies is particularly compelling. The need for extensive enterprise restructuring and modernization in view of limited domestic resources creates an environment where the potential benefits of FDI are especially valuable. Also, transition economies are well placed to benefit from the technology and knowledge transfer associated with FDI; they are relatively developed and possess a highly educated labor force (Demekas *et al.*, 2005). As a result, attracting FDI has become a prominent item on the government policy agenda, especially in transition economies, and research on the determinants of FDI has been expanding rapidly. This section presents a summery of the main findings of this research.

Lansbury, Pain, & Smidkova (1996) provide an econometric analysis of the factors affecting the pattern of investment in the Czech Republic, Slovakia, Hungary and Poland from the OECD countries over the years 1991 - 1993. The authors attempt to explain why foreign investors have moved into these markets so rapidly and why Hungary and the Czech Republic have attracted more FDI than Poland. They focus in particular on the organization of the privatization process in these economies and the trade linkages between them and those countries that have invested in the region. A number of country-specific factors such as human capital, technological endowments and economic infrastructure are found to influence the location of foreign investments.

Holland and Pain (1998) undertake a panel data analysis of the factors affecting aggregate inflows of foreign direct investment in eight Eastern European economies over the five year period from 1992 to 1996. The results indicate that the method of privatization, proximity to the EU and the extent of trade linkages with the advanced economies can have significant effects on the

[1] Bevan & Estrin (2000) find that prospective membership of CEECs in the EU, because it is conductive to the establishment of regional corporate networks, seems to have attracted more efficiency-seeking FDI to those countries after the initial announcement of the progress of EU accession.

level of investment. Also a role for the risk and relative labor costs in the host economies is detected, suggesting a degree of competition to attract inward investment. Governments can also improve the prospects for inward investment by ensuring a greater degree of macroeconomic stability.

Altomonte (1998) uses panel data techniques to show that, at the sector level, a consistent modeling of FDI flows needs to take into account not only the determinants traditionally considered by the literature, including the recent developments on gravity models, but also variables linked to the institutional environment in which the FDI is undertaken. The inclusion of these variables, affecting the risk and the uncertainty of the FDI operation, is in line with the main findings of the real option theory of investments, whose implications are empirically tested in this study.[1]

Resmini (2000) analyses European Union FDI flows into the CEECs at a sector level, which was the less studied aspect of this issue in the 1990s. The objective is to investigate whether and to what extent FDI in different sectors reacts to the same characteristics of the host countries. It seems that European Union has a comparative advantage in scale intensive and traditional sectors while non-European investors, i.e. United States and Japan, are more specialized in high-tech productions. Scale-intensive and traditional sectors can be considered as CEECs' strengths, too. Multinationals tend to invest in those activities where host countries show the greatest advantages, in terms of factor endowments, geographic location and industrial traditions.

Bevan & Estrin (2000) analyze the FDI flows between 18 source countries (EU-14, Korea, Japan, Switzerland and the US) and 11 transition economies using data covering years 1994 to 1998. They find that FDI inflows are significantly influenced by risk, unit labour costs, host country's market size and gravity factors. Most importantly however, they have been able to identify that announcements of progress in EU accession have indeed had a differential impact upon applicant countries. Contrary to expectations from the existing literature, this effect has not occurred through country credit ratings, and the authors speculate that this may be because institutional credit ratings are more likely to respond to actions rather than merely announcements.

Deichman (2001), using data from 1990 to 1999, extends the above mentioned research incorporating new variables such as annual exchange rate. Deichman's empirical model presents international trade as the most important determinant of investment via the argument that trade and investments complement one another. Investment climate, measured through the risk rating, host transportation infrastructure and labour costs are found to be another group of important determinants of investment.

Almononte & Guagliano (2003) construct a panel of more than 3,500 European multinationals that have invested in Central and Eastern Europe

[1] Through this paper it has been proven that the orthodox neo-classical theories of foreign direct investment, even in their latest formulation (gravity models), are able to predict FDI flows only to a limited extent. On the other side, the theory of real options when applied to the case of international investments can be considered a fruitful extension of the current theoretical framework, since it is able to combine consistently the existing interactions between irreversibility, uncertainty and the choice of timing, all peculiar characteristics of an investment decision. In particular, this is especially the case of the CEECs.

(CEE) and the Mediterranean (MED) over the 1990 - 1997 period in 48 industry sectors. Three general FDI determinants are included in their model estimation: demand-related variables, with the aim of controlling for market-seeking strategies of MNEs; comparative advantages, in order to take into account efficiency-seeking strategies; and institutional variables, since the study is dealing with countries which, to a different extent, are experiencing a transition process towards a market economy. After controlling for industry and time-specific effects, it is found that Central and Eastern Europe displays a greater potential in the attraction of FDI flows when compared to the Mediterranean region.[1]

Carstensen & Toubal (2004) use dynamic panel data methods to examine the determinants of foreign direct investment (FDI) into Central and Eastern European countries (CEECs). They argue that the discrepancy between different transition counties cannot be explained fully by traditional FDI determinants because transition specific factors play an important role in the investment decision of a multinational company in so far as they reflect the actual state of the transition process, the overall policy stance, or even future prospects. Based on the existing theoretical literature, the authors identify a set of traditional determinants of FDI, such as market size, trade costs, plant and firm specific costs, and relative factor endowments, as well as transition-specific determinants, namely, the share of private businesses, the method of privatization, and the risk associated with each host country, that may influence the decision to invest in CEECs.

Bos & Van de Laar (2004) question whether there is a catch-up effect or announcement effect in Foreign Direct Investment (FDI) from the European Union (EU) to the EU accession countries.[2] They study FDI outflows from the Netherlands, a small open economy with few historical ties to Eastern Europe, and compare FDI in the transition countries in Central and Eastern Europe to FDI in other regions - most notably to emerging economies in Central Asia. The authors try to find out why some transition economies receive relatively more FDI than other countries. The results show that there is no evidence that an overall catch-up effect or announcement effect exists. Rather, economic fundamentals explain differences in inward investment in the region.

Kinoshita & Campos (2004) in an attempt to provide a more complete identification of the factors that affect the success and failure of transition countries in attracting FDI, use a set of 25 countries covering both the more and less advanced countries in transition between 1990 and 1998. The results show that the main determinants of FDI inflows to these countries are institutions, natural resources, labor costs, and persistence. They also investigate whether the set of determinants varies across the region. They find

[1] Their econometric analysis reveals that this is likely due to the higher degree of integration achieved among the CEECs: this structural characteristic of the Central and Eastern European region enhances the access to markets MNEs can serve from a location in the CEECs, and hence, contrary to the MED experience, over time generates increasing FDI inflows in the area.

[2] 10 countries are included as EU accession countries, of which eight countries are joining the EU in 2004 (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic and Slovenia) and two countries are still negotiating EU accession (Bulgaria and Romania).

that for the Eastern European and Baltic countries, institutions, persistence and the extent of economic reforms are the main determinants, while for the former Soviet Union economies abundant natural resources and economic reforms are the main drivers of FDI inflows.

Janiniski & Wunnava (2004) examines bilateral foreign direct investments (FDI) between the EU-15 member states and 8 Central and East European candidate (CEEC) economies in transition (Bulgaria, Czech Republic, Estonia, Hungary, Poland, Romania, Slovak Republic, and Slovenia) using data for 1997. The study reveals that the key determinants of FDI inflows in CEECs are size of the host economy, host country risk, labour costs in host country, and openness to trade. Countries that are receiving fewer foreign investments could make themselves more attractive to potential donor nations by focusing on some of the key determinants identified by this study.

The evidence suggests that Southeastern Europe is largely absent from the existing literature, in part owing to the lack of comparable data. Out of over 40 original empirical studies reviewed by Demekas *et al.* (2005), only four cover some of the Southeastern European countries, and the coverage is patchy and inconsistent. Demekas *et al.* (2005) study includes all seven Southeastern European countries[1] and compares their experiences with that of their neighbors in Central Europe, the Baltics, and the member countries of the Commonwealth of Independent States (CIS). The study confirms the predominance of gravity factors (host market size and geographical and cultural proximity between source and host country) in explaining FDI flows to Central and Southeastern Europe, in line with the findings of the existing empirical literature on other regions.

Stoian & Filippaios (2007) use a sample of Greek firms listed on the Athens Stock Exchange (ASE) to investigate the ownership and locational determinants of the internalisation and internationalisation process. They apply the eclectic paradigm to the mode of entry and explore whether the factors suggested by the eclectic paradigm can explain the decision to enter a market using different ownership structures. The three basic modes used in this paper are joint ventures, mergers and acquisitions and Greenfield investments. They find that locational variables such as market size, openness, ethnic tensions, and to a certain extend, corruption, rule of law and expropriation risk may explain foreign investment activities of Greek firms in Central, Eastern and Southeastern Europe.

Witkowska (2007) focuses on the relationship between changes in business environments in the new Member States of the European Union (EU) and foreign direct investors' behavior. The study confirms that the EU policies and the national incentive-based FDI policies seem to be the two driving forces influencing business environment in the new Member States. All the adjustments to the EU requirements reshape conditions for doing business in the new Member States and lead to the improvement of their economic

[1] These are Albania, Bosnia and Herzegovina, Croatia, the former Yugoslav Republic of Macedonia (hereinafter referred to as FYR of Macedonia), Serbia and Montenegro (which are sometimes collectively referred to as the Western Balkans), as well as Bulgaria and Romania.

fundamentals. The national FDI policies could be treated as a factor disturbing these long term processes and changing economic choices of the established and potential investors.

The analysis of empirical results suggests that transition economies in Central and Southeastern Europe can be divided into two broad groups. The Central European countries have been the most successful in attracting FDI because of their relatively high market potential and their sound legal and economic environment, even though they have relatively high unit labor costs. The two Southern and Eastern European countries (Bulgaria and Romania) certainly benefit from low unit labor cost; however, their slow transition process combined with a risky economic environment was a major obstacle for foreign investors. These countries were unsuccessful in attracting FDI during the first half of the nineties. They began to attract foreign investors only after they changed to foreign-oriented privatization policies in the late nineties.

This paper contributes to the existing literature in two ways. First, the scope and depth of the data set allow us to expand beyond the standard gravity model considerably. It includes FDI determinants for a group of eight transition economies from Central and Southeastern Europe, over a relatively long period of six years. In addition, the analysis is not limited to basic economic fundamentals, but takes into account other political and institutional factors (such as risk, privatization and infrastructure) that may influence the distribution of FDI flows across the host countries. The second contribution is that the paper introduces a new variable (Corruption) in order to account for the corruption practices in transition economies and their effects on FDI flows. We consider this factor to be of crucial importance for investment climate since corruption has been considered by the European Commission as the most important detriment for EU accession and a serious flaw in political and economic practices of the transition economies.

Econometric Model and Data

This study aims to fill a gap in the current debate on the determinants of FDI in Central and Southeastern Europe by providing an econometric analysis of the factors affecting the pattern of investment in eight transition economies, namely, Hungary, Poland, the Check Republic, Slovakia, Slovenia, Bulgaria, Romania, and Croatia from EU-15 countries over the period 2001-2006. We attempt to explain why foreign investors have moved into these markets so rapidly and why Bulgaria and Romania have attracted more FDI than the rest of the countries in the region. We developed a model that combines traditional FDI determinants and transition specific factors (such as the method of privatization, infrastructure, corruption and the risk associated with each host country) that are expected to play an important role in the investment decision of a multinational company that have invested in these countries.

By using both traditional and transition specific variables, we extend the previous work which focuses mainly on the business environment and the privatization process as primary determinants of FDI in CEECs. The proposed

econometric model rests on a panel data set recording the FDI flows from a source county *i* to a host country *j* at time *t* (cross-country, time-series model). The observations available on the *i*-th source country over time *t* are FDI flows realized over the set of host countries *j*. As a result the panel data set is balanced.

Dependent Variable

Along the lines of previous research, dependant variable FDI_{ijt} is defined as the bilateral flows of Foreign Direct Investment (FDI) from country *i* to country *j* at time *t*. A sample of 12 European Union source countries[1] (namely, Austria, Belgium, Denmark, France, Germany, Greece, Italy, Luxembourg, Netherlands, Spain, Sweden, United Kingdom) to 8 Central and Southeastern European host countries (Bulgaria, Croatia, the Check Republic, Hungary, Poland, Romania, Slovakia and Slovenia) is examined to empirically test the determinants of FDI flows into the host economy. The time period is from 2001 to 2006.

Independent Variables

Following Altomonte (1998) and his OLI framework we develop a gravity model for explaining FDI patterns of Multinational Enterprises (MNEs) that have invested in the CEE countries. As Altomonte defines it: 'Gravity models were originally conceived in order to explain bilateral trade flows as dependent, in analogy with the law of gravitation, by the attraction of two countries' masses (sizes) weakened by the distance (transport costs) between them and enforced by preferential arrangements they eventually belong to.'[2]

Following this approach, the expected economic factors (that constitute the gravity model *per se*) to determine the size of FDI flows are:

a) The size of the market of the host country, represented by (GDPPC), the Gross Domestic Product per capita. Data for this variable is derived from the World Bank Group – The World Development Indicators. According to Altomonte (1998), this variable is expected to present a positive sign and a positive correlation: the bigger the GDP, the larger the inflows of FDI, since larger economies tend to attract more capital in accordance with the gravity approach.
b) The potential demand of local consumers represented by (POP), the Population over the sample period (2001 – 2006). Data is derived from the World Bank Group – The World Development Indicators. This variable, in line with previous research (see Altomonte, 1998; Bevan & Estrin, 2000; Bos & De Laar, 2004), is also expected to be positively related to FDI flow: the larger the consumer demand (represented by the population), the greater the incentive for investment.

[1] Data for source countries' FDI flows is derived from OECD's International Direct Investment Database (2007). Sample includes EU-15 countries excluding Finland, Ireland, and Portugal for which complete year data is missing.
[2] See Altomonte (1998), p. 8.

c) The geographical distance among markets represented by (DIST), the actual route Distance from the capital of the source country to the capital of the host country calculated in kilometers. Data is derived using standard geographical computer software. This variable, in accordance with previous research (see Bevan & Estrin, 2000; Resmini, 2000) is expected to be of negative relation to FDI flows, since the greater the distance, the greater the transportation and investment costs for a prospective investor.[1]

In addition to the gravity approach, we examine several additional explanatory variables we expect to be significant FDI determinants:

1. Changes in costs of labor in the host countries are incorporated in the model with (WAGE) variable, which represents the percentage change in the overall cost of labor in the host country.[2] This is part of the efficiency seeking considerations, which Altomonte (1998) defines as the comparative advantage of the host country over the source country in wages differences. This variable is also important as it measures the relative changes in the business climate of the country as a whole.[3] In line with Janiniski & Wunnava (2004) and Lansbury, Pain & Smidkova (1996), the expectations for wages is for a negative relation to FDI flows, since the greater the increase in overall cost of labor, the lower the incentive for foreign investment (since labor becomes more expensive and increase the total cost of investment).

2. According to research literature there is a strong positive interaction between FDI and the level of educational attainment in the domestic economy. For example, Borensztein, De Gregorio, & Lee (1998) find that the net positive impact of FDI on growth is larger when the host country labor force is highly educated.[4] That is why, we examine (LITERACY), a variable representing the percentage of the labor force in the host economy that possesses tertiary education or higher. Data is obtained from UNESCO databases on tertiary education. In line with Borensztein, De Gregorio, & Lee (1998), the variable is expected to present a positive relation to FDI flows: the more educated the workforce, the greater the incentive for investment, since better educated workforce yields higher returns.

3. Several previous studies (see Altomonte, 1998; Bevan & Estrin, 2000; Bos & De Laar, 2004; Carstensen & Toubal, 2004) have suggested that trade limitations have had significant impact on the size of FDI flows. Factors such as Trade Openness are of major importance to investors who usually prefer countries with relatively liberal trade regimes. To test this, we introduce (TRADE), a variable representing the level of imports plus exports of the host

[1] According to Resmini (2000) greater distance presents weaker trade ties between the FDI source country and host country thus providing for lower FDI flow levels.

[2] Data is derived from EBRD Transition Report, 2007

[3] Of course wages reveal only part of the story; what matters to the firm are differences in unit costs, taking account of the productivity of labour as well as wage levels.

[4] Their study finds strong complementary effects between FDI and human capital on the growth rate of income. This result is consistent with the idea that the flow of advanced technology brought along by FDI can increase the growth rate of the host economy only by interacting with that country's absorptive capability.

country as a percentage of its real GDP. Data is derived from the World Bank Group – The World Development Indicators. In line with previous research (see Resmini, 2000), this variable is expected to present a positive relation to FDI flows, since greater openness of the economy provides greater incentive for foreign investment.[1]

4. Following Beer & Cory (1996), we examine another FDI determinant that some previous research (Altomonte, 1998; Bevan & Estrin, 2001; Bos & De Laar, 2004) has omitted - Infrastructure. For this reason, we use (INFRASTRUCTURE), a variable which is represented by the European Bank for Reconstruction and Development's Index of Infrastructure Reform. In this way, we include host country infrastructure for Electric Power, Railways, Roads, Telecommunications and Water and Waste Water.[2] This variable is expected to present a positive sign and a positive correlation, since better infrastructure allows for increased FDI flows through better roads, transportation links and logistics.

5. The investment climate in the host country is incorporated in our model by the variable (RISK), which is based on the Moody's Sovereign Credit Rating for each host country transformed into numerical terms on the scale from 1 to 8. Data is derived from Moody's Credit Rating Agency's web site and cover the time period 2001 – 2006. In line with Bevan & Estrin (2000) and Carstensen & Toubal (2004) this variable is expected to be positively correlated to FDI flow, since the greater the risk of default (associated with lower credit rating), the lower the incentive for foreign investment and vice versa.

6. Another determinant of the investment climate in the host countries is (CORRUPTION). In our model, we account for its effects on FDI through the 'Corruption Index' variable. We use the format of the index suggested by Transparency International – continuous scale from 1 to 10 (1, being attributed to the countries with the highest level of corruption and 10 to the ones with the lowest). The data is collected from the Transparency International's annual reports for the period 2001-2006. The variable is expected to have a positive relationship with the FDI flow, since a higher value of the corruption index indicates a less corrupt business environment in the host country.[3]

7. As a part of the model, we use two dummy variables. The first is to take into consideration cultural similarities among countries and is named (CULT). It is based on language similarities between the countries in the sample. This means that the variable takes the value of 1 when the source and host countries are from the same language family and 0 when they are not.[4] The other dummy

[1] Also higher magnitude of the TRADE variable would present better established and maintained trade routes and relations, which also provides for higher foreign investment levels.

[2] Data is derived from the EBRD Transition Report, 2007.

[3] Bevan & Estrin (2000) find that this variable (represented by 'bribe tax' in their analysis) is highly significant and negatively correlated with credit ratings. This result most probably captures several transition specific features simultaneously, including notions of institutional capacity and capability, rule of law and so on, all of which should be highly negatively correlated with credit ratings and hence with FDI inflows.

[4] For additional control, Bulgarian-German and Bulgarian-Greek relations are given 1 for historical trade closeness; also Slovenian-Austrian and Slovakian-Austrian relations are given

variable examines the issues, pertaining to privatization. Following Holland & Pain (1998), we concentrate on the form of the process based on the preferred methods of privatization in the host country. Distinction between primary and secondary preference of Sale to Outside Owners, Voucher Privatization and Management Buy-Out modes is made.

Holland & Pain (1998) test whether the method of privatisation has indeed affected the scale of inward investment. They construct an ordinal variable, PRIV (ranging from 1 to 4), for the different types of privatisation method. Table 4 (upper part) shows the primary methods of privatization used in different countries in the sample, while the bottom part explains the properties of the respective dummy variable.

[Insert Table 4 here]

To summarise, the estimated model assumes the following form:

$$Ln(FDI_{ijt}) = \alpha_0 + \beta_1 Ln(Distance_{jt}) + \beta_2 Ln(GDP_{jt}) + \beta_3 Ln(Population_{jt}) + \\ + \beta_4 Ln(Trade_{jt}) + \beta_5 Ln(Infrastucture_{jt}) + \beta_6 Ln(Wages_{jt}) + \\ + \beta_7 Ln(Risk_{jt}) + \beta_8 Ln(Corruption_{jt}) + u_{ijt} \quad (1)$$

where:
i = Austria, Belgium, Denmark, France, Germany, Greece, Italy, Luxembourg, Netherlands, Spain, Sweden, United Kingdom
j = Bulgaria, Romania, Croatia, Hungary, Poland, Check Republic, Slovakia, and Slovenia
t = 2001,….,2006

Empirical Analysis and Results

In this stage of the analysis we estimate equation (1) using cross-section panel data analysis – a standard econometric tool used in the empirical literature of this kind. The dependent variable is a cross-section of bilateral FDI flows (as a percentage of GDP) between 8 host and 12 source countries over the period 2001-2006 from the OECD's International Direct Investment Database. On the right-hand side of (1), we use three gravity variables: population in addition to GDP per capita in purchasing power parity (PPP) terms – as a proxy for market size and potential demand of local consumers; the distance between source and host country capitals; and a dummy capturing cultural or language similarities between source and host country.

In addition to the gravity approach, we use additional factors (regressors), we expect to be significant FDI determinants: wages (overall labor costs), literacy

1, due to the belonging of both countries to the Habsburg Empire; finally Slovenian-Italian relations are given 1, to control for both exceptional closeness and trade linkages between the two countries.

rate (a dummy), trade openness, infrastructure, risk (sovereign credit rating), corruption index, and method of privatization (a dummy). The correlation between explanatory variables is shown in Table 5. The coefficients of correlation have acceptable values. Coefficients of correlation greater than +/- 0.50 are those of GDP per capita with LIT (0.811), RISK (0.769) and CORR (0.761), and of CORR with LIT (0.844). Multicollinearity, however, does not seem to be a problem since these correlations do not affect the stability of the model when tested for separate specifications in order to check the sensitivity of the model to each explanatory variable progressively added.

[Insert Table 5 here]

We run cross-section regressions for five different model specifications (A1 to A5, and B1 to B5, respectively), with the only difference being the privatization dummy (PRIV) included in specification B. 'PRIV 4' dummy is used in this case as control variable. The results are presented in Tables 6 and 7. As in all other studies in the literature, gravity variables are found to be very significant.[1] The baseline specifications A1 and A2 (see Table 6) show that there are six statistically significant variables (both economic and transition specific factors) with signs of their estimated parameters as expected – distance, GDP, population, risk, wages and corruption. The other three variables, namely literacy, trade and infrastructure, are insignificant and therefore, their interpretation has no statistical meaning.[2]

[Insert Table 6 here]

The first variable (DISTANCE) is significant at 1% level of significance, implying strong explanatory power. The negative sign of the variable shows a strong negative relationship between this variable and FDI flows: the closer the geographical proximity to the main FDI source countries, the greater the FDI attracted. Since all the variables are in 'log' form, a coefficient of -1.765 implies that one percent increase in the value of the explanatory variable leads to 1.765 percents decrease in the magnitude of FDI.

The GDP variable is significant at 10% level of significance. The sign of the coefficient shows that there is a positive relationship between this variable and FDI, which is in line with our preliminary expectations: the larger the size of the host economy, the greater the FDI attracted. In our case one percent increase in the value of the variable would lead to 1.815 percents increase in the magnitude of FDI flows.

The significance of POP variable is within the 1% significance level. As it is expected there is a strong positive relationship between this variable and FDI flows: the larger potential demand of local consumers, the greater the FDI

[1] The only variable which is not found to be relevant in our preliminary tests is 'culture'. That is why it was dropped from the regression model (1).

[2] Surprisingly, our results do not provide evidence that Trade Openness and Infrastructure are significant determinants of FDI flows in transition economies. The results from empirical studies attempting to estimate the impact of these two individual factors are ambiguous (see e.g., Demekas *et al.*, 2005).

attracted. A coefficient of 2.078 here means that one percent increase in the variable induces an increase of 2.078 percents in the magnitude of FDI flows.

The host country credit rating variable (RISK) is also found to be significantly positively correlated with FDI flows: improved credit ratings are therefore associated with greater FDI receipts in our sample. The coefficient of 5.352 means that one percent increase in the value of the variable would lead to 5.352 percents increase in the magnitude of FDI flows.

The WAGE variable is within the 10% significance level and its sign presupposes a negative relationship between this variable and FDI flows: the greater the increase in the overall cost of labor, the lower the incentive for foreign investment in host countries. The value of coefficient implies that one percent increase in the variable would generally lead to 13.091 percent decrease in the magnitude of the FDI flows.

The variable representing CORRUPTION is significant at 10% level of significance and implies a positive relationship between this variable and FDI flows, as expected in the preliminary analysis. The value of the coefficient implies that one percent increase in the variable would lead to 4.409 percent increase in the magnitude of FDI flows.

The next model specification (A2) excludes the most insignificant variable - LITERACY. As a result, the significance of the rest of explanatory variables increases. Three of the explanatory variables - GDP, Wage and Corruption, are now statistically significant at the 5% level of significance. No changes in the sign or magnitude of the variables are observed. In specification A3 we drop the remaining two insignificant variables – Trade and Infrastructure. Thus, we arrive at a model where all the explanatory variables are statistically significant and with appropriate signs.

Although our results appear to be economically sensible, there remains some possibility that the reported coefficients may be subject to bias given that the panel regression pools investment across a number of different countries in different stages of transition. To investigate the reliability of our findings from the full panel regression we follow the procedure employed by Holland & Pain (1998) and test for common parameters using two country groups - the five Central and Eastern European countries and the three remaining Southeastern countries. We re-estimate A2 allowing for separate slope parameters in each of the distinct country groups.

The first group (specification A4) includes countries that joined the European Union (EU) in 2007 – Bulgaria and Romania, and a country, which is still in process of negotiation for accession – Croatia. The second group (specification A5) includes countries that joined the European Union (EU) in 2004 - Poland, the Czech Republic, Hungary, Slovenia and Slovakia. The results (see Table 6) show that, for the first group of countries, the only significant variables are DISTANCE and POPULATION. However, the significance level of the rest of the explanatory variables is close to the 10% level of significance.

For the second group of countries the same variables (DISTANCE and POPULATION) plus GDP per capita are found to be statistically significant. The conclusion is that the pattern of FDI flows across transition economies is determined by the same gravity factors such as distance, population and gross domestic product. The other (transition specific) variables cannot explain the distribution of FDI flows across the host countries in the sample. The evidence is in line with the hypothesis that the announcement effect may not be able to explain the differences in FDI flows attracted by those transition countries that have been selected first for accession in the EU and the rest of the countries accepted in 2007 (Bulgaria and Romania).[1]

[Insert Table 7 here]

Finally, to account for the effect of different types of privatization methods used in different countries in our sample, we add a privatization dummy and run the same regression models as in Table 6. The results are shown in Table 7. We use privatization of type 4 (see Table 4) as a control value. There is little change in the coefficients on most of the explanatory variables as compared to specification A, with the exception of the Population variable whose coefficient has become statistically insignificant.

From Table 7 we can see that there is only one significant privatization dummy - PRIV2 - in specification B5, which includes the second country group – Poland, the Czech Republic, Hungary, Slovenia and Slovakia. The dummy variable is significant at the 5% level of significance. The sign and the magnitude of the variable show that, in general, there is 5.448 percent less FDI flows into the countries, experiencing privatization of type 2 (that is, Vouchers or Buy-Outs as primary methods of privatization, and Sale to Outside Owners as secondary method of privatization), as compared to the countries, experiencing privatization of type 4 (Sale to Outside Owners). In contrast to previous research (Holland & Pain, 1998, and Carstensen & Toubal, 2004), we do not find evidence that the method of privatization have a significant effect on the level of foreign investment in transition economies in Central and Southeastern Europe.

Conclusion

The analysis presented in this paper has enabled identification of several key determinants of FDI flows into the transition economies of Central and Southeastern Europe, and highlighted the implications of different political and institutional factors for FDI inflows to the EU's new member states. By using

[1] Our preliminary tests, similarly to Bos & De Laar (2004), include a dummy variable that accounts for the announcement effect related to different timing of the accession process to the European Union (EU). In line with their results we did not find evidence that an overall announcement or catch-up effect exists. Rather, macroeconomic fundamentals may explain differences in foreign investment into the region.

both traditional and transition specific variables, we extend the previous research work which focuses mainly on the business environment and the privatization process as primary determinants of FDI in these countries. Based on a cross-section panel data analysis we have found that FDI flows are significantly influenced by both gravity factors (distance, GDP and population) and non-gravity factors (risk, labour costs, and corruption). Moreover, at the second stage of the analysis, we have identified that FDI flows into different groups of transition economies are determined by the same macroeconomic factors and not by the timing of their accession to the European Union (EU).

In contrast to previous research, economic factors such as infrastructure and trade do not seem to have a statistically significant impact on FDI flows into the countries in our sample. We may expect that these variables are imperfect proxies: they may be correlated with each other or with other factors that also influence investment decisions, and their estimated coefficients may thus be hard to interpret. The results concerning institutional variables, however, have showed high significance. Explanatory variables that purport to measure the significance of political and institutional environment, such as risk and corruption, are found to be significant determinants of FDI flows into transition economies. This effect weakens when the countries in the samples are divided into different groups depending on the timing of their EU accession.

Most importantly however, our framework has permitted us to identify the impact the method of privatization may have upon FDI flows in transition economies. We do not find strong evidence that the method of privatization has a significant effect on FDI receipts, which directly contradicts the previously assumed positive impact of this variable. One possible explanation would be that our data analysis covers the period 2001 – 2006, in which most transition countries in the sample have completed their privatization programs. Although the empirical studies suggest that countries which proceed along the accession path, may benefit from a virtuous cycle, hence increasing the differential between them and the accession laggards (see Bevan & Estrin 2000; Bevan, Estrin, & Grabbe, 2001), we do not find evidence in support of this hypothesis over the sample period.

Our findings can provide an analytical foundation for the evaluation of country policies and institutions aimed at making Central and Southeastern European countries more attractive to foreign investors. In line with this finding, the paper provides guidance on which major macroeconomic and institutional determinants of FDI a strong emphasis should be placed by policymakers in these countries, such as liberalizing the trade and foreign exchange regime, controlling labor costs, and improving the overall infrastructure. Moreover, we find a significant effect for corruption measure, indicating that efforts to improve governance and combat corruption and bureaucracy will have a direct impact on FDI in these countries..

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Table 1 *Macroeconomic overview of CEECs in 2006*

Countries	FDI stock	FDI stock as percent of GDP	Gross domestic product	Monthly gross wage per capita	Private market share	Country risk (Moody's credit rating)
Bulgaria	20.707	65.0	31,483	240.16	75.0	4.66
Croatia	26.812	63.0	42,653	297.85	65.0	4.66
Czech Republic	77.460	54.8	143,018	411.27	80.0	6.33
Hungary	81.760	73.0	112,920	359.17	80.0	6.00
Poland	103.616	30.6	338,733	313.22	75.0	6.00
Romania	41.001	33.6	121,609	229.71	70.0	4.66
Slovakia	30.327	55.0	55,049	278.74	80.0	6.33
Slovenia	7.,452	20.0	37,303	361.17	65.0	7.00

Sources: FDI Stock (in billions of dollars) and FDI Stock as percent of GDP from UNCTAD (2007), GDP (in billions of dollars) and Monthly Gross Wage per capita (in dollars) from World Development Indicators (World Bank, 2007), Private market share (in percentage of GDP) from EBRD Transition Report (2007). The country risk index is taken from Moody's (2007).

Table 2 *Total FDI flows to CEECs, in US$ Million*

	2001	2002	2003	2004	2005	2006
Bulgaria	842	999	2,124	3,235	4,170	5,328
Croatia	1,487	1,666	2,172	1,577	2,030	3,768
Czech Republic	5,806	8,689	2,307	5,988	11,639	7,513
Hungary	4,304	3,272	3,781	5,625	9,946	9,114
Poland	5,624	4,361	4,894	13,683	12,626	18,188
Romania	1,142	1,161	2,252	6,587	6,453	11,432
Slovakia	1,644	4,134	2,407	3,010	2,264	4,533
Slovenia	515	1,784	805	1378	1064	1,103

Source: UNCTAD Database on Inward and Outward FDI flows, by Host Region and Economy (2007)

Table 3 *FDI flows by country of origin as of December 2006, in US$ Million*

Countries	Bulgaria	Croatia	Czech Republic	Hungary	Poland	Romania	Slovakia	Slovenia
Austria	670.75	517.42	244.26	565.34	339.96	1,593.76	-37.84	214.83
Belgium	-48.42	-22.99	-4,860.19	12,094.88	-759.89	-40.07	2.53	-219.46
Denmark	17.22	9.80	-8.18	57.99	-416.71	-0.10	21.06	14.84
France	30.92	34.81	242.25	455.23	1,240.56	-5.51	59.70	134.28
Germany	177.64	-144.20	260.89	2,163.70	459.27	1,021.29	390.64	83.69
Greece	111.00	0.88	-9.10	1.50	13.97	304.94	0.00	2.02
Italy	58.09	159.38	197.58	24.71	20.38	214.72	68.22	-1.88
Luxemburg	25.74	54.72	183.13	982.60	957.14	21.14	35.71	-33.24
Netherlands	-24.67	30.35	-24.19	539.28	799.37	1438.21	531.89	139.41
Spain	53.26	0.00	3,792.87	3,074.36	610.79	173.33	21.57	22.63
Sweden	-22.00	-23.98	-234.49	-252.26	-302.84	-36.20	56.76	107.37
United Kingdom	125.68	55.94	18.22	2,600.37	174.26	51.86	-33.72	66.86
Canada	1.00	0.00	9.00	-25.00	61.00	112.00	0.00	0.00
Japan	44.01	0.00	94.00	78.00	252.11	12.11	9.00	4.00
USA	116.00	33.00	194.12	1902.01	427.00	133.00	67.00	0.00

Source: OECD's International Direct Investment Database (2007). It is important to note that the flows are netted.

Table 4 *Methods of Privatization*

	Sale to Outside Owner	**Voucher Privatization**	**Management/Employee Buy-Out**
Bulgaria	Primary	Secondary	
Croatia			Primary
Czech Republic	Secondary	Primary	
Hungary	Primary		
Poland		Secondary	Primary
Romania	Secondary		Primary
Slovenia	Secondary		Primary
Slovak Republic		Secondary	Primary

Ranking	**Primary Method**	**Secondary Method**
4	Sale to Outside Owners	-
3	Sale to Outside Owners	Voucher or Buy Out
2	Voucher or Buy Out	Sale to Outside Owners
1	Voucher or Buy Out	Buy Out or Voucher
1	Voucher or Buy Out	-

Source: Holland & Pain (1998); Authors calculations.

Table 5 *Correlation matrix of the explanatory variables*[1]

	DIST	GDP	POP	TRADE	LIT	INFRA	RISK	WAGE	CORR
DIST	1.000								
GDP	-0.312	1.000							
POP	0.144	-0.319	1.000						
TRADE	-0.081	0.233	-0.532	1.000					
LIT	-0.170	0.811	-0.182	0.245	1.000				
INFRA	-0.022	0.188	0.347	-0.042	0.527	1.000			
RISK	-0.416	0.769	-0.085	0.214	0.672	0.367	1.000		
WAGE	-0.171	-0.211	0.097	0.009	-0.169	0.029	-0.185	1.000	
CORR	-0.243	0.761	-0.451	0.468	0.844	0.222	0.683	-0.208	1.000

Note:
1) The explanatory variables included in model A1 are distance (DIST), GDP per capita (GDPPC), population (POP), literacy (LIT), trade openness (TRADE), infrastructure (INFRA), sovereign credit rating (RISK), labor costs (WAGE) and corruption index (CORR)

Table 6 *Bilateral FDI Cross-Section Regressions*[1, 2, 3, 4]

	Without Privatization				
Models	**A1**	**A2**	**A3**	**A4**	**A5**
DIST	-1.765***	-1.785***	-1.788***	-3.985***	-1.340*
	(-3.380)	(-3.470)	(-3.500)	(-4.130)	(-1.960)
GDP	1.815*	1.663**	1.483**	2.000	1.794*
	(1.890)	(2.200)	(2.140)	(0.690)	(1.830)
POP	2.078***	2.062***	1.714***	3.979**	1.760**
	(3.570)	(3.560)	(4.130)	(2.000)	(2.230)
LIT	-0.550				
	(-0.260)				
TRADE	0.564	0.578		0.332	0.337
	(0.600)	(0.620)		(0.130)	(0.280)
INFRA	-2.232	-2.638		-12.667	-.890
	(-0.56)	(-0.720)		(-1.220)	(-0.180)
RISK	5.352***	5.217***	5.082***	4.111	4.701
	(2.610)	(2.640)	(2.610)	(0.650)	(0.930)
WAGE	-13.091*	-13.168**	-12.592*	-12.991	-10.662
	(-1.95)	(-1.970)	(-1.930)	(-1.380)	(-1.130)
CORR	4.409*	4.058**	3.673**	5.415	3.429
	(1.810)	(1.990)	(2.040)	(0.680)	(1.140)
R-squared	28.78%	28.79%	28.65%	37.07%	26.95%
No. of observation	576	576	576	216	360

Note:
1) Panel A1 - general model; Panel A2 – excluding LIT variable; Panel A3 – excluding LIT, TRADE and INFRA variables; Panel A4 – only Southeastern European countries (Bulgaria, Romania and Croatia), Panel A5 – only Central European countries (Poland, Hungary, Czech Republic, Slovakia, Slovenia)
2) All variables except dummies in logs.
3) *, **, and *** represent significance at 10, 5, and 1 percent, respectively. All regressions include source country dummies to control for source country effects.
4) *z*-statistics in brackets.

Table 7 *Bilateral FDI Cross-Section Regressions*[1, 2, 3, 4]

	With Privatization				
Models	**B1**	**B2**	**B3**	**B4**	**B5**
DIST	-1.729*** (-3.260)	-1.739*** (-3.290)	-1.708*** (-3.250)	-3.926*** (-4.070)	-1.410** (-2.070)
GDP	1.747 (1.620)	1.536* (1.880)	1.376* (1.850)	.470 (0.150)	3.753*** (2.780)
POP	2.396*** (3.130)	2.318*** (3.220)	1.684*** (3.920)	-71.930 (-0.480)	-.0281 (-0.020)
LIT	-0.733 (-0.300)				
TRADE	0.929 (0.830)	0.876 (0.790)		3.729 (0.550)	-4.272* (-1.720)
INFRA	-3.995 (-0.890)	-4.255 (-0.960)		-1.838 (-0.140)	-4.720 (-0.770)
RISK	5.180** (2.430)	5.121** (2.410)	5.425*** (2.610)	8.031 (0.800)	3.049 (0.590)
WAGE	-12.532* (-1.820)	-12.423* (-1.810)	-11.525* (-1.710)	-12.321 (-1.310)	-10.131 (-1.080)
CORR	4.987** (1.980)	4.575** (2.160)	4.120** (2.150)	11.400 (1.220)	2.426 (0.790)
PRIV1	-0.917 (-0.790)	-.792 (-0.730)	-0.083 (-0.090)	Not present	-1.274 (-0.820)
PRIV2	-0.429 (-0.550)	-.450 (0.570)	-0.346 (-0.470)	118.721 (0.500)	-5.448** (-2.080)
PRIV3	-1.078 (-0.910)	-3.710 (0.180)	-0.922 (-0.800)	38.132 (0.450)	Not present
R-squared	29.22%	29.24%	28.98%	37.73%	28.12%
No. of observation	576	576	576	216	360

Note:

1) Panel B1 - general model; Panel B2 – excluding LIT variable; Panel B3 – excluding LIT, TRADE and INFRASTUCTURE variables; Panel B4 – only Southeastern European countries (Bulgaria, Romania and Croatia), Panel B5 – only Central European countries (Poland, Hungary, Czech Republic, Slovakia, Slovenia).

2) All variables except dummies in logs.

3) *, **, and *** represent significance at 10, 5, and 1 percent, respectively. All regressions include source country dummies to control for source country effects.

4) *z*-statistics in brackets.