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DETERMINANTS OF FOREIGN DIRECT INVESTMENT IN SOUTH EAST EUROPEAN COUNTRIES AND NEW MEMBER STATES OF EUROPEAN UNION COUNTRIES

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ABSTRACT: *This paper accounts for the main determinants of Foreign Direct Investment stocks to 5-SEEC and the 10-New Member States of the EU countries by using an augmented Gravity Model. The study takes into account country specific institutional factors that determine foreign investors' decisions from 14 core European Union countries to invest into SEE-5 and EU-NMS-10 countries. From the results of the study we find that gravity factors and institutional related determinants like control of corruption, regulatory quality, political risk, corruption perception index, WTO membership and transition progress appear to significantly determine inward FDI stock from core EU countries to host economies of South East European region and new European Union member states.*

Keywords: *foreign direct investment, SEECs, panel econometrics, Gravity Model*
JEL Classification: F21

1 INTRODUCTION

Foreign Direct Investment (FDI) is considered to be the main source of foreign capital for transitional economies of South East European Countries (SEECs) and New European Member States (EU-NMS), (UNCTAD, 2013). This evolution occurred with the progression of transition from socialism to capitalism and the integration of the economies of SEECs and EU-NMS into international economic structures through trade and capital flows (Buch *et al*, 2003). Moreover, FDI in transitional economies of SEECs and EU-NMS can accelerate growth, institutional reforms, technological developments and infrastructure reforms in addition to providing capital account relief (Damijan *et al*, 2009; Bevan & Estrin, 2004).

The ongoing rise of Foreign Direct Investment has been a key element of globalisation process, and it has gained important weight over the past decades for enhancing growth prospects in transitional-developing economies (Janicki *et al*, 2004). UNCTAD reported that from 1990 to 2010 the world cumulative FDI inward rose from $207,455 millions of dollars to $1,243,671 millions of dollars, whereas in SEECs for the same period the cu-

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mulative FDI inward rose from $71 million dollars to $4,125 million dollars (UNCTAD, 2011). One reason for this growth of FDI is that an increasing share of countries' output is accounted for by foreign affiliates of international firms; therefore in recent decades dozens of countries have adopted laws to at least grant multinationals national treatment (Haskel *et al*, 2002).

Therefore, analyzing the driving factors of FDI from developed to transitional economies has received increased attention in recent years (Bevan & Estrin, 2004; Maatev, 2008). However, actual FDI flows to transition SEECs and EU-NMS economies have been modest. During the period from 1994 to 2000 on average FDI to SEECs and EU-NMS represented only 0.14 per cent and 2.53 per cent of world FDI respectively. However, these did increase in the second decade, from 2001 to 2010 on average to 0.43 per cent and 3.42 per cent for SEECs and EU-NMS respectively (UNCTAD, 2013).

The aim of this paper is to use panel data on bilateral FDI stocks from individual developed source economies to transitional developing host economies between 1994 and 2010 for empirical analysis of the determinants of inward FDI stock to host economies of SEEC-5[2] and EU-NMS-10[3] by focusing on market size, transaction cost and government policies as the determinants of FDI. The selected source EU-14 countries are the key suppliers of FDI for SEE-5 countries. The combined level of FDI outward stock of FDI in 2013 of EU-14 countries to EU-NMS-10 and SEE-5 countries accounted for 70 per cent (OECD, 2013). We keep out from our analysis some other transitional countries, as host countries of FDI, because circumstances throughout much of the period considered in this study make them special cases that would need country-specific explanations. Also, extending the data to other source countries would result in a high proportion of zeros or missing values.

The empirical strategy of the paper will be focused on advantages of location FDI, denoted by market size factors of source and host countries and ownership and internalization advantages of FDI, denoted by distance, host country institutional factors and transition progress (Dunning, 2001). These FDI are mainly coming from continental Europe and therefore several major global economies like the USA and Japan are under-represented in this study. Hence, EU-14 countries[4] will be considered as the main source countries of FDI due to their main importance in terms of FDI in the SEE and EU-NMS-10 regions.

The empirical literature on FDI relies on analyzing FDI determinants into transition economies by using aggregate inflow data (Brenton *et al*, 1999), or upon enterprise surveys (Meyer, 1998). Only a few studies analyze empirically the FDI determinants into transition economies, using panel data at a bilateral country level, to investigate whether FDI stocks into transition economies is driven by factor cost considerations or market op-

[2] Albania, Bosnia and Herzegovina, Croatia, Macedonia and Serbia

[3] Bulgaria, Romania, Slovenia, Slovak Republic, Czech Republic, Hungary, Poland, Latvia, Lithuania and Estonia

[4] Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherland, Portugal, Spain, Sweden, and United Kingdom

portunity (Bevan & Estrin, 2004). This study will enrich the empirical literature on FDI determinants, using bilateral data at country level, by considering also institutional and transition-related factors as crucial ones that largely determine the size of FDI into transition economies. Moreover, the empirical study finds that FDI between the developed EU-14 countries and the transitional SEE-5 and EU-NMS-10 countries is determined by gravity factors, host country institutional factors, and transition progress.

The empirical approach follows the models of Buch *et al* (2004) and Bevan and Estrin (2004), which are based on the theoretical models of Helpman (1984), which largely explains FDI flows by factor endowment considerations (including institutions and by viewing FDI flows, as determined by gravity factors, like market size factors represented by Gross Domestic Product (GDPs) of source and host countries and transaction factors represented by country distances). Hence, the basic gravity model of FDI, in this study, is augmented by considering also host country institutional related factors and transition progress. Based on this, the study draws on policy recommendations for promoting FDI in the host countries. This paper by applying the standard methodology of the gravity model to the dataset of South East European countries and New European Member states contributes to the literature of institutional determinants of FDI in transitioning countries.

The paper is structured as follows. The following section proceeds with a presentation of empirical studies concerning gravity estimates of FDI determinants, being focused on empirical models and methodologies of relevant studies. The third section presents the methodology and the empirical model and describes data used. The subsequent section presents the results obtained by estimating the augmented gravity model. The last section summarizes the results and concludes.

2 LITERATURE REVIEW OF FDI DETERMINANTS USING GRAVITY MODEL

In recent years the gravity model has been considered one of the most used methods in empirical analyses of FDI flows between countries, usually using countries' market size factors denoted by GDPs and also geographical distance between the respective countries' capitals.

Stone and Jeon (1999), using cross–country observations of bilateral FDI flows during the 1987-1993 period for the Asia–Pacific, estimated how the gravity model specification can be used to estimate the bilateral flows of FDI. Based on Anderson (1979), using a general form of the gravity equation, in the form of the log – linear model, the authors explored the host country demand conditions, home country supply conditions and other economic factors either resisting or promoting the flows. The study confirmed that FDI flows in the region were determined by market size factors of the home country and income in the home country.

Brenton *et al* (1999), using pooled data with dummy variables for the period 1982-1995, assessed the influence of the deepening integration between the EU and the Central and

Eastern European Countries (CEECs) on FDI flows by addressing three major issues. First, they provided systematic estimates of the expected long – term level of FDI in the CEECs; second, they studied the relationship between FDI and trade; and third, they studied whether a raise in the attractiveness of the CEECs to foreign investors has affected the magnitude of FDI flows to other European countries. The source countries in the study were Austria, Finland, France, Germany, the Netherlands, Norway, Switzerland, the UK, the USA, Japan, and South Korea. The authors found substitution between FDI and trade for France, Germany, the Netherlands and Switzerland, whereas for the remaining source countries FDI and trade were complementary.

Buch *et al* (2003) found that the most significant determinants of FDI are the host country and market size variables denoted by GDP in PPP. The study found that GDP per capita, common language and common legal system had a positive impact on FDI stocks, whereas FDI restriction in the host country and distance had a negative impact on FDI inflows in the host country.

Bevan and Estrin (2004), using panel data and a gravity model for the period 1994- 2000, examined the flow of FDI from source countries like the USA, Switzerland, the EU, Korea and Japan to Central East European host countries. The result confirmed the expected results, showing that the most important determinants of FDI were unit labor cost and distance and market size variables denoted by GDP.

Egger and Pfaffemayer (2004b) studied the effect of distance as a common determinant of exports and FDI in a three factor New Trade Theory model: physical capital, human capital and labor endowment, assuming that the distance affects both pure trade costs and plant set – up costs. The authors analyzed this effect in the OECD and non-OECD countries (19 home countries and 57 host countries). Using bilateral industry level data on exports and outward stocks of FDI from the US and Germany to other economies (including both OECD and non-OECD countries), for the period 1989-1999, the authors showed that in accordance with New Trade Theory, bilateral exports increase with bilateral sum of GDP and similarity in terms of GDP, whereas bilateral stocks of outward FDI are an increasing function of the bilateral sum of GDP for both the US and Germany, and similarity in terms of GDP only in the case of the US. The authors found that United States exports and outward FDI are complements, with respect to changes in relative human capital endowments. In contrast, authors found that German FDI mainly takes place in countries which are slightly better endowed with human capital.

Bellak, Leibrecht and Damijan (2009), using a panel econometric analysis for the time span of 1995-2004 and augmented gravity model, studied the importance of corporate income taxes and infrastructure related variables as determinants of outward FDI flow in 8 CEECs from 7 home countries. The authors found that both taxes and infrastructure play an important role in the location decisions made by Multinational Companies, telecommunication and transport infrastructure are of special importance to FDI and the tax - rate sensitivity of FDI decreases with the level of infrastructure endowment. Controlling for the interaction between taxes and infrastructure the authors found positive and signif-

icant effect of interaction term on outward FDI. The results of the study imply that among the various types of infrastructure information and communication infrastructure is more important than transport infrastructure and electricity generation capacity and the tax rate elasticity of FDI is a decreasing function of infrastructure endowment meaning that the infrastructure endowment generates location - specific and immobile ''infrastructure rents", which can be taxed without a loss of FDI.

The Gravity Model is mostly used on empirical models of investment and trade studies (Anderson 1979; Bergstrand, 1985, 1989 ; Brenton et al, 1999; Buch et al, 2003; Bevan & Estrin, 2004; Egger & Pfaffemayer, 2004a). This study uses the Gravity Model to test the determinants of FDI in SEE-5 and 10 New Member States of EU.

3 TRENDS IN FDI

The significance of FDI in transitional economies of SEE can be seen through the relative indicator of FDI inward stock as a percentage of Gross Domestic Product (GDP) in the relevant country (Table 1). Thus, this indicator allows us to uncover the potential effect of accumulated FDI on the overall national economic productivity. As viewed in Table 1, the SEECs became much more desirable to investors during the years after 2005. In 2005, the highest FDI stock as a percentage of GDP was recorded in Macedonia (34.9 per cent), Croatia (32.5per cent) and Bosnia (21.0per cent). The poorest countries in terms of inward FDI stock in 2005 were Albania (12.05 per cent) and Serbia (20.3 per cent). However, in the subsequent years Croatia recorded the highest inward FDI stock, leaving behind the other SEE countries.

Table 1: *Inward FDI stock as a share of GDP in SEEC-5 and EU-NMS-10, in per cent*

Years	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Average
Albania	6.8	8.0	8.1	8.5	11.4	12.5	15.5	25.2	22.1	27.0	27.7	34.6	38.4	48.3	21.0
Bosnia	19.5	20.7	21.8	18.4	22.5	21.0	25.6	35.1	32.7	40.4	39.6	38.6	42.7	44.5	30.2
Croatia	13.0	16.9	22.9	25.2	30.3	32.5	54.9	75.9	44.8	59.3	59.5	50.0	56.3	56.1	42.7
Macedonia	15.0	26.6	31.9	34.3	39.8	34.9	42.1	45.9	42.0	48.6	47.5	46.0	51.6	54.7	40.1
Serbia	10.5	9.5	10.3	14.3	15.6	20.3	31.1	34.6	44.2	57.5	67.2	63.3	76.2	77.9	38.0
Bulgaria	21.0	21.2	25.8	30.8	40.0	47.9	70.7	90.1	85.0	101.4	99.0	88.5	96.6	99.6	65.5
Romania	18.6	20.5	17.1	20.5	27.0	26.0	37.0	36.9	33.2	43.8	42.6	39.1	46.1	45.4	32.4
Slovenia	14.5	12.6	17.9	21.9	22.5	20.3	23.1	30.4	28.9	31.1	31.1	30.2	34.1	32.5	25.1
Slovakia	34.2	38.5	50.8	65.4	66.8	61.8	69.1	63.6	53.5	60.2	57.7	54.2	61.1	61.5	57.0
Czech R	36.8	42.1	49.3	47.5	50.2	46.6	53.8	62.3	50.2	63.8	64.7	55.8	69.5	68.6	54.4
Hungary	49.3	52.0	54.6	57.9	60.4	55.4	71.2	70.2	57.1	78.0	71.2	62.2	83.1	85.6	64.9
Poland	20.0	21.7	24.4	26.7	34.3	29.9	36.8	42.0	31.0	43.0	45.9	39.4	48.0	48.8	35.1
Lithuania	20.3	21.8	28.0	26.5	28.2	31.5	36.4	38.3	27.3	35.7	36.2	33.1	37.9	37.1	31.3
Latvia	26.8	28.3	29.8	29.4	33.0	30.9	37.7	37.8	34.5	44.9	44.6	42.5	47.8	50.6	37.0
Estonia	46.6	50.5	57.8	71.2	83.5	81.1	75.6	76.2	69.0	86.6	87.7	75.2	86.5	87.7	73.9

Notes: Inward FDI stock as a percentage of GDP.

Source: UNCTAD, 2014; own calculation.

In 2010 and subsequent years the situation changed in favour of Serbia. In 2010 this country received the highest FDI inward per capita, (67.2 per cent), leading Croatia (59.5 per cent) and Macedonia (47.5 per cent). The Macedonian FDI stock per capita during the observed period registered a steady rise from the years 2001 to 2008, reaching its peak in 2013 at (54.57 per cent). However, on average, the highest proportional shares of FDI stocks per capita during the observed period were registered in Croatia (42.7per cent), Macedonia (40.1 per cent), and Serbia (38.0 per cent), which left Bosnia (30.2 per cent) and Albania (21.0per cent) behind. In relation to other CEE countries, a significant amount of FDI stock per capita, on average during the observed period, was recorded in Estonia (73.9 per cent), Bulgaria (65.5 per cent), Hungary (64.9 per cent), Slovakia (57.0 per cent) and Czech Republic (54.4per cent), surpassing other CEEC with amounts below 50 per cent. However, in Table 1 one can notice that SEE countries are becoming more attractive locations for foreign investors, especially after the year 2005, thus changing the perception of foreign investors toward economic conditions of SEE countries. This potential change of pattern can be the result of improvement of macroeconomic stabilization policies and stable conditions for investment in the SEE area. Another point of view may be the successful negotiations between the SEE countries and the EU leading in time to their membership in the EU. This fact in turn means that the region has successfully completed its transitional period and abandoned the national conflicts and their cataclysmic results of earlier wars and political and ethnic conflicts.

The previous section has highlighted the trends of FDI inward stock as a percentage of Gross Domestic Product for EU-NMS-10 and SEE-5. However to explain the rise of intra - regional FDI between these groups of countries, the following section undertakes an empirical examination of some of the potential determinants of FDI stock from EU-14 countries to EU-NMS countries and SEE countries over the period 1994-2010, by considering FDI outward stock level from EU-14 countries to the rest of the region.

4 METHODOLOGY, EMPIRICAL APPROACH AND DATA

In line with the theoretical framework of FDI determinants, we consider the role of geography in explaining FDI pattern among SEE and EU-NMS countries and other policy factors either resisting or promoting FDI by using the conceptual framework of the gravity model. The reduced form of the model including related selected variables is given below:

$$\ln fdi_{ij,t} = a_{ij} + u_t + \beta_0 \ln gdp_{i,t-1} + \beta_1 \ln gdp_{j,t-1} + \beta_2 \ln\left|gdpc_{i,t-1} - gdp_{j,t-1}\right| + \beta_3 \ln x_{jt} + \beta_4 \ln y_{jt} + \beta_5 \ln y_{jt} \times d + \phi + \delta + \theta + \varepsilon_{ij,t} \quad (1)$$

Where $fdi_{ij,t}$ is a bilateral FDI stock from source country i to host country j at time t, in millions of US dollars. $gdp_{ij,t-1}$ represents market size variables denoting the gross domestic product, in millions of US dollar in source and host country, respectively. Both variables are lagged by 1 time period, in order to control endogeneity problems between FDI and GDP. We use the absolute difference of GDP per capita variable between source country

and host country at time t $|gdpc_{i,t-1} - gdp_{j,t-1}|$ as measures of factor endowment differentials between countries. The absolute difference of GDP per capita, between source and host country, will allow us to control for serial correlation between GDP and GDP per capita variable (Greene, 2013). The country-pair specific effects, a_{ij} captures all the time invariant factors, such as distance, common land border, common language etc, while u_t is a time dummy, φ is host country dummy, σ is source country dummy and θ is pair country dummy, x_{jt} represent the vector of host country explanatory variables and y_{jt} stands for host country institutional related variables. The interaction terms, y_{jt},d is included in the model to estimate the determinants of inward FDI stock in SEE-5 countries. The EU-NMS-10 country group is taken as control group ε_{ijt} is the standard error term.

4.1. Empirical model

Following the work of Bevan and Estrin (2004, Johnson (2006) and Mateev (2008) applied to OLI framework, we employ the gravity model for explaining FDI patterns, among countries that have invested in the SEE-5 countries and EU-NMS-10. For estimation purposes, the extended gravity equation for FDI stocks in SEE and EU-NMS-10 countries is specified in the equation (2)[5]:

$$\begin{aligned}\ln fdi_{ij,t} &= a_{ij} + u_t + \beta_0 \ln gdp_{i,t-1} + \beta_1 \ln gdp_{j,t-1} + \beta_2 \ln d_{ij} + \beta_3 \ln|gdpc_{i,t-1} - gdpc_{j,t-1}| + \beta_4 smctry_{ij} \\ &+ \beta_5 wto_{jt} + \beta_6 bfdi_{jt} + \beta_7 \ln op_{j,t-1} + \beta_8 \ln bex_{ji,t-1} + \beta_9 \ln sch_{jt} + \beta_{10} \ln cpi_{jt} + \beta_{11} \ln cc_{jt} + \beta_{12} \ln rq_{jt} \\ &+ \beta_{13} \ln gov_{jt} + \beta_{14} \ln rl_{jt} + \beta_{15} \ln pr_{jt} + \beta_{16} \ln va_{jt} + \beta_{17} \ln cpi_{jt} \times d + \beta_{18} \ln cc_{jt} \times d + \beta_{19} \ln rq_{jt} \times d \\ &+ \beta_{20} \ln gov_{jt} \times d + \beta_{21} \ln rl_{jt} \times d + \beta_{22} \ln pr_{jt} \times d + \beta_{23} \ln va_{jt} \times d + \phi + \delta + \theta + \varepsilon_{ij,t}\end{aligned} \quad (2)$$

where *i* denotes individual source countries, *j* denotes individual receipt countries, *t* denotes the years from 1994 to 2010. The empirical model assumes that bilateral FDI in SEE and CEE countries is a function of GDP, absolute difference of GDP per capita, distance, language, cultural and border similarities, world trade organization membership of host economy, bilateral FDI agreement, trade openness, bilateral exports from country *j* to country *i,* schooling, transition progress, corruption perception index and world governance indicators like control of corruption, regulatory quality, government effectiveness, rule of law, political risk and voice and accountability.

4.2. Data description and hypothesis

Along the lines of previous research, the dependent variable fdi_{ijt} is defined as the bilateral stock of FDI from source country *i* to host country *j* at time *t*. The source of this data is the OECD. The FDI stocks are measured at current prices and current exchange rate in millions of US dollar. The FDI stock variable contains a large number of zero observations

[5] Description of the variables used in the empirical model is given in appendix, table 4. Descriptive statistics of the variables employed in the model is given in appendix, table 5.

and negative values. To avoid this problem we transform the FDI stock variable[6]. The use of FDI stock variable instead of its alternative of FDI flow has an advantages to capture the time lag effects which is not the case with FDI flows.

Using gravity framework, the expected economic factors that determine the size of FDI bilateral are: the market size factors represented by GDP and absolute difference of GDP per capita between source and host countries and transaction cost factor representing the distance. In the empirical model we include the variables of gdp_{it} and gdp_{jt} to consider the market size of host and source country. The empirical literature suggests positive relationship between market size factors and the size of FDI (Bevan & Estrin, 2004; Johnson, 2006; Mateev, 2008). The explanation is that the bigger the host country GDP the larger the FDI, since larger economies become more attractive for foreign capital. The larger the origin country of FDI the more FDI should emerge from this country; and the larger the market size of a host country the more FDI it should receive. Thus, for both variables we expect positively signed coefficients. The source of this data is UNCTAD. In the empirical model we also include the variable of the absolute difference of GDP per capita between countries to capture the market size differentials between countries, as well as factor endowments differentials between countries. In line with the Linder hypothesis (1961), it can also be taken to account for the differences in consumer tastes between countries. Moreover, considering the Linder's preference-based theory (1953), the effects of country characteristics, denoted by GDP per capita on FDI, do not accord well by including the respective levels of GDP per capita for both countries, but, rather by considering the absolute differences of GDP per capita between countries (Frankel *et al.* 1995)[7]. Based on the concept of cost comparative differences and combined tastes between countries, it is expected that high income EU-14 countries will focus their investments more to relatively low income EU-NMS-10 and SEE-5 countries. Hence, it is expected positive impact of the absolute difference of GDP per capita variable on FDI. However, the empirical literature suggests both, positive and negative relationship between factor cost differentials and FDI (Globerman & Shapiro, 2002). The positive (negative) sign of this variable may also be due to the fact that differences in wage levels are compensated (not compensated) by productivity (Bergstrand, 1989).The source of the data for this variable is UNCTAD.

The transaction cost variable in this study is represented by the distance between source and host country. The variable of distance lnd_{ijt} represents gravity factor. Distance between source and host country is expected to have a negative effect on the size of FDI stocks,

[6] This variable contains a large number of zero and negative observations. Therefore, to account for zero and negative observations in the matrix of bilateral FDI variable, we transform this variable by taking the logarithm of the absolute value of FDI increased by 1. By this transformation we take care of zero observations, and negative values are retained and the coefficients from an OLS regression can still be interpreted as elasticity's (Guerin and Manzochi, 2006; Silva and Tenreyro, 2006;2008). The transformed dependent variable is used in dynamic GMM estimation methodology. In standard fixed effects and LSDV estimates we use the untransformed bilateral FDI stock variable as a dependent variable.

[7] With aggregate data, at country level, there is more reason to focus on bilateral differences in comparative advantages and tastes (reflected by the absolute differences in GDP per capita) to explain aggregate bilateral FDI between different countries, with respect to income level. This is a reflection that all countries posses comparative advantages or preferences for something.

due to costly adoptions of goods to local preferences (Johnson, 2006) and high transportation cost (Bevan & Estrin, 2000; Resmini, 2000). The variable of distance is measured by the actual route distance from the economic centres (generally, capital cities) between source and host countries, in kilometres. This variable is used in the model to proxy for the transaction, transportation cost and physical cost of foreign investments[8]. According to Resmini (2000), greater distance presents weaker trade ties between the FDI source country and the host country, thus providing for lower FDI stock levels. Typically, empirical studies proxy trade costs with bilateral distance.

However, a number of additional variables are also customarily used. In this regard, the model includes also additional gravity factors through dummy variables, like $smctry_{ij}$ which is a dummy variable that takes value one when two countries share a border, a language or were the same country in the past, correspondingly. In all the cases, the coefficient is expected to be positive. This variable is used to capture information costs and search costs, which are probably lower for foreign investors whose business practices, competitiveness and delivery reliability are well known to one another. Firms in adjacent countries, or countries with common relevant cultural features, are likely to know more about each other and to understand each other's business practices better than firms operating in less – similar environments. The source of the data for $smctry_{ij}$ is CEPII.

The variable of openness denoted by $lnop_{ijt}$ is included in the model to account for the openness level of the SEE countries (Bos & De Laar, 2004). This variable is measured by the sum of exports and imports over GDP. The variable of openness is used to capture the liberalization of trade and foreign exchange transactions. The fewer restrictions a host country imposes on trade the higher will be the FDI attracted by this country. Therefore, a positive relationship between openness and FDI stock is expected. The source of the data consisting of the openness variable, like exports, imports and GDP, is UNCTAD.

The variable $lnbex_{ji,t-1}$ is considered in the model to account for bilateral exports from host country *j* to source country *i*. This variable is lagged by one time period to allow the bilateral exports the grace period before it starts impacting host country's inward stock of FDI. It is expected that host country bilateral exports to encourage more FDI. Hence, export oriented economies may be more successful in encouraging FDI. Therefore it is expected positive relationship between lagged bilateral exports and FDI. The source of the data for bilateral exports is OECD.

The variable $lnsch_{jt}$ accounting for years of schooling of the host country population is measured by tertiary school enrolment as a per cent of gross school enrolment. This variable will account for efficiency-seeking motives of FDI, capturing the human capital developments in the host country (Borensztein, De Gregorioand Lee, 1998). According to the research literature, there is a strong positive relationship between FDI and the level of educational attainment in the domestic economy. In line with Borensztein, De Gregorio, and Lee (1998), this variable is expected to present a positive relation to FDI: the more educated the workforce,

[8] The source of this variable is http://www.geobytes.com.

the greater the incentive for investment, since a better educated workforce yields higher returns. Data is obtained from the World Bank database on education.

We augment the gravity model by considering additional explanatory variables that are expected to be significant FDI determinants. Therefore, considering the empirical work of Holland and Pain (1988), Garibaldi *et al* (2001), Kinoshita and Campos (2004), Bevan and Estrin (2004), we find that the importance of institutional development factors is significantly important for investment decisions of foreign investors. Moreover, the quality of institutions is crucially important for less developed SEE countries. In the study we proxy for the quality of institutions in the host country through the World Bank's Worldwide Governance Indicators (WGI), which include six relevant measures, on per centile rank values, like control of corruption, regulatory quality, rule of law, government effectiveness, political risk and voice and accountability. These measurements are used in the study in order to account for institutional quality and advancement issues (economic and political institutions).

The index of control of corruption $lncc_{jt}$ captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. It is expected that control of corruption will be negatively associated with bilateral FDI. The index of regulatory quality $lnrq_{jt}$ measures perception of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. It is expected that regulatory quality index will be positively related to bilateral FDI. The index of rule of law $lnrl_{jt}$ measures the perceptions of the extent to which economic agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police and the courts, as well as the likelihood of crime and violence. It is expected that economic agents' confidence in host country institutional system, represented by quality of contract enforcement and property rights, will be positively related to bilateral FDI. The index of voice and accountability $lnva_{jt}$ captures perception 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 a free media. The political stability index $lnps_{jt}$ captures the perception of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically – motivated violence and terrorism. The government effectiveness index $lngov_{jt}$ captures perception of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation and the credibility of the government's commitment to such policies. In general, it is expected that bilateral FDI from source to host country will increase as the overall institutional conditions in the SEE-5 and EU-NMS-10 host countries improve. Therefore, a positive relationship between FDI and host country governance indicators is expected.

The variable $lntp_{jt}$ is included in the model to capture the transition progress of host country institutions. Following Mrak and Rojec (2013), this variable is constructed by the sum of seven EBRD transition specific indexes, i.e. the indexes denoting large scale privatization, enterprise restructuring, competition policy, banking reforms and interest rates liberalization, securities markets and non-bank financial institutions, and infrastructure

reform. It is expected that the transition progress will be positively associated to bilateral FDI stock. The source of the data for this variable is European Bank of Reconstruction and Development (EBRD).

Additionally, Transparency International Corruption Perception Index, (CPI) is included in the study to address the level of perceived corruption and to capture the investment climate in the host countries. The variable $lncpi_{jt}$ is measured by perceived corruption on a continuous scale from 1 to 10. In the model, we account for the effects of corruption as an institutionally related determinant. The data is collected from the Transparency International's website. The variable is expected to have a positive relationship with the FDI stock, since a higher value of the corruption index indicates a less corrupt business environment in the host country.

However, in the study there are also other institutional dummy variables included. The dummy variables, such as wto_{jt}, $bfdia_{ijt}$ are included in the model in line with the business network theory of FDI stocks, to denote institutional factors affecting FDI stocks s into SEE countries. In this regard, wto_{jt} is included in the model to denote the membership of the receipt country of FDI into the World Trade Organization (WTO). The source of this data is the WTO database. The variable $bfdia_{ijt}$ is included in the model to denote bilateral investment treaties between country i and j at time t. The source of the data for bilateral investment treaties is UNCTAD.

Finally, to address the question of whether the main institutional determinants of FDI are different across the two group of countries (SEE countries versus EU NMS), in the estimated model, we introduce the interaction variables between SEE dummy variable d and host country institutional variables. These variable are included in order to differentiate between the overall potential for FDI between the SEE-5 and EU-NMS-10 countries. It is expected that inward stock of FDI may, to a certain extent, be independent of the above country-specific determinants and will be related to the geographic region of SEE that has been plagued by political instability and war for the important part of the time period under consideration. Therefore, the SEE-5 countries may be considered as less attractive locations for FDI. ε_{ijt} is the usual standard error.

5 ECONOMETRIC ISSUES

For estimation purpose we use different methodologies. In this regard, in the study we consider both static panel models and dynamic panel models. We start with the fixed effect (FE) estimates and Least Square Dummy Variable (LSDV) estimates accounting for country (source and host country) fixed effects, time fixed effects and index dummies. The LSDV estimates are presented in order to estimate the pure effect of each individual explanatory variable, accounting also for unobserved heterogeneity (Greene, 2013). This methodology also identifies individual – country specific and time effects.

However, the static panel data approach may lead to biased parameter estimates as it does not take into account the potential endogeneity of explanatory variables. Moreover the

standard static panel model does not correct the biases due to the presence of the lagged dependent variable. Therefore, the use of pooled ordinary least squares (OLS), fixed effects accounting for country and time specific effects would be inappropriate, since endogeneity would bias the results. To check for the robustness of our results obtained using the static panel data techniques, we run dynamic panel data regression using Arrellano-Bover/Blundell/Bond estimation procedure (Arrellano & Bover, 1995; Blundell & Bond, 1998). This procedure employs the Generalized Method of Moments (GMM), estimation technique to generate more efficient and consistent parameter estimates.

6 RESULTS

In this section we present the empirical results. We discuss the economic interpretation of models summarized in table 1 and 2. All the above-mentioned methodologies are presented for estimating the determinants of bilateral FDI. However, every method has advantages and disadvantages. For this reason, as it has become a common practice in empirical literature, we report the results of the all above mentioned estimation methods for the same database.

6.1. Discussion of results from static panel models

In this section we present the estimated coefficients of the augmented gravity model using standard baseline Fixed Effect (FE) estimates, (column 1 and 2) and Least Square Dummy Variable (LSDV) estimates accounting for country fixed effects, time fixed effects and index dummies (column 3 and 4). To consider whether the institutional determinants of FDI are different across two groups of host countries of (SEE-5 and EU-NMS-10 countries), the results with interactions of SEE-5 dummy variable with host country institutional factors are presented in columns 1 and 3. Additionally, as a benchmark category of these estimates, we also present the results without interaction terms (columns 2 and 4). In this case we consider the whole sample of host SEE-5 and EU-NMS-10 countries as one group of host countries of FDI.

Considering these estimates, as Bevan and Estrin (2004) find, the positive and significant coefficients of host and source country GDP and the negative and significant coefficient for distance indicates that FDI is determined by gravity factors, as expected. Hence, our results are consistent with a transaction cost analysis of FDI in which FDI stocks are attracted between relatively large economies, but the gains from overseas production diminish with distance from the source country. Host country GDP and source country GDP is positive and significant in all specifications. This suggests that the income level and the size of host and source country market is an important determinant for foreign investors. A negative and significant coefficient of distance indicates that FDI stocks are determined by gravity factors as expected. On the other hand, the positive coefficient of host country GDP and negative coefficient of distance support the market – seeking hypothesis of FDI. Focusing on LSDV estimates from column 4 the estimated gravity coefficients

can be interpreted as follows. Source and host country GDP has a positive and significant impact on bilateral FDI, with an elasticity of 0.148 and 0.518. An increase in source and host country GDP by 1 per cent, increases bilateral FDI stock from source to host country, on average by 0.14 and 0.51 per cent, respectively, ceteris paribus. The same estimates, are confirming that an increase in the road distance between capital cities of source and host country by 1 per cent will decrease bilateral FDI stock from source to host countries, on average, by 4.3 per cent, ceteris paribus. We find that the coefficient of *same country*, indicating common border, common language or cultural similarities between source and host country at the same time, are negatively associated to bilateral FDI stock. The explanation of this result is that countries in the sample that are close to each other do not have much bilateral FDI stock. Hence, the model predicts that bilateral FDI stock between two contiguous countries is 94.54 per cent lower than FDI between countries that do not share a common border[9]. The findings from the FE models (columns 1 and 2) are confirming a negative effect of absolute difference of GDP per capita between countries on the size of bilateral FDI stock. The estimated elasticity of GDP per capita difference variable is -0.326 in the model of FE estimates with interactions. (column 2). The negative side of this variable may be attributed to the fact that differences in wage levels between countries are not compensated by productivity (Bergstrand, 1989). Hence, 1 per cent increase of GDP per capita differences between countries is associated with, on average, 0.3 per cent decrease of inward FDI stock in the host countries, ceteris paribus.

However, the market size factors denoted by GDP variables and other gravity factors like distance and geographical and cultural proximity are important determinants of FDI, but their importance decreases as the host country is achieving to attract more FDI. Other transition and institutional related factors became more important as it is confirmed in recent empirical literature. The same estimates are showing that host country institutional dummy variable of WTO membership is significant and positively related to bilateral FDI stock, indicating that host country WTO membership is associated with an increase of FDI. Focusing on LSDV estimates (column 4), the estimated impact of transition progress on FDI is 2.936, indicating that advancements of host country transition reforms with respect to large and small scale privatisation, enterprise restructuring, competition policy, infrastructure reforms and the reforms in bon-bank financial institutions, by 1 per cent, is associated with average increase of bilateral FDI stock into host countries by 2.93 per cent, ceteris paribus.

To capture the partial effect of institutional development on the size of inward stock of FDI in SEE countries, the institutional variables are interacted with see dummy variable. Focusing on LSDV estimates (column 4), the estimated coefficient of CPI index for EU-NMS-10 countries, in the equation of FDI is -0.849, per cent. For SEE-5 countries it is 0.793 per cent (-0.849+1.642). The difference 1.642 per cent, or one and a half percentage point more for SEE-5 countries, is economically large and statistically significant at 1 per cent level of significance. Thus, we conclude that there is sufficient evidence against the hypothesis that the size of inward FDI stock does not vary with respect to CPI index,

[9] The formula to compute this effect is $\left(e^{b_i}-1\right)\times 100$, where b_i is the estimated coefficient.

Table 2: *Results from static panel models with and without interactions*

VARIABLES	(1) Fixed Effects	(2) Fixed Effects	(3) LSDV	(4) LSDV
Log of GDP in source country (-1)	0.142*	0.147*	0.175**	0.148*
	[1.88]	[1.95]	[2.13]	[1.80]
Log of GDP in host country (-1)	0.746***	0.768***	0.623***	0.518**
	[8.70]	[8.84]	[2.93]	[2.30]
Log absolute diff of GDP capita (-1)	-0.382***	-0.326**	-0.136	-0.141
	[-2.70]	[-2.24]	[-0.81]	[-0.84]
Log of distance			-2.068***	-4.376***
			[-12.19]	[-8.45]
Same country			-4.445***	-2.909**
			[-2.82]	[-1.99]
WTO membership	0.482***	0.542***	0.190	0.280**
	[4.20]	[4.62]	[1.55]	[2.22]
Bilateral FDI agreement	-0.007	0.127	-0.136	0.011
	[-0.06]	[1.08]	[-1.17]	[0.09]
Log of openness (-1)	0.242	0.234	-0.244	-0.226
	[1.34]	[1.28]	[-1.01]	[-0.92]
Log of bilateral exports (-1)	0.006	0.008	-0.000	0.000
	[0.24]	[0.32]	[-0.02]	[0.01]
Log of schooling	0.813***	0.736***	0.051	0.049
	[5.93]	[5.31]	[0.27]	[0.26]
Log of transition progress	5.973***	5.634***	3.144***	2.936***
	[13.54]	[11.80]	[5.00]	[4.45]
Log of corruption perception index	-0.308	-0.826***	-0.252	-0.849***
	[-1.24]	[-2.91]	[-0.94]	[-2.71]
Log of control of corruption	-0.508**	-0.618*	-0.076	-0.160
	[-2.21]	[-1.89]	[-0.31]	[-0.46]
Log of regulatory quality	0.664*	1.517***	0.920**	1.588***
	[1.84]	[3.21]	[2.43]	[3.24]
Log of government effectiveness	0.287	0.681*	0.613**	1.095**
	[1.06]	[1.67]	[2.15]	[2.53]
Log of political risk	-0.475***	-0.577***	-0.452**	-0.567**
	[-2.84]	[-2.82]	[-2.42]	[-2.46]
Log of voice and accountability	-0.520	-0.223	-0.870**	0.209
	[-1.38]	[-0.35]	[-2.27]	[0.31]
Log of rule of law	-0.439	-0.208	-0.470	-0.290
	[-1.35]	[-0.61]	[-1.41]	[-0.82]
Log of corruption perception index**d*		2.007***		1.642***
		[3.48]		[2.83]
Log of control of corruption**d*		-0.404		-0.214
		[-0.84]		[-0.45]
Log of regulatory quality**d*		-2.375***		-1.947***
		[-3.47]		[-2.80]
Log of government effectiveness**d*		-0.108		-0.270
		[-0.18]		[-0.45]
Log of political risk**d*		0.650*		0.613
		[1.77]		[1.62]
Log of voice and accountability**d*		-0.651		-1.626*
		[-0.82]		[-1.95]
Constant	-17.131***	-21.156***	5.055	14.329***
	[-8.75]	[-7.55]	[1.34]	[3.55]
Source and host country dummy	No	No	Yes	Yes
Time and index (country - pair) dummy	No	No	Yes	Yes
Observations	1,767	1,767	1,767	1,767
R-squared	0.664	0.670	0.923	0.924
Number of groups	170	170		

Notes: Dependent variable is log bilateral FDI stock. t-statistics in brackets, ***, ** and * indicate significance of coefficients at 1, 5 and 10 per cent, respectively.

between SEE-5 and EU-NMS-10 countries. These results indicate that 1 per cent increase in the CPI index, which is associated with lower perceptions by host country population toward corruption presence in the business environment, the size of bilateral FDI stock into host countries SEE-5 countries increases by 0.79 per cent, ceteris paribus. On the other hand, the negative coefficient of CPI index for the benchmark category of EU-NMS-10 countries indicate that bilateral FDI stock into EU-NMS-10 countries, originated from EU-14 countries, decrease as the business environment in the former group of countries is perceived to be less corrupted.

The estimated coefficient of regulatory quality for EU-NMS-10 countries in the selected LSDV estimates (column 4), is 1.558 per cent. For SEE-5 countries it is -0.389 per cent (1.558-1.947). The difference -1.947 per cent, or 2 percentage points less for SEE-5 countries, is statistically significant. Thus, we conclude that the size of inward FDI stock vary with respect to perceptions of SEE-5 and EU-NMS-10 countries governments to promote private sector developments. The results indicate that a 1 per cent increase in regulatory quality index is associated with 0.4 per cent decrease of inward FDI stock in SEE-5 countries, ceteris paribus. Hence, sound regulation policies that promote private sector developments in SEE-5 countries are not contributing to inward stock of FDI. The size of regulation policies on the private sector for SEE-5 countries is found to be critical factor on foreign capital accumulation, in the form of FDI. The explanation that lay behind the scope of this interpretation can be attributed to biasness and inconsistency of private sector-regulation policies, for SEE-5 countries, thus confirming the regional predispositions toward this inconsistency, concerning regulation policies being applied for FDI attraction motives.

The positive coefficient of regulatory quality for the benchmark category of EU-NMS-10 countries indicate that bilateral FDI stock into EU-NMS-10 countries, originated from EU-14 countries, increase as the private sector-regulation policies in the former group of countries are perceived to be well promoted. The estimated coefficient of political risk in the LSDV model (column 4), for EU-NMS-10 countries is -0.567 per cent. For SEE-5 countries it is 0.046 per cent (-0.567+0.613).

The difference of 0.613 per cent, or just below one half percentage point more for SEE-5 countries, is statistically insignificant. However, in fixed effect model (column 2), this difference is statistically significant at 1 per cent level of significance[10]. The coefficients size, below 1 in absolute value, of political risk indexes for EU-NMS-10 countries and SEE-5 countries, indicate that foreign investors are not sensitive to changes in political risk indexes between countries, although the size of inward FDI stock between SEE-5 and EU-NMS-10 countries is not the same with respect to changes in political risk index, between countries. Hence, a 1 per cent increase in the political risk index (associated with host country governmental destabilization by unconstitutional means), increases (decreases)

[10] The estimated elasticity of political risk for the benchmark category of EU-NMS-10 countries is -0.577, or -5.7 per cent. For SEE-5 countries the estimated elasticity is 0.073 per cent. Hence, the difference of 0.613 per cent, confirms statistically significant interaction term between SEE-5 dummy and political risk, which favours the hypothesis that size of bilateral inward FDI stock between SEE-5 and EU-NMS-10 countries, vary with respect to political risk index

the average bilateral FDI stock in SEE-5 countries (EU-NMS-10 countries) by 0.4 per cent and 0.5 per cent, respectively, ceteris paribus.

6.2 Discussion of results from dynamic panel models

We introduce the dynamic panel estimates to account for the endogeneity associated with the dependent variable. Following Roodman's (2006) approach we have employed the strata command *xtdpdsys*. The new *xtdpdsys* jointly offer most of *xtabond2's* features, while moving somewhat towards its syntax and running significantly faster (Roodman, 2006). The lagged dependent variable and all the institutional variables, bilateral exports and GDP are endogenous, whereas openness and schooling are exogenous. Following Roodman (2006), we use only one lag for the dependent variable in the *GMM* and exclude distance and all dummy variables employed in static panel models, like: *smctry, see dummy, wto membership and bilateral FDI agreement*. In the estimates, the Wald statistics reports the joint significance of the explanatory variables.

The *p-value* of 0.00 of the Wald test in all specifications suggests rejection of the null hypothesis that the independent variables are jointly zero. The estimates from GMM specification are confirming theoretically expected results. The estimated coefficient of the lagged dependent variable is significant and positive in the GMM estimates, implying that there are significant persistence effects, which supports the use of GMM. The results confirm that an increase of agglomeration effect of FDI by 1 per cent, results in an increase of further FDI stock into host countries, by 0.6 per cent. Therefore, there is an indication that FDI agglomerations are concerned with further FDI movements. The market size coefficients of GDP in source and host countries are significant and positive, as expected and confirmed in static panel models.

Table 3: *Results from dynamic panel models, GMM*

VARIABLES	(5) One step results GMM estimates	(6) One step results GMM estimates
Lagged dependent variable	0.689***	0.692***
	[44.72]	[44.96]
Log of GDP in source country	0.309***	0.352***
	[4.63]	[5.60]
Log of GDP in host country	0.213***	0.195***
	[5.58]	[5.36]
Log of GDP per capita difference	-0.093	-0.066
	[-1.19]	[-0.85]
Log of bilateral exports	0.104***	0.112***
	[4.89]	[5.31]
Log of transition progress	0.852***	1.080***
	[3.45]	[4.11]
Log of corruption perception index	-0.386***	-0.281*
	[-2.60]	[-1.68]
Log of control of corruption	0.054	0.237
	[0.51]	[1.24]
Log of regulatory quality	-0.044	0.121
	[-0.23]	[0.42]
Log of government effectiveness	-0.215*	-0.171
	[-1.83]	[-0.72]
Log of political risk	0.209**	-0.157
	[2.45]	[-1.07]
Log of voice and accountability	0.098	-0.337
	[0.59]	[-1.05]
Log of rule of law	-0.396***	-0.373***
	[-2.91]	[-2.82]
Log of corruption perception index**d*		0.090
		[0.31]
Log of control of corruption**d*		-0.208
		[-0.90]
Log of regulatory quality**d*		-0.696**
		[-2.21]
Log of government effectiveness**d*		0.003
		[0.01]
Log of political risk**d*		0.389**
		[2.17]
Log of voice and accountability**d*		0.441
		[1.29]
Log of openness	0.085	0.039
	[0.75]	[0.37]
Log of schooling	0.346***	0.228***
	[5.06]	[3.56]
Constant	-6.699***	-6.076***
	[-6.74]	[-6.13]
Sargan test, χ^2	1586.876	1639.471
P - value > χ^2	0.0000	0.0000
Wald, χ^2	12314.71	13761.17
Prob > χ^2	0.0000	0.0000
Number of instruments	780	851
Observations	3,248	3,248
Number of groups	210	210

Notes: Dependent variable is log bilateral FDI stock z-statistics in brackets, ***, ** and * indicate significance of coefficients at 1, 5 and 10 per cent, respectively.

The coefficient of bilateral exports is significant and positive in both GMM estimates. This indicates that an increase of bilateral export from exporting SEE-5 and EU-NMS-10 to importing EU-14 countries, by 1 per cent increases the inward stock of FDI from source EU-14 to host SEE-5 and EU-NMS-10 countries by 0.1 per cent, ceteris paribus. This result suggests that the increase of bilateral exports of host SEE-5 and EU-NMS-10 countries serves as a channel through which FDI activity in the exporting countries expand. The positive relationship between bilateral exports and bilateral FDI stock, on the other hand, confirms the complementarities between bilateral exports and bilateral FDI for both groups of countries.

Referring to the same estimates (see column 5 and 6), we find significant coefficients of schooling. The estimated elasticity of schooling is 0.228 indicating that a 1 per cent increase in tertiary school enrolment will increase bilateral FDI stock, from EU-14 to SEE-5 and EU-NMS-10 countries, by 0.2 per cent. This result supports efficiency seeking considerations, that foreign investors are likely to locate their investments in countries with high potentials of efficient human resources and a well-educated labour force. Generally, other explanatory variables, considered in the static panel model are showing the same effect and significance level on FDI stocks between countries, in the dynamic - panel model.

The fact that some of the significant explanatory variables, reported in the static panel models become insignificant in the *GMM* specification, with exception to lagged dependent variable, suggest that some of the explanatory power of the lagged dependent variable is being falsely attributed to the other variables in static specification. Therefore, the empirical findings of the model imply that there exist some omitted dynamics in the static panel models, thus confirming that the empirical findings related to determinants of FDI in transition economies, using static panel models, should be accepted with caution.

7 CONCLUSIONS

This paper has identified significant determinants of FDI stock into the SEE-5 transition economies and EU-NMS-10 Countries, and highlighted the implications of different institutional factors for FDI. Using an augmented gravity model, we focused the research mainly on the importance of institutional and transition-related factors as crucial determinants that largely explain the size of FDI into transition economies. As expected, all of these determinants play an important role in determining firms' foreign market entry decision. Moreover, SEE-5 and EU-NMS-10 host country institutional-related factors appeared to significantly determine bilateral FDI stock from the EU-14 countries. Guided by the economic theory and empirical investigation, we specify static and dynamic models. From all the estimates we found that gravity factors, like market size of the host and source country, are an important determinant for foreign investors. Negative and significant coefficient of distance indicates that FDI is determined by gravity factors, as expected.

Based on a cross-section panel data analysis we have found that FDI stocks are significantly determined by both gravity factors (distance, GDP) and non-gravity factors (openness,

schooling, transition progress, the corruption perception index and interaction terms between governance indicators with bilateral FDI). The positive and significant coefficients of market size factors (GDP) for both source and host country indicates that FDI is determined by host and source country market seeking considerations. Also, the positive and significant coefficients of schooling, is a signal that foreign investors are considering efficiency - seeking considerations for positive FDI decisions. The interaction terms of institutional related variables (corruption perception index, regulatory quality and political risk), with SEE dummy, have been proved as significant.

The economic importance of the findings of this paper is on providing an analytical basis for the evaluation of state policies and institutions aimed atmaking SEE Countries and New EU member states more attractive to foreign investors. In line with this finding, the paper provides support on which most important macroeconomic and institutional determinants of FDI a strong emphasis should be placed by policymakers in these countries.

In terms of contribution to the empirical evidence, the study has augmented the gravity model to accounts for many host country transition and institutional related factors that consider investment climate in SEE-5 and EU-NMS-10 countries. For this purpose, several political and institutional related variables were included in the model, such as WTO membership, bilateral FDI agreement, corruption perception index, control of corruption, regulatory quality, government effectiveness, political risk, voice and accountability and institutional transition progress. These factors have also been considered by the European Commission as the most important detriment for EU accession.

The limitations of this study are pertaining to the data set, the estimation techniques and the variables used. The sample size used in this study is limited to the number of 24 investing partners, on the information provided by the OECD. Although the data set includes more than 70% of the total FDI stock into SEE-5 originated from 14 European Union investing partner countries, some important investing partners such as EU-NMS- 10 countries (Bulgaria, Slovenia, the Slovak Republic, the Czech Republic, Poland, Hungary, Estonia, Latvia, Lithuania) for SEE-5 countries, are excluded from the sample of source countries of FDI, and these countries are considered as host countries of FDI for the EU-14 countries. A different study where EU-NMS-10 countries, would also be considered as a source countries of FDI, for SEE-5 countries, among other EU-14 countries, would improve the research results of the study, as concern to the determinants of FDI in SEE-5 countries. In addition, among EU-14 countries, only 11 of them are part of European Monetary Union (EMU), like: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal and Spain, whereas other countries like: Denmark, Sweden, the United Kingdom use their own national currency. This may lead to biased estimates of the impact of regional integration on the inward stock of FDI. This study offers a methodology to make progress headed for disentangling the effects of diverse institutions. However, future empirical research might usefully try to investigate a larger and perhaps a new diverse data set than our 29 countries.

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APPENDIX

Table 4: *Description of variables used in the model and data sources*

Variable name	Measurement unit	Source
$lnfdi_{ijt}$	FDI outward stock of Source Country: FDI stock from source country to host country at current year	OECD
$lngdp_{i,t}$	GDP in source country	UNCTAD
$lngdp_{j,t}$	GDP in host country	UNCTAD
$lndifgdpc_{ij,t}$	Difference in GDP per capita between source country and host country, in PPP (constant 2005 international$), in logarithm	UNCTAD
lnd_{ij}	Distance in kilometers between capital cities of host and source countries, in logarithm	www.geobytes.com
smctry	Dummy variables that take value one when two countries share a border, a language or were the same country in the past, correspondingly and zero, otherwise	CEPII
$lnop_{j,t}$	Openness: (Export + Imports)/GDP, in logarithm	UNCTAD, own calculation
$lbex_{jit-1}$	Bilateral exports from country *j* to country *i*. In millions of US dollar	OECD
wto_{jt}	World Trade Organization membership of host country. Dummy variable = 1 at the time of host country accession into WTO at year t, 0 otherwise	UNCTAD
$bfdia_{ij}$	Bilateral Investment agreement. Dummy variable = 1, denoting the year of entry into force of bilateral investment agreement, at the time afterward, 0 otherwise	UNCTAD
$lnsch_{jt}$	School enrollment, tertiary (% gross), in logarithm	World Bank
Ltransjt	Log of transition progress. the sum of seven EBRD transition specific indexes, i.e. the indexes denoting large scale privatization, enterprise restructuring, competition policy, banking reforms and interest rates liberalization, securities markets and non-bank financial institutions, and infrastructure reform	EBRD
Lcpijt	Log of corruption perception index, range 0 - 10	Transparency International
$lncc_{jt}$	Control of corruption in host country, in per centile rank, in logarithm	World Bank. WGI
$lnrq_{jt}$	Regulatory Quality in host country, in per centile rank, in logarithm	World Bank. WGI
Lgovjt	Government effectiveness, in per centile rank, in logarithm	World Bank. WGI
$lnrl_{jt}$	Rule of law in host country, in per centile rank, in logarithm	World Bank. WGI
Lpsjt	Political risk, in per centile rank, in logarithm	World Bank. WGI
$lnva_{jt}$	Voice and accountability in host country, in per centile rank, in logarithm	World Bank. WGI
seed	Dummy variable = 1 for SEE countries capturing bilateral relationship between SEE host countries and EU-14 source countries, O otherwise (capturing bilateral relationship between NMS - EU – 10 host countries and EU-14 source countries.	Own knowledge

Table 5: *Descriptive statistics of the variables used in the model*

Variables	Obs	Mean	Std.Dev	Min	Max
Log of FDI	1793	5.217049	2.6398	-4.71053	11.56833
Log of FDI stock (transformed variable)	3570	2.691952	3.15899	0	11.56834
Log of GDP in source country (-1)	3569	13.0338	1.052331	10.93089	15.103
Log of GDP in host country (-1)	3569	10.09527	1.213576	7.57492	13.17948
Log of difference in GDP per capita (-1)	3570	10.01834	2.709805	4.156837	28.46393
Log of distance	3570	7.158972	.5868352	4.007333	8.105609
Language, border and cultural similarities	3570	.0285714	.166622	0	1
WTO membership	3570	.6784314	.4671438	0	1
Bilateral FDI agreement	3570	.6705882	.4700655	0	1
Log of openness	3430	1.01906	.3198304	.3003606	1.735325
Log of bilateral exports	3570	4.280308	2.611247	0	10.68594
Log of schooling	3556	3.663512	.4530056	2.327495	4.49518
Log of transition progress	3332	2.586845	.2439516	1.386294	2.813011
Log of Consumer Price Index	3570	1.33237	.2986206	.6931472	1.902107
Log of Control of corruption	3570	3.904717	.487955	1.921217	4.463944
Log of Regulatory Quality	3570	4.122033	.3715025	2.870569	4.520331
Log of Government Effectiveness	3570	3.969506	.5066156	1.921217	4.44208
Log of Political Risk	3570	3.91958	.5305904	1.347074	4.488583
Log of Voice and Accountability	3570	4.119053	.3312094	2.486508	4.493379
Log of Rule of Law	3570	3.910839	.4933368	2.207275	4.461333
Log of Corruption Perception index*d	3570	.3511553	.5094607	0	1.481605
Log of Control of Corruption *d	3570	1.150178	1.655953	0	4.149694
Log of Regulatory Quality *d	3570	1.238456	1.763355	0	4.250525
Log of Government Effectiveness *d	3570	1.161196	1.674215	0	4.267726
Log of Political Risk *SEE dummy	3570	1.113829	1.603425	0	4.216156
Log of Voice and Accountability *d	3570	1.255482	1.786692	0	4.230477
Log of Rule of Law*d	3570	1.238456	. 1.763355	0	4.250525