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Master Thesis

**Institutional Factors affecting Investment
Inflows in Transitional Countries**

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Declaration of Authorship

I hereby declare that I elaborated this master thesis independently, using only the listed literature and resources.

Prague, July 24, 2012

Signature

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Abstract

This thesis investigates the relationship between institutional quality and the level of investment inflows in transitional countries from Central and Eastern Europe. We try to empirically verify the argument that institutional determinants are important in explaining the behavior of investment inflows in transition economies after 1990's. The role of institutions is being assessed using Worldwide Governance Indicators developed by Kaufmann. Consequently, in order to investigate the institutional quality progress specific for transition economies, we employ indicators developed by European Bank for Reconstruction and Development. Applying a panel-data set for ten countries in a period between 1996 and 2010, we conclude that there is a significant impact of institutional quality on investment inflows. In the regression benchmark performed with Kaufmann indicators, we managed to observe an indirect effect due to the fact that the information available on institutions is already incorporated in the macroeconomic variables. In the regression benchmark considering EBRD indicators, we managed to report a clear significance of the institutional determinants on the level of foreign investments.

Keywords

Foreign Direct Investment, Institutions, Institutional Determinants, Central and Eastern Europe, Transition Economies, Kaufmann Indicators, European Bank for Reconstruction and Development, Panel Data, Indirect effect

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Acronyms

BIT	Bilateral Investment Treaty
CEE	Central and Eastern Europe
CIS	Community of Independent States
EBRD	European Bank for Reconstruction and Development
EU	European Union
FDI	Foreign Direct Investment
FE	Fixed Effects
GDP	Gross Domestic Product
ICRG	International Country Risk Guide
LSDV	Least Square Dummy Variable
MNE	Multinational Entity
OLI	Ownership, Localization and Internationalization
RE	Random Effects
SEE	Southern Eastern Europe
UNCTAD	United Nations Conference on Trade and Development
UNECE	United Nations Economic Commission for Europe
WBEI	World Bank Economic Indicators
WGI	World Governance Indicators

Master Thesis Proposal

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Proposed Topic: Institutional Factors affecting Investment Inflows in Transitional Countries

Topic Characteristics:

With the rise of globalization, Foreign Direct Investment has been increasingly seen as an important stimulus for productivity and economic growth for both developed and transitional countries. As far as the Central and Eastern Europe is concerned the regions attract a very small share of the world FDI.

Most of the research papers stress the role of the market as one of the most significant factors for the attraction of FDI in the transition economies and only discuss the role of institutions and institutional factors. In the study, the role of institutions is investigated with a set of selected indices developed by Kaufmann and EBRD. This research attempts to empirically verify the argument that institutional determinants have an impact in explaining the behavior of direct investment inflows in the transition economies after the 1990's. The paper uses a panel-data set for 10 countries of the CEE region for a period from 1996 to 2010. The transitional countries employed in the study are: Czech Republic, Slovakia, Moldova, Romania, Hungary, Lithuania, Bulgaria, Belarus, Ukraine and Poland. With using both traditional and specific determinants, we extend the previous research that mainly focused on stressing the role of macroeconomic indicators as the most significant factors in the attraction of FDI inflows in transition economies. The proposed econometric model relies on a panel data set which aims to capture the dynamic behavior of the parameters and provide a more efficient estimation of the parameters employed in the model.

Hypotheses:

1. Higher FDI inflows are associated with a more stable and developed macroeconomic environment
2. The more safe and reliable are the political, economical and social institutions in a country, are higher are the FDI inflows.

Methodology:

This research applies panel data analysis including testing for fixed and random effects. In order to evaluate the significance of an estimator versus another estimator, Hausman Test is employed. Frequency of the data is annual and it is from 1996-2010 for the ten transitional countries included in the study. Data is available from sources like: World Bank Economic Indicators, World Governance Indicators, UNECE Statistical Division Database, European Bank for Reconstruction and Development.

Outline:

1. Introduction
2. Theoretical Framework
3. Methodology and empirical strategy
4. Results and Interpretations
5. Conclusions

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Chapter I Introduction

With the rise of globalization, Foreign Direct Investment has been seen as an important stimulus for productivity and economic growth for both developed and developing countries. Receiving foreign capital contributes to the economic growth thus countries tend to develop sustainable conditions to attract investment inflows into their economies. Although the level of FDI increases continuously, the distribution between countries is unequal. As far as the CEE, the region attracts a small share of the world's FDI. The available literature tries to explain the uneven allocation by providing empirical analyses on the main determinants specific for transition economies. Most of these investigations stress the role of the market size, economic reforms and labor costs as the main factors attracting investment inflows without concentrating on the potential role of institutions. Taking into account these macroeconomic factors, this paper investigates the cases of transitional economies from CEE region and tries to empirically determine whether the quality of institutions of the host country like voice and accountability, political stability, government effectiveness, banking reforms, privatization process also have a significant impact on the decision making process of the investors.

The quality of the institutional framework can be employed for explaining the cross country differences in attracting FDI. Daude & Stein (2004) emphasize the significance

of institutional factors for the FDI levels, fact also supported by Pournakis & Varsakelis (2002) and Fabry et al. (2006). However, there are also authors like Wernick (2009) which concluded after his research that he is unable to observe any clear relationship between institutions and the level of investment inflows. Therefore, the aim of this project is to fill a gap in the current debate on the main determinants in CEE by providing an econometric analysis of the potential institutional factors affecting investment inflows in ten transitional countries, covering a period of 15 years from 1996 to 2010. We examine if there is any linkage between the quality of institutions and the level of FDI inflows. We develop a model that combines traditional FDI determinants and specific institutional indicators which are expected to play a significant role in explaining the cross-country variation in FDI inflows. Institutional quality is being assessed using two sets of indicators. First group relates to the Worldwide Governance Indicators developed by Kaufman and the second one is closely related to the issues of transitional economies from CEE and it is provided by the European Bank for Reconstruction and Development. By using both traditional and specific determinants, we extend the previous research which mainly emphasized the macroeconomic determinants as main drivers for increasing the level of investment inflows. The proposed econometric model relies on a panel data set which is developed in order to capture the dynamic behavior of the parameters in the regression in order to provide a more efficient estimation of the parameters employed in the model.

The thesis is structured as follows: Chapter 2 summarizes the literature available on FDI, institutions and empirical investigations of the impact of institutions on FDI inflows. We discuss the importance of theoretical and empirical findings for a broader understanding of the topic. Chapter 3 provides the detailed information on empirical strategy employed in this thesis including variables description, hypotheses and model specification. Chapter 4 provides the results on the empirical strategy employed and state the preliminary conclusive remarks. Chapter 5 summarizes all the findings of this research. Chapter 6 provides insights regarding value added from this empirical investigation and further research plans.

Chapter II Theoretical Background

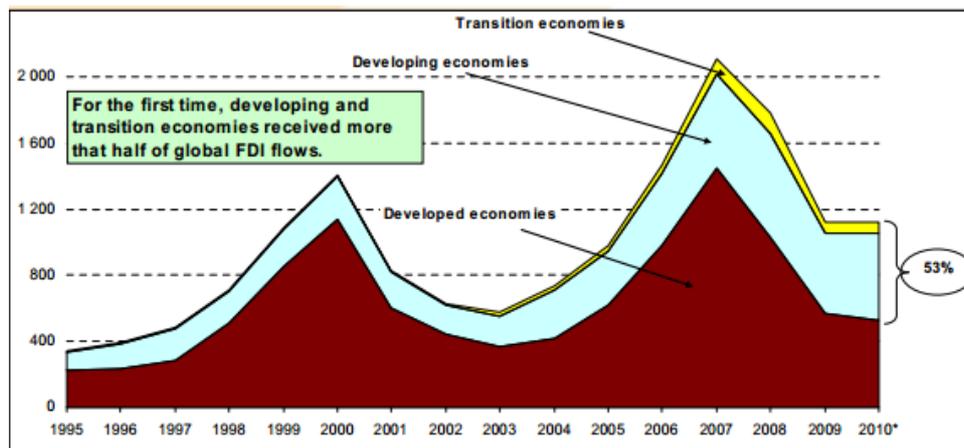
2.1 Foreign Direct Investment

FDI is considered a type of investment that includes the insertion of foreign funds into an entity that operates outside the country of origin of the investor. Grčić & Babić (2001) stated that FDI has specific features in comparison with other forms of capital and financial transactions and unlike classical loan it is more based on investors' long-term interest in the area in which they invest. Generally, firms invest in countries with favorable economic and political environment in order to minimize transaction costs and maximize their profit.

There are two types of FDI known, horizontal and vertical; however in practice the difference between these types is often unclear. Demekas et al. (2005) in his research stated that horizontal FDI is targeted towards the local markets of the host country, when the national production is considered more profitable thus source countries instead of considering exports, expand their activity in the market of the host country. Vertical FDI's are oriented on minimizing the costs of investment. In this case MNEs choose the location of each entity in order to minimize global costs. Thus, investors based on these differences choose to expand their activities in different countries. Accordingly market size would represent one of the main determinants for horizontal FDI and cost of labor for vertical FDI. Although, Demekas et al. (2005) suggests that horizontal FDI are observed on a large scale in comparison with vertical FDI, both types can be encountered simultaneously.

Since the 1970s, a significant increase in the FDI inflows has been observed in the world economy. Moreover, the growth of FDI inflows has exceeded the growth in world trade and world output (Bissoon 2011). According to Diaz (2004) during the second half of 1990's, worldwide FDI grew four times faster than the domestic output, twice as fast as domestic investment and three times as fast as exports. The trend however showed that most of the FDI inflows were absorbed by developed countries. The situation changed after 2007 (see Figure 1) when, for the first time, developing and transitional countries absorbed more than half of the global FDI inflows (UNCTAD, 2011).

Figure 1 FDI inflows, global and by groups of economies, 1995-2010 (USD billions)



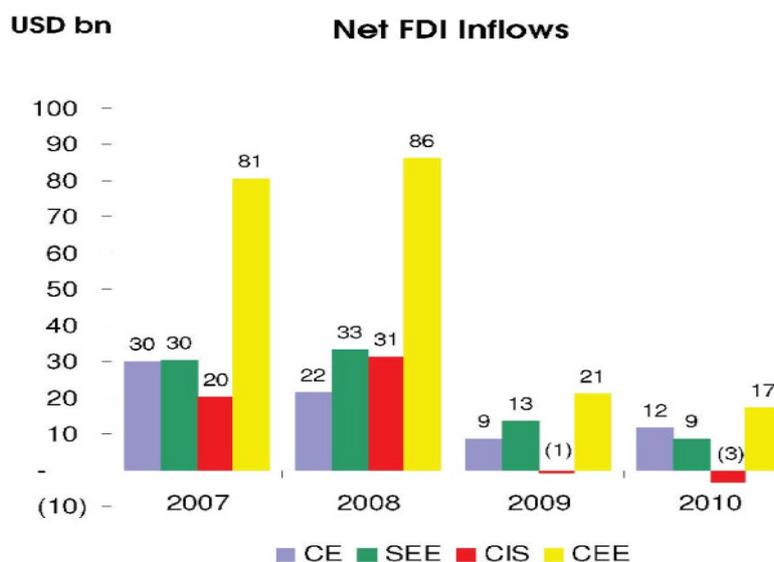
Source: UNCTAD, Global Investment Trend Monitor

For transition economies, increase in the FDI inflows represents a significant improvement for their economic growth strategy. Bevan & Estrin (2000) stated that the main problem of these economies is the lack of capital and technology necessary to spur growth while there are sufficient stocks of human capital. Focusing on CEE, the region became more eager and open to foreign investors after the political changes in the early 1990's. Their deteriorated economic conditions, has led them to begin massive restructuring in order to attract FDI.

Therefore, the foreign companies were expected to provide assistance through various channels. One of them would be competitiveness improvement via innovation in products, production processes and organizational issues. Secondly, it would provide a financial support in order to reduce the existent debt burden and finally would improve

the social imbalances concerning level of poverty, job losses and low income (Pournakis & Varsakelis, 2002). In the last years, massive FDI inflows were observed in CEE region which emphasizes that these economies have made significant progress and therefore investors are more orientated towards these markets. Figure 2 emphasizes this assumption, where it is obvious that CEE is an uncontested leader among neighborhood regions. The uneven distribution can be determined by localization advantages, political, social and economical progress which might have influenced the decision making process in a positive way. CEE region starts to earn credibility which consequently gives an impulse to these countries to continue the socio-economical and infrastructural development. It is a both sided effect since host countries beneficiate of financial assistance and source countries are provided with advantageous incentives.

Figure 2 Increase in FDI inflows in CEE, 1997-2010 (USD billions)



Source: Raiffeisen Economic Research Department

Besides the recorded progress, there are certain characteristics that investors take into account when deciding to invest in a specific region. According to Dunning (1988), there are several factors that attract or restrain the level of FDI inflows. He provides a theoretical framework where it is argued that FDI are determined by three set of advantages: ownership, localization and internationalization and it is also referred as the Dunning's OLI paradigm.

Ownership advantages refer to the ability of a company to hold products and services that cannot be easily duplicated by competitors or possession of sufficient financial resources required to enter specific closed markets. Porter (1980) emphasized that in order to provide a firm with competitive advantage in entry-mode selection process it is vital to possess unique and sustainable ownership advantages.

Localization advantages refer more to the issues regarding the market under consideration, market risk, market potential, market expansion available to all firms etc. (Dunning 1988). Researchers like Pournakis & Varsakelis (2002) consider CEE, region that exhibits more localization advantages. From the supply side they offer cheap labor force and corporate taxation and from the demand size they offer market growth and good social infrastructure.

Finally, internalization advantages arise with the costs associated with choosing a hierarchical mode of operation over an external mode (Dunning 1988). These are the transaction costs and due to the fact that they cannot be calculated accurately before the international operation has been established, many studies exclude this factor (Dunning 1993).

Consequently, Dunning developed a framework concerning MNEs on their strategies and motives when investing abroad. According to Dunning (1993), MNEs can be classified in three categories: market seekers, natural resource seekers, efficiency seekers. Market seekers take in consideration the market size and market growth of the host country. This process involves replication of a production technology in the host country. Resource seekers, on the other hand, are more interested in the resources available in the host country that are not significant in the home country. These can include natural resources, quality raw materials, cheap labor force. Finally, efficiency seekers rely more on the quality of institutional arrangements, economic policies, demand patterns, market structures that they consider when concentrating production in specific locations that would be able to supply multiple markets.

However, even if at a first glance it may seem that CEE region mainly attracts market-seekers, Dunning (1999) and Pournakis et al. (2001) argued that the presence of natural resources and cheap labor force, do not seem the main drivers of attraction for FDI nowadays. They stated that MNEs are slowly shifting to efficient-seeking FDI therefore the emphasis is now more on quality and stability. Even though inexpensive labor might not always be the main driver for FDI investors, Botric & Skuflic (2005) state that FDI

into developing countries consist more in knowledge transfer using the production already present in the host country. Nevertheless, authors mention that labor market conditions of a country are of significant importance. Besides inexpensive labor, one should also take in consideration the productivity and capability of the labor force.

Because of the growing importance of FDI in the world economy, especially in transitional countries, a vast empirical literature on FDI determinants has been developed. The literature on FDI in CEE has established market size as the most significant factor that investors base their investment decisions upon, fact confirmed by many empirical studies (Carstensen & Toubal (2004); Janiniski & Wunnava (2004)).

One interesting finding was made by Barry (2002) who stated that the high level of FDI inflows are due to the overall market framework advantages and not an attempt to integrate these economies in the EU production framework. Along market size, authors like Garibaldi & Mauro (2002); Bevan & Estrin (2000); Janiniski & Wunnava (2004); found that determinants like labor costs, trade openness, macroeconomic stability, economic reforms can as well explain the level of FDI inflows in these countries. However, until recently most these studies have focused on macroeconomic variables only but in the past ten years, more attention was given to political and economic institutions in order to explain investors' decisions. Therefore, this paper tries to assess the impact of institutional quality on the investors' decision making process along with macroeconomic determinants, compare the results with the existent literature available and make its own contribution in the investigated field.

2.2 Institutions and Foreign Direct Investment

For many years institutional framework of a country was not taken in consideration when analyzing the level of investment inflows. Moreover, in economic theory, the role of institutions has been often ignored completely. In institutional economics, the term "Institutions" has a variety of meanings. In this study they are considered and accepted as the "rules of the game" in a society, North (1990). "They provide rules, constraints and incentives that are instrumental for the governance of exchanges. They consist of both informal constraints (sanctions, taboos, customs, traditions and codes of conduct) and formal rules (constitutions, laws, property rights)", North (1990).

The institutional framework consists of three components: formal rules, informal rules and enforcement mechanisms. Formal rules are considered the written rules of a society. Examples of formal institutions can be considered regulation of banks, imposition of tariffs and quotas, laws governing contracts (North, 1990). On the other side, informal rules are the unwritten rules that govern the social life. These include norms of behavior and codes of conduct. The third aspect of the institutional framework is enforcement- this aspect determines the effectiveness of the rules. Ali, Fiess & McDonald (2008) found that quality or good institutions, including efficient enforcement, decrease the cost of doing business and increase profitability from the economic activity.

Based on the areas they regulate, institutions can be classified in economic, political and social. They matter the most when investors decide to expand their activity in a certain area. Dumludang et al. (2009) in their research assessed the role of each entity. Thus economic institutions are responsible for the degree of property rights protection and enforcement of contracts while political institutions put more emphasis on regulation of the political power and social institutions refer more to the issues of social environment.

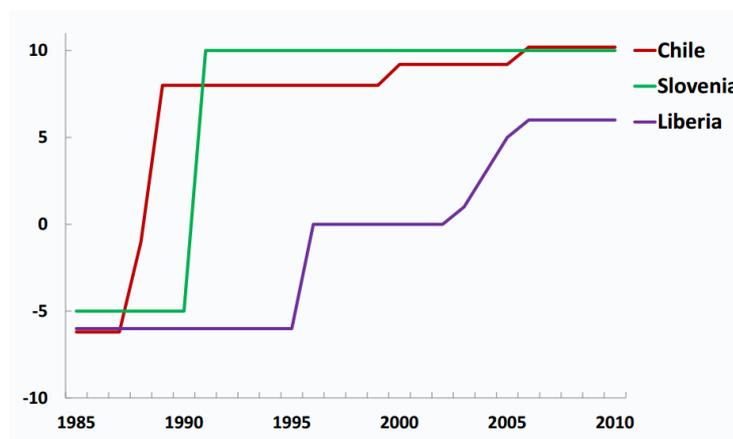
Therefore, institutional determinants depend on the efficiency of government policy implementation and also on characteristics of political and social entities. These characteristics include the level of political and social risks, transparent regulatory framework, political stability and effective property rights protection, the rule of law, lack of corruption and efficient banking environment. All these features encourage investment and spurs productivity. For instance, political stability and efficiency of the judiciary system is supposed to increase the credibility of investors that their property rights will be protected. This is considered a significant factor since lacking the protection in property rights may lead to expropriation which may decrease the chances of companies investing in a certain area. Level of corruption creates conditions for the unfair competition development which creates barriers for the investors. The taxation system is also taken in consideration since high taxes are associated with growth inhibition, productivity harm and investment discouragement. A flexible taxation system might encourage investors and remove existent barriers towards productivity growth process. Economic integration can also have a positive and dynamic effect on FDI inflows.

Considering the democratic and political regime framework worldwide, Daniel Kaufmann, at the annual conference on institutional development held in Cairo, Egypt

in 2012, has discussed about the division of transition economies in three categories. First category includes the improving/performing economies which are considered to have established a considerable increase in terms of institutional quality. From the second group, there are stagnating economies which across time did not present any improvement in the political and democratic framework of the country. From the last group, countries that emphasize a deteriorating institutional dimension are included. They are called Deteriorating Group and they underline the unsatisfactory institutional development which contributes to a decline in their further economic, political and social growth.

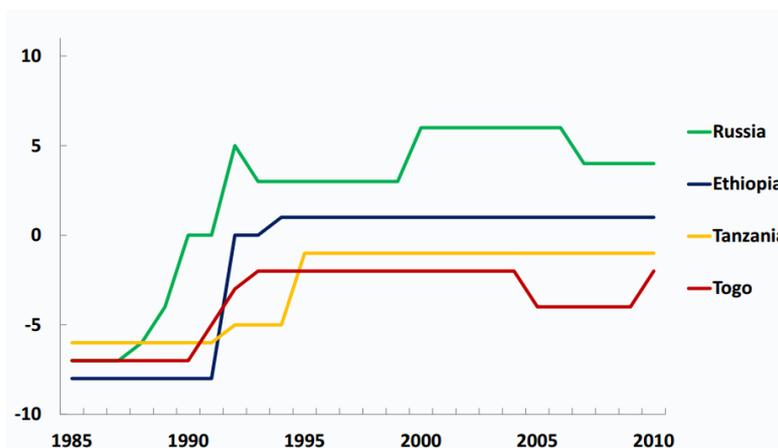
A graphical representation of the three groups described above can be observed in the figures below. We notice a conglomeration of countries from various parts of the world. The charts are mostly represented by African countries which are prevalent in the last two groups of unsatisfactory institutional determinants. One interesting finding is the fact that Russia, which is a developing country, has registered insignificant institutional development progress. It may be assumed that this criterion can be interpreted as a fact that bureaucratic and corruption elements are still persistent in their economy from the communist era, which creates a blockage for institutional development. However, besides these elements, we assume that mentality factor also plays an important role. Even though CEE region is not present in the chart it does not mean it is not included in the dataset itself. The fact that Slovenia is part of the Performing Group makes us believe that other countries from CEE are included due to the localization factor.

Figure 3 Institutional performances of selected countries from Improving/Performing Group, 1985-2010



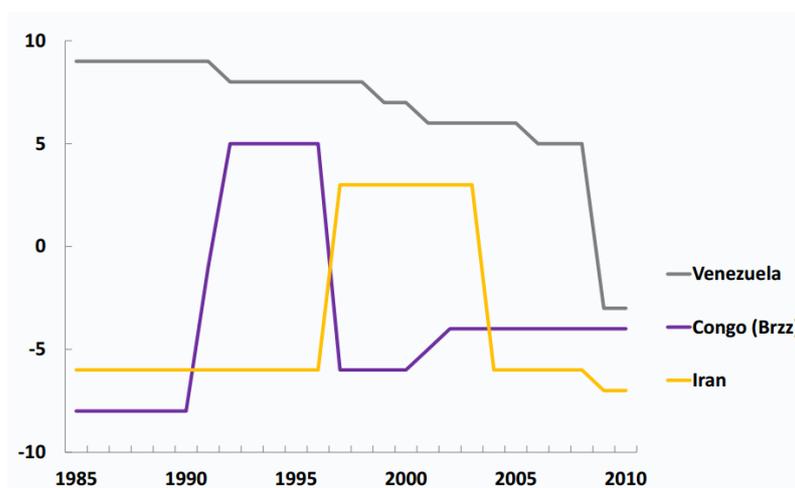
Source: Polity IV Project: Political Regime Characteristics and Transactions

Figure 4 Institutional performances of selected countries from Stagnating Group, 1985-2010



Source: Polity IV Project: Political Regime Characteristics and Transactions

Figure 5 Institutional Performances of selected countries from Deteriorating Group, 1985-2010



Source: Polity IV Project: Political Regime Characteristics and Transactions

One may assume as well that there is a positive relationship between the FDI inflows increase and EU enlargement process. This may be explained by the fact that investors perceptions may gradually change due to the fact that with economic integration there are incentives for the economies to harmonize with the EU legislation which consequently creates a favorable environment for investment. On the other hand, EU membership may not be considered very significant determinant, especially in CEE region where market size and cheap labor force were determined as main factors influencing investment inflows. In this matter, EU integration feature can be viewed from different perspectives therefore the outcomes may differ as well.

The next section will present empirical evidence on the impact of institutional determinants on the level of FDI levels with an emphasis on CEE region.

2.3 Review on the determinants of FDI- Role of Institutions

The empirical investigation on institutional quality is rather limited despite the vast research performed on determinants of FDI. The available literature mentions that factors like effectiveness of property rights, sound and stable regulatory framework, economic freedom and lack of corruption are of significant importance for investor decision making process. According to the review studies, the localization advantages that make some countries more attractive than other countries are the following: size of the market, macroeconomic stability represented by inflation, cost of labor, economic growth, trade openness, political stability, transparent regulatory framework, corruption, privatization process, EU membership (Dumludang et al. 2009). The institutional variables have been studied along with the basic macroeconomic determinants to assess the impact of attracting or constraining the level of investment inflows. The econometric methods applied include panel data regressions and cross-section time-series analyses.

An early attempt to study the impact of institutions on FDI level was made by Wheeler & Moody (1992). Taking the first principal component of 13 risk factors (including quality of legal system, corruption, bureaucracy and political instability), they did not find that “good” institutions have a considerable impact on the location of US foreign affiliates. However, the index included also factors like inequality level and environment of expatriates that are not directly related to the quality of institutions.

Among other earliest attempts to investigate this relationship was made by Rodrick (1999). In his econometric specification he added “social conflict” indicator as one of the explanatory variables. The empirical results have shown that what really matters are the rules of games of a society.

Daniele & Marani (2006) discuss the potential channels through which institutions may affect the level of investment. First, the presence of good institutions tends to improve factor productivity and subsequently stimulates investments, regardless domestic or external. Secondly, good institutions associate with reduction in investment related transaction costs (for instance corruption related costs). Finally, FDI engage high sunk costs. Thus, good institutions will add more credibility and security for MNEs.

The impact of both macroeconomic and institutional variables was studied by Ali, Fieiss & McDonald (2008). They employed a panel regression analysis for a sample of 107 countries from 1981-2005 and examined variables like GDP growth, trade ratio, inflation, institutions, government size, human capital, years of high education, property rights, natural resources and their impact on FDI inflows. To measure quality of institutions they employed the ICRG index which incorporates twelve dimensions. They concluded that both macroeconomic framework measured by market size, openness of trade, inflation and institutional one, are statistically significant in all model specifications. They managed to show empirically that institutions together with the basic determinants of FDI inflows, are important for the decision making process of the investors.

However, the empirical evidence is quite diversified in concluding remarks and some do not support hypotheses regarding the significant impact of the quality of institutions. For instance, Jensen (2003) focusing on 114 developing countries worldwide using a panel regression for years 1970-1997, found that expropriation, corruption level, bureaucratic framework and rule of law are insignificant determinants while trade openness and economic growth appear to be important factors influencing FDI inflows. Therefore in this case we might assume that investors are relating more to the macroeconomic framework of a country rather than its institutional quality. On the other hand, authors like Busse & Hefenker (2005) when analyzing a data sample consisting of 83 developing countries from 1984-2003, indentified that indicators that matter the most for investors are government stability, law and order, bureaucratic quality and

democracy level. The level of macroeconomic stability represented by inflation and corruption turned out to be less significant determinants.

Another empirical investigation regarding the impact of institutions was performed by Daude & Stein (2004) where they used a set of indicators developed by Kaufman. These indicators are constructed based on a variety of surveys and polls of experts. These are: Voice and Accountability; Political Stability; Government Effectiveness, Regulatory Quality; Rule of Law and Control of Corruption. The indicator of voice and accountability measures citizens' freedom and civil rights and their impact in government affairs. Political stability indicator relates to the possibility of violent actions against the government in power. Government effectiveness is determined by the quality of public services in providing sustainable results. The rule of law shows to which extent the nation follow the rules and regulations stated by the judiciary framework. Control of corruption measures at which level the public goods are attained by private entities for their own benefit. The authors used a model of unobserved components, which enabled them to achieve the level of coverage of approximately 160 developing countries for each of the indicators. The results showed that the quality of institutions is statistically significant and economically very important. Moreover, they concluded that not all institutional indicators are of the same importance in the decision making process. Excessive regulatory quality and government effectiveness seemed to play a more significant role in attracting FDI inflows.

Analysis on institutional quality in transition countries is of major interest since these economies, in general, represent a suitable natural environment model for studying institutional improvements of economic development (North, 2005). The change of the economic system in former socialist countries included a significant institutional change which allows researchers to econometrically test the importance of institutions for several areas of economic life.

Among the earliest attempts to investigate institutional framework in transition economies was made by Holland & Pain (1996). The authors examined the time-series of 11 transition countries from 1992-1996 using the specific transition indicators from EBRD database. The analysis showed that besides macroeconomic indicators like trade openness and cost of labor, method of privatization appeared to be an important determinant influencing FDI inflows. The outcome of this research can be catalogued as

reasonable due to the fact that the beginning of the 1990's was characterized by massive privatization process across former soviet countries.

Greek authors, Pournarakis & Varsakelis (2002), analyzed institutional environment impact on investment inflows of 10 transitional countries from CEE region for the period 1997-2000. They found that weak civil and political rights prevent the country being attractive to foreign investors. They concluded that a transparent business environment in these countries is a significant advantage regarding the attraction of FDI from EU member states.

Consequently Grosse & Trevino (2005) have examined the relationship between FDI inflows in CEE countries and institutional development regarding government efforts to stabilize and create a more favorable investment climate. Their results indicate that the corruption level is influencing negatively the investment inflows while the low level of repatriation restrictions and the presence of BITs are positively related to the FDI inflows.

Susjan & Redek (2007) were also among the researchers that dedicated their time in analyzing the relationship between institutional quality and FDI inflows in transition economies. Their findings confirm the assumption that FDI can spur economic growth in transition economies and that institutions play an important role on the level of FDI. Employing institutional indicators from Heritage Foundation database, they emphasized that property rights protection; regulation and black market are major institutional determinants for FDI inflows.

EBRD transition indicators have been engaged in various empirical studies due to the fact that they are more closely related to the issues of transitions economies from CEE region. Fabry & Zeghni (2006) employed these indicators in their studies focusing on the type of ownership, banking sector reform, trade liberalization and legal development. They analyzed the time-series of 11 transition economies and their findings suggest that property rights protection is among the main determinants of FDI inflows since investors are extremely sensitive to expropriation issues. Along with property rights, private sector development and overall regulatory framework were observed to significantly influence investors' decision making process.

The same authors analyzed as well the importance of EU membership variable in explaining the level of FDI in transition economies. It was stated that FDI are more

sensitive to institutions in non-candidate countries than in future or existent EU members. This can be explained by the fact that before joining EU, candidate countries make substantial effort to improve their legal, political and economical institutions shifting towards more stable and transparent rules.

The EU integration process positively affected FDI inflows in CEE in the last years. To prove this assumption, Bevan & Estrin (2000) constructed variables which represented significant political announcement for admission of CEE countries into EU as a results of the progress made by candidate countries in fulfilling membership criteria of the Essen European Council Meeting in 1994-1995 and the Agenda 2000 document which announces the “first” and the “second” wave countries. The results show that the countries announced in the future perspective of EU enlargement, improved their image as investment destinations. Consequently, the same authors mention that countries like Czech Republic, Hungary, Slovakia and Poland observed an increase in the FDI levels after the official announcement. They suppose that positive feedback related to the progress of these countries, might improve their institutional quality because they comply more with the EU requirements.

Latest research made by Tintin (2010) also emphasizes the major impact of EU membership variable for CEE countries. Tintin stated that “given the role of European investors, who account for 78% of total FDI inflows, it is logical to apply the EU membership prospective variable when trying to explain FDI inflows level”. Being an EU member requires a mandatory improvement of institutional framework such as economic freedom, political rights and civil liberties. The author mentioned as well that economic freedom is directly affecting the business and investment environment thus having a particular importance among others. Therefore one may assume that EU membership indicator might be an important determinant in explaining the FDI level in CEE countries.

The framework regarding EU membership can be viewed as well from a different perspective. On the other side, non-candidate countries may not be considering these requirements since investors emphasize these institution as less stable and reliable therefore they may not have the incentive to initiate quality improvement process. Also, EU commission may hold different reasons when announcing potential future candidates. Barry (2002) analyzed the EU framework in detail and concluded that the entity is considering more the localization and ownership advantages and the

announcements do not represent an attempt to integrate these economies into the EU dimension. Bos & Van de Laar (2004) also concluded in their research that investors do not consider the progress made by economies in the development towards EU integration but are more interested in their economic features and framework. Consequently, Witkowska (2007) later on analyzed the correlation between the business environment and EU membership status. She concluded that there is a positive relationship observed and being a formal member of the EU community might induce more business opportunities for the specific countries thus more investment inflows. However, this statement can be argued when we analyze the “Starting a business” index provided by annual World Bank reports for a set of ten countries from CEE region (see Table 2.1), we observe that in the top of the chart there is Belarus, a country which apart from the fact that it is not a formal EU member it has also imposing economic and political restrictions applied by the European community. We can thus assume that even though this country has made significant progress in developing a favorable business environment, it still does not attract considerable amounts of FDI inflows. Thus, being a formal or non-formal member does not always provide with better incentives since there are cases like the one discussed now, when a country is not considered for investment purposes although the expert surveys state that the business climate has been improved considerably.

Table 2.1 “Starting a business” Index for transition economies, 2010-2012

<i>Country</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>
Belarus	7	7	9
Hungary	39	37	39
Romania	42	31	63
Bulgaria	50	43	49
Slovakia	66	74	76
Moldova	77	96	88
Lithuania	99	89	101
Czech Republic	113	130	138
Poland	117	115	126
Ukraine	134	118	112

Source: International Finance Corporation, World Bank

Kaufmann Indexes are also employed on a large scale in explaining the level of FDI inflows referring to the transitional institutional environment. Wernick et al. (2009) based on the six indicators retrieved from WGI, searches for dependency of FDI level on the institutional and policy environment level of the host country. The estimation results presents that control variables GDP and trade openness appear to be the most significant determinants while inflation proved to be insignificant. The analysis indicated as well that there is no clear relationship between institutional quality and FDI levels and they were not able to assess if the quality of institutions is an important determinants. The concluding remarks of Wernick et al. (2009) are in contrast with the findings of Anghel (2005) which managed to identify different aspects of the quality institutions from a country almost always significant regardless of the control variables used in the regression.

All these results however must be treated with accuracy due to the fact that there is no guarantee that all these investigations exhibit totally perfect estimation results. In this matter, after considerable literature review on both macroeconomic and institutional determinants, we will perform our own empirical investigation by providing an econometric analysis employing both Kaufmann Indicators and EBRD transition indicators, separately for each regression specification.

Chapter III Empirical Investigation

3.1 Empirical Strategy

This study aims to fill a gap in the current debate on the determinants of FDI Central and Eastern Europe by providing an econometric analysis of the institutional factors affecting investment inflows in 10 transitional economies, namely, Moldova, Romania, Hungary, Czech Republic, Belarus, Lithuania, Bulgaria, Ukraine, Poland and Slovakia covering a period of 15 years from 1996-2010. We attempt to explain if there is any linkage between the qualities of institutions and the level of FDI in the examined country. We developed a model that combines traditional FDI determinants and the specific transitional factors (such as control of corruption, political stability, government effectiveness etc.) that are expected to play a significant role in the decision making process of multinational companies that have invested in these countries. With using both traditional and specific determinants, we extent the previous research that mainly focused on stressing the role of macroeconomic indicators as the most significant factors in the attraction of FDI inflows in transition economies. The proposed econometric model relies on a panel data set which aims to capture the dynamic behavior of the parameters and provide a more efficient estimation of the parameters employed in the model.

3.2 Dependent Variable

Along the lines of previous research, the endogenous variable in this study was chosen Foreign Direct Investment inflows per capita. Using per capita values allows us to take the relative country size into account. The values for FDI per capita for each country employed were obtained by performing the ratio of FDI (BoP in current US \$) for country i at time j divided by the total number of population for each country separately. Values for both indicators were collected from the World Bank Indicator Database (WDI DATABANK 2010). Frequency of the data is annual and it is from 1996-2010 for the ten transitional countries employed in the study. Thus the dependent variable (in all ten countries) is Log of FDI per capita and the independent variables that are expected to determine the FDI inflows were carefully chosen, based on previous literature and availability of the dataset for the selected period.

3.3 Independent Variables

Dunning (1988) in his OLI paradigm framework discussed previously, suggested that there are several factors that one should consider when analyzing FDI inflows into a country. Moreover, considering these factors many companies base their investing decision upon. Following this approach, the expected factors to determine the size of FDI flows in transitional countries employed in this study are:

► **Market Size** is represented by GDP per capita using purchasing power parity rates. It is considered one of the most important factors in explaining foreign investment (Chakrabarti, 2001)¹. In our study it is used as a proxy for market size and indicates the attractiveness of a specific location for investment. It captures potential economies of large scale production. The data for this variable is derived from the World Bank Economic Indicators. It is expected to be a positive and significant determinant of FDI inflows, fact confirmed by numerous empirical studies (Bevan & Estrin (2000); Asiedu (2002); Garibaldi, 2002).

► **GDP growth rate:** It is expected that a higher growth rate of GDP will attract more FDI. GDP growth indicates a precondition for economic expansion (Dumludang, 2009). Investors are attracted to countries with faster growing markets, fact confirmed empirically by various studies (Barrell & Pain (1996); Trevino (2002)). Annual percentage growth rate of GDP is retrieved from World Bank Economic Indicators and it is expected to be positive and significant determinant of FDI inflows.

¹ Note that we are using FDI per capita values as the dependent variables. Thus, we have to use GDP per capita too

► **Openness:** It shows the extent of international openness to trade. In the literature, the ratio of trade to GDP is often interpreted as a measure of trade restrictions. In general, the impact of openness to trade is linked to the type of foreign investment (Asiedu, 2002). Horizontal FDI may be attracted by higher trade barriers since at the same time it protects the output of foreign investor in the local market against imports of competitors, also known as the tariff jumping hypothesis (Busse & Hefeneker, 2005). At the same time, multinationals involved in exports-oriented investment, also known as vertical FDI, might prefer investing in more open economies since the presence of trade barriers increase transaction costs. Also, trade restrictions may be linked to other forms of policy imperfections, especially present in transition economies, leading to reduction of investment inflows. Overall, trade openness may be positively or negatively associated with FDI, depending on the country sample. It is proxied as the ratio of Exports plus Imports divided by GDP and the data is available from the World Bank Economic Indicators. The empirical evidence suggests a positive relationship in the case of transition economies therefore we expect this factor to be a significant determinant of FDI in this region (Chakrabarti, 2001).

► **Labor Cost:** It has always been argued that labor costs are a major component of total production cost and productivity of firms. In the empirical analyses we often encounter wage variables since it is particularly true for labor-intensive production activities that higher wage might deter FDI. Generally, higher labor costs impose the cost of production to increase and thus lead to FDI outflows or less FDI inflows (Ranjan & Agrawal, 2011). In this case, we expect negative sign of the coefficient (e.g. countries with lower labor costs would attract more FDI). As a measure for labor costs we employ the log of Gross Average Monthly Wages for country i at time t . The data is collected from UNECE Statistical Division Database, compiled from national and international (OECD, EUROSTAT, CIS) official sources. The wages are computed using nominal exchange rates.

► **Inflation:** The attraction of a particular market is further enhanced if the country has a consistent macroeconomic stability. This stability implies small budgets and trade deficits, low inflation and interest rates which is likely to reduce the risk premium for foreign and domestic investment and most importantly decrease transaction costs (Busse & Hefeneker, 2005). Therefore as a proxy for macroeconomic stability we added annual inflation rate for the sample period, as it can be expected to be closely linked to policy distortions such as fiscal and monetary imbalances. It is expected a negative sign

for this coefficient as generally lower inflation should boost FDI inflows. The data is reported from the World Bank Economic Indicators.

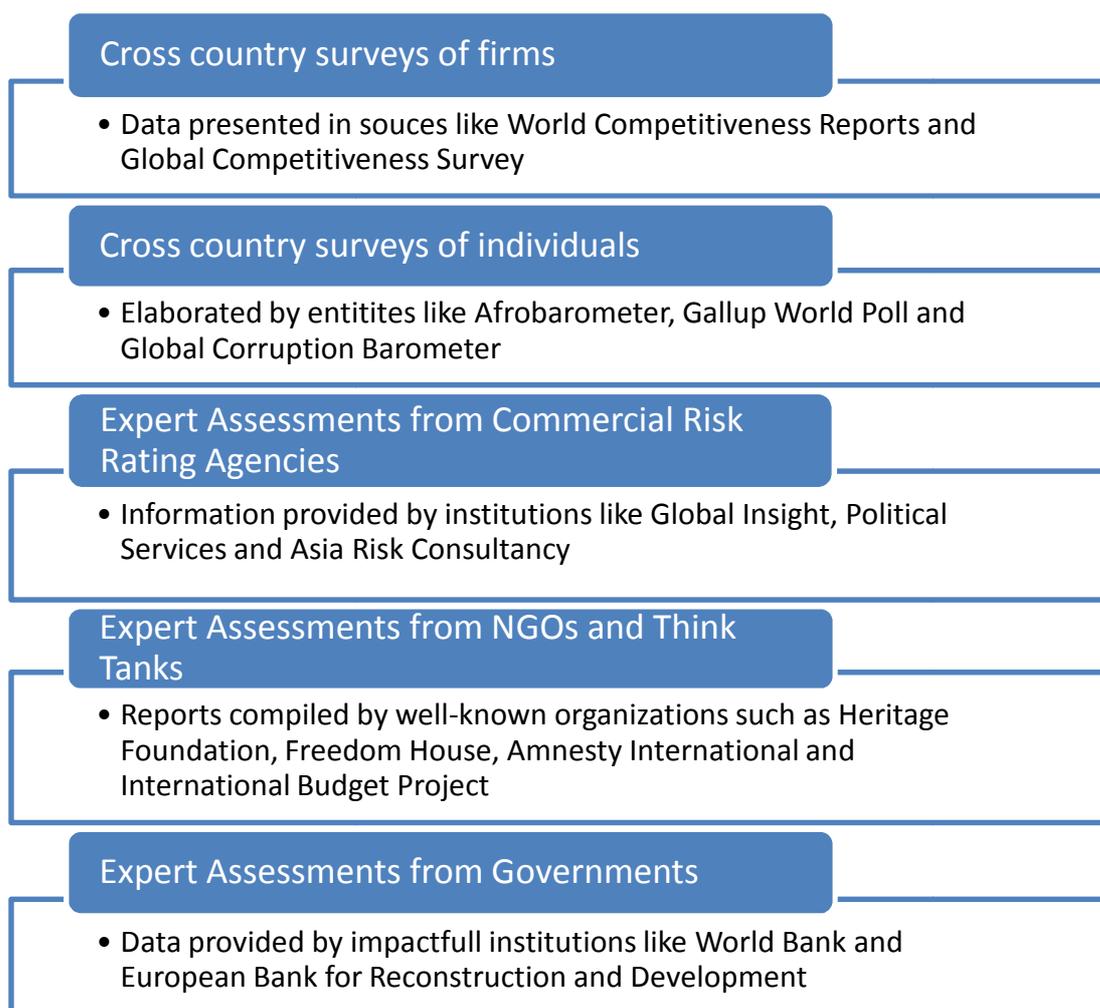
► **EU membership:** EU accession allows membership in the Single European Market and offers firms located in current EU members countries the opportunity to reallocate production to countries with lower labor costs (Bevan & Estrin, 2004). Moreover, being an EU member may be viewed by potential investors as a reducing country risk because the requirements for admission in the EU community guarantee a well-developed legal and institutional environment. Data was retrieved from the EU Commission Database. In this matter, we employ EU membership dummy and we expect a positive sign since EU membership associates with better institutions and therefore a better investment climate.

3.4 Institutional Variables

3.4.1 Kaufmann Worldwide Governance Indicators

In order to assess the role of institutions as determinants of the location of FDI, we primarily use a set of institutional variables developed by Kaufmann. These indicators are constructed based on information compiled through a wide variety of cross-country surveys as well as polls of experts (Daude & Stein, 2007). Data on six institutional dimensions covers 213 countries over the period 1996-2010. It is considered a combination of hundreds of indicators retrieved from over 30 organizations and data sources. Some of the individual sources for constructing WGI are presented in the figure below.

Figure 6 Sources for constructing Worldwide Governance Indicators



Source: Author's Demonstration

Therefore six different institutional indicators are constructed, each representing different dimension of governance (See figure 7). These indicators are recorded in such a way that they all have zero mean and unit standard deviation. In all cases, the scores lie between -2.5 and 2.5 where larger values indicate better institutions. They are constructed using the unobserved component model for aggregation. Indicators are available at a two-year frequency from 1996-2002 and at an annual frequency from 2002 onwards.

Figure 7 Worldwide Governance Indicators developed by Kaufmann



Source: Author's Demonstration

► ***Voice and Accountability***

Captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and free media (Kaufmann et al. 2007). Generally, it refers to the way authorities are selected and replaced. It focuses on different indicators related to the political process, civil rights and institutions that facilitate citizens' control of government actions.

► ***Political Stability and Lack of Violence***

This indicator measures the risk of destabilization or removal from power of the government in charge. It also determines if the removal from the power is made in a constitutional way. In cases of illegal actions measures the extent to which violent and terroristic actions were employed.

► ***Government Effectiveness***

The measure is related to the ability of the government to formulate and implement policies that will serve in the benefit of its citizens. It aggregates indicators on the quality of bureaucracy, the competence of civil servants, the quality of public service and the credibility of the government's commitment to its policies.

► ***Regulatory Quality***

This indicator is based on the ability of the government to implement sound regulations and policies that allows the development of private sector. It is more focused on the policies themselves like the existence of market-unfriendly policies such as price controls or inadequate bank supervision, as well as tax burdens imposed by excessive regulation in areas such as foreign trade and business development.

► ***Rule of Law***

This indicator includes variables that measure the perceptions on the effectiveness and predictability of the judiciary, as well as enforceability of contracts. This indicator measures to which extent the property rights are protected and also the level of succeeding in creating and developing an environment where fair and predictable rules form the basis of the social and economic interactions.

► ***Control of Corruption***

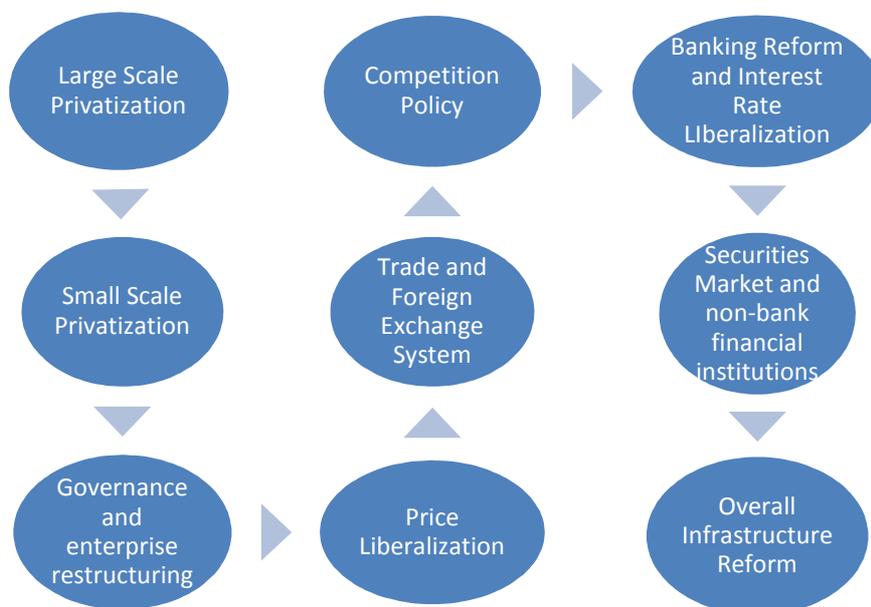
It measures perceptions of corruption, conventionally defined as the exercise of public power for private gain. According to their definition, the presence of corruption represents a failure of the governance. Corruption in political, economic or social systems associate with a threat for foreign investment, especially in the long run, influencing the financial and economic environment negatively. This factor decreases investors' credibility and reduces considerably chances of investment inflows.

3.4.2 EBRD Transition Indicators

In order to analyze the institutional environment specific for transition economies and compare with the results with the WGI developed by Kaufmann, we will employ indicators which are used in assessing the progress made in transition economies across Central and Eastern Europe. They are called EBRD indicators and they have been used to track reform developments in all transition economies since the proclamation of independence in 1989. EBRD stands for European Bank for Reconstruction and Development which has the main goal to assist and provide financial support to countries during the process of becoming open, market economies.

Progress is measured against the standard of industrialized market economies, while recognizing that there is neither a “pure” market economy nor a unique end-point for transition (EBRD Transition Report, 2011).

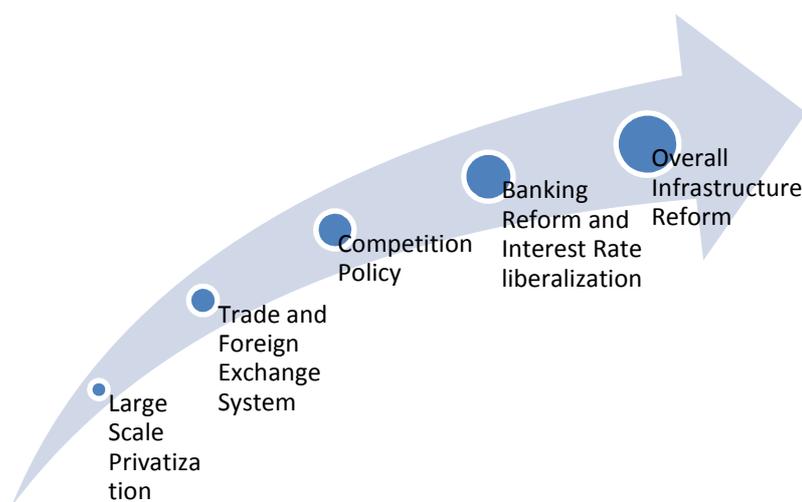
Figure 8 EBRD Indicators assessed for transition economies



Source: Author's Demonstration

The set of indicators provides annual data and it is measure on a scale from 1 to 4+, where higher value represents full transition to market economy and the lowest value-central planned economy. In this analysis, I will employ five out of nine indicators which I consider suitable taking in consideration all aspects of transition economies environment (See figure 9).

Figure 9 Selected EBRD Transition Indicators



Source: Author's Demonstration

Privatization process has been seen as a signal for commitment to private property which may determine important FDI inflows. Moreover, countries with bigger share of private sector have attracted more FDI than those with smaller private sector size, fact determined empirically by Holland and Pain (1996). This process has been of significant importance for transition economies since after the fall of communism, a general institutional transformation was initiated. In this matter I include this indicator in my estimation model and expect a positive and significant sign.

Trade and competition level are also chosen as important determinants since the liberalization process of import and export restrictions might create favorable incentives for investment inflows. Moreover fair and equitable competition policy legislation might reduce entry restrictions on international firms that show interest in investing in these countries.

The banking environment is considered a vital factor as well since these institutions are aimed to maintain monetary and fiscal stability thus it is expected that significant movement of banking laws and regulations towards high-standard profiles, might ensure well-established institutions thus increasing credibility for foreign investors. In this matter, this variable is assumed to impact the level of investment inflows.

The indicator of infrastructure is related to the overall progress made in the infrastructure framework. In general lines, infrastructure stands for physical and organizational structures necessary for the operation of a society and in general required for an economy to function properly. We assume that development in this area might induce economic welfare thus attracting investors' attention for further investment.

3.5 Assumptions and Hypotheses

Following the discussion in the literature review, market size is considered one of the main determinants for FDI attraction in transition economies. In this thesis, the proxy for market size used is GDP per capita based on purchasing power parity and we expect a positive sign for the coefficient. GDP growth and Trade Openness variables are also expected to be positive, since theoretically open and developed economies are more integrated into international markets. We consider as well that lower labor costs and inflation might induce more investment inflows in one country because of the labor availability and macroeconomic stability. We expect negative signs for both indicators. Consequently, due to the empirical evidence concerning the EU membership variable, we include it in our regression and expect a positive and significant sign. (See Table 3.1)

Table 3.1 Basic Model Variables and Expected Signs

Variable	Data Source	Symbol	Expected Sign
<i>GDP (ppp)</i>	WBEI	GDP	+
<i>GDP Growth</i>	WBEI	GDPGR	+
<i>Trade Openness</i>	WBEI	OPEN	+
<i>Gross Average Monthly Wages (log)</i>	UNECE Statistical Division Database	WAGEN	-
<i>Inflation</i>	WBEI	INFL	-
<i>EU membership</i>	EU Commission	EU	+
Total	4	6	+/-

Source: Author's Demonstration

Following the analysis, we can state the hypothesis that a more stable is the macroeconomic environment of one country; the higher are the FDI inflows.

H1: Higher FDI inflows are associated with a more stable and developed macroeconomic environment.

Table 3.2 Institutional Variables and Expected Signs

Variable	Data Sources	Symbol	Expected Sign
<i>Voice and Accountability</i>	WGI	VOICE	+
<i>Political Stability and Lack of Violence</i>	WGI	POLST	+
<i>Government Effectiveness</i>	WGI	GOV	+
<i>Rule of Law</i>	WGI	RULE	+
<i>Regulatory Framework</i>	WGI	REG	+
<i>Control of Corruption</i>	WGI	CORR	+
<i>Large scale of privatization</i>	EBRD	PRIVAT	+
<i>Trade and Foreign Exchange Rate</i>	EBRD	TRADE	+
<i>Competition Policy</i>	EBRD	COMP	+
<i>Banking Reform and Interest rate liberalization</i>	EBRD	BANKREF	+
<i>Overall Infrastructure Reform</i>	EBRD	INFR	+
Total	2	11	+/-

Sources: Author's Demonstration

Table 3.2 summarizes the information available on institutional determinants and their expected signs. Considering the results of previous empirical investigations, we assume that the higher value of institutional quality indicators, the higher are the investment inflows. The remark is referring to both Kaufmann and EBRD indicators used in our regression specification. We expect that transition economies are performing a strategic plan for the improvement of their institutional framework in order to increase investors' credibility and to attract more FDI. In this matter, the following hypotheses are stated.

H2: The more safe and reliable are the political, economical and social institutions in a country, the higher are the FDI inflows.

In the next sections, the two hypotheses will be tested using the data from the sample of economies in transition from CEE for the period 1996-2010. The results of our empirical investigation will determine if our hypotheses are accepted or rejected.

3.6 Methodology

Based on the hypotheses stated above, the estimation model is as follows:

$$FDI = f(\text{market size, growth potential, institutional quality, trade openness, labor costs, macroeconomic stability, EU membership}) \quad 3.1$$

Equation 3.1 can be transformed into mathematical form using log-linear model:

$$LFDI_{it} = \alpha + \beta_1 INST_{it} + \beta_2 LGDP_{it} + \beta_3 GDPGR_{it} + \beta_4 OPEN_{it} + \beta_5 LWAGEN_{it} + \beta_6 INFL_{it} + \beta_6 EU_{it} + \varepsilon \quad 3.2$$

Where,

$LFDI_{it}$ is the log of net inflows of Foreign Direct Investment per capita for country i in year t

$INST_{it}$ stands for the indicators that measure institutions for country i in year t which will be singly added to the benchmark regression

$LGDP_{it}$ is the log of Gross Domestic Product per capita for country i at time t and it is a proxy for market size

$GDPGR_{it}$ is the GDP Growth Rate for country i at time t

$OPEN_{it}$ is the Trade Openness for country i at time t and is computed as ratio of import plus exports of Goods and Services divided by value of GDP

$LWAGEN_{it}$ is the log of Gross Average Monthly Wages for country i at time t and it is a proxy for labor cost

$INFL_{it}$ is the Inflation Rate (annual percent) for country i at time t and it is a proxy for macroeconomic stability

EU_{it} is the EU membership dummy variable which takes value 1 when a country becomes a formal member, otherwise its value is 0.

3.6.1 Econometric Issues

An econometric problem that may arise in the panel regression analysis concerns autocorrelation of the disturbances. Autocorrelated errors can be determined by performing the Durbin-Watson test. For the benchmark regression, we obtain a value lower than the settled benchmark of 2.0 which indicates that we do have a first-order

serial correlation for our data sample. Therefore adding each institutional indicator separately to the regression does not solve this problem.

In this matter the problem of autocorrelation can be solved by including the lagged dependent variable, which models the tendency for new FDI to follow where FDI has flowed in the past (Roberts, 2006). There is a clear tendency that FDI inflows include reinvestment of profits from previous FDI. For instance, if one firm makes an investment and it turns out to be successful, other investors tend to follow this path, particularly those in the same industry due to network effects. Moreover, the lagged dependent variable also regulates the omitted variables issue because it is measured in the same way as the dependent variable and it is expected to absorb some of the effect of the included variables due to their measurement error (Roberts, 2006). Moreover, the importance of lagged dependent variable has been empirically tested by Jensen (2003) who found this variable highly significant in their regressions.

OLS is highly sensitive to outliers so in order to deal with this issue we transform the data by taking the logarithms. Therefore, the variables that are skewed and are not ratios or net amounts leading to negative values (i.e GDP per capita, WAGEN) are transformed in logs.

3.6.2 Data Analysis Tool

This empirical investigation is based on a methodology using panel data specification. This technique presents a set of advantages in comparison with pure time-series and cross-sections since it incorporates all the available information that might provide useful insights when analyzing the dataset (Baltagi & Kao, 2000). Ranjan & Agrawal (2011) confirms that panel data has advantages by suggesting individual heterogeneity which reduces the chances of getting biased and inconsistent results and by providing a large framework of data points, allows us to study in depth the dynamics of the model.

Panel data model employs three methods:

► Fixed Effects Method

In this specification we assume time invariant effect for each entity that might be correlated with the regressors. This method is appropriate to specify if we are focusing on a specific set of countries. The model for fixed effect method is:

$$Y_{it} = \alpha + \beta x_{it} + \mu_i + v_{it} \quad 3.3$$

In this case μ_i and v_{it} represent the decomposition of the disturbance term. μ_i denotes unobservable individual time-invariant specific effect and v_{it} is the remainder disturbance term which varies both with individual and in time. Simple OLS regression applied on the original model can cause issues with the loss of degrees of freedom and multicollinearity.

Therefore we apply the Least Squares Dummy Variable (LSDV) estimator which assumes that the model is premultiplied by matrix Q which wipes out the individual specific effects. OLS is performed on the resulting transformed model.

$$Qy = \alpha Q\chi NT + Q\beta + QZ\mu\mu + Qv \quad 3.4$$

► Random Effects Method

This specification represents an alternative method of estimation which assumes constants to be random parameters. This is in contrast with the fixed effects, where constants are considered fixed. This specification is appropriate if observed individuals are drawn randomly from a large population. We can write the random effects panel data model in the following way:

$$Y_{it} = \alpha + \beta x_{it} + \omega_{it} \quad 3.5$$

Where $\omega_{it} = \varepsilon_i + v_{it}$

This model assumes the intercepts for each cross-sectional unit to arise from a common intercept α , which is the same in time and for all cross-sectional units plus a random variable ε_i that is constant in time but can vary cross-sectionally (Ranjan & Agrawal, 2011).

In this model there are no more dummy variables that might capture the variation in the cross-sectional framework however; in this case, this is performed via ε_i terms. Generalized Least Squares estimator is appropriate to employ for random specification since it combines the within and between variation of the observations in an optimal way.

► Pooled OLS method:

This method is constructed under the main assumption that there are no significant differences among the data in the cross-sectional framework and it is known as the

pooled least square model. It is based on the principle of pooling the data and estimate OLS regression.

$$Y_{it} = \beta_0 + \beta_1 x_{it} + \mu_{it} \quad 3.6$$

Still, this will result in biased results because of the heterogeneity problem. However, the bias is smaller under this specification in comparison with cross-sectional OLS because pooled OLS takes in consideration the within variation as well.

► Hausman Specification Test

In order to assess the significance of one estimator versus another estimator we employ the Hausman specification test which helps us evaluate which model fits data accordingly. The test compares the parameters of the fixed and random effects model and concludes on the correlation between errors and regressors.

H₀: Random Effects model preferred;

H_A: Fixed Effects model preferred;

The test is based on two estimates, one coefficient from the fixed effects model and one from the random effects specification. The FE coefficient ($\hat{\alpha}_{1FE}$) under the H₀ hypothesis is consistent and inefficient and inconsistent under H_A while RE estimator ($\hat{\alpha}_{1RE}$) under H₀ is consistent and efficient and is consistent under H_A.

	H ₀	H _A
$\hat{\alpha}_{1RE}$	Consistent & Efficient	Inconsistent
$\hat{\alpha}_{1FE}$	Consistent & Inefficient	Consistent

The test relies mainly on estimation of equation M (3.7)

$$M = (\hat{\alpha}_{1RE} - \hat{\alpha}_{1FE})^T \times [var(\hat{\alpha}_{1RE}) - var(\hat{\alpha}_{1FE})]^{-1} \times (\hat{\alpha}_{1RE} - \hat{\alpha}_{1FE}) \sim X_{kw}^2 \quad 3.7$$

If M is significant, considering the asymptotic distribution with kw representing the number of regressors in the within regression, we reject H₀ and we select the FE model.

We perform ordinary least squares (OLS) with panel-corrected standard errors because we assume that disturbances are heteroskedastic and contemporaneously correlated across panels. Investment inflows are likely to reflect the world economy as a whole and as specific factors characterizing recipient countries (Roberts & Amess 2005).

Initially we will perform fixed effects specification that is whether the heterogeneity between countries can be captured by the difference in the constant term otherwise all the parameters from equation (3.2) can be considered equal for the ten cross-country units. Thus, random specification is viable which states that there are no behavioral differences across countries and the data can be treated as one sample.

In order to evaluate the significance of an estimator versus another estimator, we employ Hausman specification test. If correlated (H_0 is rejected), random effect model produces biased results therefore fixed effect model is preferred.

Chapter IV Results and Interpretation

4.1 Estimation results for Kaufmann Indicators

The OLS results of a panel of 10 transitional countries for a period from 1996 to 2010 are presented in the table below. Six sets of regressions have been carried out, each time with a different institutional indicator. Since the institutional variables are highly correlated, we perform the regressions on each parameter separately. Table 4.1 presents a complete correlation analysis between Kaufmann institutional indicators².

Table 4.1 Correlation Matrix between Kaufmann Indicators

Variable	VOICE	POLST	GOV	REG	RULE	CORR
VOICE	1.0000	0.6509	0.9004	0.9572	0.9118	0.8478
POLST		1.0000	0.8160	0.6968	0.7820	0.8318
GOV			1.0000	0.9204	0.9568	0.9352
REG				1.0000	0.9317	0.8624
RULE					1.0000	0.9353
CORR						1.0000

Source: Author's Computations in GRETL

² See Appendix for the descriptive statistics and correlation matrix between macroeconomic variables included in the regression- table A.1 and A.2 respectively

Heterogeneity between countries has been tested, whether it is adequate to assume that our data can be treated as one sample with no behavioral differences across countries or allows different constants for each country by analyzing the impact of variables that vary over time. Therefore, we first employ the fixed effects specification followed by random effects model and compare the results. Consequently, we perform Hausman test which enables us to evaluate which statistical model corresponds best to the data. For this regression setting, Hausman suggested random effects to be more suitable considering no differences across entities from the dataset. Under these circumstances, we analyze our results considering one sample therefore we interpret the results from the random effects specification³.

Table 4.2 Determinants of FDI, the role of macroeconomic and Kaufmann indicators for 10 transition economies, RE Model

Dependent variable: Foreign Direct Investment, net inflows per capita (% of GDP)

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-2.2773 (0.2073)	-4.2606 (0.0632)*	-2.8236 (0.1781)	-2.1050 (0.2614)	-2.44245 (0.2107)	-1.7230 (0.4008)
VOICE	0.2170 (0.0696)*					
POLST		-0.2261 (0.3795)				
GOV			0.0273 (0.8625)			
REG				0.2005 (0.1436)		
RULE					0.1200 (0.4686)	
CORR						0.2673 (0.2127)
LGDP	0.2499 (0.3331)	0.3995 (0.1780)	0.2639 (0.3343)	0.2260 (0.3874)	0.2623 (0.3175)	0.2076 (0.4348)
GDPGR	0.0484 (0.0022) ***	0.0444 (0.0048) ***	0.0443 (0.0051) ***	0.0464 (0.0032) ***	0.0458 (0.0041) ***	0.0444 (0.0046)***
INFL	-0.0016 (0.7140)	-0.0024 (0.5842)	-0.0027 (0.5353)	-0.0010 (0.8228)	-0.0027 (0.5295)	-0.0030 (0.4802)

³ For more information regarding the results of the benchmark equation for fixed effects model, see Table A.3 in Appendix

OPEN	0.0349 (0.0250) **	0.0422 (0.0084) ***	0.0383 (0.0205) **	0.0331 (0.0382) **	0.0359 (0.0270) **	0.0348 (0.0289)**
LWAGEN	0.3646 (0.1180)	0.4753 (0.0466) **	0.4235 (0.0801) *	0.3779 (0.1073)	0.3636 (0.1502)	0.3372 (0.1679)
EU	0.0606 (0.7716)	0.0468 (0.8271)	0.0791 (0.7096)	0.0393 (0.8526)	0.0819 (0.6990)	0.1143 (0.5910)
LFDI_1	0.4193 (2.49e-05) ***	0.4238 (3.00e-05) ***	0.4403 (1.42e-05) ***	0.4235 (2.31e-05) ***	0.4441 (1.10e-05) ***	0.4425 (1.02e-05) ***
Hausman Test	0.1234	0.0432	0.0121	0.0805	0.0620	0.0449
Observations	106	106	106	106	106	106

Note: p-values in parenthesis; ***, ** and * indicates significance at 1%, 5% and 10% level, respectively

Source: Author's Computations in GRET

Table 4.2 reports the OLS estimates of the effect of macroeconomic and institutional determinants on the level of FDI inflows over the period from 1996 to 2010. The results support the hypotheses concerning the expected signs of the explanatory variables, even though some of them are not significant. The only exception concerns WAGEN variable which stand as a proxy for labor costs. This finding suggests that investors are more focused on the skills and qualification of the labor rather than availability of massive cheap labor force. It is worth discussing more in detail regarding the coefficient of WAGEN which does not present the expected sign but it statistically significant. Although one would expect that lower labor costs would attract more investment inflows it is not excluded that investors seek high-qualified labor in order to expand their activity in these countries. It is still an important finding since these countries cannot rationally attract FDI without increasing the qualification of economically active population. In addition, coefficient of inflation is in negative relation with FDI inflows which supports the expected sign assumption nevertheless its magnitude is not much of significance.

Estimation results show that economic growth and trade openness determinants are statistically significant at 1 per cent level and 5 per cent level respectively, which emphasize the importance of these variables for FDI inflows. Empirical observation

illustrates the fact that countries which chose to open their economies and achieved considerable growth rates, have a significantly attractive effect on inward FDI. Thus, considering the interpretation of the empirical findings, main macroeconomic drivers for attraction of inward FDI in transitional countries are considered economic performance, trade openness and the availability of skilled labor.

Moreover, the fact that the lagged value of FDI is statistically significant at a 1 per cent level confirms our assumption that investors tend to follow the previous FDI inflows path. Most probably investors are sensitive to experimenting in areas where they do not have the certainty of high profit therefore they prefer to invest in countries that have already been assigned as high-profit areas.

The EU membership dummy included in the regression is not evaluated as a significant determinant for FDI flows although it has the expected sign. The insignificance of this variable confirms the hypothesis of Bos & Van de Laar (2004) which assumed that investors are more interested in the economic features of a country and not in their status in the European framework. Even though being a formal member might influence MNEs to invest more because the institutional framework is better consolidated, the results suggest that investors base their investment decision-making process on macroeconomic stability and growth levels of the analyzed countries.

Most importantly we want to analyze how the institutional framework affects the level of investment in these countries. For all specifications, institutional variables have a statistically insignificant effect on FDI inflows, even though the estimated coefficients have the expected sign (with the exception of POLST as regressor). Only the coefficient of Voice and Accountability is significant at 10 per cent level which suggests that investors are considering the overall development of the democratic framework in transitional countries.

Thus, at this point the results suggest that institutional variables do not contribute substantially to the explanation of the cross-country variation of FDI inflows but confirm previous findings in the literature that the level of economic growth and trade openness are very important factors influencing the decision of MNEs to enter the local markets in the host country.

However, these results do not imply that the institutional indicators have no impact at all. It would be more appropriate to test whether macroeconomic indicators already incorporate available information on institutional indicators that may cause the effect to not be visible at a first glance. In this matter, we present an alternative specification

model. We take each macroeconomic variable and estimate them separately on all Kaufmann Indicators. The estimation results are reported in the table below:

Table 4.3 The effect of institutional determinants on macroeconomic variables

Variable	Constant	VOICE	POLST	GOV	REG	RULE	R ² -adj.
LGDP	8.8139 (3.38e-133) ***				0.9784 (5.70e-011) ***		0.84
GDPGR	3.5883 (2.30e-010) ***			10.1043 (0.0030) ***		-15.7454 (0.0005) ***	0.10
INFL	26.2812 (1.65e-05) ***	29.1526 (0.024) **	-19.3540 (0.0197) **		-51.9469 (7.44e-07) ***	33.6241 (0.0492) **	0.34
OPEN	19.2811 (1.57e-064) ***	-3.3128 (0.0112) **					0.88
LWAGEN	5.3156 (5.44e-082) ***			-0.8417 (0.0152) **	1.5743 (3.08e-08) ***	0.9561 (0.0440) **	0.74

Note: p-values in parenthesis; ***, ** and * indicates significance at 1%, 5% and 10% level, respectively;

Source: Author's Computations in GRETL

In order to deal with multicollinearity issues, we omit one by one, institutional variables that are less significant and report the ones that present the most impact. We observe that for most of the macroeconomic indicators the most significant institutional indexes appear to be GOV, REG and RULE. It means that there is an emphasis put on government effectiveness policies and regulatory framework such as diminishing tax burdens imposed in areas such as foreign trade and business development which present significant interest for investors.

Indicators related to political environment of these countries appear to be less significant and it is reasonable to assume that investors might be more interested in the economic performance and specific aspects that would create incentives for further development with profitability perspectives.

Coefficient which measures the level of corruption in one country, has been removed completely from the analysis due to the fact that it does not present any significant impact on macroeconomic variables therefore it cannot be considered an impactful determinant in explaining investment inflows level in this framework.

Overall, one of the concluding remarks is that progress made in stabilizing the macroeconomic indicators is accompanied by improvements in civil rights, rule of law and policy implementation framework.

The results show a clear significance of institutional variables which enables us to conclude that they have a strong impact on investment inflows but we cannot observe a direct effect since all the information available on institutions is already incorporated in macroeconomic variables. In general terms, we can state that countries that have made significant progress in terms of macroeconomic stabilization are accompanied by positive impact of an increase in per capita income of FDI. A good macroeconomic environment ensures good institutions which guarantee property rights and minimizes transaction costs thus it leads to the creation of an environment favorable for investment activities.

4.2 Estimation results for EBRD Transition Indicators

The findings highlighted earlier emphasize the fact that good institutional framework indirectly affects the level of investment inflows via continuous development of the macroeconomic environment. It is worth mentioning that we included in the analysis Worldwide Kaufmann Governance Indicators as measures of institutional variables, which we consider suitable taking in consideration the study purpose framework. Nevertheless, in order to analyze the institutional environment specific for transition economies and compare with the results obtained previously, we will employ EBRD transition indicators which are used to assess progress in transition economies across Central and Eastern Europe employed in our research.

One important factor to mention is that Czech Republic has made significant progress in a record time from transition to modern market economy and due to this fact the demand for EBRD services in this country has gradually declined. Consequently in 2006, considering the high economic performance achieved, this country was entitled an open and competitive economy. Since our dataset comprises years from 1996 to 2010, I considered reasonable to include the maximum value starting with 2006 for this country in order to have a complete dataset. The rest of the countries, contain data for all the selected years.

Table 4.4 Correlation Matrix between EBRD transition indicators

Variable	PRIVAT	TRADE	COMP	BANKREF	INFR
PRIVAT	1.0000	0.8756	0.7286	0.8789	0.7940
TRADE		1.0000	0.5694	0.7936	0.7517
COMP			1.0000	0.7827	0.7600
BANKREF				1.0000	0.8756
INFR					1.0000

Source: Author's Computations in GRETL

The benchmark equation remains the same and the only change concerns the second set of institutional indicators which will be singly added to the benchmark regression due to high correlation among them. (See Table 4.4 for the correlation matrix between EBRD transition indicators). After performing both specifications, Hausman suggested that random effects model is of more appropriate usage considering our regression setup therefore we interpret and conclude based on the results obtained from random effects framework⁴. Moreover, we believe that the features provided by RE specification, like including time invariant variables and assuming correlation between error terms, will provide a more realistic view on the institutional environment in transitional countries.

Table 4.5 Determinants of FDI, the role of macroeconomic and EBRD indicators for 10 transition economies, RE Model

Variables	(1)	(2)	(3)	(4)	(5)
Constant	-2.9352 (0.0341)**	-4.1834 (0.0038)***	-3.2131 (0.0223)**	-2.6358 (0.0549)*	-3.4203 (0.0137)**
PRIVAT	0.2135 (0.0316)**				
TRADE		0.2365 (0.0183)**			
COMP			-0.1282 (0.6117)		
BANKREF				0.4732 (0.0047)***	

⁴ For more information regarding the results of the benchmark equation for fixed effects model, see Table A.4 in Appendix

INFR					0.2648 (0.0298)**
LGDP	0.2509 (0.2466)	0.4115 (0.0674)*	0.2810 (0.2059)	0.2876 (0.1788)	0.3024 (0.1639)
GDPGR	0.0450 (0.0008)***	0.0457 (0.0007)***	0.0397 (0.0034)***	0.0454 (0.0006)***	0.0420 (0.0015)***
INFL	0.0011 (0.0800)*	0.001 (0.0893)*	0.0010 (0.1184)	0.0010 (0.0961)*	0.0010 (0.0956)*
OPEN	0.0256 (0.0499)**	0.0283 (0.0222)**	0.0401 (0.0010) ***	0.0164 (0.2314)	0.0353 (0.0027)***
LWAGEN	0.3964 (0.0330)**	0.3097 (0.1115)	0.5234 (0.0084)***	0.2089 (0.3016)	0.4048 (0.0287)**
EU	0.0575 (0.7391)	0.0843 (0.6249)	0.0872 (0.6393)	0.0601 (0.7242)	0.0130 (0.9401)
LFDI_1	0.4146 (9.47e-07) ***	0.4119 (1.02e-06) ***	0.4298 (5.66e-07) ***	0.3853 (4.77e-06) ***	0.3760 (1.65e-05) ***
Hausman Test	0.0808	0.1273	0.0053	0.1721	0.0793
Observations	135	135	135	135	135

Note: p-values in parenthesis; ***, ** and * indicates significance at 1%, 5% and 10% level, respectively;

Source: Author's Computations in GRETL

Table 4.5 present the OLS estimate of the effect of macroeconomic and EBRD institutional variables on the level of FDI inflows over the period of 1996-2010. Most of the coefficient estimates have the expected sign and are statistically significant at one of the 1, 5 or 10 percent significance levels. Besides economic growth considered a major determinant of FDI inflows, the other control variables such as trade openness and labor costs present a significant impact in the decision making process of the investors.

The lagged value of FDI is again significant at a 1 per cent level indicating that investors base their investment decisions keeping track of previous FDI inflows in specific sectors where high profitability was already obtained. This indicates that investors are extremely careful when choosing the appropriate investment path and rely on the network effects to ensure the welfare of the initiated activity.

The results state that openness has a positive and a significant effect on the investment inflows in transitional economies. Moreover, the empirical investigation suggest that countries that decided to open their economies after the fall of communism, managed to achieve significant growth rates in comparison with countries that remained closed economies. Nowadays, in order to attract FDI countries implement diverse strategies

and policies for a more transparent regulatory framework thus opening up more sectors to increase the chances for foreign investments.

It is interesting to observe the coefficient of labor cost being positive and significant. Estimation results suggest that the availability of skilled labor influence greatly MNEs investment path. We observe the same pattern in comparison with the results of the benchmark equation including Kaufmann indicators. This is an important finding, especially for transitional economies, where higher labor costs were mostly associated with lower FDI inflows. This result does not support the findings provided by Ranjan & Agrawal (2011) which claim that lower labor costs induce FDI but supports the assumption of Botric & Skuflic (2005) which state that investors are more focused on knowledge transfer therefore they seek high qualified labor in the countries of interest.

Our interpretation is in accordance as well with the assumptions of Dunning (1999) and Pournarakis & Varsakelis (2001), which concluded that investors are more oriented towards efficiency-seeking. Nevertheless, we consider that the hypothesis of cheap labor was viable in the beginning of the 1900's during the massive wave of social, economical and political changes in transitional countries. However, after two decades it might be reasonable to assume that investors, considering the high growth rates and economic development in these countries, started to focus on the quality of the service provided and not exclusively on its amount.

To have additional insights on the institutional framework in transitional countries, we included the EU membership variable since we assumed that being a formal member might influence MNEs to invest more due to the developed institutional set up. However, the assumption was not confirmed by our empirical findings although the indicator has the expected sign. We observe the same insignificant effect like in the set up with Kaufmann indicators which suggest once again that we cannot observe a clear relationship between being a formal EU member and the level of investment inflows.

Furthermore, good governance has been associated with higher growth rates and income levels thus promoting a better institutional framework of a country. Therefore, the institutional set up is vital for a country's development followed by encouragement for FDI inflows. The results for the 5 transitional indicators included in the regression benchmark show that large scale privatization, trade and foreign exchange system, banking and overall infrastructure reforms matter for the investment decisions of the MNEs, as their respective coefficients are positive and statistically significant. The strongest significance level (1 per cent level) can be observed for BANKREF which stands for the banking environment development. It is a vital indicator since these

institutions are aimed to maintain monetary and fiscal stability thus it is expected that significant improvement in banking laws and regulations towards high-standard profiles, might ensure well-established institutions thus increasing credibility for foreign investors.

In addition, large scale privatization was found a positive and significant institutional determinant for FDI inflows which confirms our assumption regarding the importance of the massive wave of privatization process at the beginning of the 1990's as a strategy for transitional economies to commit to private property. This process has been of significant importance for these economies since a general institutional transformation was initiated and created favorable incentives for further development.

TRADE and INFR institutional variables appear to have a significant impact on the level of FDI as well which suggest that a more flexible exchange system and better development of the infrastructural framework, increases investors credibility in a more stable and prosperous investment activity in these countries. Being aware of the past economic issues of transitional economies but observing the substantial positive changes and growth, they are more eager to expand their activity in these countries.

Overall, the latest results show that the quality of institutions and the level of FDI are significantly related. We managed to empirically show that institutions play an important role in the decision making process of investors. Estimation results for the regression benchmark with EBRD transitional indicators confirm our hypothesis that better institutional framework is associated with higher FDI. In this matter, we did not perform the alternative specification model due to the visible significance of the institutional variables.

The results obtained with Kaufman indicators partially confirm our hypothesis due to the fact that our empirical findings suggest an indirect effect of institutional variables since the information on institutional quality is already incorporated in the macroeconomic variables. The interpretation suggests that institutional development is obtained simultaneously with the prosperity of the macroeconomic environment of the country.

Chapter V Final Conclusions

This thesis has analyzed the effect of both macroeconomic and institutional determinants on foreign investment inflows in ten transitional countries from CEE using panel data specification. We have covered the topic from both theoretical and empirical point of view.

From the theoretical point of view we have determined that main macroeconomic determinants specific for transition economies are considered market size, economic growth factor, labor costs and trade openness, fact supported by many empirical studies. Since our main focus regards the institutional determinants, we have investigated the available literature and determined that the conclusive remarks are divided. Some authors find a significant impact of institutional quality on FDI inflows; others do not observe a clear relation between institutions and the level of FDI. In this matter, we have performed our own empirical investigation by employing a model based on traditional and specific FDI determinants that are expected to play a significant role in the decision making process of MNEs in these countries. As specific determinants, we considered two sets of institutional variables developed by Kaufmann and by European Bank for Reconstruction and Development. Regressions were carried out separately for each set of institutional variables. Random effects specification was employed due to the Hausman evaluation test results.

Results obtained using the set of institutional variables developed by Kaufmann suggest that we cannot observe any significant relationship between institutional quality and the level of investments. Moreover, these findings confirm the results provided by Wernick (2009) which concluded that he cannot observe any relation between institutions and FDI levels. On the other hand, traditional determinants like economic growth, trade openness and labor costs appear to impact significantly investors' decision making process thus confirming our hypothesis that a more stable macroeconomic environment increases the level of investment inflows. Other important findings suggest that investors tend to follow the previous investments path where high profitability and earnings were achieved. Concerning labor costs determinant, the findings suggest that investors seek high qualified labor to expand their activities. This is one distinctive factor, since the previous literature stressed the fact that cheap labor costs indicator is one of the main drivers for FDI inflows in transition economies.

However, the insignificance of institutional variables may be misleading therefore in order to assess if some information is already incorporated in the macroeconomic framework regarding institutions, we performed an alternative specification model. We employed each macroeconomic variable and performed the estimation on the whole set of institutional determinants developed by Kaufmann. Since there may arise multicollinearity issues, we omit variables that present less significant result and report the ones with a more impactful effect.

Alternative specification with Kaufman Indicators has confirmed our assumptions regarding the effect of institutions on macroeconomic variables. We observe a visible significance which allows us to assume that we cannot observe directly the impact of institutional quality on FDI inflows since the information is already incorporated in the macroeconomic framework. Important determinants appeared to be government effectiveness, regulatory framework and rule of law. Therefore, one concluding remark suggests that with the development of the macroeconomic framework, there is an improvement in the quality of institutions which enables us to observe a direct impact of institutions on investment inflows thus an indirect effect is observed.

Consequently, we performed the regressions using the second set of institutional indicators developed by EBRD which are considered closely related to the issues of transitional economies. We observe a different behavior of institutional variables which suggest their relevance as factors for FDI attraction. We observe that the impact of

institutional determinants is statistically significant and economically very important. Among the main determinants appear to be the level of privatization, banking reform and interest rate liberalization, trade and foreign exchange system and overall infrastructure development. The stability of the banking environment appears to be the determinant with most significance which suggests that investors consider the monetary and fiscal stability of a country in order to form some expectations regarding future profitability and revenues in case of business expansion. It is reasonable to assume that due to the recent economic recession when massive financial destabilization occurred, investors tend to put more emphasis on the development of the banking sector. Improvement in the monetary and fiscal framework increases investors' credibility thus creating favorable incentives for investment inflows.

Furthermore, privatization process has always been seen as a stimulus for foreign investment. This assumption holds especially for transitional countries when, after the fall of communism at the beginning of the 1990's, massive privatization waves monopolized the entire region. The commitment to private property created incentives for a general institutional development and reorganization. Besides reorganization and transformation, the countries itself persuaded a new path of economical, social and political changes which determined their development as new formed democratic states. Although more than 20 years passed, the empirical findings suggest that investors still consider privatization process a significant factor in their decision making process.

Moreover, it was shown that countries that would increase foreign investments would be able to do so by improving their institutional quality, even by improving their overall infrastructure framework and trade system. In addition, this strategy would have positive spillovers on other economic activities which would induce economic growth and prosperity.

However, our main goal was to stress the role of institutions and the impact of institutional quality on the level of FDI inflows and we managed to prove that by providing an empirical analysis using both macroeconomic and institutional variables. In both specifications, macroeconomic indicators present statistical significance which confirms our hypothesis that a well established macroeconomic environment represented by economic growth, trade openness and labor costs, influence MNEs to invest in transitional countries. Another important finding regards the tendency of investors to follow where FDI has flowed in the past. The importance of network effects has also been highlighted by Jensen (2003) in his empirical findings. We assume that

this phenomenon occurs followed by uncertainties arising due to the lack of information regarding relevant aspects for the business activities of MNEs.

One of the main concluding remark concerns the institutional variables and their impact on foreign investment. For both specifications, we managed to confirm our hypothesis regarding the positive relationship between institutions and FDI inflows. In the regression benchmark performed with Kaufmann indicators, we managed to observe an indirect effect due to the fact that the information available on institutions is already incorporated in the macroeconomic variables. In the regression benchmark considering EBRD indicators, specific for transitional economies; we managed to report a clear significance of the institutional determinants on the level of FDI. Institutions from these countries by engaging into a permanent commitment to maintain stability and further development will foster multinational corporations desire to invest in these countries which consequently will attract higher FDI inflows.

Chapter VI Contribution and Further Research

This thesis aims to fill a gap in the current debate regarding the main determinants of FDI inflows in Central and Eastern Europe. The empirical analysis performed in this study investigates the question whether the quality of institutions from transitional economies affect considerably the level of FDI inflows into these countries.

Although, there is a vast theoretical and empirical evidence available providing different perspectives on the topic, we engaged to perform our own analysis in order to emphasize the importance of institutional framework for investment inflows. Therefore, we develop a model that combines traditional and specific FDI determinants that are expected to play an important role in the decision making process of multinational corporations. We want to extend the existent literature that mainly stresses the importance of macroeconomic framework of a country and just briefly discusses the institutional environment. By employing two sets of specific institutional indicators, we report a broader analysis and interpretation that provides us with a new perspective on the topic. Considering the fact that previous researches focused on a small period sample, we decided to increase the sample of years from 1996 to 2010, in accordance with the availability of the dataset, to extend the existent empirical investigations.

Our results show that better institutions attract more FDI in CEE region. They are empirically less confirmed in the general setting including Kaufmann indicators nevertheless their importance is still prominent. Findings related to EBRD indicators suggest that policy-makers should not only improve institutions but enhance institutional reforms that can boost FDI inflows since this setting is of vital importance for foreign investors.

However, possible extensions regarding this topic framework might arise. For further investigation we plan to increase the countries and time period sample and include countries not only from Central and Eastern Europe. This would create a broader perspective on the influence of institutional quality on FDI inflows considering the increased sample.

Regarding specific aspects of institutional effect, we might try to focus on certain institutions in a country and analyze how they affect investors' decision making process. It is assumed that various institutions function according to their own policies and strategies therefore these outcomes may have a different impact on the levels of foreign investment. In this matter, it would be challenging to verify empirically this hypothesis.

In order to explore new aspects in this field we consider testing for non linear effects and analyze FDI inflows on sectoral data. With increasing the country sample, it would be easier to observe if there is any relationship between lagged value of institutional determinants and investment inflows. Furthermore, splitting the data in sectors would allow us to compare the impact of institutional quality of various sectors on the level of FDI. It would create incentive to report a new theory model regarding the functioning and impact of these institutions.

Nevertheless the obtained results and interpretation in this thesis were performed based on my own understanding and perception of the empirical and theoretical background. Further research is welcomed and appreciated since there may be aspects that were not emphasized in this study but considering my conclusive remarks further investigation might be employed for a different outcome of the impact of institutions on investment inflows.

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Appendix

Table A.1 Descriptive Statistics

Variable	Mean	Maximum	Minimum	S.d.
FDI	320.11	7198.2	-4198.9	927.43
VOICE	0.36807	1.1817	-1.7705	0.79120
POLST	0.40055	1.1614	-0.60883	0.47173
GOV	0.10463	1.0561	-1.1622	0.69639
REG	0.34395	1.2727	-1.8516	0.82010
RULE	0.051369	0.95837	-1.2964	0.66833
CORR	-0.11040	0.66499	-1.1583	0.52196
GDP	10722	24848	1405.4	6083.8
GDPGR	3.6008	12.100	-14.800	4.7815
INFL	23.490	1058.4	-1.1295	91.281
OPENESS	17.931	29.797	7.2539	6.0547
WAGEN	429.96	1436.9	29.000	347.27
EU	0.28667	1.0000	0.00000	0.4537

Source: Author's Computations in GRETL

Table A.2 Correlation Matrix of macroeconomic variables

Variable	FDI	GDP	GDPGR	INFL	OPEN	WAGEN	EU
FDI	1.0000	0.2716	0.0023	-0.0559	0.1128	0.3180	0.2744
GDP		1.0000	0.0079	-0.1969	-0.0904	0.9278	0.7587
GDPGR			1.0000	-0.1390	-0.1002	-0.0507	-0.0506
INFL				1.0000	0.0137	-0.1976	-0.1343
OPEN					1.0000	-0.0996	-0.0037
WAGEN						1.0000	0.8000
EU							1.0000

Sources: Author's Computations in GRETL

Table A.3 Determinants of FDI, the role of macroeconomic and Kaufman indicators for 10 transition economies, FE Model

Dependent variable: Foreign Direct Investment, net inflows per capita (% of GDP)

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Constant	1.2657 (0.8400)	1.0309 (0.8705)	-1.0135 (0.8756)	3.54203 (0.6000)	2.2888 (0.7195)	3.13287 (0.6164)
VOICE	0.4471 (0.4002)					
POLST		-0.2866 (0.4053)				
GOV			-0.8050 (0.1323)			
REG				0.3059 (0.5930)		
RULE					0.0877 (0.9038)	
CORR						0.5353 (0.2981)
LGDP	-0.5714 (0.5661)	-0.5237 (0.6028)	-0.1885 (0.8549)	-0.9235 (0.3887)	-0.7219 (0.4716)	-0.8220 (0.4061)
GDPGR	0.0515 (0.0017) ***	0.0510 (0.0018) ***	0.0546 (0.0009) ***	0.0506 (0.0020) ***	0.0511 (0.0021) ***	0.0496 (0.0024) ***
INFL	-0.0022 (0.6613)	-0.0008 (0.8599)	0.0015 (0.7668)	-0.0004 (0.9304)	-0.0011 (0.8299)	-0.0018 (0.7130)
OPEN	0.0759 (0.1110)	0.0607 (0.2055)	0.0519 (0.2770)	0.0760 (0.1192)	0.0703 (0.1436)	0.0752 (0.1110)
LWAGEN	1.0203 (0.0433) **	1.0741 (0.0300) **	0.9168 (0.0689) *	1.1907 (0.0206) **	1.1140 (0.0245) **	1.1196 (0.0229) **
EU	0.0654 (0.7793)	0.0397 (0.8655)	0.0855 (0.7124)	0.0430 (0.8555)	0.0613 (0.7937)	0.1057 (0.6555)
LFDI_1	0.2856 (0.0089) ***	0.2901 (0.0077) ***	0.2797 (0.0096) ***	0.2865 (0.0092) ***	0.2966 (0.0070) ***	0.2999 (0.0058) ***
R²-adj.	0.73	0.73	0.74	0.73	0.73	0.73
Observations	106	106	106	106	106	106

Note: p-values in parenthesis; ***, ** and * indicates significance at 1%, 5% and 10% level, respectively

Source: Author's Computations in GRETL

Table A.4 Determinants of FDI, the role of macroeconomic and EBRD indicators for 10 transition economies, FE Model

Dependent variable: Foreign Direct Investment, net inflows per capita (% of GDP)

Variables	(1)	(2)	(3)	(4)	(5)
Constant	1.2040 (0.8028)	0.2815 (0.9498)	-0.6432 (0.8831)	2.42657 (0.6095)	-0.7755 (0.8646)
PRIVAT	0.1928 (0.5646)				
TRADE		0.0885 (0.7871)			
COMP			-0.7273 (0.1313)		
BANKREF				0.4551 (0.2062)	
INFR					-0.1945 (0.4967)
LGDP	-0.5095 (0.5411)	-0.3263 (0.6649)	0.0997 (0.8941)	-0.6639 (0.3948)	-0.0787 (0.9181)
GDPGR	0.0500 (0.0004)***	0.0509 (0.0003)***	0.0483 (0.0005)***	0.04948 (0.0004)***	0.0523 (0.0003)***
INFL	0.0007 (0.2784)	0.0006 (0.2999)	0.0007 (0.2798)	0.0006 (0.2956)	0.0006 (0.3562)
OPEN	0.0282 (0.4164)	0.0261 (0.4571)	0.0174 (0.6185)	0.0328 (0.3456)	0.0253 (0.4676)
LWAGEN	0.9649 (0.0149)**	0.8832 (0.0178)**	0.7879 (0.0351)**	0.8573 (0.0207)**	0.8195 (0.0330)**
EU	0.0851 (0.6580)	0.0956 (0.6604)	0.2726 (0.2412)	0.0972 (0.6091)	0.0934 (0.6294)
LFDI_1	0.3186 (0.0004)***	0.3260 (0.0003)***	0.3236 (0.0003)***	0.3090 (0.0005)***	0.3368 (0.0003)***
R ² -adj.	0.77	0.77	0.78	0.77	0.77
Observations	135	135	135	135	135

Note: p-values in parenthesis; ***, ** and * indicates significance at 1%, 5% and 10% level, respectively;

Source: Author's Computations in GRETL