FDI in transition

-An Empirical Study of the determinants of Foreign Direct Investment in Central and Eastern Europe during the EU accession

Abstract

After the fall of communism, the transition economies in Central and Eastern Europe have experienced a unique type of political and economic change in modern time. While the transition process within the CEE has been characterized by success but also by disappointment, FDI has been seen as a potential catalyst for economic change of the transition countries. This study aims to investigate the determinants of FDI to the CEE countries during the period 1992-2005. Using aggregate data on FDI inflows to the CEE, this study confirms the importance of traditional and transitional determinants for the distribution of FDI within the CEE. In addition, this study investigates the impact of the different steps in the EU accession for inward FDI to the CEE. The findings suggest that an EU membership has a significantly positive impact on FDI inflows to the new EU member countries within the CEE. An EU membership and further EU integration are suggested to contribute a reduction of risk associated with investing in the CEE through guarantees of future economic and political stability within the region.

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1. Introduction

1.1 Background

The fall of the Berlin Wall in 1989 marked the beginning of the end for the Soviet Union and a new economic and political era in the Central and Eastern Europe (CEE). The CEE countries embarked on a transition path consisting of reforms towards political pluralism and parliamentary democracy, private enterprise and a market economy open to international trade and investment.

The starting point for the transition process differed among the Central and Eastern European Countries (CEECs), nevertheless all the countries engaged in a process of implementing transition reforms.[1] The reforms in the CEECs differed in design and the degree of implementation. Having already initiated some reforms prior to the fall of the Berlin Wall, the Viségrad[2] countries were among the first among the CEECs to break free from the old communist system and to peacefully embark with the transition process. The Baltic countries soon followed while the transition was slower in the South East European countries and in some cases also impeded by civil war. Nevertheless, it was evident that a unique transition process had started in all the CEECs which was characterized by a systematic shift from a centrally planned to a market oriented economy. The change in institutions that occurred has been argued to be a unique type of change in modern time[3] and the accession towards the European Union that occurred during the later half of the 1990´s, a major indicator of its existence.

With the early results from the reforms,[4] characterized by a major contraction of industrial output due to industrial restructuring and consequently a widespread recession and unemployment across the region, it became evident that the social heritage was an impediment to the transformation. The social heritage became evident through the presence of; macroeconomic imbalances, distortions of prices and the behavioural patterns of managers, workers and consumers, and the presence of a capital stock which was inappropriate for an open market economy. The opening up of the markets, privatisation of

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[1] Reforms refer to the overall change and include: macroeconomic reforms, microeconomic reforms and institutional reforms.
[2] Viségrad here refers to Czech Republic, Hungary, Poland and Slovakia. Slovenia's relations to the Soviet differed, initial transition was marked by liberalization from the former Yugoslavia.
[3] See also Kornai (2006)
[4] See also Campos and Coricelli (2002)

ownership and consequently the increase in Foreign Direct Investment (FDI) was seen as a potential key to overcome this problem. The power of FDI as a catalyst for economic change laid in the financial resources, technology, management techniques and the linkages to foreign markets that FDI offered.

Almost two decades after the fall of the Berlin Wall the income levels across the CEECs vary, a majority of the countries have undergone a major transition process and are today members of the European Union. As much as these countries vary in their implementation of transition reforms, EU accession progress and income levels, they also differ in the timing and the levels of inward FDI received. It is from this perspective; bearing in mind the potential benefits for the economic progress of the transition countries brought by FDI, interesting to study the determinants of inward FDI across the countries of Central and Eastern Europe.

1.2 The Aim of study

The aim of this study is *to examine the determinants of inward FDI into the Central and Eastern European countries and the impact of the EU accession by these countries on the FDI inflows to the CEE region*. Alongside the traditional determinants of FDI, this thesis aims to investigate the effect on FDI inflows to the CEE region from the transition process and the EU accession. In addition, the relation between an EU membership and inward FDI is studied.

1.3 Delimitations

This study is focusing on the formerly centrally planned economies in Central and Eastern Europe (CEE). The countries included in the study span from the South East Europe (SEE) to the Baltic region in the North. All of the countries included in the study have either completed their accession process and become members of the EU, or are today in negotiations for an EU membership.[5] Eleven countries in total are included in the study and these can be grouped by region: the Baltics (Estonia, Latvia and Lithuania), the Viségrad-5 (Czech Republic, Hungary, Poland, Slovenia and Slovakia), and the SEE countries (Croatia, Bulgaria and Romania). The term CEE is some studies used to refer to the Viségrad group of countries,

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[5] EU Members include: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovenia, Slovakia (part of the EU-8, joined during the first "Eastward expansion" of the EU in May 2004), Bulgaria and Romania (second "Eastward expansion" in January 2007). Croatia is one among 2 candidate countries that have started negotiations for a membership as of 3 October 2005 (the other country is Turkey and will not be considered due to its difference in political history).

here it will be used to refer to the entire group of the countries and will be used interchangeably with the term transition countries and EU accession countries.

The time period considered spans over a fourteen-year period, 1992-2005 and includes the entire period for the EU accession of the EU-8 and approximately the first one-and-a-half-year of their membership in the EU. This time period is chosen to capture the effect of the EU integration and also the first period of the EU membership of the EU-8. Data from the first years of transition is not considered due to a lack of reliable data for the earlier years.

The study is conducted on an aggregate level of analysis and hence it is not possible to identify the origin of FDI, i.e. the home country of FDI, neither is it possible to pursue a deeper analysis of the results based on a distinction by the form, type or motive of investment.[6] The decision to undertake FDI by the MNE is taken as given, and the study focuses on the exogenous factors affecting FDI and does therefore not cover the behavioural and organisational determinants and the actual decision process within the MNE on how to serve a given market. The effect of FDI on the recipient economy will not be studied; rather it is assumed that FDI offers potential advantages to the host country.[7] The aggregated type of data does not allow for a distinction of determinants of FDI across economy sectors and therefore this distinction will not be made.

1.4 Contribution

This study combines the research area concerned with the determinants of FDI in transition economies and the research area concerned with the impact of international trade agreements on FDI, here in terms of integration of the Central Eastern European countries into the EU. Since the early transition in the CEE a number of studies have tried to identify the determinants of FDI in the CEE. However, only two empirical studies that study the effect of the EU integration on FDI to the CEE are known; Bevan and Estrin (2000) and Clausing and Dorobantu (2005).[8] This study is the only known study, up to today, that considers the entire accession period and the effect of an EU membership on the FDI flows by using data that covers the first period of the membership of EU-8 countries. By using a longer time-period

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[6] Form of investment refers to: e.g. Greenfield vs. acquisition. Type of investment: e.g. horizontal or vertical. Motive: Market-seeking, Resource/asset-seeking, Efficiency-seeking and Knowledge-seeking.
[7] For more details of the prospective advantages from FDI see chapter 3, Patterns of FDI.
[8] These studies adapt a different approach to measuring the progress in EU accession, this will be discussed in the empirical part of this study in chapter 6.

this study tries to contribute to the research area by estimating the effect of the entire EU integration and the first period of EU membership on the FDI flows into the CEE region.

In addition, by studying the accession countries within the CEE and only using data on the CEECs rather than studying the region in a wider context (e.g. within the context of entire European Union or former Soviet Block including the Commonwealth of Independent States (CIS)) this study tries to estimate the factors that have determined the distribution of FDI within the CEECs. Given the positive effects from FDI on the host economy this study can be used as an indicator of which transition path, or transition measures, have been more successful in terms of attracting FDI to the economy within the CEE. This information can be used in order to estimate the effects from transitional measures on FDI inflows to countries in transition that are not currently members of the EU. The information can also be used to estimate the effect on FDI inflows from a prospective additional Eastern expansion of the EU for the countries currently not within the EU.

1.5 Outline

The study will be structured in the following way: in chapter 2 an overview of the transition and EU accession is provided. In chapter 3, the patterns of FDI are investigated and the potential host-market effects are presented. Chapter 4 presents previous studies on the topic. In chapter 5 hypotheses are formed based on the findings in the previous sections. In chapter 6, the data for the study is presented and the empirical setup is presented. Chapter 7 presents the empirical findings; these are further discussed in chapter 8. In chapter 9, the conclusion of the thesis is presented and suggestions for further research are provided.

2. Historical Background

In the new market economies, historical and political events have an influence on inward FDI. Trade-agreements, opening up of markets and EU accession of the CEECs have been important steps towards a market economy and democracy of the former centrally planned economies. This chapter provides the reader with an overview of the transition process and a description of the EU accession process.

2.1 An overview of the transition[9]

The transition process towards a market economy and democracy within the CEECs was initiated in the Czech Republic, Poland, Romania, Bulgaria and Slovakia in 1989. The Baltics soon followed and had declared independence from the Soviet Union by 1991, Croatia and Slovenia declared independence from the former Yugoslavia the same year. After the fall of communism the countries adapted a number of reforms, these can be classified into; macroeconomic reforms, e.g. monetary stabilisation; microeconomic reforms e.g. privatisation and market liberalisation, and institutional reforms; e.g. legislation changes and restructuring of the banking system.

Even though the early results from the restructuring, that started showing in the early 1990s, where marked by a widespread recession across the CEE the implementation of reforms continued. The reforms adapted by the CEE countries varied by their implementation and design; one indication of this are different timing and different modes of privatisation programmes of commonly and state-owned enterprises chosen among the CEECs. The methods of privatisation varied from methods of distribution of property rights to local owners to the more commercial approach of direct sales and international tenders. While the methods of privatisation varied,[10] so did their impact on the restructuring of the enterprises. It has been suggested that mass privatisation through vouchers, i.e. free distribution of property rights from the state to the public, has been a less efficient method in terms of enterprise restructuring since mass ownership did not contribute to efficient governance and the much needed inflow of new capital. The more commercial method has been suggested to have contributed to faster restructuring of enterprises. Kalotay and Hunya (2000) suggest that the

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[9] This section is based on Borsos-Tostila (1999), unless other source is stated.

[10] The privatisation methods can be grouped into: Sales to foreign/domestic investors (portfolio and direct sales), Equal access voucher ("mass-privatisation"), Insider (management buy-out and employee share ownership program), Other, the remaining enterprises are classified as "Still State Property".

commercial approach to privatisation has been a major determinant of FDI into the CEE and that foreign ownership has made a positive contribution to the restructuring of enterprises through an improvement of efficiency and corporate governance.

From an initial downturn, the economic situation within the CEE started to stabilise by the mid 1990s. Trade patterns among the transition economies started to change. Having during the existence of Soviet union been closed to trade and investment from other countries outside of the Council for Mutual Economic Assistance (CMEA), the CEECs enjoyed an opening up of markets, investment liberalisation and reorientation of trade patterns towards the EU. Soon various trade agreements between the CEE and the Western European countries emerged, with the Europe Agreements being perhaps the most significant ones.

2.2 Accession towards the EU[11]

Shortly the fall of the Berlin Wall in 1989, the European Community's diplomatic relations with the CEECs became more sophisticated. During the 1990s, the EU and its members progressively concluded the Accession Agreements, also called the Europe Agreements (EA), with ten CEE countries.[12] The aim of these agreements was a progressive convergence: economical, political, social and cultural, of the candidate countries towards the EU. These agreements covered political and cultural cooperation, economic activities and favourable trade relations with the EU. More importantly these EA agreements contained provisions concerning free movement of services, payments and capital and implied a progressive establishment of a free-trade area (with the exception of tariffs on sensitive products such as agriculture). The EA where signed firstly in 1991 with Hungary and Poland; followed by Bulgaria, the Czech Republic and Slovakia in 1993; Estonia, Latvia and Lithuania in 1995; and finally with Slovenia in 1996. The establishment of similar trade relations to the EA with Western Balkans, and thus Croatia, was delayed by the unstable situation in the area. Similar trade relations where established through the Stabilisation and Association Agreements (SAAs) at a later point in time.[13]

The commitment by the EU to accept the accession countries was made at the Copenhagen European Council in June 1993. Simultaneously, a provision was made that the CEE countries' accession was conditional on their compliance with a set of *acquis communautaire*

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[11] This is a summary based on information from http://europe.eu
[12] Croatia is the exception within the sample.
[13] SAA is a part of the Stabilisation and Association Process (SAP) was signed in 2000.

consisting of; economic criteria, i.e. to have a functioning market economy that is able to face the competitive pressure within the Union; political criteria, i.e. to be stable democracies governed by the rule of law respectful of human rights and protective of their minorities; and administrative criteria, i.e. to have proper institutions for adhering to the political, economic and monetary rules of the Union. In July 1997 the findings and recommendations, based on an evaluation of the progress made by the CEECs in meeting the accession criteria, where published in an Agenda 2000 document. This document identified two waves of accession countries among the CEEC:s: the Czech Republic, Estonia, Hungary, Poland and Slovenia these where suggested as accession countries qualified for accession negotiations, while Bulgaria, Latvia, Lithuania, Romania and Slovakia where suggested to compose the group of second wave countries with which negotiations would commence at a later date.

At the Luxembourg European Council in December 1997, the enlargement process was launched with the first wave countries, as identified by the Agenda 2000; this was followed by accession negotiations that commenced in March 1998. The Helsinki Summit in December 1999 launched the accession of the second wave of countries, with which accession negotiations started in February 2000. At the Copenhagen European Council in December 2002, the EC approved the recommendation made by the Council in October the same year, based on an evaluation of the applicants' countries compliance with the *acquis criteria*, to conclude the accession negotiations with eight of the CEE applicant countries. Meanwhile, year 2007 was suggested as a tentative date for the EU accession of Bulgaria and Romania.

The EA agreements, which had initiated the accession of the CEECs towards the EU ceased to apply on May 1, 2004 for the eight countries that where the first CEECs to enter the European Union, later the EA ceased to apply for Romania and Bulgaria on January 1 2007 when also these countries became EU members. The Accession negotiation for Croatia Started in year 2005 and year 2009 was set as a tentative date for the accession.[14] While the European Agreements have implied an opening up of the CEE markets for trade, capital and factor movements, the EU accession has implied an economic and political change within the candidate countries. This has an impact for the inward FDI into the CEE.

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[14] In Appendix 2 for more detailed information on the EU accession process is provided.

3. Patterns of FDI

This chapter provides the reader with a statistical overview of the patterns of FDI during the time period 1992-2005. Both global trends in FDI and the distribution of FDI among the CEE countries and across time are presented. In addition, the potential host market effects from FDI are described.

3.1 Global and Regional patterns of FDI

Global FDI flows have increased during the last few decades and have become an important aspect of the ongoing global economic integration. FDI flows have traditionally been concentrated to developed countries; these have both been the largest home and host countries for FDI. From the beginning of the 1990's, the developing countries' importance as a recipient of FDI has increased and later also their importance as host countries of FDI has become more significant, as noted in the World Investment Report 2006 (WIR). Although not as large recipient of total inward FDI as Latin America and East and South Asia, as shown in *Figure 1*, the CEE has become an increasingly important destination for global FDI.

Figure 1: Total FDI inflows by Host Region 1992-2005 (Millions USD). Own calculations based on UNCTAD data.
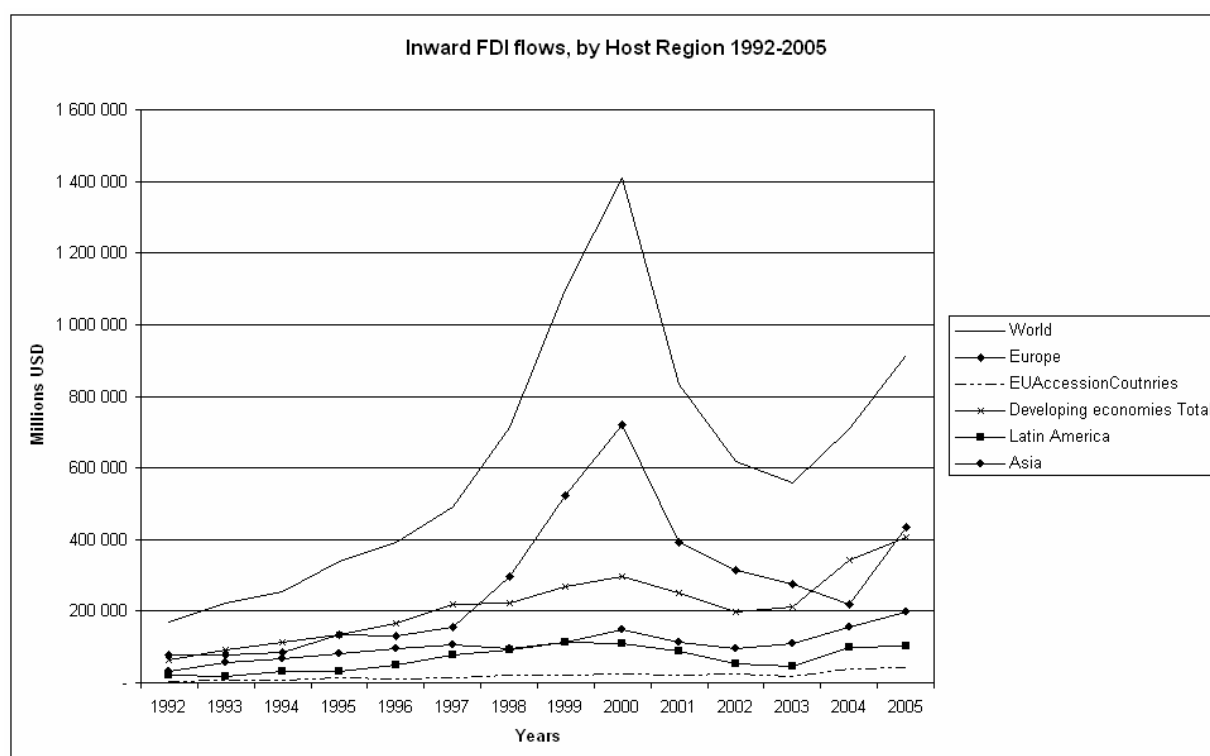
Source: UNCTAD, *World Investment Report*

While being almost non-existent during the CMEA-period, the global FDI inflows into the CEE have grown, beginning in the early 1990s. It is evident from *Figure 2* that the distribution of FDI has varied between the CEECs and over time. When studying the distribution of inward FDI flows into the accession countries, in *Table 1*, it is evident that Czech Republic, Hungary and Poland have received the largest share of FDI inflows in the region during the time period 1992-2005. The largest recipients are also the three largest economies in the region.

Figure 2: Total FDI inflows by Host Country 1992-2005 (Millions USD).
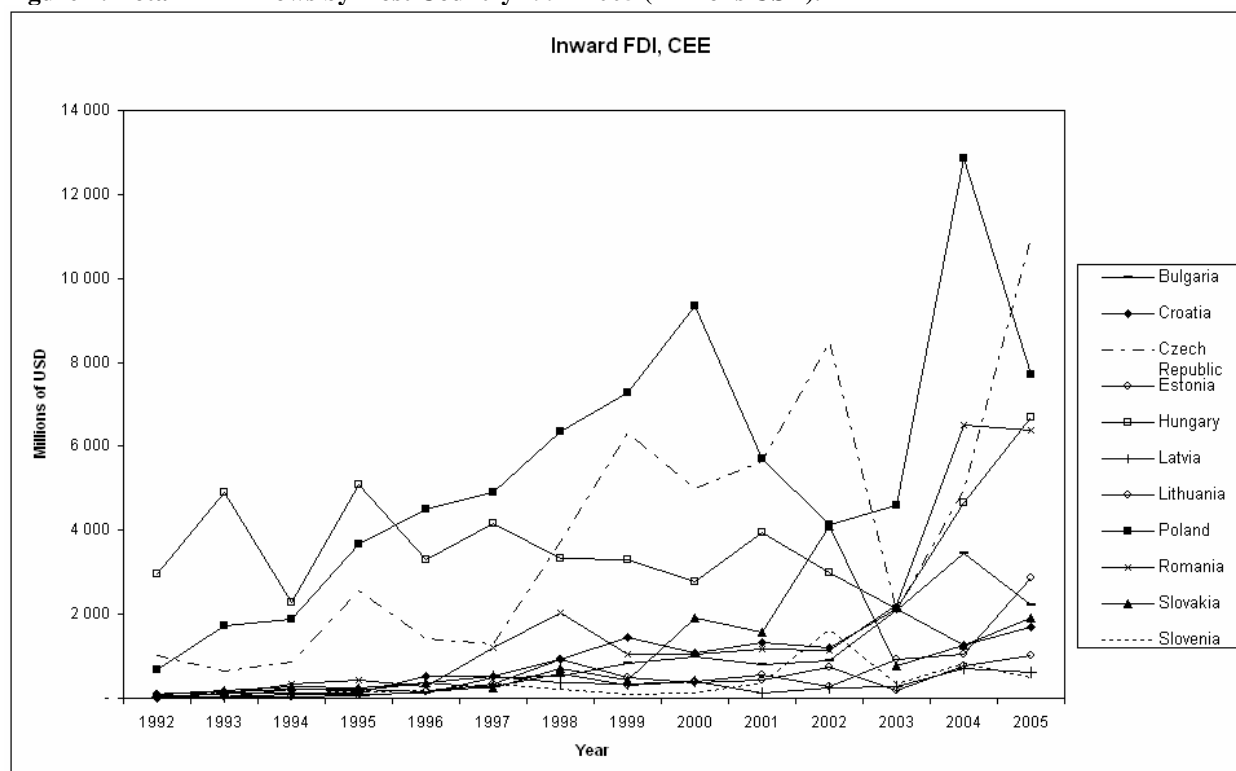
Source: UNCTAD, *World Investment Report.*

The WIR 2006 suggests that a large share of the growth in global FDI flows can be contributed to an increase in cross-border mergers and acquisitions (M&A) and the CEECs are no exception to this. The positive relation between FDI inflows and privatisation of state-owned enterprises in the CEE has been studied by Kalotay and Hunya (2000). It is suggested that the largest recipients of FDI in the region also have done best in terms of enterprise restructuring and the scale of privatisation of state-owned enterprises. Hungary is an example of an early-restructurer[15] and hence also the country which has received a large share of the FDI in the region in the early stage of the transition period, as indicated in *Figure 2*.

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[15] Kalotay and Hunya (2000)

When studying FDI in relative terms, by calculating the FDI-per-capita levels, it is evident from *Table 1* that the FDI pattern changes. The per-capita FDI flows to Poland, the country with the largest population in the region, is below the average for the region while Estonia, with a relatively small population, emerges as the top recipient in terms of FDI-per-capita. The same relationship holds when FDI is related to GDP.

Table 1: Cumulated FDI flows, total, share of total, per capita and as a share of GDP. Own calculations using population and GDP values for year 2005.

	Cumulated FDI Inflows 1992-2005 (millions USD)	1992-2005 Share of Total (%)	1992-2005 Per Cap. (USD)	1992-2005 FDI/GDP (%)
Bulgaria	12729.27	4.73	1644.41	18.70
Croatia	12537.73	4.65	2820.98	21.42
Czech Republic	55035.20	20.43	5397.53	25.32
Estonia	7996.90	2.97	5945.63	36.64
Hungary	52533.80	19.50	5207.60	28.79
Latvia	4497.29	1.67	1955.32	14.34
Lithuania	5581.09	2.07	1634.26	11.36
Poland	75342.00	27.97	1974.09	14.12
Romania	23937.00	8.89	1106.55	12.02
Slovakia	14074.52	5.22	2612.61	15.87
Slovenia	5119.00	1.90	2561.81	11.49
Total Inflows	**269383.80**	**100.00**	**2524.39**	**18.02**

Source: UNCAD, *World Investment Report; the World Bank, World Development Indicators*

While it is outside the scope of this thesis to investigate the effects from FDI on the CEECs,[16] it might be interesting to present the sources of potential effects from FDI on the host economies. In the absence of distortions[17] the potential effects from FDI can be classified into three categories: factor market effects, productivity effects and product market effects.

The factor market effects stem from the potential net capital inflows in the host country, leading to an increased demand for labour and increase in the production of labour force and ultimately an increase in real wages in the long run. In chapter 5 in SOU 1997:156 it is suggested that the CEECs that are suffering from domestic underinvestment, consequently FDI is not expected to crowd out domestic investment, rather it is expected to serve as a source of capital for modernization and restructuring of the current capital stock.

The productivity effects stem from the knowledge and technology brought to the host economy by the MNEs. For the transition economies one major source of productivity effects on the local firms are the potential "spillover effects" of knowledge and technology from the investing MNEs. Borsos-Tostila (1999) argues that the potential host country FDI benefits for

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[16] This has been done by Borsos-Tostila (1999) and by Holland and Pain (1998), among others.

[17] When distortions are present, e.g. tariff-protection or weaknesses in competition law, second-best outcomes arise and the economic effects from FDI need to be analysed taking the specific conditions into account.

the CEEC:s stem from inflows of new technologies and management techniques and new trade linkages brought to the host economy by the MNEs.

The product market effects from FDI are associated with the increase in competition in the host market and the consequent increase in consumer benefits. In SOU 1997: 156 it is argued that the actual product market effect is dependent on the existence of an efficient national competition law, disturbances to this could lead to monopoly profits being brought out of the country by the MNEs. The recent accession towards the EU is suggested to have contributed to an improvement of the quality of competition policies within the CEECs and hence increased the potential of positive product market effects from increased FDI.

4. Previous Literature

The theoretical field aiming to explain the determinants of FDI is large and diverse. Before forming hypotheses on the determinants of inward FDI to the CEECs, this chapter provides the reader with an overview of the theoretical field and the previous empirical studies on the topic. There are only a few known studies that investigate the impact on FDI from an EU accession; there is no known study that investigates the impact on FDI to the CEE from an EU membership.

4.1 Theoretical Literature

The theoretical field aiming to explain the motives and determinants of Foreign Direct Investment (FDI) has been characterized by a large diversity of the theoretical explanations. One way to organise the theoretical field of FDI is by the different economic theories that a specific FDI theory is based on. Another way of organising the theories within the field is by the level of analysis. Borsos-Tostila (1999) distinguishes between three levels of analysis that the studies in the theoretical field are conducted on:

1.) **Microeconomic analyses** look at FDI and international growth of individual firms. Theories on this level are derived from the theory of the firm.

2.) **Mesoeconomic analyses** consider the interaction between firms at the industry level. The theories applied here are based on industrial economics, game theory and the theory of innovation.

3.) **Macroeconomic analyses** examine broad national and international trends. Studies conducted at this level of analysis are based on theories of trade, location and the balance of payments and exchange rate effects.

Scholars, among them Cantwell and Caves, suggest that different types of FDI need different explanations and that the use of particular theory should reflect the issues addressed and questions asked. It is suggested that two distinct dimensions of FDI have implications for the choice of its location; the form of FDI and the motives of the investors. FDI can take a number of different forms which vary by the degree of commitment of the investor: e.g. greenfield, acquisition and joint venture. The other dimension to FDI is the investors' motive for undertaking FDI which results in that countries that that differ by characteristics tend to receive different types of FDI. Markusen et al (1995) classify the motives for firms to

undertake FDI into four main non-exclusive types: market-seeking FDI, resource- or asset-seeking FDI, efficiency-seeking FDI and knowledge seeking FDI.

Market-seeking FDI is conduced in order to better serve a local or regional market through production in the host country and in some cases further exports to third markets. This form of FDI is often referred to as horizontal FDI because it involves replication of production facilities in the host country. The market-related factors diving market-seeking FDI are the market size and growth of the host economy and this type of FDI is further encouraged by access restrictions to the market such as tariffs and transport costs.

Resource- or asset-seeking FDI is primarily based on firms' willingness to acquire resources or assets wherever available. This type of FDI is driven by firms' willingness to acquire natural resources, raw materials or low labour cost in the host market. This type of FDI is usually vertical or export-oriented FDI where one part of the production chain is reallocated to the host country. The input factor driving this type of FDI differs by industry of the investor firm.

Efficiency-seeking FDI is conducted by firms who seek to gain from the common governance of geographically dispersed activities in the presence of economies of scale and scope. The aim of efficiency-seeking FDI is to obtain the most economic sources of production by having specialized production in various markets and thereby take advantage of differences in productivity-adjusted factor prices and exchange of production between the affiliates.

Knowledge-seekers make FDIs in order to obtain access to managerial expertise or superior technology in the host market.

This study is conducted on the macroeconomic level of analysis. While it might be interesting to study the different forms of investment and the motives of firms investing in Eastern Europe, more closely, the aim of this study is to look on the determinants within the CEE economies that have affected the distribution of FDI within the region. In addition, the secondary data used for the study does not allow for differentiating among motives and forms of investment. Meanwhile, it is hard to distinguish between the motives of FDI since they are non-exclusive and generally FDI is driven by a combination of different motives. Once one or more of the motives for undertaking FDI are present within a firm it is not necessary that a firm will undertake FDI unless it is advantageous to do so. In the literature there is a prevailing consensus that foreign firms have an inherent disadvantage to domestic firms when setting up MNE operations abroad due to the specific costs associated with setting up MNE

operations in a foreign host market.[18] An MNE will thus only enter a market if it has some compensating advantages over local firms.

Dunning's eclectic paradigm (1977) is one of the best-known syntheses of past theories of FDI and also a widely accepted framework for analysis of FDI by MNE:s. Rather than being a general theory of FDI, it provides a general framework for understanding the determinants of FDI. Dunning proposes that a firm will undertake FDI only if three (OLI) preconditions for investing abroad are fulfilled: ownership advantage (O), location advantage (L) and internalisation advantage (I). Ownership advantages are firm-specific advantages, e.g. the possession of an intangible or tangible asset, that give the firm sufficient cost advantages and market power to outweigh the cost associated with doing business abroad. A location advantage must be offered by the host market in order for a firm to find it more profitable to produce in the host market rather than in the home market and serve the foreign market through exports. The sources of location advantages include: trade costs (e.g. tariffs, quotas, transport costs etc.), access to factor endowments and/or factor prices, natural resources, customer access etc. Internalization advantages are present when a firm finds it more profitable to exploit their specific asset internally within the firm in the foreign market rather than to sell then or lease them through licensing and cooperation agreements to outside agents.

The theory of multinational firm investing abroad, under the condition of the OLI preconditions being fulfilled, has advanced through the creation of several general equilibrium theoretical frameworks where the existence of the MNE:s and the firms decisions on how to serve a given market are investigated.[19] The focus of this study is on the location decision within Eastern Europe of existing MNE:s rather than the firms' decision regarding how to serve a given market. The OLI paradigm is one of the most widely theoretical frameworks used in empirical studies of the determinants of FDI, therefore it will be used as a basis for this study and it is assumed that the OLI preconditions for MNE:s to undertake FDI in the CEE are fulfilled.

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[18] For a detailed overview of costs see Markusen et al. (1995)
[19] For further details about general equilibrium frameworks see e.g. Brainard (1993), Markusen & Venables (1998)

4.2 Empirical literature

Similarly to the variety of the theoretical field concerned with the determinants of FDI, the empirical studies on the topic have been numerous. Dunning's eclectic paradigm is the overall framework which has been most often used in empirical studies of the determinants of FDI. The empirical studies of the determinants of FDI can be categorised in research focused on FDI made in developed or developing countries. Borsos-Tostila (1999) notes that studies focusing on the determinants of FDI into the transition economies are scarce. In addition, the existing empirical studies have primarily been conduced on the macroeconomic level of analysis due to a lack of detailed sector-specific data and the incompletes of time series data. Clausing and Dorobantu (2005) provide and overview of the relatively few existing studies on the determinants of FDI in the transition economies. The studies of determinants of FDI in the transition economies in the CEE can be categorized by the type of data used: survey data, aggregate data or disaggregate data broken down by sector or region. One prevailing feature among the different types of empirical studies of the location determinants of FDI is the classification of the host country determinants into categories of factors. The following core specification is an illustration of the underlying factors that have been suggested as major determinants to FDI within the transition countries:

$$FDI_t = \beta_o + \beta_1 \text{ market related factors}_t + \beta_2 \text{ institutional factors}_t + \beta_3 \text{ production factors}_t + u_t$$

Market related factors

Market related factors of FDI are generally considered the most significant determining factors of FDI in both developed and developing economies. The reasoning behind the market related factors impact on FDI is that firms seek to find new market opportunities for their products and are attracted by: current demand and a relatively low competition in the market, the potential of economies of scale in production within markets large in absolute size and the expectation of a sustained economic growth and further demand growth through a catch up of consumption to Western demand levels. The empirical evidence of the importance of market related factors is extensive. In a survey-based study, Lankes and Venables (1996) find evidence that a majority of firms that invested in the transition economies searched for new market opportunities. Torsos-Bostila (1999) argues that the "wait-and-see" investment strategy, i.e. initial establishment of representative affiliates during the early phases of the transition followed by an increase of presence in the market at a later stage of the transition, of the investors in Eastern Europe is an indicator of the presence of market-seeking

considerations. The evidence from econometric studies, on the importance of the different market-related factors e.g. the size and growth of the host market, for FDI in the transition economies is provided by Altomonte (1998), Clausing and Dorobantu (2005), Carstensen and Toubal (2003) among others.

The degree of openness of the economy is another market-related factor which has been argued to affect the level of FDI. It is argued that investors prefer countries with relatively liberal trade regimes and possibly located within regions with wider supra-national free trade arrangements. Having previously been relatively closed economies, during the existence of CMEA, the accession countries became increasingly integrated with the EU markets through the European Association Agreements (EA).[20] The EA's impact on FDI inflows is multifaceted. Indirectly, it signalled a commitment by the governments in the transition economies to economy-opening reforms and transformation of economic regimes and hence an increase of the probability of a membership in the EU. A more direct impact of the EA was that it provided investors with a duty-free access to EU markets. In combination with the geographical proximity of the transition economies and their supply of production factors, which will be discussed in a later section, the EA has been argued to positively affect both investments from the EU and from third countries.[21]

Other market-related factors that have been suggested to affect FDI into the transition economies are the host markets' proximity, initial conditions of the transition countries and the presence of agglomeration economies.

The proximity of the host market is suggested to provide a measure of the transaction cost of doing business in the host country. Holland and Pain (1998) find evidence of the importance of distance for the patterns of bilateral trade flows within the EU. Campos and Kinoshita (2003) support this finding by using data on aggregate inflows of FDI to the CEE countries; in addition the distance from the core of the EU is found to have a negative impact on FDI to the CIS countries. Holland and Pain (1998) suggest that the geographical distance is a poor indicator of the transaction cost of doing business in the Baltic region because of the countries psychological proximity to the Scandinavian countries. They find support that the Baltic countries receive more FDI than expected given their fundamentals.

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[20] For more information on the EA see Kaminski (2001) or Baldwin (1994)

[21] One type of investment from third countries is export-platform FDI made by firms outside the EU. See Ekholm, Forsild and Markusen (2003) for an analysis of this phenomenon.

Melo et al (1997) argue that initial conditions, e.g. level of development, macroeconomic distortions, membership of the Former Soviet Union, is an determining factor for economic performance among the transition economies. The applicability of this finding for the distribution within the CEECs can be questioned because the pace of policy reforms by these countries has not strictly followed the pace suggested by the initial conditions, e.g. Estonia being previously part of the Soviet Union has been one of the frontrunners in the reform process.[22] Campos and Kinoshita (2003) find evidence for initial conditions only to matter for the distribution of FDI into the CIS countries when testing for both regions.

Agglomeration economies imply that the presence of foreign firms, rather than domestic ones, in a market might signal the quality of business supporting services in the market, i.e. once a "threshold" level of FDI has been reached it serves as a self-enforcing mechanism in attracting subsequent FDI. The impact of the presence of agglomeration economies on FDI is argued to differ between the sectors of FDI, e.g. agglomeration economies are not present in the natural resources sector because of the limited supply of natural resources while they are present in the manufacturing sector where the presence of linkages to other companies within the value chain are valuable. Campos and Kinoshita (2003) find a positive effect of agglomeration economies on FDI to the CEE. Bevan and Estrin (2000) find an indirect effect of agglomeration economies on inward FDI through a positive relation between inward FDI and subsequent improvements in country credit risk ratings. Resmini (2000) suggests that the allocation of a large share of total FDI to Hungary, Czech and Poland within the CEE region is an indication of the presence of agglomeration economies.

Institutional factors

Institutional factors refer to the overall quality of the receiving countries' investment climate in terms of political, economic and cultural nature of the host economy. Institutional factors are of particular importance for studies of FDI in transition economies and are sometimes referred to as transition-specific factors. Bevan and Estrin (2000) distinguish between three main elements of the institutional factors of FDI: macroeconomic stability, e.g. growth, inflation and exchange rate risk; institutional stability e.g. policies towards FDI; tax regimes, corruption and transparency; and political stability proxied by e.g. indicators of political freedom to measures of surveillance and revolutions. Borsos-Tostila (1999) argues that commitment to systematic transformation and policies ensuring macroeconomic stability, infrastructural development and the establishment of a market-oriented legal framework are

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[22] Borsos-Tostila (1999)

key factors in attracting FDIs to transition economies. In a survey-based study, Lankes and Venables (1996) emphasise the importance of political and economic stability and the level of perceived risk in attracting foreign investors to the CEE countries. Brada et al (2003) have studied the effects from transition and reforms on the Eastern European transition economies' ability to achieve their potential FDI inflows. The study finds that the transition economies are experiencing a shortfall in FDI relative to similar market economies due to the process of transition and political instability, the later is identified as the major cause of the observed shortfall of FDI to the Balkan economies.

The recent accession by the CEECs towards the EU has been suggested to be a major driver of the transformation of institutions within the region. Holland and Pain (1998) suggest that the effect of a prospective EU membership on the investor's perception of the institutional factors of the candidate countries is twofold. First, the prospect of an EU membership serves as an external validation of the progress in transition by the candidate countries, i.e. the extent of success of each country's reform policies. Second, an EU membership implies guarantees in terms of macro-economic stability,[23] institutional and legal environment[24] and political stability. Both effects serve to reduce investor's perceived level of country risk within the CEE. Through using the accession announcements made by the European Council as a measure of the accession progress of the candidate countries, Clausing and Dorobantu (2005) and Bevan and Estrin (2000) find evidence supporting the hypothesis that the EU accession process has had an impact on FDI into accession countries. The EU's commitment to accept qualified candidate countries and the recent enlargement of the EU are suggested as major sources for reducing the perceived level of risk when investing in the accession countries.

Host country production factors

The host country production factors are some of the neo-classic explanations of determinants of FDI. By undertaking FDI, profit maximising MNC:s attempt to minimise production cost by taking advantage of underpriced input factors in the host country. Labour and natural resources are the production factors which have been suggested as determinants of FDI into Eastern Europe. Campos and Kinoshita (2003) show that the abundance of natural resources is a determinant of FDI to the CIS countries, while Borsos-Tostila (1999) suggest that labour is a determinant of FDI into CEECs. Bevan and Estrin (2000) argue that the opening up of the

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[23] E.g. The prospective elimination of exchange rate risk via an adaptation of the Euro.
[24] EU members are enacted into law of EU legislation.

accession countries towards the EU-15 markets has positive implications for FDI. In the context of EU market, the authors argue that the accession offers European firms access to areas of lower labour costs within the Single European Market but also encourages investment from third countries seeking to serve the European market through production in a lower-labour-cost region.

The wages in the transition economies have during the transition been amongst the lowest in Europe, as suggested by Lansbury et al (1996). Nevertheless, the evidence of the importance of labour costs for attracting FDI to Easter European countries has been lacking. Lankes and Venables (1996), Clausing and Dorobantu (2005) find no statistically significant evidence of labour costs as a determinant for FDI. Holland and Pain (1998) present evidence of the importance of relative labour costs for the location decision within Eastern Europe and Lansbury et al (1996) find evidence on the importance of the relatively lower wages in Eastern Europe for re-orientation of investment from other low wage regions in Southern Europe to East Europe. When also taking into account the productivity of labour, as suggested by Lankes and Venables (1996), the evidence of the importance of labour as a determinant of FDI into the CEE is more extensive. Carstensen and Toubal (2003) and Bevan and Estrin (2000) find significant evidence of productivity-adjusted labour costs' impact on FDI. Not only does an increase in productivity-adjusted cost of labour deter FDI, also the rate of growth of productivity-adjusted labour cost is negatively correlated with the growth rate of FDI, as shown by Bevan & Estrin (2000). The presence of skilled labour is another determinant of FDI to the Eastern European countries, as identified by Carstensen & Toubal, (2003) and Lankes and Venables (1996). One possible reason for the mixed evidence of the importance of labour production factor for FDI are sectoral differences of FDI determinants and the presence of agglomeration economies within sectors. Resmini (2000) notes that the cost of labour matters less for subsequent investments made by firms that have already invested in one location within the CEE.

5. Hypotheses

Based on the findings in the chapter 3, Patterns of FDI, and results from previous studies presented in chapter 4, it is possible to form a number of hypotheses about the determinants of FDI to the CEE countries. It has been suggested that a combination of traditional and transitional factors are potential determinants of FDI to the CEE. In addition, the EU accession of the CEECs has been suggested as one major determinant of FDI to the accession counties. When taking into account the availability and the quality of data the number of possible hypotheses that can be tested is limited.

In previous studies it has been suggested that new market opportunities has been one large motivation for firms investing in the CEE. While the positive relationship between market size and FDI was evident already in the statistic presented in chapter 3, other components of new market opportunities are actual demand in the market, low competition and expectations of sustained growth of the market. In addition, the costs of doing business in the host market should be considered by firms looking to find new market opportunities. One approach to proxy the transaction costs of doing business in the host market is by the geographical distance. In order to see if the FDI to the CEE is influenced by more traditional determinants, the following hypotheses about the market related factors as determinants for FDI into the CEECs are formed:

1) *Countries with a larger actual demand attract relatively more FDI.*
2) *Countries that experience a higher degree of economic growth attract relatively more FDI.*
3) *Countries centrally located within the European market attract relatively more FDI.*

Institutional factors have been suggested to be of particular importance for the transition economies as these are measures of the quality of the receiving countries' investment climate. For the transition economies the path and pace of structural reforms, particularly the scale and method of privatisation chosen have been suggested as major transition-related determinants of FDI. The method of privatisation chosen has had implications for the progress in enterprise restructuring as suggested by Kalotay and Hunya (2000). The economical and political stability have been two major concerns of investors looking to invest in the CEECs, as suggested by Lankes and Venables (1996). While the EU accession might have served to increase the economical and political stability in the accession countries it is interesting to see how the perception of the investment climate in the countries has affected inward FDI. In

addition, the effect of the EU accession and EU membership is tested. In order to investigate the relationship between transition, EU accession and FDI, the following hypotheses about the institutional factors as determinants for FDI into the CEECs are formed:

4) *Countries which have chosen a commercial privatisation path and privatised at a larger scale receive relatively more FDI.*
5) *Countries with a good investment climate in terms of low perceived economic and political risk receive relatively more FDI.*
6) *Progress in the EU accession has a positive impact on FDI to the accession countries.*
7) *EU membership has a positive impact on FDI to the member countries.*

The production factor which has been associated with the CEECs is the high-skilled labour force. The high-skilled labour force has been suggested to attract both investment from the EU and third countries, the later has been suggested to increase with the integration of the markets within the Single European Market. In order to investigate if the importance of the quality of labour-force as a determinant for FDI to within the CEE, the following hypothesis is formed:

8) *Countries with a higher quality of labour receive relatively more FDI.*

6. Empirical Setup

There is not one complete theory or model that can be used to assess the determinants of FDI within the accession countries. Previous empirical studies suggest that the state of the transition economies is unique and therefore the impact of transition-specific determinants of FDI should be considered. Given the dynamic nature of the transition economies it is difficult to completely isolate the importance of transition-specific determinants for FDI since the transition also has an impact on some of the traditional determinants of FDI. Previous studies suggest that a combination of institutional, market-related and production factors determine the FDI flows to the transition economies. This approach will be followed in this empirical study allowing for an inclusion of transition specific determinants and the progress in EU accession, which have been suggested to have had a large impact on the inward FDI to the CEE.

From the statistics presented in chapter 3 it could be observed that the levels of FDI inflows have varied among the CEECs. When controlling for the size of the host market, by using a per capita measure of FDI, there is a difference in the distribution of cumulative FDI inflows among the CEECs. Another difference is the timing of the FDI inflows; the distribution of FDI inflows among the countries within the CEE seems to vary over time.

In the chapter 2 it has been discussed that the pace of the transformation and the pace of the EU accession has varied among the CEECs. Given the uniqueness of the transition process within each CEE country and the observed differences in the distribution of FDI within the CEE region, a study of the determinants of FDI into the CEE countries should be able to capture the potential relationship between the transition progress, EU accession and FDI. In addition to the transitional and traditional determinants of FDI, the effect of an EU membership on FDI within the CEE region is studied.

6.1 Data

The dataset used for the study contains data that covers 11 transition economies over a fourteen-year-long period of transition (1992-2005), starting from the first year after the dissolution of the Soviet Union[25] and incorporating the first complete year of EU membership of the first eight CEECs that joined the EU in 2004. A description of the dataset and the

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[25] The SU was formally dissoluted in December 1991.

variables is provided in the following sections. The data is gathered from various reliable sources, for more detailed information about the data see Appendix 1.

The theoretical field aiming to explain the determinants of FDI within the transition economies is relatively unexplored due to the lack of longer time-series of data for the countries, as noted in chapter 4. Even though the availability of data has improved somewhat since the beginning of the EU accession,[26] the CEECs are no exception to this. The lack of available data is the reason why the potential EU accession countries[27] are not included in the study.

6.2 Dependent variable: FDI inflows

In order to measure inward FDI into the CEECs a measure of FDI flows is used. In order to control for the proven relation between the size of an economy and FDI, FDI is considered in relative terms. The inward FDI is related to the GDP value of the host country in order to control for the size of the economy. Campos and Kinoshita (2003) argue that this method of relating FDI to the size of the economy introduces fluctuation to the variable due to the volatility of GDP in the initial years of transition. In addition this measure is negatively related to GDP growth. One alternative way to overcome this problem is to relate FDI to the population in the region, i.e. use a FDI/CAP measure; a measure of market size that has been comparatively more stable during the period. In this study both approaches will be tested.

6.3 Explanatory Variables: the market related factors

Market related factors are often referred to as traditional determinants of FDI. As observed in section 4.2, the size of the market and the growth of the economy among the CEECs are important factors for companies seeking new market opportunities when investing abroad. From the statistical material it was evident that Hungary, Poland and Check Republic, the three largest economies in the region, have been among the largest recipients of absolute levels of FDI. The expected relationship between the size of the market and FDI is positive; therefore a relative measure of FDI is used in the dependent variable to control for this relationship.

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[26] The availability of data has increased particularly for those countries that have become members of the OECD (Czech Republic, Hungary, Poland and Slovakia).

[27] Potential EU accession countries include: Albania, Bosnia & Herzegovina, FYR of Macedonia, Montenegro, Serbia (incl. Kosovo).

While the absolute size of the market might capture the benefits of scale economies in production, a GDP/CAP measure will be used to capture the actual demand within each market. The expected relationship between this measure of consumer wealth and FDI is positive. The measures for GDP/CAP is lagged by one year since it is assumed that FDI is not a usually a decision that is done overnight by companies.

The dynamics of the transition with respect to the market as a determinant of FDI are better captured by a measure of economic growth. Therefore a value for GDP growth, Δ GDP, will be introduced to capture this effect.[28] Economic growth has been volatile in the transition economies, especially during the 1990s. Around year 2000 however, economic growth stabilized. The expected relationship between FDI and GDP growth is therefore not straightforward; the volatility during the 1990s could have deterred FDI flows while the later recovery could have contributed to an increase in FDI flows.

The geographical location of the market has been proven to matter for the size of FDI in studies concerned with developed economies, as well as in studies on the determinants to the transition economies. One important issue when measuring distance is to identify the centre of gravity. In studies of the effect on FDI from the EU integration Brussels has been used as the centre of gravity, i.e. the "institutional centre" of Europe, and the geographical proximity of host market has been calculated as the distance between the capital city of the host economy and Brussels. This approach is applicable and will be used in this study and is in line with other measures used in the study, e.g. the accession of the CEECs towards the EU is used as an estimator of the progress in transition. The variable PROX is used to capture the effect of geography and is measured as the distance from Brussels to the capital in each of the CEECs.

6.4 Explanatory Variables: the institutional factors

Institutional factors relate to economic and political risk. For the transition economies the transition process and the progress towards integration in the EU are two large factors which in chapter 4 have been discussed to have affected investors' perception of the quality of institutions in the accession countries.

In order to measure the impact from the transition reforms on FDI within the CEECs, transition indicators from the European Bank for Reconstruction and Development (EBRD) will be used. EBRD publishes yearly Transition Reports which include an analysis of the

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[28] For more information on how this variable is constructed see Appendix 1.

transition to market economies and macroeconomic performance of the Eastern European and the CIS countries. The EBRD provides a number of transition indices based on an evaluation of the progress across a number of aspects of transition. Among the reforms that the CEECs have implemented in the early years of transition, the privatisation of common and state-owned enterprises has been identified as a major determinant of FDI in previous studies, as discussed in chapter 4. Both the method and the pace of privatisation have varied between the countries and across time. For these reasons the ERBD Large Scale privatisation index and ERBD Enterprise Restructuring Index will be used to measure the degree of privatisation and the progress of the restructuring in enterprises. While the former is expected to capture the difference in pace of privatisation between the countries the later is used as a proxy for the quality of privatisation method chosen. In order for FDI to be successful business-supporting infrastructure in the economy is necessary. In order to control for the differences in these more qualitative aspects of transition the ERBD Overall Infrastructure measure from ERBD transition indices is used.

The EU accession by the CEECs during the 1990s and after year 2000 is characterized by the opening up of markets through the EA agreements singed between the EU and the CEECs. As noted in section 2.2 the EU accession has implied a stepwise adaptation of the countries' economic, political and legal frameworks etc. to the acquis criteria which are the pre-conditions for a membership in the EU. In addition to the increased openness of the economies, the EU accession has served as an external validation of the transition progress for the investors. The actual accession implied an increased probability of a more stable economic and political environment within the countries as these where emerging towards a full membership. A membership in the EU, can be regarded as a guarantee of economic and political stability to investors and also a prospective continuation of integration towards the EU-15 economies, e.g. the prospective adaptation to the Euro is one such example of future integration. In order to estimate the effect of the EU accession and membership a number of dummy variables are constructed to measure the impact of the progress in the EU accession among the countries. Instead of looking at different announcements about the accession progress towards the EU, which has been done in previous studies, the dummies are constructed to reflect the different phases of the accession, in other words the different steps in the progress towards an EU membership. Three dummy variables are constructed; a negotiations dummy (Negotiations), a signing dummy (Signing) and a membership dummy

(EUm).[29] Progress in the EU accession and an EU membership are expected to have a positive effect on inward FDI.

While the transition indices and the EU accession can be used as measures of the transition progress within the CEECs, the Country Credit risk (CCR) is used to measure the investors' perception of the risk associated with investing in the CEE. The CCR is an index published twice a year by Euromoney, ranging from 0-100 where 100 symbolises the lowest credit risk. It consists of measures of economic and political risk associated with investing in a country, for more details about how the CCR is computed see Appendix1. In this study the CCRs for September are used and are lagged by one year to include the decision-making period by investors. One alternative approach would be to use the average value of CCR as the CCR is published twice a year, i.e. in March and September. However constraints to the data availability is the reason why the former approach is chosen An advantage with including the Credit Risk measure is this measure also includes the investor's perceived political risk within country. This factor has by Borsos-Tostila (1999) been suggested to be difficult to measure. A potential disadvantage of using CCR is that it is highly dependent on other variables measuring economic development. The countries that have the highest credit rating ranks are well developed economies. Therefore the variable might introduce some multicollinearity into the model. The effect of the EU accession on the CCR of the accession countries has been tested by Holland & Pain (1998), no direct impact of the accession announcements on the countries' CCR was found.

6.5 Explanatory Variables: the host country production factors

The integration of the CEECs into the EU has implied an integration of both trade and factor markets within Europe. The relatively lower factor prices of labour within the accession countries have often, through media, been argued to lead to production-reallocation and job-losses in the old EU-15 countries. As noted in the section 4.2 the CEECs are relatively labour-abundant. Although the competition from lower wages in the accession countries has been argued to pose a threat to overall employment within the old EU-15, there is no strong evidence in favour of the wage cost being a determinant of FDI into the CEE. Rather the evidence on the labour production factor as a determinant of FDI to the CEE is strong when also incorporating the productivity of labour, i.e. when testing for a productivity-adjusted cost of labour. The ratio of highly educated labour is one distinguishing feature of the CEE

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[29] For more information on how the dummies are constructed, see Appendix 1.

compared to many other emerging economies around the world, SOU 1997:156. Ideally a unit labour cost should be used, but due to limitations in the availability of data the importance of the quality of labour will in this study be measured by a ratio for labour skills and a measure for value added per worker. In order to test for the importance of endowments of qualified labour, the skill ratio of labour with secondary education within the CEECs (SKILL) will be used. In addition, by using a measure of the value added per worker in industry, VADDPW,[30] the productivity of labour is measured. Combining the two measures, the quality of labour in the CEE is estimated.

6.6 The basic model

The basic estimated model takes the following form:

$X_t = \beta_0 + \beta_1 \, GDP_{t-1}/CAP_{t-1} + \beta_2 \, \Delta \, GDP + \beta_3 \, PROX + \beta_4 \, TRANSITION + \beta_5 CCR_{t-1} + \beta_6 SKILL_t + \beta_7 \, VADDPW_t + \beta_8 \, EUACC + \varepsilon$

X_t represents FDI inflows into the CEE, in order to control for the observed positive relation between FDI and market size, two different approaches will be used. In section 6.2 it was argued that relating inward FDI to the GDP of the transition economies might be troublesome since this value has been volatile during the early years of the transition. In order to overcome this problem, two different regressions will be run where X_t equals:

1) FDI related to the GDP of the host economy at time t.
2) FDI related to the Population (CAP) of the host economy at time t.

The independent variables and their expected impact on the dependent variable have been explained in the empirical section. The TRANSITION and EUACC variables in the outlined basic model call for some explanations. The TRANSITION variable relates to three different EBRD transition indices included to capture the reforms which are related to restructuring of the enterprises within the CEE and the EUACC variable represents three Dummy variables constructed to measure the effect of the EU accession progress and ultimately an EU membership.

In order to test for aspects which are expected to affect inward FDI but are not captured in the base-case model, i.e. other country-specific determinants and time-trend in FDI, extensions to the base-case model will be done by including country-dummies and yearly-dummies when running extended regressions of the model.

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[30] See Appendix 1 for more information on how VADDPW is constructed.

7. Findings

The results from the basic regression, using two different specifications of the dependent variable, are presented in *Table 2*. The explanatory power of the second specification; 0.435 is somewhat larger than the explanatory power of 0.404 for the first specification. The level of the explanatory power for the models is satisfactory considering that cross-sectional data is used. Two possible disadvantages with the first specification, FDIGDP, are that it is negatively affected by GDP growth and the initial volatility in GDP due to transition. Given that the differences in the signs of coefficients and significance are not large between the two specifications the results from both regressions will be discussed while the second specification will be used for the hypothesis evaluation.

The F-test allows rejecting the joint null hypothesis in all cases, giving support to the explanatory power of the models.

Table 2: Results from the basic regressions. One asterisk denotes a significance level of 10 percent, two a level of 5 percent, and three a level of one percent.

	1. FDIGDP		2. FDICAP	
Adjusted R^2	0.404		0.435	
F	9.590***		10.733***	
Variable	**Coefficient**	**t-statistic**	**Coefficient**	**t-statistic**
Constant	-0.067	(-5.038)***	-812.760	(-4.184)***
GDPCAP_1	8.57E-007	(1.469)	0.013	(1.552)
GDPGrowth	-0.001	(-1.419)	-6.946	(-1.252)
PROX	1.52E-005	(2.891)***	0.136	(1.765)*
LSP	0.005	(2.121)**	73.886	(1.987)**
ER	0.007	(2.172)**	80.943	(1.714)*
INFR	0.009	(2.535)**	64.535	(1.185)
CreditR_1	-4.50E-012	(-2.716)***	-6.088	(-2.023)**
VADDPW	4.54E-007	(1.683)*	0.010	(2.516)**
SKILL	1.96E-012	(1.579)	3.674	(2.023)**
Negotiations	-0.004	(-1.039)	24.394	(0.468)
Signing	-0.14	(-2.567)**	-97.548	(-1.246)
EUm	0.012	(2.208)**	248.097	(3.202)***

The coefficients for the market factors have all expected signs in both specifications, except for the proximity coefficient. The coefficient for actual demand in the market, GDPCAP, has the expected positive sign, but this relationship is not significant in any of the specifications. The coefficient for GDP growth is negative in both specifications but this relationship is not significant. While the negative impact on FDI from GDP growth might seem surprising, this can be explained by the fact that an increase in GDP reduces the dependent variable when

FDI is related to GDP. For the second specification, where FDI expressed as a per CAP measure, the coefficient for GDP growth is also negative. Given this result, the negative coefficient of the GDP growth can also indicate that volatility of the GDP growth within the transition countries might have had a negative impact on FDI in the region, this is however not a significant finding.

The proximity coefficient shows a positive value, which is surprising given that geographic distance is expected to have a negative impact on FDI due to increased trade costs; its significance is in the second specification is at the 10 % level and at the 1 % level in the first specification. One explanation could be that if FDI is substitute for trade, i.e. when the FDI is market-seeking, distance contributes to an increase of FDI. The fact that Estonia did well in terms of attracting FDI, as indicated in *Table 1*, although having the second largest distance from Brussels, might also have contributed to this result. The Baltic countries psychological proximity to the Scandinavian countries has been studied by Holland and Pain (1998) among others. In order to control for the proximity of Estonia to the Scandinavian countries, a border dummy is constructed to test the impact on FDI from sharing a border with the old EU-15. When testing for the border effect no significant result is found.

The institutions coefficients can be divided into privatisation and restructuring-specific, risk-specific and EU accession specific. The coefficients for the privatisation and restructuring-specific factors all have the expected positive sign. In the first specification all the coefficients are significant at the 5 % level. In the second specification only the large scale privatisation coefficient is significant at the 5 % level, the enterprise restructuring coefficient is significant at the 10 % level and the infrastructure coefficient is not significant. The significance both the large scale privatisation and the enterprise restructuring coefficients imply that not only the scale of the privatisation matters but also the method of privatisation as some of the methods chosen by the CEE have been suggested to contribute more to the restructuring of enterprises. The significance of the overall infrastructure coefficient in the first specification is an indicator of that business supporting infrastructure in the countries is also of importance for FDI, a more qualitative aspect of privatisation and restructuring.

The risk-coefficient, which is estimating the impact from an increase in country credit rating on FDI, is small and with a negative sign. It is significant at the 1 % level in the first specification and 5 % level in the second specification. The negative credit rating coefficient can imply that the increase in credit ratings of the CEE countries has been relatively slow which might have served to deter FDI from the region as compared to other regions. The

Credit Rating is composed by measures of economic and political risk, which both have been high in the CEE during the transition as compared to other European market economies with similar characteristics. Economic transition and political instability has by Brada et al (2003) been found to cause a shortfall of investment to the CEE, as compared to similar European economies. In the model, the Credit Risk rating might be capturing the economic volatility and political uncertainty among the CEECs during the transition. This is especially evident for Croatia which has had the lowest credit ratings among the included CEEC:s in the early-mid 1990s due to high political risk associated with war and political unrest.[31] Another potential explanation for the negative impact of the credit rating on inward FDI is that the method of using September measures for the previous year does not provide the most accurate measure of perceived risk.

When studying the coefficients for the EU accession, it is evident that the negotiations coefficient is not significant in any of the two specifications. The EU membership coefficient has the expected sign and is significant at the 5 % level in the first specification and 1 % in the second. This indicates that an EU membership has had a large positive significant impact on FDI into the new member countries. The signing dummy coefficient is, on the contrary, negative in both specifications, but this result is only significant in the first specification at the 5 % level. This negative relationship between the signing of the accession treaty and FDI should be considered in a broader context, e.g. when studying *Figure 1* it is evident that the global levels of FDI declined heavily in 2003, the same year that the Accession Treaty was signed by eight countries of the CEE. In order to control for potential trends of FDI to the CEE, extensions of the base-case model are done in the section 7.1.

When studying the signs of the coefficients relating to production factors, the signs are in accordance with the expectations in both specifications. Only the coefficient for the productivity of worker is significant at the 10 % level in the first specification, while both the skill ratio and the productivity coefficients are specific at the 5 % level in the second specification. The quality of labour seems to matter for the distribution of FDI among the CEECs.

To summarize, the institutional determinants are of importance for the distribution of FDI among the CEECs, this is not surprising given that the institution-specific determinants capture the effect on FDI from the unique transition process within the CEE and the EU accession. The evidence for the market-related determinants is weak and the progress in

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[31] For Croatia the average 1993-1995 CCR was 7.7 as compared to the 93-95 average of 30.8 for the rest of the CEE. This is in line with the average level for Afghanistan (7.1) during the same period.

privatisation and enterprise restructuring seems to override the importance of the geographic location of the CEE countries. Here the relatively large inflow of FDI to Estonia, as identified in *Table 1*, is suggested as one reason for the observed relationship of the proximity variable. This effect cannot be explained by Estonia sharing a border with the EU-15. The production-factor determinants are also significantly important for the distribution of FDI, this indicates that the quality of labour matters for the distribution of FDI among the CEEC:s.

7.1 Trends in FDI

In order to capture the effect of a trend in FDI flows to the CEE, a trend variable is introduced to the base case regression, see Appendix 3, this trend variable is however not significant in any of the two specifications. When running an extended version of the basic model including yearly dummies to identify potential trends in FDI, it is evident from the results in *Table 3,* that the value of the adjusted coefficient of determination is larger than for the base-case regressions but that the F-value has decreased. The signs of the base case coefficients have not changed when including yearly dummies, however their degree of significance has changed somewhat. The change of significance levels for the EU accession countries is of particular interest.

When studying the coefficients for the year dummies it is evident that only the coefficients for year 1992 and 2005 are significant in both specifications. The 1992 dummy coefficient is positive and significant at the 5 % level in both specifications. The 2005 dummy coefficient is positive and significant at the 5 % level in the first and 10 % level in the second specification. Given the insignificance of the other yearly dummies, it is not possible to distinguish a trend in the FDI inflows to the CEECs. Nevertheless, the increase in FDI flows in the year 2005, the first year of the EU membership, is significant. The size and the significance of the EU membership coefficients, as compared to the base case regressions, has decreased somewhat when including the year dummies. The EU membership coefficient is not significant in the first specification, having been significant at the 5 % level in the base-case regression; meanwhile the significance of the yearly dummy for 2005 is at the 5 % level. Also the significance for the EU membership coefficient has decreased to the 10 % level in the second specification, as compared to the 5 % level in the base-case regression; meanwhile the significance of the yearly dummy for 2005 is at the 5 % level. This implies that some of the increase in FDI from an EU membership is captured by the year dummy for the first full year of the membership in the extended model.

The sign of the signing dummy coefficient is negative and significant at the 1 % level in the first specification and 10 % level in the second. Given the insignificance of the dummy for year 2003, the global downturn in FDI is not captured by the yearly dummy; however the signing dummy might be capturing some of this downturn.

Table 3: Results from the extended regressions with yearly dummies. One asterisk denotes a significance level of 10 percent, two a level of 5 percent, and three a level of one percent.

	1. FDIGDP		2. FDICAP	
Adjusted R^2	0.427		0.448	
F	5.534***		5.938***	
Variable	**Coefficient**	**t-statistic**	**Coefficient**	**t-statistic**
Constant	-0.088	(-5.534)***	-1099.837	(-4.722)***
GDPCAP_1	7.20 E-007	(1.196)	0.011	(1.239)
GDPGrowth	-4.8 E-012	(-1.216)	-5.574	(-0.952)
PROX	1.91E-005	(3.533)***	0.194	(2.445)**
LSP	0.007	(2.517)**	109.997	(2.571)**
ER	0.011	(3.133)***	116.757	(2.303)**
INFR	0.007	(1.712)*	33.259	(0.548)
CreditR_1	-4.8 E-012	(-2.623)***	-6.442	(-2.386)**
VADDPW	4.32 E-007	(1.573)*	0.011	(2.764)***
SKILL	2.51 E-012	(1.991)**	4.376	(2.363)**
Negotiations	-0.006	(-1.214)	-21.068	(-0.315)
Signing	-0.022	(-2.922)***	-209.692	(-1.879)*
EUm	0.005	(0.670)	220.610	(1.947)*
1992	0.014	(2.265)**	199.462	(2.132)**
1993	0.005	(0.897)	68.651	(0.820)
1994	-6.4E-012	(-0.086)	1.661	(0.021)
1995	excluded		excluded	
1996	-0.004	(-0.827)	-50.716	(-0.640)
1997	7.68E-012	(0.044)	4.131	(0.05)
1998	0.005	(0.894)	47.760	(0.54)
1999	0.003	(0.506)	53.868	(0.581)
2000	0.007	(0.892)	93.005	(0.867)
2001	0.001	(0.187)	55.296	(0.516)
2002	0.005	(0.687)	133.657	(1.237)
2003	0.008	(0.959)	115.458	(0.895)
2004	0.013	(1.445)	74.226	(0.565)
2005	0.021	(2.269)**	253.698	(1.878)*

In summary, when testing for a trend in FDI by including a trend dummy or by using yearly dummies it is difficult to detect a trend in FDI to the CEE countries. It is evident from *Figure 2,* that the FDI inflows have been volatile. The insignificance of the trend dummies might indicate that the FDI inflows have been driven by specific transition-related events within the countries of the CEE, rather than trends in FDI to the CEE. The significant positive upturn in FDI in year 2005, which is the first year of the membership in the EU by eight of the CEEC:s, indicates that an EU membership has positively contributed to inward FDI to the CEE

countries. The insignificance of the yearly dummy for 2003 in the extended model might indicate that the signing dummy might be capturing the effect of an overall downturn in FDI in 2003, initially shown in *Figure 1*.

7.2 Country-specific determinants

In the section 2.1 it was suggested that the initial conditions, pace and paths of transition have varied greatly among the CEE countries, in order to test for other country-specific determinants of FDI which are not included in the model as explanatory variables country-dummies are constructed. The results from the extended regression including country-dummies are presented in *Table 4*. When studying the results in *Table 4*, it is evident that the significance of some of the coefficients has changed to a larger extent. None of the privatisation and restructuring coefficients are significant in this version, the different reform paths chosen by the countries in the CEE and the differences in quality of the infrastructure are now captured by the country coefficients.

The GDP per capita coefficient is positive and significant at the 1% level in both specifications. This implies that the actual demand in the market has had an effect on inward FDI, when controlling for other country-specific factors and the absolute market size. The GDP growth coefficient is positive and significant at the 10 % level in the first specification and of positive sign and insignificant in the second specification. The production factor-related coefficients are both significant at the 5 % level in the second specification while the skill ratio coefficient is the only significant production factor coefficient in the first specification, this at the 10 % level of significance.

The coefficient of the EU membership is still positive but not significant; the EU membership is country-specific and this effect is therefore now captured by the country dummy. The sign of the signing coefficient is still negative and significant at the 5 % level both specifications. The significant negative coefficient of the singing dummy indicates that the dummy is capturing other factors, such as the global trends in FDI, given that the effect from the EU accession now is captured by the country dummies.

When studying the coefficients for the country dummies, it is evident that Estonia has done better in terms of attracting FDI than many other large recipients such as the Czech Republic, Poland and Hungary for which the coefficients are negative and significant. This is in line with what was suggested in chapter 3. Also significant negative coefficients are found for Bulgaria and Slovenia, indicating that these countries have received relatively less FDI as compared to Estonia due to country-specific factors. The positive coefficient for Slovakia in

the second specification is somewhat surprising, since this indicates that Slovakia would have done better in terms of attracting FDI than Estonia, which is not supported by the data. This coefficient is however only significant at the 10 % in only one of the specifications and therefore not much weight should be put on its importance. Given the insignificance of the privatisation and enterprise restructuring coefficients and EU membership dummy when extending the regression to also include the country-specific determinants it is an indication of that the country-dummies also capture the difference in privatisation and enterprise restructuring and EU accession paths among the CEECs.

Table 4: Results from the extended regressions with country dummies. One asterisk denotes a significance level of 10 percent, two a level of 5 percent, and three a level of one percent.

	1. FDIGDP		2. FDICAP	
Adjusted R^2	0.458		0.508	
F	7.112***		8.469***	
Variable	**Coefficient**	**t-statistic**	**Coefficient**	**t-statistic**
Constant	-0.045	(-2.933)***	-734.217	(-3.354)***
GDPCAP_1	4.36 E-006	(3.115)***	0.073	(3.673)***
GDPGrowth	0.005	(1.850)*	59.274	(1.578)
LSP	-2.1E-012	(-0.72)	-29.565	(-0.712)
ER	0.006	(1.524)	62.321	(1.128)
INFR	0.004	(1.067)	-13.690	(-0.244)
CreditR_1	-5.1E-012	(-2.632)***	-7.376	(-2.658)***
VADDPW	5.60E-007	(1.040)	0.017	(2.239)**
SKILL	3.24 E-012	(1.945)*	5.262	(2.212)**
Negotiations	-0.003	(-0.820)	5.970	(0.106)
Signing	-0.019	(-2.825)**	-233.487	(-2.486)**
EUm	0.006	(1.012)	121.866	(1.530)
Bulgaria	-0.021	(-2.558)**	-300.126	(-2.576)**
Croatia	0.004	(0.420)	98.906	(0.661)
Czech	-0.024	(-2.234)**	-86.956	(-0.577)
Estonia	Excluded		Excluded	
Hungary	-0.040	(1.669)*	-341.104	(-1.002)
Latvia	-0.005	(-0.735)	-35.984	(-0.407)
Lithuania	0.002	(0.214)	159.210	(1.208)
Poland	-0.067	(-2.296)**	-722.824	(-1.748)*
Romania	0.005	(0.610)	153.332	(1.426)
Slovakia	0.008	(0.784)	267.494	(1.811)*
Slovenia	-0.020	(-2.337)**	-254.021	(-2.057)**

In summary, country-specific factors matter for inward FDI. Privatisation and enterprise restructuring paths and EU accession are two country-specific determinants which have been shown to matter for the amount of FDI received by the CEECs but there might be other country-specific determinants for the distribution of FDI among the CEECs. Among the CEEC:s, Estonia is a country which has received comparatively more FDI, the privatisation

and enterprise restructuring path chosen by Estonia is suggested to be one reason for this. Because EU accession has been suggested to be country-specific, the significant coefficient of the signing dummy, when controlling for country-specific factors, is an indication of the dummy being affected by global trends in FDI.

When controlling for country-specific factors, the significance of the actual demand in the market, i.e. one market-related determinant of FDI, increases while the significance for the factor-related coefficients is similar to the level observed in the base-case regression. Given this result, it is not possible to rule out the importance of any of the three groups of determinants. Even though country-specific determinants, where privatisation and EU membership are two identified determinants, are important determinants of FDI to the CEECs, it is not possible to rule out the importance of the traditional determinants for FDI to the CEECs.

In order to test the robustness of the model a number of configurations where tried. Extending the basic regression and including a trend dummy did not change the size or the sign of the coefficients of explanatory variables to any larger extent, see appendix 3. Also using the two different extended versions did not change the results to any larger extent. When using the country-dummies the largest change in significance occurred. This change has been discussed in section 7.2, it indicates that the pace and paths of the transition and EU accession are country-specific. The results are fairly robust bearing in mind the small size of the sample, consisting of data for eleven countries.

7.3 Predictions of FDI

As a final test, predictions of the increase in levels of FDI inflows from the EU membership are made. The second specification of the base-case model is used to first estimate the average increase in FDI inflows from an EU membership to the new EU countries, later a prediction of the effect on FDI from a membership for the SEE countries is made, had these countries joined the EU simultaneously. The second specification is used for prediction since this measure is in absolute numbers and therefore provides estimations that are more easily interpreted.

In order to estimate the average impact of an EU membership the level of FDI to the member countries is predicted for year 2005, the first full year of the EU membership, without taking into account the EU accession, i.e. the level of FDI per capita is predicted as a function of the explanatory variables alone. Later the level of FDI per capita for 2005 is calculated for the countries taking into account the EU membership. For the SEE countries the same approach is used, here both country-specific predictions and mean estimates are made. The results are summarised in *Table 5*. According to the obtained results, the average increase of inward FDI per capita, due to an EU membership, is 74.2 percent for the new member countries in the first year of their EU membership. For the South-East European countries this effect is even larger. If the South-Easter European countries had joined the European Union simultaneously as the EU-8 countries, the mean level of inward FDI per capita would have increased by 93.0 percent in the first year of membership.

Table 5: Predicted levels of per capita FDI inflows for year 2005, with and without the effect of an EU membership.

Predicted FDI inflows	Without EUm, (USD/capita) 2005	With EUm, (USD/capita) 2005	Change in FDI from EUm (%)
EU -8 average	334.40	582.50	74.2
Bulgaria	183.48	431.58	135.2
Croatia	323.52	571.62	76.7
Romania	293.61	541.71	84.5
SEE average	266.87	514.97	93.0

By studying the results for the specific countries it is evident that the positive effect on inward FDI from an EU membership is larger for the countries that are predicted to receive less inward FDI given their base-case explanatory variables.

8. Discussion on Empirical Results

When evaluating the hypothesis set out in chapter 5, the second specification of the basic model should be used due to the higher explanatory power of the model and less volatile dependent variable. However, when running regressions of the extended versions of the base-case model it is evident that the base-case model does not provide a full picture of the determinants of FDI to the countries in CEE. In order to provide a more complete evaluation of the initial hypothesis, set out in the empirical section, the results from the basic-regression are evaluated by also considering the results from the extended versions of the basic model.[32]

The results from the general regression indicate that the countries which have privatized at a larger scale along a commercial privatisation path have received relatively more FDI. It has been suggested in chapter 3 that FDI is M&A driven; therefore this result is in line with expectations. In the section 4.2 the combined importance of the method and scale of privatisation has been suggested, the joint significance of the enterprise restructuring and large scale privatisation is evidence in favour of this suggested relation. There is no evidence of the more qualitative aspect of privatisation and enterprise restructuring, as measured by the infrastructure variable, to matter for the distribution of FDI. When running an extended version of the basic model, evidence is found that the methods and scope of privatisation are some of the country-specific determinants of FDI and Estonia is found to be the country which has been particularly successful in attracting FDI.

Countries with relatively higher quality of labour force, a traditional determinant of FDI, have received relatively more FDI. Both the educational level and the productivity of labour are significantly important. This result is robust also when testing for other country-specific factors.

The European Membership has had a significantly positive impact on FDI into the new member countries. The countries that joined the European Union have received a significant increase in their FDI from the EU membership. For year 2005 the average increase in inward FDI is estimated to be approximately 74.2 percent or an average of 248.1 USD per capita as compared to the expected FDI if the countries had not joined the EU. This positive effect is found to be particularly large for countries that are predicted to receive less FDI given their

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[32] The second specification of the extended model is used.

base-case explanatory variables. While the increase in FDI from an EU membership is a robust finding, other steps in the EU accession are not found to have had a significant impact on the inward FDI to the accession countries. The insignificant impact of the negotiations variable on inward FDI can be explained by the fact that EU negotiations have been characterized by both progress and disappointment as they evolved, while the EU membership and the signing of the Accession Treaty are stronger guarantees in terms of future macroeconomic stability, institutional and legal environment and political stability. By running extended versions of the model, e.g. including country-dummies, there is evidence that the singing dummy is affected by global trends in FDI. This finding suggests that other methods for measuring the progress of the EU accession could be tested in future studies, e.g. one method could be to measure the number of acquis chapters closed by a candidate country each year of the accession negotiations.

There is no evidence that the countries with a more stable economic and political investment climate, as measured by the CCR, have received relatively more FDI. Rather, the macroeconomic and political risk, as measured by the credit risk rating, has been shown to have had a deterring effect on inward FDI into the CEE region. This negative impact from country credit risk is in contradiction with previous findings. However, this is not a relationship that is expected to sustain over time, given the suggested positive effect from an EU membership on economic and political stability within the transition countries. This finding is particularly applicable for countries which have had a more unstable transition-path and are currently only potential candidate countries.

The results from the base-case regression indicate that there is no significant evidence that larger actual demand in the market and the degree of economic growth are determinants for FDI into the CEEC:s. When controlling for other country-specific factors the demand in the host market, a traditional determinant of FDI, is found to be a significant determinant for inward FDI to the CEE. However, there is no significant evidence for a positive impact on FDI from a country's GDP growth, in the extended regressions. Bearing in mind the macroeconomic instability during the initial years of transition; this is not a surprising result. There is no evidence of a central location within the European market to have affected inward FDI positively; rather the opposite relationship is found. It has been suggested that this result has been influenced by the country-specific progress in transition, which has been proven to be independent of the geographic location of the markets. In order to test for this an extension

of the model is made, controlling for country-specific factors. In accordance with expectations Estonia emerged as the country which has received relatively more inward FDI despite its peripherical location within the European Union. One additional test was made where the implication from sharing a border with the EU-15 on the inward FDI was tested. There is no evidence that sharing a border with the EU-15 has affected FDI positively, this finding leaves the question of the effect on FDI from the integration of the CEE economies into the Single European Market through trade agreements open. By studying data on bilateral FDI flows the importance of proximity, both physical and psychical, for the distribution of FDI to the CEECs could be studied more closely.

9. Conclusions and Suggestions for Further research

The objective of the study was to identify the determinants of inward FDI into the Central and Eastern European Countries and investigate the impact of the EU accession and EU membership on the FDI flows into the countries. The FDI to the transition countries has been seen as a potential catalyst for economic change of the transition economies. Having been almost non-existent in early 1990s the levels on inward FDI have increased during the period 1992-2005. The levels of inward FDI received by the CEECs during the period 1992-2005, represent only a small fraction of the simultaneous inward FDI to the developing countries globally and these levels of inward FDI to the accession countries are well bellow the levels for the rest of the Europe.

It has been shown that both traditional and transitional determinants of FDI matter for the distribution of FDI within the CEE countries. The importance of the traditional determinants is more evident when the importance of the country-specific determinants is controlled for. The country-specific transition paths have been shown to matter for the distribution of FDI among the CEECs. Among the country-specific determinants it has been found that the scale and mode of privatisation chosen have had a positive and significant impact on FDI inflows to the CEE, in addition a successfully completed EU accession is found to have a positive impact on FDI inflows to the new member countries. Given the guarantees of institutional stability, both economic and political, that an EU membership provides this is in line with the expected outcome. If economic and political instability during the transition period has been a deterrent of FDI to the CEE, an EU membership has served to reduce this uncertainty which has led to an increase in FDI to new member countries. Governments in the CEE countries and in the potential candidate countries play a crucial role in this respect. Not only are scope and method of certain policies such as privatisation important but also policies ensuring economic and political stability allowing for future integration to the EU. This finding is of particular importance for those countries which have experiences a more unstable transition path and are currently only potential candidate countries within the EU.

A positive impact from transition and successfully completed EU accession on FDI to the CEE countries has been shown in this study; in addition a room for further growth in FDI to the CEECs has been identified. When combining these findings, there is reason to believe that

FDI can serve as a catalyst for a successful transformation of the transition economies in Eastern Europe through the financial resources, knowledge and technology that FDI brings.

Suggestions for further research

The results from this study indicate that transition and EU membership have had a positive impact on inward FDI in the transition economies. There is also some evidence that the transition countries have received less FDI than their potential level due to the perceived level of risk associated with investing in the countries.

For further research it might be interesting to study the implications for FDI from further integration of the CEE into the European Union. Here it might be interesting to study the progress in reducing the economic and political risk, e.g. the progress in eliminating the exchange rate risk through an adaptation of the Euro. As the availability of data increases similar studies of the transition and the EU accession implications for FDI could be performed including also the prospective candidate countries.

Although the presence of agglomeration economies in FDI have not been studied in this paper, it might be interesting to study if the presence of potential agglomeration economies has had implications for the aggregate distribution of FDI among the CEE.

Even though it is outside of this study to estimate the economic impact from FDI on the CEE, by taking into account the differences between the CEECs, this might be an interesting topic to investigate for future research.

10. References

Literature

Altomone, C. and Guagliano, C. (2001)."Competing locations? Market Potential and FDI in Central and Eastern Europe vs. the Mediterranean". *LICOS Discussion Paper 108*, Katholieke Universiteit Leuven Belgium.

Baldwin, R. E., Francois, J.F. and Portes, R. (1997). "The costs and benefits of eastern enlargement: The impact on the EU and Central Europe", *Economic Policy*, Vol. 12, No. 24.

Barrell, R. and Pain, N. (1999)."Domestic Institutions, agglomerations, and foreign direct investment in Europe", *European Economic Review*, Vol. 43.

Bevan, A.A. and Estrin, S. (2000). "The determinants of FDI in transition economies", *CEPR Discussion Paper* No. 3638, London: CEPR.

Brada, J. C., Kutan, A. M. and Yigit, T.M. (2003). "The effects of transition and political instability on FDI: Central Europe and the Balkans", *Center for European Integration Studies Working Paper* B28, Germany: Bonn.

Borsos-Tostila, Julianna (1999). "The Determinants of FDI operations of Finnish MNCs in Transition Economies 1990-1995", ETLA, The Research Institute of the Finnish Economy, Helsinki: Taloustieto Oy.

Brainard, L.S. (1993). "A simple theory of multinational corporations and trade with a trade-off between proximity and concentration", *NBER Working Paper* No. 4269, Cambridge, MA: National Bureau for Economic Research.

Campos, N.F. and Coricelli, F. (2002), "Growth in Transition: What we know, What We Don't, and What We Should", *Journal of Economic Literature*, Vol. XL, No. 3.

Caves, R.E. (1996). "Multinational Enterprise and Economic Analysis" New York: Cambridge University Press.

Carstensen, K. and Toubal, F. (2003)."FDI in Central and Eastern European countries: A dynamic panel analysis", *Kiel Institute for World Economics Working Paper* No. 1143, Germany: Kiel.

De Melo, M. Denzier, C., Gelb, A. and Tenev, C. (1997)."Circumstances and choice: The role of initial conditions Policies in transition economies", *World Bank Policy Research Working Paper 1866*, Washington: The World Bank

Dunning, J. H. (1977). "Trade, location of economic activity and the multinational enterprise: A search for an eclectic approach", in Ohlin, B., Hesselborn, P.-O. and Wijkman, P.M.edited "The international Allocation of Economic Activity": Proceedings of a Nobel Symposium held at Stockholm", London: McMillan.

Ekholm, K., Forslid, R. and Markusen J., (2003), " Export-platform Foreign Direct Investment" *National Bureau of Economic Research Working Paper* No. 9517, Cambridge: NBER

Girabaldi, P., Mora, N., Sahay, R. and Zettelmeyer, J. (2001),"What moves capital to transition economies?" Staff Papers, IMF, Vol. 48, Special Issue

Holland, D. and Pain, N. (1998). "The diffusion of innovations in Central and Eastern Europe: A study of the determinants and impact of foreign direct investment", *National Institute of Economic and Social Research Working Paper* No. 137, London: NIESR

Kalotay, K. and Hunya,G. (2000). "Privatisation and FDI in Central and Eastern Europe", *Transnational Corporations,* Vol.9, No. 1.

Kaminski, B. (2001). "How Accession to the European Union has affected external trade and foreign direct investment in Central European Economies", *Policy Research Working Paper No 2578*, The World Bank

Kinoshita, Y. (2001)."R&D and technology spillovers through FDI: Innovation and absorptive capacity", *CEPR Discussion Paper* No. 2775, London: Centre for Economic Policy Research.

Kinoshita, Y. and Campos, N.F. (2003)."Why does FDI go where it goes? New evidence from the transition economies", *William Davidson Institute Working Paper* No. 573, Ann Arbor, MI: University of Michigan.

Kornai, J. (2006). " The great transformation of Central Eastern Europe, Success and disappointment", Economics of transition, Vol. 14, No. 2.

Landsbury, M., Pain, N. and Smidkova, K. (1996)."Foreign direct investment in Central Europe since 1990: An econometric study", *National Institute Economic Review*, Vol. 156.

Lankes, H.P. and Stern, N. (1997). "Capital flows to eastern Europe and the former Soviet Union". ERBD Working Paper No. 27. European Bank for Reconstruction and Development.

Markusen, J.R., Melvin, J.R., Kaempfer and Maskus, K.E. (1995). "International Trade Theory and Evidence", Singapore: Mc Graw-Hill Inc.

Markusen, J.R. and Venables, A.J. (1998)."Multinational firms and the new trade theory", Journal of International Economics, Vol.46, No. 2.

Pitelis, C. N. and Sugden, R. (2000), "The Nature of the Translational Firm", London: Routledge, Taylor & Francis Group.

Resmini, L. (1999). "The determinants of foreign direct investment in the CEEC:s" Economics of transition, Vol. 8, No. 3.

SOU 1997:156, *Ett store och bättre Europa.* Betänkande av kommittén om EU:s utvidgning-samhällsekonomiska konsekvenser. Stockholm: Finansdepartementet, Kapitel 5

Thomsen, S. and Woodlock, S. (1993). "Direct Investment and European Integration – Competition among Firms and Governments", Royal Institute of International Affairs, London: Pixter Publishers.

Data Sources

http://devdata.worldbank.org/dataonline/, The World Development Indicators

http://ec.europa.eu, the official website of the European Union

http://www.erbd.com, The European Bank for Reconstruction and Development

http://www.imfstatistics.org/imf, International Financial Statistics Database

http://www.se.map24.com/, Roadmap Europe

http://www.unctad.org, The United Nations Conference on Trade and Development

Institutional Investor, various issues (September) 1992-2005

11. Appendices

Appendix 1 –Data

Base variables

Variable	Description/Measurement	Source
FDI	Inward Foreign Direct Investment, Current millions USD	UNCTAD, World Investment Report
GDP	Gross Domestic Product, Current PPPs; millions USD	The World Bank, World Development Indicators
Population	Total population, Millions	The World Bank, World Development Indicators
GDPCAP	Per Capita Gross Domestic Product Current PPPs; USD	The World Bank, World Development Indicators
PROX	Proximity, Road distance from Brussels and the capital of the CEEC in km	Road Map, Map24
CCR	Country Credit Rating* Index 0-100 where 100 denotes lowest risk	Several (September) issues of the Institutional Investor
SKILL	Secondary School enrolment ratio, % of total population	The World Bank, World Development Indicators
TRANSITION:		
(LSP)	Large Scale Privatisation Index	European Bank for Reconstruction and Development
(ER)	Enterprise Restructuring Index	European Bank for Reconstruction and Development
(INFR)	Overall Infrastructure Index	European Bank for Reconstruction and Development

* To obtain the overall country risk score, Euromoney assigns a weighting to nine categories. These are political risk (25% weighting), economic performance (25%), debt indicators (10%), debt in default or rescheduled (10%), credit ratings (10%), access to bank finance (5%), access to short-term finance (5%), access to capital markets (5%), forfeiting (5%).

Constructed variables

Variable	Description
GDP growth	Δ GDP = [(GDP_t + GDP_{t-1})/ GDP_{t-1}]*100
VADDPW*	Value Added Per Worker $_t$: [Industry Value Added $_t$ / (Employment in Industry $_t$ *Total Employment $_t$)]

Sources:

VALUE ADDED	*Industry Value Added,* *Current USD (incl. manufacturing sector)*	*The World Bank, World* *Development Indicators*
EMPLOYMENT	*Employment in Industry* *(% of total employment)*	*The World Bank, World* *Development Indicators*
	Total Employment, by country	*The International Monetary* *Fund, International Financial* *Statistics Database*

EU ACCESSION- dummies*

Negotiations	Symbolizes the negotiations phase of the accession, from the beginning of negotiations to the conclusion. D = 1 for the period 1998 -2002 (First wave countries), 2000-2002 (Second Wave countries) where this period is extended to 2004 for Bulgaria and Romania (reflects the somewhat longer period of negotiations), otherwise D =0.
Signing	Symbolizes the signing of the accession treaty, pre-condition for a membership. D=1 for the period 2003-2005 (the end of the sample) for the EU-8 and for year 2005 for Bulgaria and Romania, otherwise D=0.
EUm	Symbolizes the EU membership, D=1 for the period 2004-2005 (the end of the sample) for the EU-8 countries.

*A note about the Accession Dummies: The timing of the different events in the EU accession varies. The reasoning that has been used when constructing the dummies is that if a progress in the accession has occurred during the first half of the year (Jan-June), the year is included in the dummy, if the progress on the other hand was made during the second half of the year (Jul-Dec), the time-series of the dummy starts with the next full year following the event. In this way the potential FDI inflows corresponding to specific events are better matched to their triggers over time given that a more precise measurement is not possible with the data available.

Missing observations

Variable	Description
SKILL	The data for the ratio of labour force education is missing for a couple of years of the time-series for all the countries. Given that this is a measure that changes slowly over time the annual increase in Labour skills is calculated for the years of available data and used to calculate the missing values assuming a linear increase in the ratio of skilled labour.

Appendix 2 - EU accession[33]

After the fall of the Soviet Union, the European Community established diplomatic relations with the CEECs. During the 1990s the countries of Central and Eastern Europe submitted their applications for EU membership. The fifth Enlargement of the EU, in May 2004, was an historical and unique Enlargement in the history of the European Union, which provided the opportunity to further the integration of the continent by peaceful means.

The EU enlargement process can be summarised by its key events:

<u>Copenhagen European Council (June 1993)</u>; the European Council (EC) officially declares that "the associated countries of Central and Eastern Europe that so desire shall become members of the European Union". The accession criteria ("Copenhagen Criteria") were announced.
<u>The Madrid European Council (December 1995)</u>; the EC requested from the European Commission to submit an assessment of the candidate countries' applications for membership and to prepare a detailed analysis of the implications for the EU from an enlargement.

<u>AGENDA 2000 (July 1997)</u>; On request of the European Council in Madrid in December1995 the Commission evaluated its opinion of the ten CEE countries' capacity to adopt and implement the EU's legislation *acquis communautaire* and gave recommendation concerning the opening of negotiations. The findings and recommendations based on an evaluation of the progress made by the countries of the CEE in meeting the accession criteria where published in the AGENDA 2000 document. This document identified two waves of accession countries among the CEE: the Czech Republic, Estonia, Hungary, Poland and Slovenia where suggested as accession countries qualified for accession negotiations, while Bulgaria, Latvia, Lithuania, Romania and Slovakia where suggested to compose the group of second wave countries with which negotiations would commence at a later date. In addition, the Agenda 2000 document outlined the impact of enlargement of the EU as a whole and the future financial framework beyond 2000, taking into account the prospect of enlarged Union.

<u>The Luxembourg European Council (December 1997)</u>; The launching of the enlargement process and opening of negotiations with the first group of candidate countries, as identified by the AGENDA 2000 document, "Luxembourg countries" (the Czech Republic, Estonia, Hungary, Poland, Slovenia among the CEECs).
In addition, the EC invited the Commission to draw up Regular Reports on the progress made towards accession by each of the candidate country. Each year the Commission assessed the progress made by applicant countries in the Regular Reports, which served as a basis for the Council to make its conclusions on the readiness for membership by each candidate country. The Regular Reports were accompanied by a Strategy paper.

<u>(31 March 1998)</u>; Opening of negotiations with the "Luxembourg countries".
In order to prepare candidate countries to adopt the EU's laws and regulations, Accession Partnerships were created. Each Partnership was an agreement between the EU and a candidate country that took into account the country's particular needs and brought together in one framework all the various forms of EU financial and other support; The first Accession

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[33] Based on information from: http://ec.europa.eu/enlargement

Partnerships were decided in March 1998, They were regularly updated taking into account further developments in a candidate country.

Helsinki Summit (12 December 1999): European Council decides to launch accession also with the second group of countries "Helsinki countries" Bulgaria, Latvia, Lithuania, Romania and Slovak Republic". In addition, the Helsinki European Council stated that the Union will take decisions on the necessary institutional reforms by the end of 2000 in order to be able to welcome new members as from the end of 2002.

(15 February 2000); Opening of negotiations with the "Helsinki countries".

Copenhagen Summit of 2002 (December 2002): Negotiations completed with the Czech Republic, Hungary, Estonia, Latvia, Lithuania, Poland, Slovakia and Slovenia.
April 2003: Accession Treaty is signed by the Czech Republic, Hungary, Estonia, Latvia, Lithuania, Poland, Slovakia and Slovenia (EU-8)
1 May 2004: Accession of the EU-8.
December 2004: Negotiations completed with Bulgaria and Romania.
April 2005: The treaty of accession is signed by Bulgaria and Romania.
October 2005: Opening of negotiations with Croatia.

Most recent events (outside of the time period considered in this study)
1 January 2007: Accession of Bulgaria and Romania, Slovenia adopts the Euro.

Appendix 3 – Extended Regression

Results from the extended regressions with a trend dummy. One asterisk denotes a significance level of 10 percent, two a level of 5 percent, and three a level of one percent.

	1. FDIGDP		2. FDICAP	
Adjusted R^2	0.404		0.432	
F	9.590***		9.886***	
Variable	**Coefficient**	**t-statistic**	**Coefficient**	**t-statistic**
Constant	-0.067	(-4.981)***	-805.145	(-4.126)***
GDPCAP_1	9.21E-007	(1.530)	0.014	(1.641)
GDPGrowth	-4.9E-012	(-1.255)	-6.107	(-1.062)
PROX	1.54E-005	(2.910)***	0.139	(1.803)*
LSP	0.005	(1.875)*	66.976	(1.710)*
ER	0.007	(2.208)**	84.893	(1.774)*
INFR	0.009	(2.228)**	53.268	(0.919)
CreditR_1	-4.82 E-012	(-2.667)***	-6.690	(2.534)**
VADDPW	4.32 E-007	(1.573)	0.010	(2.371)**
SKILL	2.00E-012	(1.599)	3.739	(2.050)**
Negotiations	-0.004	(-1.120)	15.780	(0.290)
Signing	-0.15	(-2.527)**	-117.289	(-1.370)
EUm	0.011	(2.138)**	243.048	(3.110)***
Trend	3.24E-012	(0.452)	6.046	(0.577)