UNIVERSITY OF LJUBLJANA
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DETERMINANTS AND TRADE EFFECTS OF FOREIGN DIRECT INVESTMENT IN SOUTH EAST EUROPEAN COUNTRIES WITH SPECIAL FOCUS TO MACEDONIA

DOCTORAL DISSERTATION

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The undersigned Bardhyl Dauti, a student at the University of Ljubljana, Faculty of Economics, (hereafter: FELU), declare that I am the author of the doctoral dissertation entitled Determinants and Trade Effects of Foreign Direct Investments in South East European Countries, written under supervision of full professor Jože. P. Damijan, PhD.

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Dejavnikih in učinki na zunanjo trgovino tujih neposrednih investicij v tranzicijskih gospodarstvih Jugovzhodne Evrope, s posebnim poudarkom na Makedoniji

Povzetek

Ta doktorska disertacija analizira različne teme povezane z determinantami NTI-ja. Tri empirične študijepreučujejo determinante bilateralnega NTI-ja med državami in učinke NTI-ja natrgovanju na izvozni in uvozni ravni ter izračun potencialnih zalog NTI-ja v Makedoniji z uporabo gravitacijskega modela.Empirična analiza temelji na več dimenzionalnih podatkih za 20 OECD držav, 5 jugovzhodnih držav (v nadaljevanju JVE) in 10 novih držav članic Evropske unije (v nadaljevanju NDC-EU-10) v obdobju 1994-2010. Uporabljene sorazlične metode vrednotenja glede na preučevan pojav, od standardnih večdimenzionalnih statičnih metod, večdimenzionalnih dinamičnih metod do nelinearnih metod ocenjevanja.

Prvi empirični del študije predstavlja glavne determinante NTI-ja v državah JVE in vdesetih državah NDC-EU-10 z uporabo razširjenega gravitacijskega modela. Specifike institucionalnih dejavnikov vsake države, ki odločajo o naložbah tujih investitorjev iz temeljnih 14 držav EU, so bile vzete v obzir. Iz rezultatov raziskave smo ugotovili, da gravitacijski dejavniki in dejavniki povezani z institucijami, kot so nadzor nad korupcijo, politična stabilnost, bilateralni sporazum NTI, članstvo v Svetovni trgovinski organizaciji (WTO) in napredek v tranziciji bistvenovplivajo na vhodneNTI-je iz temeljnih držav EU vgospodarstva držav JVE in nove države članice EU.

Drugi empirični del študije z gravitacijskim modelom empirično preverja razmerje med NTI in trgovino (izvoz in uvoz) in značilnosti držav, od OECD0 20 držav, od JVE 5 držav in od NDC-EU-10 držav z uporabo bilateralnih podatkov med državami. Empirični model ocenjuje kako značilnosti držav odločajo ali so NTI-ji v JVE 5 ali v NDC-EU-10 držav od osrednjih OECD 20 držav vertikalni ali horizontalni. V vseh ustreznih ocenah, ki temeljijo na razmerju med zalogami vhodnih neposrednih tujih naložb in izvozom, ugotovitve študije so pokazale, mešane dokaze, s čimer podpirajo tako Helpman (1984) teoretično napoved o pozitivenem sorazmerju med NTI in izvozom za EU-NMS-10 države in Markunsen (1984) teoretično napoved o negativniem sorazmerju med NTI in izvozom za države JVE 5.

Tretji empirični del študije z razširjenim gravitacijskim modelomocenjuje dejavnikebilateralnega NTI-ja med OECD-20, JVE-5 in NDC-EU-10 državami. Določeni koeficienti iz rezultatov študije se uporabijo za izračun zalog potencialnih bilateralnih NTI-jev v Makedoniji iz OECD-20 za obdobje 2007-2015. Ugotovitve študije kažejo, da so NTI-ji v JVE-5 in NDC-EU-10 državedoločeni glede na z velikost trga in dejavnike povezane z institucijami.Izračun potenciala NTI-jev v Makedoniji kaže, da so sosednje države in relativno blizu države (Avstrija, Nizozemska, Grčija,

Velika Britanija in Svica) vložile več kot druge države, medtem ko večina drugih držav, glede na te rezultate, ne bi mogla doseči svojo polno zmogljivost v zalogah bilateralnih NTI-jev v Makedonijo. Glede na izbor spremenljivk v modelu (BDP, BDP na prebivalca, razdalja, ista država, enak jezik in kulturne podobnosti, bilateralni sporazum NTI, članstvo v STO, dvostranski izvoz, odprtost trgovine, indeks zaznave korupcije, šolanje, napredek tranzicije in pogoji interakcij z upravljalnimi kazalniki z NTI), lahko rečemo, da bo sposobnost makedonske vlade povečati gospodarsko rast in izvesti strukturne reforme in nadaljevati z institucionalnimi reformami ključen dejavnik pri privabljanju novih NTI-jev v prihodnosti.

Na splošno ugotovitve te disertacije osvetljujejo pogled na zagotavljanje analitične podlage za vrednotenje politik držav in institucij, katerih cilj je, da bi Makedonija, JVE-5 in 10 novih držav članic EU bile bolj privlačne za tuje vlagatelje. Ugotovitve kažejo tudi na to, da mora biti močan poudarek na vladah državah gostiteljicah pri izboljšanju učinkovitosti državnih institucij, nadziranjem korupcije in birokracije ter izboljšanjusplošnih gospodarskih razmer.

ključne besede: Neposrednetuje investicije, trgovina, gravitacijski model, večdimenzionalni podatki

SUMMARY

This PhD dissertation analyses various topics related to the determinants of FDI. The three empirical chapters of the dissertation examine the determinants of bilateral FDI flows between countries, the trade effects of FDI - at both export and import levels - and the calculation of potential FDI stocks in Macedonia using the gravity model. The empirical analysis is based on the panel data for OECD-20 countries, SEE-5 and EU-NMS-10 countries, for a yearly time span: 1994-2010. Different estimation methods are used depending on the phenomena studied which range from standard static panel techniques, dynamic-panel techniques and non-linear estimation techniques.

The first empirical part of the work accounts for the principal determinants of FDI flows to SEE countries and the 10 new member states of the EU 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 said countries. From the results of the study we find that gravity factors and institutional related determinants like control of corruption, political stability, bilateral FDI agreement, WTO membership and transition progress appear to significantly determine inward FDI flows from core EU countries to host economies of SEE and new EU member states.

The second empirical part of the study uses an augmented gravity model tests the linkage between FDI and trade, both exports and imports regarding country characteristics between OECD0-20 countries and SEE-5 and EU-NMS-10 countries using bilateral level data between countries. The empirical model considers how the relationship between FDI and Trade (export and import) in a link to country characteristics determine whether type of FDI into SEE5 and EU-NMS-10 from core OECD-20 countries, is vertical or horizontal. Based on the relationship between stock of inward FDI and exports, the findings of the study showed mixed evidence, thus supporting both Helpman (1984) theoretical predictions on positive relationship between FDI and exports for EU-NMS-10 countries and Markunsen (1984) theoretical prediction on negative relationship between FDI and exports, for SEE-5 countries. On the other hand, based on the relationship between FDI and imports, the results of the study supported Helpman's (1984) theoretical predictions on positive relationship between FDI and imports for both EU-NMS-10 and SEE-5 group of countries.

The third empirical part of the study, using an extended Gravity Model estimates the determinants of bilateral FDI stock between OECD-20 countries, SEE-5 and EU-NMS-10 countries. The estimated coefficients from the results of the study are used to calculate the stock of bilateral FDI potentials in Macedonia, originated from OECD-20 countries. The findings of the study suggest that FDI into SEE-5 and EU-NMS-10 countries is determined by market size and institutional related determinants. The calculation of FDI potentials in Macedonia indicate that some OECD countries, like:

Austria, Greece, Netherland and Switzerland could reach a realized level of FDI stock in Macedonia, higher than potentially expected. Other selected OECD-20, could not reach their expected level of potential of bilateral FDI-stocks in Macedonia. In regards to the selection of the variables in the model i.e. GDP, GDP per capita, distance, same country, language and cultural similarities, etc...The point can be made that Macedonia's ability to promote economic growth and structural reform as well as institutional reform will certainly be pivotal factors in attracting FDI in future.

In general, the findings of this dissertation shed additional light in providing an analytical framework for the assessment of country policies and institutions aimed at making Macedonia, SEE-5 countries and 10 New European Member states more attractive to foreign investors. The findings also suggest that strong emphasis should be placed by host country policy makers in improving the efficiency of government institutions, controlling corruption and bureaucracy and improving the general economic conditions.

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1   INTRODUCTION

Small and open economies, such are the case with South East European countries, usually suffer from insufficient sources of domestic savings. The requirement to attract foreign capital through Foreign Direct Investmen, therefore, becomes a national strategy of SEE countries for future economic growth. This dissertation analyzes the determinants and trade effects of Foreign Direct Investment in SEE economies and CEE economies: (Albania, Bosnia and Herzegovina, Croatia, Macedonia, Serbia, Bulgaria, Romania, Slovenia, Slovak Republic, Czech Republic, Poland, Hungary, Latvia, Lithuania and Estonia) and their national strategies for attracting more foreign capital. The analysis covers the period 1994-2010.

The ongoing rise of Foreign Direct Investment (FDI) has been a key element of globalisation process, and it has gained important weight over the past decades for enhancing growth prospects in transition-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 South East European Countries (SEEC) for the same period the cumulative 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, and favour these firms via policies such as subsidies and tax breaks (Haskel et al., 2002).

In terms of economic performance, transition countries of South East Europe (SEE) always lagged well behind the countries of the European Union (EU). This development and performance gap expanded even more due to several political and economic crises that the transition economies went through during the past decade. In observing the transition processes of the SEE region from central planning systems to market oriented systems an increased interest in Foreign Direct Investment (FDI) arises in said countries. Along with this, a large number of transitional countries made wide use of various promotional policies to attract FDI. A particular justification for this is that social returns of FDI exceed private returns due to productivity spill-over from FDI to domestic firms (Haskel et al., 2002). Developing countries can gain potential benefits by drawing to themselves international capital flows. It is a given that foreign capital, through expanding domestic savings (usually at low levels), enables countries to increase their rate of capital accumulation. (Haskel et al., 2002).

Considering the importance of FDI for SEE countries, this research tackles the following three key issues. First, the research analyzes the processes and policies that have an impact on foreign investors' decisions about investing in the SEE region. Using the gravity model, we will analyze whether FDI inflows into these countries are driven by market–seeking, resource–seeking or efficiency–seeking factors. Second, we

will study the relationship between FDI and exports and whether FDI inflows have an impact on subsequent increases of trade from the SEE countries. Third, we will estimate the determinants of FDI flows between EU-24 using a gravity model, and then apply these coefficients to calculate the potential for FDI inflows in Macedonia, (under the assumption that Macedonia would be integrated in the EU market). Finally, we will also provide a comparison between potential FDI inflows to actual FDI inflows in Macedonia. Based on this, we will draw on policy recommendations for promoting FDI inflows in Macedonia.

1.1   Research scope

Foreign Direct Investment has been considered one of the main factors underlying the relative growth rates experienced by the South East European economies. The rising trend of FDI inflow made possible the deep liberalization and transformation of the economies of the region of SEE, thus increasing the degree of openness and integration of SEE economies into the world markets. In addition, the attitude of SEE countries towards European Union (EU) membership has involved a new boost in FDI that reflects the favorable prospects for the countries' economic future when faced with the challenges of the Single European Market. Despite the crucial role played by FDI in the SEE economies, the available empirical evidence is rather scant, being generally of a descriptive nature. The aim of this dissertation is to provide some more robust evidence on the tested hypothesis related allocation over time and locations of gross aggregate FDI inflows in the SEE economies. For this purpose, using yearly data for the period 1994-2010 we employed panel analysis.

Previous research on FDI determinants in SEE countries addressed market factors of size which are important for FDI in SEE economies (see Botric and Skuflic, 2006) and gravity factors that explain the pattern of FDI in SEE countries (Mateev, 2008). Other factors that are found to have significant effects are geographical proximity, barriers to trade, tax policy and tax incentives, labour costs and regional integration. According to Dimitri et al. (2005), gravity factors explain a large part of FDI inflows in transition economies, including South-East European countries, but the policy environment also matters for FDI. Janicki and Wunnava (2004) found that internationaltrade is perhaps the most important determinant of Foreign Direct Investment in this region. In this dissertation, in order to account for investment climate in the SEE region, we will include several political and institutional variables, such as risk, corruption index and transitional-specific variables, like the WTO membership of the host country and bilateral FDI agreements. Political and institutional factors have been considered by the European Commission as the most important detriments for EU accession. Therefore, considering the ambitions of SEE countries to become part of the EU structure, it is expected that the findings of this dissertation will provide a useful analytical framework for policymakers to decide which major macroeconomic, transition-specific and

institutional determinants of FDI should be considered for development strategies of the SEE countries.

1.2   Research objectives

The principal objective of this research is to evaluate determinants of FDI in SEE countries and how these affect trade. Also, it analyses FDI flows between different locations and their geographical distances in SEE economies. The primary research question asks which factors motivate, attract, and sustain foreign investments in southeastern European countries. In this regard, the research questions that are considered in the dissertation are:

1. Is it really geography that explains FDI flows and magnitudes in the SEE region, or are there other underlying reasons pertaining to country, sector - and individual countries' specific policies?
2. Do FDI inflows have a significant and positive effect on trade, suggesting that export-platform FDI may be important for the SEE countries?
3. Given the geographic position and other country-specific characteristics, what is the scope for FDI inflows to Macedonia, if Macedonia were to normalize its economic policies and be closely integrated into the EU in the same way as the existing EU members are integrated among themselves?

In answering said research questions we shall attempt to provide an overview of Foreign Direct Investment (FDI) academic work, for example the Eclectic Paradigm, Resource Based Theories of FDI, Market Based Theories of FDI, Efficiency Based Theories of FDI, and the Gravity Models of FDI, the last of which helps to understand various patterns of FDI in SEE economies and Macedonia. Macedonia is chosen as the target country of special focus, in order to see how the model of the determinants of FDI applies to a semi–developed transition country. Moreover, the Macedonian government has taken important steps with regard to promotion of the country to foreign investors. The research will employ an extended Gravity Model, to estimate the determinants of FDI inflow in SEE economies, relying moreover on institutional determinants of Foreign Direct Investments.

1.3   Organization of the Research

This thesis contains seven chapters. Chapter one introduces the objectives of the research as well as the scope of the work. Chapter two describes patterns of industry regarding FDI. In this chapter we shall focus on the importance of FDI for all transitional economies of the southeast European countries. This chapter will examine trends of FDI inflows based on geographical and sector distribution in the SEECs and compare these stocks with those of central east European countries (CEECs) as well as European Union (EU) countries. Also, this chapter looks at the importance of FDI in

transitional economies of five southeast European countries. In addition this part of the chapter contemplates some macroeconomic data from selected samples of (SEE-5), ten new European Union member states (EU-NMS-10) and 14 European Union member states (EU-14 countries) shall be shown, including an overview of patterns and characteristics of FDI. The third chapter reviews accepted FDI literature predicated upon the Eclectic Paradigm, the Resource–Based Theory as well as the Market–Based Theory and Efficiency–Based Theory. This chapter will identify the empirical evidence found in the literature when naming the main determinants of Foreign Direct Investment in the SEEC. Finally in this chapter an overview of the Gravity Model regarding trade and FDI will be shown in order to develop an empirical model for the next chapter. Chapter four examines an empirical examination of the main determinants of Foreign Direct Investment inflows to the SEE countries (i.e. Albania, Bosnia and Herzegovina, Croatia, Macedonia and Serbia). The research work will consider studying the factors, including the country-specific policies that determine foreign investors' decisions to invest into these countries. EU-14 countries will be considered as main source countries of FDI due to their main importance in terms of FDI in the SEE region. Based on relevant research, we will estimate an extended version of the Bevan and Estrin (2004) and Boss and De Lar (2004) model. Chapter five will investigate empirically the relationship between inward FDI and trade using bilateral data for the OECD-20 and SEE-5 and EU-NMS-10 countries over 17 years. We will use FDI and Trade flows in both directions, from OECD-20 to SEE-5 and EU-NMS-10, as well as from SEE-5 and EU-NMS-10 to OECD-20.Chapter six will investigate the potential for foreign direct investment stock in Macedonia. In this regard, we will estimate the determinants of bilateral FDI stock between countries using the Gravity Model, by considering OECD-20 countries, as a source country of FDI, and SEE-5 and EU-NMS-10, on the other hand, as a host country of FDI. In the second stage, the estimated coefficients will be used for predicting the level of potential FDI inward stock to Macedonia from individual source OECD-20 countries. Finally, in the third stage we will compare the potential FDI inward stock to the actual ones. This will enable us to infer the potential for FDI inward stock to Macedonia, were Macedonia to normalize its economic policies and to be closely integrated into the EU in the same way as the existing EU members are integrated among themselves. For estimation purposes, we will use bilateral direct investment flows between countries. The sample will cover the period 1994-2010. Chapter seven will discuss the results, policy implications and will conclude the study.

2 FOREIGN DIRECT INVESTMENT IN TRANSITION ECONOMIES

2.1 Introduction

This chapter presents the descriptive part of the thesis, relying on the macro and micro data for the countries of SEE-5 and CEE-10. The chapter is organized into the following sections. The first section provides the definition and types of FDI. Section two proceeds with the importance of FDI for the SEE and CEE countries, relying on the macro data for the selected SEE countries and New Member States of the Central East European countries. The next section deals with the geographical distribution of FDI among SEE countries, considering European Union countries as the main source countries of FDI in the SEE region. The final section deals with the importance of EBRD transition-specific indicators for market functionality of the host economies of the SEE region and their influence on the cumulative FDI inflow in the SEE region.

2.2 Definition and types of FDI

According to the definition that is used by the International Monetary Fund (IMF) and Balance of Payments Statistics and which is accepted by the OECD workshop on international investment statistics direct investment represents a category of international investment which is a cross-border investment in which a resident in one country (the direct investor) acquires a long-term interest in an enterprise in another country (the direct investment enterprise) (Lehmann, 2002). A long-term interest implies the existence of a long-term relationship between the direct investor and the enterprise, as well as a significant degree of power on the management of an enterprise. By convention, a direct investment is established when the direct investor has acquired 10 per cent or more of the ordinary shares or voting rights of the company operating under another legal structure. According to the European Central Bank, ownership of less than 10 per cent is treated a portfolio investment. This voting determines the existence of a direct investment relationship which is high enough that it provides an effective voice on the management to influence the decision processes of an enterprise. The direct investor may be an individual, an integrated or included private or public enterprise, a government, or a related group of individuals or enterprises that has a direct investment enterprise in an economy other than that in which the direct investor resides. Besides the determining criterion of 10% of voting power for the existence of direct investor relations, some countries have chosen to permit two types of qualifications to that criterion. First, if a direct investor owns less than 10 per cent of an enterprise's ordinary shares, but has an influential voice in executive management, the transactions between the investor and the enterprise are included in FDI statistics. Second, if the investor owns less than 10 per cent of voting power in the form of ordinary shares, and does not have an influential voice in the executive management,

the enterprise is disqualified from FDI statistics. Table I shows the number of countries in 1997 and 2001 that used the 10 per cent ownership threshold to identify direct investment enterprises resident in their economy (the inward FDI statistics), as well as those countries that use other qualifications to identify direct investment enterprises, and indicates the changes since 1997.

Table 1: Definitions used for identifying direct investment enterprises resident in the reporting economy

Number of Countries	Countries that apply 10% Ownership Threshold as their Basic Criterion	Countries that apply a per centage of ownership different from the 10% threshold	Countries that include enterprises in which the investor owns less than 10% but has an effective voice in management	Countries that exclude enterprises in which the investor owns more than 10% but has no effective voice in management	Countries that apply a 10% value threshold to identify FDI enterprises	Countries that apply different treatment incorporated and unincorporated FDI enterprises.
Total 2001 (61)	55	9	10	3	6	5
Total 1997 (61)	50	9	12	5	12	5
Change	+5	0	-2	-2	-6	0
OECD 2001 (30)	28	2	6	2	4	2
OECD 1997 (29)	24	6	7	2	4	3
Other 2001 (31)	27	7	4	1	2	3
Other 1997 (32)	26	3	5	3	8	2

Source: International Monetary Fund, 2003.

The fifth edition of the Balance of Payments Manual and the benchmark of the International Monetary Fund (IMF) state that direct investment involves both the initial transaction that establishes the relationship between the two entities, and all subsequent capital transactions between them and among affiliate's enterprises. This thus defines the concept of FDI as International Investment by an entity. The European Central Bank states that FDI comprises not only mergers and takeovers/acquisitions and new investment, but also reinvested earnings, loans, and similar capital transfers between parents and affiliates (Adam et al., 2003).

According to the Organization for Economic Co-Operation and Development (OECD), some countries may consider that the existence of elements of a direct investment relationship may be indicated by a combination of factors such as:

- Representation of the board of directors
- Participation in policy making processes
- Material intercompany transactions
- Interchange of managerial personnel
- Provision of technical information and
- Provision of long term loans at lower than existing market rates.

The literature of FDI suggests two types of FDI: horizontal and vertical FDI. Horizontal FDI occurs when multinational companies produce homogenous products across different countries, or multinationals participate in homogenous industry in the home country and abroad. Vertical FDI often happens when production of a multinational company integrates vertically across different countries, locating each stage of a production process in a country where the product can be produced at low cost. Another type of foreign investment is Foreign Portfolio Investment (FPI). This type of investment takes place in international financial markets, and is undertaken by economic agents like individuals, firms and local or national governments. Foreign Portfolio Investment means transactions, including the purchasing and sale of equity securities, or debt securities taking the form of bonds, notes, financial derivatives and money market tools (with the exception of securities classified as direct investment and reserves fund) (Ridgway, 2004).

However for this research FDI refers to a long terminterest of a non–resident entity inside a resident entity, thus showing non–residents' claims on resident entities. Indeed, the items are recorded as the country's external liabilities. (Ridgway, 2004).

2.3   The importance of FDI for transition economies

After the economic change-over from centralist and planned systems to market-oriented systems an increased interest in Foreign Direct Investment (FDI) in transitional countries has occurred. In accordance with this, many of these countries accomplished the transition by paying subsidies to attract FDI. This was done on the justification that social returns of FDI exceed private returns due to productivity spill-over's from FDI to domestic firms (Haskel et al., 2002). These appeared as positive externalities in the form of raising a country's technological level, creating new employment and promoting economic growth (Blomstrom and Kokko, 2003).

Because of the significance of positive external variables that receipt countries experience from inward FDI the determinants of FDI have been drastically examined. Host nations have benefited from knowledge and technology transfers to home companies and to the labour force. They also gained from increased competition and improved access to foreign export markets, notably in the source country. Thus, FDI is considered a vital catalyst for economic transformation in the transitional economies. This critical factor is seen to provide sufficient financial resource in the acquisition of new plants and equipment. Also, it is seen in the transfer of organizational formats of relatively more technologically advanced economies (Blomstrom and Kokko, 2003). When the inflow of foreign resources results in a rise of domestic saving rates in the receiving countries, then positive spill-over occurs. These arise through linkages with local suppliers, competition, imitation and training. Blomstrom and Kokko (2003) state that despite the fact that spill-over studies seldom reveal whether Multinationals

(MNC) are able to extract all the benefits that the new technologies or information generate among their supplier firms, it is still reasonable to assume that spill-over are positively related to the extent of linkages, thus it is assumed that spill-over benefits are sufficiently large to justify investment incentives.

The significance of FDI exists in its ability to enhance competitiveness in native markets of the host country. This results in the correction of domestic market failures to reflect the spill-over advantages. The entry of foreign firms into host country markets increases demand for locally produced products in the host country. This leads to the entry of other new firms and product varieties into the less than competitive sector and reduction production costs. Hence, an increase in competitiveness attracts additional foreign investors into the country which raises national income and welfare. This compels the host country to subsidize FDI thus creating competition with other host countries that see the same potential gains.

However, FDI can result in negative spill-over as well, if it forces domestic enterprises to shut down due to their inability to obtain the necessary resources for financing their activities, or for upgrading their technology (Jansen and Stockman, 2004). Haddad and Harrison (1993) and Blomstrom et al. (1986) found that foreign presence lowers the average distribution of a sector's productivity, but they also observed that the effect is more significant in sectors with simpler technology which means that the presence of foreign firms forces local firms to become more productive in sectors where best practice technology lies within their capability.

The best overall simple measure of the importance of FDI for transition countries is trends in inward FDI stock as a share of GDP. 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 2). Thus, this indicator allows us to uncover the potential effect of accumulated FDI on the overall national economic productivity.

As viewed in Table 2, 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 2: 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
SEE-5															
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
EU-NMS															
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 the 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.

On the other hand, in contrast to developed countries in Europe, where both inward stock and outward stock are present, there is no such case in the transitional economies of the SEE countries. The outward stock of FDI, in comparison to inward stock of FDI, is low in these countries (table 3). An explanation for this might be that shortage capital in the region may indicate that there could be no outward stock of FDI. As can be seen in Table 3, on average, during the observed period, 2000-2013, the highest FDI outward stock as a per cent of GDP was recorded for Estonia (19.5 per cent), Slovenia (12.2 per cent) and Hungary (12.1 per cent). The poorest countries in terms of outward FDI stock, during the observed period, were Albania (0.7 per cent) and Macedonia (0.9 per cent).

Table 3: Outward 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
SEE – 5															
Albania	0.0	0.0	0.0	0.0	0.3	0.3	0.4	0.7	1.1	1.4	1.3	1.4	1.6	1.9	0.7
Bosnia	0.0	0.0	0.0	0.0	0.6	0.6	1.3	1.7	1.5	1.1	1.3	1.2	1.2	1.1	0.8
Croatia	3.8	3.9	6.4	6.0	5.2	4.6	4.8	6.4	7.5	10.6	7.5	7.4	7.9	7.5	6.4
Macedonia	0.4	0.5	1.0	0.9	1.0	1.0	0.6	0.8	0.9	1.0	1.1	1.2	1.0	1.0	0.9
Serbia	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	3.7	4.9	5.6	5.1	6.1	6.5	2.3
Bulgaria	0.5	0.2	0.3	0.3	0.4	0.4	1.4	1.9	2.8	2.9	3.3	3.1	3.9	4.3	1.8
Romania	0.4	0.3	0.3	0.4	0.4	0.2	0.7	0.7	0.7	0.8	0.9	0.7	0.8	0.8	0.6
Slovenia	3.8	4.8	6.6	8.1	9.0	9.2	11.7	17.0	16.2	18.5	17.4	15.6	16.3	16.5	12.2
Slovakia	2.7	3.4	3.1	3.4	2.6	1.6	2.7	2.8	3.1	3.6	4.0	4.2	4.8	4.5	3.3
Czech R	1.3	1.8	1.9	2.4	3.3	2.8	3.4	4.7	5.6	7.5	7.5	6.1	7.7	10.8	4.8
Hungary	2.8	3.0	3.3	4.2	5.9	7.1	11.0	12.7	11.4	15.6	16.0	17.7	28.1	30.5	12.1
Poland	0.6	0.6	0.7	1.0	1.3	2.1	4.2	5.0	4.6	6.8	9.5	10.2	11.7	10.6	4.9
Lithuania	0.3	0.4	0.4	0.6	1.9	2.8	3.4	4.0	4.2	6.2	5.7	4.8	6.1	6.2	3.4
Latvia	0.3	0.5	0.6	1.0	1.7	1.8	2.4	3.2	3.1	3.4	3.6	3.0	3.9	4.7	2.4
Estonia	4.6	7.1	9.2	10.5	11.8	13.9	21.4	28.1	27.9	34.2	30.3	21.0	26.3	27.2	19.5

Notes: Outward FDI stock as a percentage of GDP.

Source: UNCTAD, 2014; own calculation.

2.4 FDI Dynamics in transition economies

The region of southeast Europe[1] consists of five ex-socialist countries: Albania, Bosnia and Herzegovina, Macedonia, Croatia and Serbia. The sample of 10 NMS countries consists of the Central East European countries that became part of the EU structure from 2005 onward. The following countries are considered to lie within this sample: Bulgaria, Romania, Slovenia, Hungary, Slovakia, Czech Republic, Poland, Lithuania, Latvia and Estonia.

SEE countries, in comparison with the economies of the CEE countries, lagged well behind, because of the Balkan crisis which the region of SEE has endured during the past decade. The slow pace of these countries' progress can also attest to inconsistent macroeconomic stabilisation policies. In a global context SEE-5 represents a small fraction of the total amount of world FDI. But, the situation has gotten better with time as their share is constantly growing when compared to other parts of the world. Thereby this growth reinforces a successful re-entrance of these countries into the world economy.

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[1]The above countries are selected for the purpose of our research. 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. Among the host SEE countries, Montenegro is not included in the sample of host countries because there is no data available or at best, it is available only for few years.

Table 4 reveals that the world stock of FDI grew by 1.123 per cent between 1990 and 2010. Table 4 indicates that at the start of the last decade a telling section of inward FDI stock was concentrated in developed countries. This pattern subsided constantly over the years and is justified by the moving of FDI stock in developing countries. In relation to the New Member States of the EU, at the start of their road toward EU structures in 2000 the total inward stock in these countries, as a share of world total of FDI (EU developed countries), was 1.40 per cent (1.85 per cent). Its level increased significantly in 2006 to 2.99 per cent (4.08 per cent). Following this amount of time FDI inward stock in NMS of the EU has gradually grown until the year 2010. Thereby this stock reached its pick in 2012 and 2013. Regarding transitional economies of SEE the general trend of FDI inflow in the SEE countries has gotten better, and these countries gained significant levels of FDI from 2000 to 2013.

Table 4: Inward Stock of FDI

Region / Years	1990	2000	2006	2007	2008	2009	2010	2011	2012	2013
World	2,081,392	7,511,300	14,495,137	18,136,166	15,679,509	18,427,630	20,370,690	21,117,234	23,304,429	25,464,165
Developed Countries	1,565,422	5,681,798	10,625,118	12,841,861	10,857,287	12,470,328	13,040,937	13,425,931	14,536,019	16,053,141
Developed Countries share of world total (%)	75	76	59.7	58.6	81.9	58.9	61.2	61.8	57.6	57.1
Developing Countries	514,319	1,771,479	3,499,663	4,660,152	4,423,631	5,364,271	6,597,073	6,942,733	7,945,334	8,483,009
Developing countries share of world total (%)	24.7	23.6	24.1	25.7	28.2	29.1	32.4	32.9	34.1	33.3
Transition Countries	1,652	58,023	370,356	634,153	398,591	593,031	732,679	748,570	823,076	928,015
Transition Countries share of world total (%)	0.08	0.77	2.56	3.50	2.54	3.22	3.60	3.54	3.53	3.64
SEE – 5	n.a	5,682	44,660	71,647	65,375	74,767	74,327	74,776	78,060	85,285
SEE – 5 as a share of World Total (%)	n.a		0.04	0.04	0.07	0.08	0.11	0.12	0.19	0.28
SEE – 5 as a share of Transition Countries (%)	n.a		2.18	2.03	1.70	3.84	3.67	3.49	5.97	8.70
10 NMS of EU	2,436	105,324	433,437	591,937	584,504	640,539	658,058	638,293	722,535	764,467
10 NMS of EU as a share of World Total	0.11	1.40	2.99	3.26	3.73	3.48	3.23	3.02	3.10	3.00
10 NMS of EU as a share of Developed Economies (%)	0.15	1.85	4.08	4.61	5.38	5.14	5.05	4.75	4.97	4.76
Euro Area	535,135	1,628,783	4,145,174	5,355,519	4,784,488	5,296,291	5,085,711	5,232,130	5,372,311	5,754,261
Euro Area as a share of world total (%)	25.71	21.68	28.60	29.53	30.51	28.74	24.97	24.78	23.05	22.60

Notes: FDI stock in millions of US dollar at current prices and current exchange rates. n. a refers to not applicable data. This means that in 1990 the sample that consist SEE-5countries, with exception to Albania, were part of Yugoslavia, for which ex - country the data are not applicable in UNCTAD.

Source: UNCTAD, 2014; own calculation.

2.5   FDI trends and characteristics in SEEC and CEEC

The development trend of SEE countries is improving in comparison to CEE countries, including those that have become new EU members. The explanation for this can be that SEECs are becoming more open economies, due to their effort for successful integration in EU markets. Although the number of population in SEECs is lower by 80% comparative to the CEECs the overall GDP of the former group of countries is lower by 90% comparative to the CEECs. (table5). With regard to the GDP per capita for individual countries, Croatia has the highest level in the region based on Purchasing Power Parity (PPP), once again reflecting its level of trend development which is constantly increasing. On the other hand, Albania, Bosnia and Macedonia have significantly low per capita GDP in the region. Leader country in terms of GDP per capita within the sample of CEE is Czech Republic followed by Slovakia, Estonia, Lithuania, Poland and Hungary. Looking at overall GDP per capita level of group countries, it turns out that CEECs (New Members States of European Union) are 2 times richer than SEECs. This indicator is in favour of SEE countries, once considering the sample size of CEE countries.

Table 5: Basic Indicators in SEEC-5 and EU-NMS-10 for 2013

	Population (Thousand)*	GDP, PPP (constant 2011, international dollar)	GDP per capita, PPP (constant 2011 international $)	Inflation, GDP deflator (annual %)	Inflation, consumer prices, annual
Albania	2,773,620	28,860.49	10,405.35	0.82	1.94
Bosnia and Herzegovina	3,829,307	35,947.05	9,387.35	-0.29	-0.09
Croatia	4,252,700	85,322.47	20,063.13	0.85	2.21
Macedonia	2,107,158	24,461.93	11,608.97	0.04	2.78
Serbia	7,163,976	92,363.55	12,892.78	5.41	7.69
SEEC – 5	20,126,761	266,955.49			
SEEC – 5 Share of CEE – 10, (%)	20.14	11.98			
Bulgaria	7,265,115	114,026.11	15,695.02	-0.76	0.89
Czech Republic	10,521,468	294,171.30	27,959.15	1.67	1.43
Hungary	9,897,247	226,784.70	22,913.92	2.97	1.73
Poland	38,530,725	881,476.02	22,877.22	1.17	1.03
Romania	19,963,581	363,343.21	18,200.30	3.79	3.99
Slovakia	5,414,095	142,192.25	26,263.35	0.52	1.40
Slovenia	2,060,484	56,819.51	27,575.81	1.40	1.76
Latvia	2,013,385	43,941.26	21,824.57	1.35	0.00
Lithuania	2,956,121	72,373.53	24,482.60	1.73	1.08
Estonia	1,324,612	33,290.18	25,132.03	4.54	2.79
CEE – 10	99,946,833	2,228,418.07			

Notes: Total population counts all residents regardless of legal status or citizenship--except for refugees not permanently; PPP GDP is gross domestic product converted to international dollars using purchasing power parity rates, in millions; GDP per capita based on PPP); The GDP implicit deflator is the ratio of GDP in current local currency to GDP in constant local currency. Consumer price index reflects changes in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly. Data are period averages.
Source: World Bank, 2014.

FDI inflows to SEECs were rather light at the end of the 1990s because of the high level of centralization in said economies and down to state owned companies. At the end of 2000, cumulative FDI flows in the SEEC were 1,608.02 millions of dollars which represented 0.01 % of total FDI in the CEE countries (Table 6). A slowing down of reforms and political instability seem reasonable reasons for the disappointing levels of FDI inflow into the SEECs.

Regarding FDI in SEEC conditions improved drastically in the years since 2009, and peaking in 2013. A thorough picture of cumulative FDI inflow in the SEEC can be viewed in Table 6. FDI in SEEC-5 is tellingly concentrated in only a handful of countries: Croatia and Serbia, before the years of 2007, after which the pattern favoured Serbia and Albania, by the end of 2013. The reason for this trend is that somewhat more developed countries receive more FDI when compared to less developed nations. The reason for Albania's high level of FDI in 2013, however, can surely be attributed to the increase of the privatization process, thus making the Albanian economy more open to foreign investors.

Table 6: FDI inflows in SEE and CEE, in millions of US dollars

Years	2000	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
SEEC	1,608.02	2,661.48	2,359.62	2,536.95	4,542.77	8,097.92	8,499.81	4,793.63	2,158.66	3,354.60	2,669.83	2,471.24
CEEC	16,836,303.80	17,806.56	39,169.66	48,359.83	62,778.64	62,851.46	63,151.33	27,338.52	31,589.86	41,337.81	38,242.22	9,312.59
SEEC share of CEEC(%)	0.01	14.95	6.02	5.25	7.24	12.88	13.46	17.53	6.83	8.12	6.98	26.54
Albania	144,27	178.03	345.67	264.34	324.42	658.51	974.33	995.93	1050.71	876.27	855.44	1,225.49
Bosnia	146,07	381.05	511.19	351.18	554.69	1,819.24	1,001.65	249.95	406.03	493.34	366.31	331.72
Croatia	1,050,85	1,989.07	1,179.09	1,825.41	3,231.08	4,927.66	5,938.06	3,346.35	489.98	1516.80	1,355.51	580.12
Macedonia	215,05	113.33	323.67	96.02	432.58	692.51	585.77	201.40	211.94	468.19	92.57	333.91
Serbia	51,78	1,516.42	1,077.14	2,211.47	5,247.51	4,976.59	3,492.10	2,358.11	1,813.06	3,256.79	659.41	1,377.42
Bulgaria	1,016.28	2,088.58	3,397.12	3,919.97	7,804.89	2,388.86	9,855.11	3,385.35	1,524.70	1,849.02	1,375.25	1,450.39
Romania	1,056.75	2,196.30	6,435.59	6,482.86	11,366.87	9,921.47	13,908.52	4,844.11	2,940.12	2,522.15	2,748.10	3,616.77
Slovenia	137.28	305.29	825.96	587.65	643.98	1,514.31	1,947.49	(658.56)	360.01	997.66	(59.44)	(678.58)
Slovakia	1,932.28	2,975.67	4,028.99	3,109.64	5,803.09	4,017.25	4,868.02	(6.08)	1,769.76	3,491.29	2,825.92	590.97
Poland	9,445.15	4,587.72	12,874.42	10,293.37	19,603.24	23,560.76	14,838.70	12,932.11	13,875.57	20,615.62	6,058.58	(6,037.74)
Hungary	2,764.06	2,137.40	4,265.73	7,708.96	6,817.54	3,950.84	6,325.44	1,994.61	2,201.63	6,290.30	13,983.35	3,091.06
Czech Republic	4,985,209	2,102.74	4,974.50	11,653.25	5,462.63	10,443.82	6,451.00	2,926.81	6,140.58	2,317.55	7,984.11	4,990.44
Latvia	413,0256	304.45	636.53	706.72	1,663.35	2,322.32	1,261.39	93.94	379.53	1,465.75	1,109.32	808.35
Lithuania	378,8725	180.41	773.70	1,028.09	1,816.78	2,015.01	1,964.52	(13.72)	799.60	1,447.99	700.24	531.12
Estonia	391,5762	928.00	957.12	2,869.32	1,796.27	2,716.82	1,731.14	1,839.95	1,598.36	340.48	1,516.79	949.81

Notes: Data on FDI flows are presented on net bases (capital transactions' credits less debits between direct investors and their foreign affiliates). Net decreases in assets or net increases in liabilities are recorded as credits (with a positive sign), while net increases in assets or net decreases in liabilities are recorded as debits (with a negative sign).

Source: UNCTAD, 2014.

2.6   Foreign Direct Investments in the SEE region, by country of origin

As is usual with small and open economies, the SEE countries have received an exceptionally large part of their FDI from neighbouring countries. In this regard, from the regional countries of the SEE region, Greece appears to be the main source country of FDI for Albania and Macedonia, while for the other SEE countries like Croatia, Bosnia and Herzegovina and Serbia, European Union countries are the main source countries of FDI. In this regard, Austria, Italy, Hungary, Slovenia and the Netherlands, are the main countries that have recorded a high proportion of investment share in the SEE region during the period 1994-2013.In regard to Albania, the stock of FDI came mostly from Italy, Greece and Turkey. During the observed period, 1994-2013, the FDI stock from Italy in Albania was 50.7 per cent, leaving behind Greece with 27.9 per cent, Austria with 12.4 per cent and Turkey with a 3.5 proportional share of total investment. According to the explanation of the Bank of Albania, this large inflow of Greek capital into the Albanian economy can be attributed to the deep debt crisis that faced Greece, which challenged the financial stability of the largest Greek companies, thus forcing them to diversify their investment portfolios in neighbouring countries. Austria is the main source country of FDI in Bosnia. During the observed period, 1994-2013, on average, the Austrian capital in Bosnia accounted for 47.3per cent, leading Slovenia with 27.6 per cent, Germany with 7.8 per cent, Italy with 6.8 per cent and Turkey with 5.8 per cent.

As evidenced in Table 7, the largest foreign investors in Macedonia during the observed period (1994-2013) were Austria, taking place in the investment proportional share with 97 per cent. The situation with Croatia and Serbia is almost the same. In this regard, the highest investment share in Croatia, on average during the observed period (1994-2013), was recorded by Austria (41.1 per cent), Germany (16.2 per cent), Hungary (12.4 per cent), Slovenia (9 per cent) and Italy (8.2 per cent).Also, Serbian FDI originated mainly from Greece (31.0 per cent), Slovenia (26.0 per cent) Italy (14.2 per cent) and Germany (13.2 per cent).

In general, Austria, Hungary, Netherland, Italy and Slovenia are among the main European investors that account for high investment share in SEE-5 countries. The reasons underlying behind the high investment share of these European countries into SEE-5 countries may be attributed to market seeking motives and efficiency seeking motives of FDI, like providing low labour cost and gaining access to domestic markets of SEE countries.

Table 7: Stock of Foreign Direct Investment into SEE-5 countries from individual source countries, for the period 1994 - 2013

	Albania	%	Bosnia	%	Croatia	%	Macedonia	%	Serbia	%
					Host countries of FDI stock					
Austria	1,907.41	12.6	9,668.78	47.3	64,710.89	41.1	498,576.13	97.4	2,274.06	4.4
Belgium	0	0.0	9.78	0.0	1,051.80	0.6	0	0.0	339.40	0.7
Czech Republic	-0.34	0.0	5.97	0.0	-251.13-	-0.1	-16.45	0.0	-720.74	-1.4
Denmark	0	0.0	75.02	0.3	4,320.05	2.7	0	0.0	798.76	1.6
France	151.71	1.0	74.86	0.3	7,198.05	4.5	8.24	0.0	530.40	1.0
Germany	286.60	1.9	1,612.69	7.8	25,499.41	16.2	248.95	0.0	6,799.09	13.2
Greece	4,162.96	27.6	256.99	1.2	263.67	0.1	4,436.01	0.9	15,946.15	31.0
Hungary	12.82	0.0	266.41	1.3	19,598.08	12.4	4,750.71	0.9	3,338.29	6.5
Italy	7,641.50	50.7	1,396.86	6.8	12,929.49	8.2	731.63	0.1	7,291.64	14.2
Netherland	11.84	0.0	46.45	0.2	1,229.50	0.7	12.79	0.0	978.65	1.9
Norway	5.14	0.0	1.10	0.0	710.48	0.4	0.45	0.0	92.25	0.2
Poland	24.79	0.1	57.05	0.2	341.78	0.2	10.58	0.0	241.199	0.5
Slovenia	52.99	0.3	5,700.64	27.9	14,251.81	9.0	2,639.76	0.5	13,524.93	26.3
Slovak Republic	203.82	1.3	120.73	0.5	245.35	0.1	203.82	0.0	0.03	0.0
Sweden	0	0.0	10.86	0.0	1,882.64	1.2	0	0.0	141.17	0.3
Switzerland	0	0.0	0	0.0	689.96	0.4	0	0.0	0	0.0
Turkey	535	3.5	1,204	5.8	41	0.0	336	0.1	3	0.0
United Kingdom	47.20	0.3	14.48	0.0	1,740.00	1.1	0	0.0	-279.03	-0.5
United States	13.00	0.0	-89.00	-0.4	632.00	0.4	46.00	0.0	129.26	0.3
Total	15,056.45	100.0	20,433.68	100.0	157,084.84	100.0	511,984.63	100.0	51,428.51	100.0

Notes: FDI stock by country represents the value of the stock of direct investments held at the end of the reference period. The data are calculated using OECD database for the period 1994 - 2013. The FDI stock data are represented in millions of US dollar and as a percent of the total. The data are in total values during the observed period 1994-2013.
Source: OECD, 2014; own calculation.

2.7   Foreign Direct Investment in the SEE region, during transition

The beginning of the transition process in the SEE countries resulted in a complete turnaround of FDI policies. The governments of SEE countries started to apply policy measures directed toward creating favourable conditions for foreign investors, through establishment of new foreign investment laws. Therefore, the countries of the SEE region are now actively competing for the inflow of FDI through the use of incentives, such as the reduction of corporate income taxes, tax holidays and the provision of social amenities.

To provide a more comprehensive picture of the role of transitional progress for the cumulative FDI inflow in the SEE region, we have used transition indices provided by the European Bank for Reconstruction and Development (EBRD), considering that

transition-specific indices should be important for FDI inflow (Table 8). This section argues that transition progress is important for economies that want to attract FDI. For the calculation of transition progress measurements, we have included four EBRD transition indicators, such as the index of infrastructure reform, index of foreign exchange market (FOREX) and trade liberalization, index of banking sector reforms and the index of non–bank financial institutions (Johnson, 2006). The result of this indicator ranges from 9.35 to 15.82 per cent. The lowest value of 9.35 per cent stands for Serbia, thus indicating little progress from the standard of a planned economy. While the highest value of 15.82 stands for Hungary, indicating that that economy is approaching to standards of industrialised market economy. A proxy measure for transitional progress is also the measure of the private sector as a share of GDP (Johnson, 2006). This indicator, between the years of 2000-2010, for the SEE countries is on average 68.22 per cent, whereas for member states of the CEE countries it is 90.30 per cent, once again confirming the difference between the SEE countries and CEE countries, with respect to market functionality and transition progress. However, there is a large difference in regard to the variation between FDI inflow and transition progress between the CEE countries and the SEE countries for the period 2000-2010. Table 8 shows that the CEE countries that have high transition progress, during the observed period; have received large amounts of cumulative FDI inflow, leaving behind the SEE countries with the small amounts of cumulative FDI inflow. This argument is also supported by the private sector share indicator, once again confirming that the indicator of the private sector share is increasing simultaneously with FDI. Hence, countries that have privatized more have done this by using FDI. Transition indicators are important for the incentives of foreign investors to consider an investment activity in a host economy. A successful transition improves the conditions for foreign investors to engage in investment activities in the host country's economy. Therefore as the transition progresses in the host economy, the likelihood of MNCs to engage in profitable economic activities in the respective economy increases.

Among the EBRD transition indices the most important for MNEs as incentives for investment are price liberalization, trade liberalization and the foreign exchange system. The MNCs do not want to be constrained by governmental price regulations when they consider investment in foreign markets. A governmental price regulation would decrease market functionality of the host economy resulting on lowering the incentives of MNCs for undertaking investment in the respective economy. Moreover, liberalization of trade and the foreign exchange system is important for foreign investors, due to the production process of the MNCs in the host country. The MNE wants to be able to export the goods it produces and also import intermediate goods to use in its production without restrictions, such as tariffs. It is also important that there exist well-established financial institutions providing full banking services and securities markets.

Table 8: Transition Indicators of SEE countries, average 2000 - 2010

Countries	Large scale privatisation	Small scale privatisation	Enterprise restructuring	Price liberalisation	Trade andForex system	Competition Policy	Banking reform and interest rate liberalisation	Securities markets and non-bank financial institutions	Overall Infrastructure reform	Transition Progress Reform	Private sector as a share of GDP	Transition Progress Reform Second stage	Cumulative FDI inflow 2000 - 2010
	1	2	3	4	5	6	7	8	9	10 = 9+5+7+8	11	12=1+3+ 6+7+8+9	13
Albania	3.12	4.00	2.15	4.33	4.33	1.88	2.63	1.67	2.12	10.75	75.00	13.57	4.037,8
Bosnia	2.60	2.90	1.91	4.00	3.57	1.42	2.63	1.54	2.30	10.04	63.33	12.40	6.548,7
Croatia	3.24	4.33	2.88	4.00	4.33	2.51	3.18	2.75	2.87	13.13	79.44	17.43	21.838,6
Macedonia	3.21	4.00	2.48	4.21	4.24	2.12	2.76	2.09	2.27	11.36	78.33	14.93	3.501,1
Serbia	2.24	3.36	1.99	3.84	3.12	1.45	2.36	1.78	2.09	9.35	45.00	11.91	17.303,9
SEE – 5, average	2.88	3.72	2.28	4.08	3.92	1.88	2.71	1.97	2.33	10.92	68.22	14.05	10.646,02
Bulgaria	3.88	3.82	2.57	4.30	4.33	2.60	3.48	2.51	2.97	13.29	90.00	18.01	46.988,8
Romania	3.51	3.67	2.33	4.33	4.33	2.51	3.00	2.45	3.21	12.99	82.77	17.01	51.513,6
Slovenia	3.00	4.33	2.94	4.00	4.33	2.67	3.33	2.76	2.97	13.39	81.66	17.67	926,7
Slovak R.	4.00	4.33	3.45	4.27	4.33	3.21	3.51	2.69	2.87	13.40	97.77	19.73	26.023,4
Hungary	4.00	4.33	3.51	4.33	4.33	3.21	3.97	3.85	3.67	15.82	97.77	22.21	24.326,8
Poland	3.36	4.33	3.48	4.33	4.33	3.15	3.51	3.70	3.48	15.02	91.11	20.68	102.111,0
Latvia	3.51	4.33	2.91	4.33	4.33	2.81	3.63	2.87	2.97	13.8	84.44	18.70	7.108,9
Lithuania	3.75	4.33	2.94	4.27	4.30	3.15	3.42	3.12	2.82	13.66	90.55	19.20	7.643,9
Estonia	4.00	4.33	3.48	4.33	4.33	3.33	3.88	3.42	3.33	14.96	96.66	21.44	7.192,6
NMS	3.67	4.20	3.07	4.28	4.33	2.96	3.53	3.04	3.14	14.04	90.30	19.41	30.426,19

Notes: The values are in per cent and declared in average terms for the reference period 2000-2010.
Source: EBRD 2013; own calculation.

Furthermore, the existence of a developed and effective infrastructure is necessary for the operations of an MNE since it reduces costs of distribution, transportation and production (Johnson, 2006). With regard to these indices, almost all economies of SEE had achieved price liberalization and trade and foreign exchange liberalization, thus giving a space to MNCs to consider these countries for investments. Also, other market functionality indicators like large and small scale privatization, enterprise restructuring, competition policy, and overall infrastructure reform show that the SEE countries are in good shape on their road toward free market functionality, thus approaching to the level of the standards of advanced industrialized economies.

Alternatively, following Mrak and Rojec (2013), for the calculation of second stage transition progress measurement, we have included six EBRD transition indices, such as the index of large scale privatization, enterprise restructuring, competition policy, banking reforms and interest rates liberalization, securities markets and non-bank financial institutions, and infrastructure reform. The results of this indicator range from 11.91 to 21.44. Again the lowest value is provided for Serbia and the highest value for Hungary. These results indicate that Serbia has recorded insignificant progress with regard to advancements of industrialized market economy; while Hungary on the other hand has recorded significant improvements in this regard. However, the transition progress measured by the EBRD transition indicators is of crucial importance for the inward stock of FDI for transition economies but this importance come to force only if country offers some basic attractiveness which are related to the main country structural characteristics, like country market size or cost of production factors (UNCTAD, 1998). Therefore, other location country specific advantages (i.e country market size, cost of production) may be more important than transition progress for the inward stock of FDI in transition economies.

3 LITERATURE REVIEW OF THE DETERMINANTS OF FOREIGN DIRECT INVESTMENT

3.1 Introduction

This chapter re-examines theories of Foreign Direct Investment (FDI) by asking the question: What drives multinational companies (MNCs) into doing business with transitional economies? Therefore, the goal of this chapter is to identify relevant factors which affect decisions of multinational firms to invest in transitional economies. The chapter looks at relevant literature which centers on the combined level of FDI in three main FDI theories i.e. the Eclectic Paradigm concept, the Resource-Based Theory and the Business Network Theory. This part of the thesis consists of four sections. The first section gives an overview of FDI theories. The second section provides an observation of the Eclectic Paradigm concept, which is followed by the Resource and the Business Network Theories. Section three shows empirical evidence of the most fundamental literature related to Foreign Direct Investment determinants in transitional economies, based upon a theoretical concept of the Eclectic Paradigm. The last section deals with the location-specific advantages of FDI determinants being focused moreover on the investment environment-improving determinants of FDI, macroeconomic-related factors and cost-related factors of FDI determinants.

3.2 Theory overview of FDI determinants

A few academic papers give overviews of FDI theories: see for example, Agarwal (1980), Calvet (1981), Casson (1982), Helleiner (1989), Cantwell (1991) and Markusen (2002), as well as lately, Faeth (2009). All these argued that the theory of FDI is dependent upon three combined theories i.e. (1) international capital market theory, (2) theory of the firm, and (3) international trade theory. The international trade theory has developed the general equilibrium model of world trade (Ohlin, since the 1920s) from which are taken the model of Heckscher-Ohlin-Samuelson, the Leontief paradox (1953), and the partial equilibrium theory. The theory of the firm, begun by Coase (1937), was later fully developed by Williamson (1975, 1985), Grossman and Hart (1986), Hart and Moore (1990). The new trade theory started to attract attention in the 1970s. Generally, the theories of FDI are discussed in terms of concepts related to international economics, international finance and international business (Zorska, 2005).

Moreover, there exists many FDI theories, and in addition FDI sub–theories are not mutually exclusive. Every sub-theory requires elements of each other; pointing to the fact that each is incomplete if taken separately. Foreign Direct Investment theories are mainly based on theoretical hypotheses of perfect competition, imperfect competition and increasing returns to scale. In accordance with different theoretical frameworks of

FDI inflow with respect to determinants associated with the investment environment, macroeconomic and investment costs, the theories having significant influences on later studies of FDI flows could mainly be summarized such as (1) Neoclassical theories of FDI, (2) the Monopolistic advantage theory of FDI, (3) FDI theory based on Industrial Organization developed by S. H. Hymer (doctoral thesis in 1960), (4) international product life cycle theory of FDI introduced by Raymond Vernon (1996), (5)substitution theory of FDI for trade by Robert Mundell (1968), (6) the complementarities theory of FDI by trade by K. Kojima (1973-1985), (7) OLI theory (Ownership, Location and Internalization advantage) suggested by Dunning, (8) The Resource Based Theory, (9) The Business Network Theory and (10) The Theory of New Economic Geography. These theories try to explain the determinants of FDI inflow under different assumptions and frameworks.

3.2.1 Neoclassical theory of FDI-Perfectly competitive advantages

The neoclassical theory of FDI is based on international trade and international capital market concepts. The theory assumes perfectly competitive markets. The neo-classical approach argues that due to the rarity and relatively dear cost of labor in developed countries these nations endeavor to transfer manufacturing facilities to less developed, labor-intensive countries (Caves, 1996). Thusly, there is a single direction of capital flows: from developed countries to capital-scarce countries (Vasyechko, 2012). The Heckscher-Ohlin model, which predicts the pattern of trade in goods between the two countries based on their differences in factor endowments, has been used extensively in explaining FDI in a general equilibrium framework.

But, researchers have often been negative towards the neoclassical approach for its lack of realism and an inability to be explained FDI (Aliber, 1970). In regards to transition perfectly competitive markets do not exist and basic market institutions have not been developed. Zebregs (1998) states that the neoclassical approach is not viable when used to explain FDI flows in less developed transitional countries. Moreover, the neoclassical belief that capital transits from economically developed countries towards capital-scarce countries was very important for understanding FDI motives in transitional economies (Kemp, 1964). Considering the neoclassical theory of FDI, the investment incentives of foreign investors in transition economies are explained by the differences in capital endowments, currency risks and risk premiums held by foreign investors in many transitional economies (Aliber, 1970). Two vital elements of business activity proposed by the neoclassical FDI theory i.e. global market uncertainty as an element of risk for investors as well as the role government plays in creating institutions later became the foundation of empirical study of FDI in transitional economies.

3.2.2 Monopolistic Theory of FDI-Imperfectly competitive markets

The monopolistic theories of FDI were created by Coase (1937), who gave us the concept of transactional costs in explanation of the nature and weakness of the firm. Coase (1937) criticized the neoclassical approach, which assumes perfectly competitive firms operating in a market, in relation to international activities of the firms taking place on foreign markets. Contrary to the neoclassical hypothesis, Coase (1937) introduced the concept of cost which describes the organization of company structures, which then help to reduce transactional costs. Coase's (1937) critiques were cited upon the difficulties to the ideal use of a market price system in the neoclassical approach. In step with Coase, Hymer (1960) gave an alternative: a microeconomic study of MNCs based on industrial organization theory. Hymer (1968) argued that FDI flows are not distributed randomly among industries, but rather by competitive conditions (Xizhong, 2004). Acording to industrial organization theory, the enterprise determinant for involvement in industries located in other countries is a firm's ability to generate or acquire income-generating assets not available to indigenous firms, sufficient to overcome the advantages which the latter firms have in that country and, therefore, the net advantage of the foreign firm depends upon the nature of the product supplied in the industry (Dunning, 1981). Therefore, the focus of Hymer (1968) was to relate FDI to MNCs and to analyze the expansion motives of MNCs, relying more upon international production concepts than upon international trade concepts.

Based on the hypothesis of the international product life cycle theory of FDI, many assumptions became foundational for future theoretical and empirical work on the research of FDI, especially for the case of transition economies. The theory shed light on important determinants of foreign direct investments, such as managerial expertise, patents or licensing, product differentiation, information asymmetry, cultural incompatibilities and business ethics (Caves, 1971). In line with Hymer's concept, in 1966, Vernon presented a theoretical concept to explain FDI flow based on the hypothesis of equal advantage of factor endowments. This theory represents the first dynamic interpretation of the determinants of FDI flows and trade patterns. The theory explains FDI flow based on the hypothesis of comparative advantage of factor endowments that is the theory which stressed the information, uncertainty and scale economies (Xizhong, 2004). The explanations of factor endowments and its impact on trade may give some insight into geographical and industrial composition of international investment (Dunning, 1973). The factor endowment theory implies that differences in endowments and inherent conditions among countries explain the geographical trend of inward FDI (Kinoshita and Campos, 2004). Thus, the phenomenon of developed countries investing in developing countries would certainly occur. But, Vernon's model makes simpler FDI as a replacement for trade and cannot explain the phenomenon of transitional nations investing in advanced economies.

3.2.3 Substitution Theory of FDI

The substitution theory of FDI for trade by Robert Mundell (1968) states that international trade is driven by differences in factor endowments and the factor prices of homogenous products. By relaxing the assumption of international immobility of productive factors, Mundell develops a standard two-good, two-factors, and two-country model. Capital mobility between the two countries is introduced and the assumption of identical production function is relaxed. In this case capital movement becomes a perfect substitute for trade (Mundell, 1957). Trade barriers largely explain international capital movements in this kind of framework. Mundell (1968) stated that when high trade impediments deter commodity movements the relationship between commodity and factor movements are often substituted. This relationship suggests that an increase of FDI will lower exports from a home country to a host country. Therefore Mundell concludes that capital movements spurred on by the FDI area become perfect substitutes for exports, but only if FDI flows always follow the trajectory of a particular curve (Rybczynski, 1955). This situation occurs because of the relatively higher efficiency or lower transformation costs of production factors. However, many researchers have argued against the substitution theory of FDI, due to FDI flows and trade can never be perfect alternatives in the real world economy and FDI can co-exist with exports (Vasyechko, 2012). Johnson (2006) found both of these to be complementary and replace connections between FDI and exports stating that investment in a host country produce an increase in trade in the home country of intermediate materials used in manufacturing.

3.2.4 Complementarities Theory of FDI

K. Kojima introduced the complementarities theory of FDI in the late 1970s as a major change to the substitute model (Xinzhog, 2005). This theory exists as a synthesis of the Heckscher–Ohlin model, the Rybczynksi theorem, Linder's hypothesis and the Vernon product life cycle hypothesis (Vasyechko, 2012). Kojima views FDI as an extension of the neoclassical theory of trade to embrace crossing borders of intermediate products (Dunning, 1988). Kojima's macroeconomic approach predicts that export-oriented FDI occurs when the source country invests in those industries in which the host country has a comparative advantage (Xinzhog, 2005). Thus, Kojima derived the results that export-oriented FDI is characterized as being welfare-improving and trade-creating since it can promote both host countries' and source countries' exports. These complementary effects are helpful to increase the international trade between home country and host country. Evidence discovered by Kojima for Japanese business concerns perhaps reflects the ad hoc response of Japanese business to market distortions created by public initiatives in developing countries (Tsurumi, 1979). Therefore, beyond East Asia, said evidence can be extended to other transitional countries (Vasyechko, 2012).

3.2.5 The Eclectic Paradigm Concept

The internalization theory of FDI explained by ownership, location and internalization advantages of FDI, developed into the Eclectic OLI Paradigm, was founded by Dunning (1977). The theory itself is an extension of Hymer's work and Coase's transactional cost theory. It states that all transactions are done within an institution, but only if the transaction costs on the free market are larger than internal costs. Thus, this is called internalization. The OLI system includes macroeconomic location advantages as well as microeconomic ownership advantages, because they are incomplete if used separately. For Dunning, the OLI requirements create a more comprehensive theoretical framework which integrats key parts of various explanations of FDI. In a transitional situation, Dunning was first to believe the structure of resources, market size, and government polices as determinants of the location of FDI in a host country. He also stated that the patterns of FDI are not constant but vary depending on said determinants. In line with this Dunning's (1980) Eclectic Paradigm concept provides a useful framework for analytical studies of Foreign Direct Investment theories and international production. Dunning's Eclectic Paradigm is based on three factors that influence FDI decisions: ownership, location and internalisation factors. The theory represents a merger of three partial theories of FDI, when focused on proprietary advantages, location advantages and the internalization advantages. At the same time this paradigm offers an answer to the three crucial questions related to FDI: which firms will invest abroad; where will the investment take place; and why would a firm serve the foreign market via direct investments and not via export? This paradigm assists researchers in ascertaining why and FDI happens, how it is manipulated by multinational firms to sharpen their global competitiveness, how it affects the host country's competitive advantage, how and why governments of host and home countries conduct their initiatives toward Foreign Direct Investment and how said policies are utilized by industries in reprise to changes in competitive parameters. But, the Eclectic Paradigm has a halted ability to explain or predict certain types of international manufacturing, and even less, the behavior of individual enterprises (Dunning, 1988, 1998; Dunning and Gray, 2003). Pertaining to the Eclectic Paradigm, a company's system of international production is dependent upon three configuration sets of advantages as seen by the enterprise are as follows (Dunning, 1988, 1998; Dunning and Gray, 2003):

1. (O) Ownership – particular advantages, referring to the impetus of investment
2. (L) Location – particular advantages, referring to the scope of investment
3. (I) Internalization – incentive advantages, referring to reasons for undertaking FDI

Ownership Advantages, or company specific advantages, find their place amongst the key determinants of FDI. In order to overcome the informational lead that domestic

enterprises may hold over foreign companies said company, upon entering an economy, must have some kind of offsetting company-specific advantage (Johnson, 2006). Examples of such abilities range from scale economies, brand name, managerial skill or advanced technology (Johnson, 2006). Therefore, multinational companies strive to take advantage of its own inherent abilities. Said advantages come from an economy of scope, managerial and marketing experience, superior technologies as a result of available investments in research and development, the variety (the specifics) of products, and similar pluses. Dunning's eclectic paradigm theory of international production states that domestic enterprises will seek for competitive or ownership advantages over firms of other nationalities, in order to be involved outside their national boundaries (Dunning, McQueen, 1981). By combining these assets provided by firms' competitive or ownership advantages, with foreign endowments located in foreign countries, the form of international involvement can be determined. These advantages, called competitive or monopolistic advantages, must be sufficient to compensate the setting-up costs, in addition to the same cost faced by potential producers (Dunning, 1988).

Location Advantages consist of the motives of an enterprise to utilize advantages which a certain country offers, such as lower labour costs, natural resources and such. Said advantages decide exactly how attractive various locations are for manufacturing (Johnson, 2006). They also serve for utilizing the advantage in a foreign market or a host country, and using its advantages of location (sales markets, production factors and capabilities, industry clusters, infrastructure, government policies) to serve the firm's interest (Oxelheim et al., 2001). Considering the extent to which the level of the firm's organizational and managerial constraints can be handled when deciding upon location-specific advantages, and the degree of respective challenges the firm faces, a firm's involvement strategy is built upon a mutually exclusive or inclusive basis of location (Dunning and McQueen, 1981). Regarding ownership-specific advantages, Dunning has indicated a few major determinants of location-specific advantages for foreign and native firms. These consist of parameters which determine the size and pace of growth regarding consumers, general infrastructure, the availability and quality of inputs, governmental policy towards general foreign direct investment, overall political, social and economic stability of the country, and the attitude of native peoples to foreign companies. Location is also concerned with both supply and demand oriented variables influencing the spatial distribution of production processes, research and development, and the administration of firms (Dunning, 1977). Anticipating a particular size and distribution of markets every company is a profit maximizing operation in a price taking environment. Thus, manufacturing will be situated where costs are lowest (Dunning, 1981). Eventually this depends on the availability and cost of factor inputs, the overall rate with which these are transformed into outputs, and the costs of transport from the point of production to that of marketing (Dunning, 1977).

Internalization Advantages represent the motives of companies to expand their enterprise in order to achieve lower transactional costs (Johnson, 2006). If the parent MNC doesn't own the foreign branch offices in their entirety it will be burdened with enormous (transactional) expenses for monitoring the foreign partner or foreign markets. Internalization advantage decides how the MNE chooses to utilize its ownership advantage (Johnson, 2006). Said abilities can be had through defending technology know – how, quality, brands and the leveraging of information and training within the company's international network of subsidiaries and joint ventures (Oxelheim et al., 2001). Internalization theories (Dunning 1981) show how FDI, as a result of greater organization, is achieved if the coordination of international manufacturing remains in the hands of the company-investor. The inherent abilities of internalization become vital in circumstances where commercial barriers or the transport costs are high; the risk from inefficient employment to the specific knowledge of the company is high, when important information asymmetries between potential buyers and sellers exists, and such. The theories of internalization are equally important for industries that are based on exploitation of the resources and for the technologically intensive industries.

The OLI Paradigm Theory states that if all conditions are satisfied firms may decide to take FDI to enter foreign markets; if only the first and the third conditions are fulfilled, firms use exports to serve foreign markets; if only the first condition is valid firms may rather pursue contracts (e.g. licensing, subcontracting) with foreign partners (Zorska, 2005). Table 9 shows determinants of FDI inflow which have been researched in earlier studies along with the intention of indicating variables which can be stated to constitute Location, Ownership and Internalization advantages. The first column displays location advantages, as the second and third columns indicate ownership and internalization advantages. The right margin column lists the assumed effect of each determinant on FDI inflow[2].

3.2.6 Resource-Based Theory of FDI

The Resource-Based Theory focuses on resources rather than products (Kim, 2000). The resource-based theory of the firm (Barney, 1991; Grant, 1991; Davidow, 1986) creates a methodological basis for MNC investment strategy to achieve competitive advantage by understanding the external and internal forces that strongly affect an organization (Lindelöf and Löfsten, 2004). The theory considers the competitive advantage of the firm as a result of the positioning advantages of the firm (Grant, 1991; Barney, 2001) and resource capability based advantages (Barney, 1991; Grant, 1991; Idriset al., 2003; Lindelöf and Löfsten, 2004).

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[2]This is based on a priori theoretical reasoning. There might be other studies that find other results.

The empirical evidence of the Resource–Based Theory literature considers the following resources as a basis of a firm's capability: financial resources, physical resources, human resources and organizational resources. (Penrose, 1959; Williamson, 1975; Becker, 1976; Bowman and Asch, 1987; Barney, 1991; Grant, 1991; Hall, 1992; Hill and Jones, 1992; Idriset al., 2003; Brown and Gutterman, 2003; Lindelöf and Löfsten, 2004; Caldeira and Ward, 2003). This theory focuses more on the advantages associated with the complexity of managing a multiplicity of activities and functions in a volatile but innovatory global economy (Dunning, 2000). The findings of Tondel (2001) support a hypothesis of market-seeking and resource-seeking investments prevailing in Central and Eastern Europe and in former Soviet republics.

Kudina and Jakubiak (2008) also find that market-seeking orientation has the most positive effect on investment performance, followed by skilled labor and cheap input orientations in smaller transition countries. Resmini (2000) argues for a statistically significant positive relation between FDI and market size, wage differential, the stage of the transition process and the degree of openness of the economy. The Resource-Based Theory of FDI can be used in the study to analyze how the internal factors of the firm such as human capital, physical capital, and financial resources can determine the level of FDI in SEE countries.

3.2.7   The Business Network Theory of FDI

The Business Network Theory is a field of social science applied to business. It defines the relationships between firms to support the exchange of information among members that operate within the business activity. The Business Network Theory can verify the importance of factors that are relevant in the choice of FDI over alternative forms of internationalization. This theory is based on a set of relationships between firms, including strategic alliances, joint ventures, long-term buyer-supplier partnerships, and collaborative relationships, and also includes reputation and brand image as part of the network (Ebers and Jarillo, 1998; Jarillo, 1988; Gowa and Mansfield, 2004).

Jarillo (1988) in his strategic network paper tried to answer the research question of whether firms should produce internally or be focused on outsourcing. He found that firms should not internalize the production activities but outsource them through collaboration with partners, since the total cost of outsourcing partners is lower than the internal production cost.

Castells (2000) considered the network as a new form of paradigm and regarded it as the fundamental node from which new organizations are and will be made. A network can be defined as, "A long-term relationship between organizations as actors that share resources to achieve negotiated actions for joint objectives." (Porras et al., 2004). In line with this, many authors defined the network in a similar spirit with Porras' et al.

(2004) definition. Mills et al. (2003) include within the definition of networks interest groups within the company, relationships of company personnel with suppliers, customers, government institutions, legislative authorities, and advisors.

Chang et al. (2006), by using Taiwanese manufacturing firms investing abroad, analyzed the exchanges between activities within a business. The theory supported. Jarillo's findings that business networks develop social capital and routines to create value and reduce transaction costs, and found that local linkage intensity of a foreign subsidiary is determined by firm size, FDI location, entry mode and the nature of the production network (Chang et al., 2006). This finding is also supported by the Girod and Rugman (2005) research, which examined the retail multinational enterprise relationship between FDI and business networks. They found that network linkages can succeed in overcoming internal or environmental constraints to cross-border resource transfer. However, the authors found that the business relationship can be more successful in countries where there are barriers to FDI (Girod and Rugman, 2005). The purpose of networks through FDI is to use the resources in a foreign market and to serve them as a source of sustainable competitive advantage, such as market intelligence, technological know-how, management expertise, or simply reputation for being established in a prestigious market (Chen, 1998; Gulati et al., 2000).

By using the Business Network theory of FDI, we will try to explain how firms in South East European countries can use economic integration and trade agreements to increase the efficiency of the production processes of their affiliations and reduce the cost of the production processes. In this regard, the attitude of SEE countries toward EU membership, present a great investment opportunity for foreign investors to form alliances. In addition, the membership of SEE countries in economic integration structures such as WTO and engagement of SEE countries in bilateral FDI agreement with other more advanced countries is another advantage in drawing flows and stocks of FDI into SEE countries.

3.2.8 Theory of New Economic Geography

The seminal work on the theory of New Economic Geography (NEG) was done by Krugman (1991). This theory has recently contributed to therestoration of location choices analysis. The theory of NEG is explained by agglomeration and dispersion forces (Disdieer and Mayer, 2004). More explicitly, the location choice of firms in the NEG theory is positively determined by market access and negatively by production costs and concentration of local rivalry (Disdier and Mayer, 2004; Markunsen and Venables, 1998).

The NEG theory is explained from agglomeration activities which occur as a result of the interaction between increasing returns to scale and transport cost (Disdieer and Mayer, 2004). Due to reducing the transport cost, this interaction causes firms to focus their production capacities on a single place located near the consumers. As a result, the

agglomeration of production increases input prices and lowers the price index due to a reduction of transport costs. In this regard, single firms attracted by positive productivity spillover effects, are looking forward to operating in heterogeneous markets where a number of other competitors are active. Driven by productivity spillover effect the single firm is motivated to cooperate with other existing firm in the market, whereas the increased rivalry pressures on the other hand leads the firm to leave the market and look after other potential locations having fewer competition. As a result, the general impact of competition on a location choice by a single firm is indefinite. Which effect dominates it is a matter of empirical studies. However, market entrance and cost of production are the most important determinants of location choices. Barrell and Pain (1997) suggest that being part of larger market like European Union market, positively determines FDI, whereas Clausing and Dorobantu (2005) and Bockem and Tuschke (2010) found no significant effect of announcement for EU adherence on FDI.

3.3 Literature Review of Foreign Direct Investment Determinants in Transition Economies and their effects on transition economies

Numerous studies have dealt with Dunning's Eclectic Paradigm to identify the global strategic approaches of firms to other regions. Dunning's Paradigm identifies the firm's preferences for undertaking FDI (Agarwal and Ramaswami, 1992), factors affecting FDI inflow (Ismail and Yussof, 2003), the impact of FDI on economic growth and technological advantages (Loungani and Razin, 2001). FDI are seen as an important catalyst for local industrial and economic development. Moreover, recently there is increasing empirical literature that deal with the effects of multinational corporations on industrialization pattern of receipt countries of FDI, as well as export growth and productivity growth. (Lankes and Venables, 1996; Altomonte and Resmini, 2001; Beata, 2004; Harding and Beata, 2011; Damijan et al., 2014).

Hill et al. (1990) discuss strategic, environmental and transaction factors, with respect to the decision of entry mode. Strategic factors included the extent of national differences, extent of scale economies and global concentration. Environmental factors include country economic and political risk, demand conditions, and volatility of competition. Transaction cost considerations include the value of firm-specific know-how. The authors conclude that firms undertaking FDI should consider the country risk, since this favours licensing and joint ventures over wholly–owned subsidiaries. The logic behind this rationale lies under marginality rules of the management decision making process. If the establishment cost and the cost of know-how exceed licensing and joint ventures costs, the wholly–owned subsidiaries make no sense.

Itaki (1991) critically examined the Eclectic Paradigm, focusing mainly on the confusion between ownership advantage and location advantage. He argued that the ownership advantage consisted of firm's internal economies of integration, internalized

external economies, and minimized transaction cost and market power. Itaki (1991) argued that the Eclectic Paradigm confused the ownership advantage in engineering terms and this advantage is influenced and inspired from location advantages. In this regard, the author suggested that the Eclectic Paradigm theory should differentiate between real and nominal terms.

Agrawal and Ramaswami (1992) examined the Eclectic Paradigm on the choice of entry modes of multinational firms. The results showed that firms used entry modes in high potential markets and they are likely to establish market presence in these markets through direct investments. However, the firm's abilities are constrained by their size and multinational experience.

Lankes and Venables (1996) surveyed the investment decision of western MNC in manufacturing sector in transition econmies. They found investment risk associated with regulatory, legal risk and macroeconomic unstability risk plays a crucial role on investment decision of foreign western manufacturing companies. In addution, the author found that low cost of labor and skilfull workofrce support inward FDI. Moreover, these factors were found to be signifcantly related in FDI projects whose primary function is to serve foreign markets through exports. For a sample of 17 emerging economies the authors found that market seeking considerations is the main form of FDI.

Wang and Swain (1995) using one equation model, surveyed the factors that best explain FDI in Hungary and China, for the period 1978-1992. The authors found that evidence that host country market size is positively related to FDI, whereas cost of capital and political risk are negative related to FDI. Furthermore, the study provided empirical evidence that low labor cost and currency depreciation are explaining the size of FDI in particular country i.e. Hungary and China. Also the OECD growth rate is proved to be positively associated to FDI in Hungary.

Altomonte and Resmini (2001) using regional and sector dimension panel data of multinational corporations and domestic firms in Poland, for the period 1995-1998, analyzed the agglomeration effects of FDI. Using standard panel fixed effects; the authors investigated the catalyst effects of competitive products, backward (forward) linkages of foreign and domestic firms operating in both industries (consumption and intermediate goods) and the interaction effects between multinational and domestic firms on domestic firm performance. The authors found significant catalyst effect on on industrialization of domestic firms. The catalyst effect on domestic firm performance was found to be caused by the presence MNCs in the consumption, thus increasing the sales of domestic firms. The presence of MNCs on the same production lines of domestic firms had insignificant effect on the performance of domestic firms and the interaction effect between domestic and multinational firms was found to be positively

related to domestic firm performance, although statistically significant only in downstream industries.

Bevan and Estrin (2000) analyzed the determinants of FDI flows and country risk, employing a large panel data set for the period 1994-1998. The authors used bilateral data on the flows of FDI between source country i. (EU-15) and receipt country j. (Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Slovenia and Ukraine). The authors looked at the role of location advantage and internalization advantage as defined in the Eclectic Paradigm. Bevan and Estrin (2000) found that of the location specific advantages, market size is a statistically significant factor for the host countries, owing to greater market opportunities for investors. Contrarily, the authors did not find support under that source for the idea that country size is a significant determinant of FDI inflows. In terms of ownership and internalization advantages, the results suggested distance and unit labor cost are negatively associated to FDI receipts. In this regard, country credit rating variability was also found to be significantly positively correlated with FDI inflows.

Kinoshita and Campos (2002) analyzed the location determinants of FDI into 25 transition economies, utilizing a panel data between 1990 and 1998. Considering location–specific advantages, within the OLI framework, the authors focused the research on market-seeking factors (to sustain existing markets or exploit new ones), resource–seeking factors (to acquire resources not available in the home country), and efficiency-seeking factors (to enable the firm to gain from the common governance of geographically dispersed activities in the presence of economies of scale and scope). The authors exploited host country characteristics and agglomeration economies as determinants of FDI location, by incorporating the past stock of FDI as a proxy for agglomeration economies. By using the General Method of Moments (GMM) estimation technique the authors found that agglomeration economies are the most significant determinant of FDI in transition economies. However, poor quality of the bureaucracy in the host country is found to be a deterrent to foreign investment decisions even after controlling for the agglomeration effect. The results of the paper suggested that the more liberalized the country is towards external trade, the more FDI it will attract, confirming the finding of many studies that trade and FDI are complementary to each other.

Beata (2004), using unbalanced firm level data on manufacturing sector for Lithuania, surveyed by the Lithuanian Statistical Office, for the period 1996-2000, investigated the spillover effect of FDI on productivity. The author found significant evidence of positive spillover effects of FDI on upstream sectors of local firms and this positive spillover effects were moreover associated with the projects with shared capital between local Lithuanian firms operating in manufacturing sector and foreign firms.

Eicher and Kang (2005) examined the optimal strategy of multinational firms on their choice for entry mode in foreign markets. They determine the entry mode of foreign markets from the market size, FDI fixed costs, tariffs and transport costs. The authors included international trade and transport cost to investigate the dynamics of a three – stage entry mode between a local firm and multinational company rival. The results showed that low trade barriers favored international trade over entry option on the part of the multinational company. The authors found that the increase of trade barriers is followed by price level depression. Therefore, it is unlikely that MNCs could overcome trade barriers. FDI also existed in markets due to the MNCs advantage in production cost over the local firm. High fixed investment costs increased the threshold of market size for FDI, which cannot be offset unless the trade barriers are sufficiently low to allow for MNCs' export penetration. With sufficiently high trade barriers, MNCs favor acquisitions over trade as long as fixed costs of FDI are not too large to allow for FDI. Moreover, large markets give rise to acquisition and independent trade barriers, because the monopoly power derived from acquisitions are very attractive. In the case of high competition, FDI becomes the predominant entry mode, which allows the MNCs to take full benefit of their ownership advantage.

Harding and Beata (2011) using data on FDI and exports for 105 countries during the period 1984-2000, examined the catalyst effects of FDI on exports. The authors found positive significant effect of FDI on exports in developing countries, althouth they found ambiguous effect of FDI on exports in high income countries.

Derado (2013) employing panel data set for the period 1990-2004, analyzed the determinants of inward FDI stock into 12 transition economies originated from five foreign investor countries in the region. Contrary to expectations the author found negative and significant coefficient of GDP per capita in source countries, providing evidence that high income countries reduce their bilateral FDI activity to transition economies. The author also found singificant and positive impact of opennesm, EU adherence dummy variable and small scale privatization on FDI for transition economies.

Damijan et al. (2014) using AMADEUS firm level data for CEECs-9, as well as individual CEEC-9 countries, for the period 2004-2013 investigated which firms tend to invest abroad and what is the effect of outward FDI on productivity of investing firms. The author founds that firms with outward FDI are more productive and there is a positive effect of foreign subsidiaries on productivity growth of parent firms in CEECs and this effect was found to be more significant for Czech Republic and Romania.

Some additional studies of the determinants of Foreign Direct Investments in transition economies, considering the OLI framework are presented in the tables below.

Table 9: Main findings for some of the determinants of FDI inflows, suggested by empirical literature

Author	Holland and Pain (1998)	Resmini (2000)	Carstensen and Toubal (2003)	Janicki and Wunnawa (2004)
Investigation	The diffusion of innovations in Central and Eastern Europe: A study of the determinants and impact of foreign direct investment	The determinants of foreign direct investment in the CEECs: New evidence from sectoral patterns	Foreign Direct Investment in Central and Eastern European Countries: A Dynamic Panel Analysis	Determinants of Foreign Direct Investment: empirical evidence from EU accession candidates
Sample and period	11 CEE transition Economies. Using yearly data from 1992 to 1996	European Union - source countries of FDI flow and CEE countries as host countries of FDI flows	Ten OECD reporting countries and seven Eastern European destination countries. Period: 1993 - 1999	Sample:11 host CEE countries and 15 source EU countries. Period: 1997 - 2004
Methodology	Panel Estimation. Methodology: Random effect and Pooled OLS.	Panel Estimation. Methodology: Fixed Effect Model	Dynamic Panel Analysis. Methodology. General Method of Moments (GMM	Panel Analysis using bilateral Data for FDI flows: Methodology: Weighted Least Square
Findings	The paper finds that the method of privatization, labor costs, trade linkages and proximity to the EU are important for FDI inflows	The study concentrates on the manufacturing sectors and the results suggest that FDI inflows are determined by market size, wage differential, the stage of transition process and the degree of openness of the economy. Significant negative relation has been found been found by proximity to Europe and the degree of industrial concentration	The study finds that the traditional determinants, such as market potential, low relative unit labor costs, a skilled workforce and relative endowments have significant and plausible effects. In addition, transition-specific factors such as the level and method of privatization, and the country risk, play an importantrole in determining the flows of FDI into the CEECs.	It was found that the log value of GDP of host country j and international trade significantly determine FDI inflow into CEE countries.

Notes: Summary papers with empirical studies.

Table 10: Main findings for some of the determinants of FDI inflows, suggested by empirical literature

Author	Dimitri et al. (2006)	Botrić and Škuflić (2006)	Andreas Johnson (2006)	Merita Zulfiu (2007)
Investigation	Foreign Direct Investment in South Eastern Europe: How (and How Much) Can Policies Help?	Main Determinants Foreign Direct Investment in the South East European Countries.	FDI inflows to the Transition Economies in Eastern Europe: Magnitude and Determinants	Determinants of Foreign Direct Investment in Transition Economies: With particular Reference to Macedonia's Performance
Sample and period	Data: Panel Data, bilateral FDI flows between 15 host and 24 source countries. Period: 2000-2002	Sample: SEE – 7 countries. Period: 1996 – 2002	25 Transition Economies of CEE countries and CIS countries. Period: 1993 – 2003	Host country: Macedonia Source country: 29 source countries: Period: 1997-2003
Methodology	Panel Analysis GMM (General Method of Moments)	Panel Analysis: Methodology. Generalized Least Square (GLS)	Panel Analysis Methodology: Time invariant fixed effect, random effect and pooled OLS	One way RE and FE and System GMM and difference GMM
Findings	The findings suggest that high unit labor costs, a high performance tax burden, and to a lesser extent a high level of import tariff discourage FDI, while a liberal foreign exchange and trade regime and advanced reforms in the infrastructure sector encourage FDI.	Openness has significantly positive effect on FDI. At the same time characteristics of the economies, such as private sector share or service sector share, also proved to be significant and exerted positive influence on FDI. Thus increasing trade with other economies positively influences FDI.	Using panel data into CEE sample Johnson found that the proxies for host country demand has a significant positive effect on FDI. The result suggested that market seeking (absolute GDP, GDP per capita is an important motive for investment in the CEE economies	Using One way RE the author found positive and statistically significant coefficient of host country GDP and openness and negative and statistically significant coefficient of distance Using one step and two step results from system and difference GMM the author found evidence that FDI stock is subject to persistence effects

Notes: Summary papers with empirical studies.

Table 11: Main findings for some of the determinants of FDI inflows, suggested by empirical literature

Author	Miroslav Mateev (2008)	Adan Seric (2010)	Gorbunova et al. (2012)	Estrin.S and Uvalic. M (2013)
Investigation	Determinants of Foreign Direct Investment in Central and Southeastern Europe: New Empirical Test	Determinants of FDI location in Central and Eastern Europe.	New Evidence of FDI Determinants: An Appraisal over the transition period	Foreign direct investment into transition economies. Are the Balkan different?
Sample and period	Host countries of FDI are8 transition economies: Hungary, Poland, the Check Republic, Slovakia, Slovenia, Bulgaria, Romania, and Croatia Source countries of FDI: EU-12 countries Period: 2001-2006	All CEE countries . Using yearly data from 1995 to 2000	26 former socialist countries Period: 1994-2002	Host: 17 transition countries Source: More than 70 countries. Focus group: SEE-7: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Montenegro, Romania and Serbia Period: 1990-2011
Methodology	cross-section panel data analysis: LSDV with source country dummy	Fixed Effect and Dynamic Panel Estimation: two step least square regression	Feasible GLS and Prais - Winston transformation	OLS
Findings	It was found that gravity factors (GDP, population, distance and cultural proximity) and cost and transition specific factors (wages, corruption and risk credit rating) are statistically significant with estimated sign as expected.	FDI into transition countries is driven mainly by market potentials, low labor cost and productivity., low labor cost, and abundant natural resources. FDI in transition economies might be market and efficiency seeking.	FDI are determined by market and institutional factors. Among market variables, relatively higher labor costs unexpectedly do not represent an problem for foreign investment. The variables proxying market stabilizing institutions play a more important role than those proxying market creating institutions.	Using augmented gravity model with institutional variable and dummy variable capturing EU membership, the authors found that, Western Balkans countries receive less FDI than other transition economies.

Notes: Summary papers with empirical studies.

3.4 Alternative classification of the determinants of FDI within OLI framework

There is a main core of theories in the theoretical literature regarding FDI, which is combined in different classifications depending upon the research focus. Namely, alternative classifications of the previously elaborated theory of FDI can be encountered which depend on the selected authors' criteria or on the research goal. Dunning (1973), trying to answer the question 'Why do firms invest overseas,' identified three approaches concerned with the behaviour of firms.

The survey approach, which has to do with investment determinants of international production, identifies several factors determining foreign investment. Almost without exception, Dunning's studies stress that a host government's attitude to inward foreign investment, and the political stability and the prospects of market growth are the most important considerations prompting foreign activities. However, Dunning in this study is self critical, due to the reason that he fails to differentiate between the motives and determinants of FDI, partly because they do not identify the assumptions underlying the answers given by firms.

Capital theory is the second approach that is related to the study of 'why do firms invest overseas'. This approach focuses attention on the differences in the levels of interest rates between countries and risk evaluations (Dunning 1973). The third approach to 'why international production' is that of international economics, which is represented by **trade theory.** With completely free movement of goods, but immobility of factors of production, and with all firms transacting goods and services in a price-taking situation, there is little incentive for international direct investment. The most powerful attempts to incorporate capital movements into trade theory in recent years have come from two directions. The first proposition is that trade and capital movements are substitutes for each other, and the second one comes from the attempt to take account of changes in technology, or advances in the knowledge, in the analysis (Dunning 1973). However by introducing a new dimension of a world scenario for international business activity, Dunning (1998) identifies three features that impact the changing geography of FDI activity and lead to gradual movement towards a world economy. The **emergence of intellectual capital,** which is identified as a high share of annual capital expenditure on information technology, and with a knowledge component of the labour force and growth of services, is the first feature that is introduced as the key wealth-creating asset in most industrial economies (Dunning 1998).

Increasing globalization of economic activity, identified by reduction in trade and investment barriers throughout the world, and by advances in transport and information technologies, is the second component introduced by Dunning (1998) which

contributes to creation of assets in industrial economies. **'Alliance' capitalism** is the last feature of contemporary global economy of the new approach of international business activity, which arises through intra-firm relationships on horizontal and vertical levels and through inter-firm cooperative arrangements between suppliers and customers (Dunning, 1998). In the 1990s by analysing the microeconomics approach of the location of FDI activity, Dunning (1998) states that FDI decisions, will not depend only upon the type of activity in which foreign investors are likely to be engaged, but also upon the motives for the investment and whether it is a new or a sequential one. The achievement is that he succeeds in differentiating between the motives and determinants of FDI, in comparison to his research of the 70s. In the motives for the investment are included markets or efficiency seeking FDI and, moreover, asset-seeking FDI which is geared less to exploiting an existing ownership-specific advantage of an investing firm. However, some of the variables found by Dunning, influencing the location of value added activities by FDI, as comparison between 1970 and 1990 are presented in the table below.

Market-seeking FDI are horizontal FDIs whose purpose is to serve local and regional markets (Kinoshita and Campos, 2004). Market-oriented MNEs invest in order to serve the host country's demand for goods, where the same production activities are replicated in several locations to satisfy local market demands (Johnson, 2006). Two examples of market demand FDI are the size of the market as it can be measured by absolute GDP and the quality of market demand as measured by GDP per capita. Trade-related variables, specifically, the openness variable, can be viewed as market-seeking variables.

Resource-seeking FDI include those activities when firms invest abroad to acquire resources not available in the home country, such as natural resources, raw material or low-cost labor. Dunning (1983) argues that resource-seeking was the most important form of FDI that took place during the late 19th century. These FDI are vertical and export oriented (Johnson, 2006). This type of FDI is intended to serve not only the local market but also the home and third country markets, therefore, the availability of resources and the availability of cheap and skilled labor and physical infrastructure are the main attractors of resource-seeking FDI.

The third type of FDI, called efficiency-seeking FDI, occurs when the firm can gain from the common governance of geographically dispersed activities in the presence of economies of scale and scope (Johnson, 2006). Efficiency-seeking FDI means that the MNC invests in order to reduce production costs, therefore, this type of FDI is considered a vertical investment.

Table 12: The variables influencing the Location of Value Added activity by FDI

Type of FDI	In the 1970	In the 1990
A. Resource Seeking	1. Availability, price and quality of natural resources. 2. Infrastructure to make possible resources to be exploited, and products arising from them to be exported. 3. Government boundaries on FDI and / or on capital and dividend remissions. 4. Investment incentives, e, g tax holidays.	1. As in the 1970% but local opportunity for improvement ofquality of resources and the processing and transportation of their output is a more significant location incentive. 2. Availability of local associates to mutually support knowledge and/or capital-intensive resource development.
B. Market Seeking	1. Mainly domestic, and occasionally (e.g. in Europe) adjacent regional markets. 2. Real wage cost; material costs. 3. Transport costs; tariff and non tariff trade barriers. 4. As A3 above, but also (where relevant) privileged access to import licenses.	1. Typically large and growing domestic markets and contiguous regional markets (e.g. NAFTA, WTO, CEFTA, EMU, EU etc.). 2. Availability and price of skillful labor. 3. Presence of competitiveness of related firms, e.g. lending industrial suppliers. 4. Quality of national and local infrastructure, and institutional competence. 5. Less spatially related market distortions, but increased role of agglomerative economic and local service support facilities. 6. Macroeconomic and macro – organizational policies are pursued by host governments.
C. Efficiency Seeking.	1. Essentially production cost related (e.g. labour, materials, machinery, etc.) 2. Freedom to take on in trade in intermediate and final goods. 3. Existence of agglomeration economies, e.g. export dealing zones. 4. Investment incentives, e.g. tax breaks, accelerated depreciation, governmental grants and subsidies.	1. As in the 1970s, but growing geographical dispersion of knowledge based assets, and need of firms to harness such assets from foreign locations, makes this a more important motive for FDI. 2. Increased role of governments in removing obstacles to restructuring economic activity, and facilitating the upgrading of human resources by appropriate educational and training programs. 3. Availability of specialized spatial clusters, e.g. science and industrial parks, service support systems etc; and of specialized factor inputs.
D. Asset-seeking FDI	1. Availability of knowledge based assets 2. Institutional and other variables influencing the simplicity or complexity at which resources can be acquired by firm	1. Knowledge based assets 2. The price and availability of synergistic assets to foreign investors 3. Access to different cultures, institutions and systems, consumer demand and preferences 4. Offered opportunities for exchange of tacit knowledge, ideas and interactive learning

Source: John H Dunning (1998).

Since the MNCs divide the different stages of the production process between geographical locations in order to minimize production costs, the examples of efficiency-seeking FDI include firms that are seeking investment locations that provide low labor cost, highly educated employees, or low cost of raw materials and other inputs. In this regard, the membership of countries in the EU seems to have attracted

more efficiency-seeking FDI. All factors together suggest that the countries with a large market share, low labor cost, abundant natural resources and close proximity to the major Western markets would attract larger amounts of FDI inflow.

Asset -seeking FDIare similar with efficiency seeking FDI and represent the fourth type of FDI influencing the location of value added activity by FDI. Asset seeking investments are situated in particular locations to exploit economies of cross - border specialization and the irregular allocation of static created assets (Dunning, 2000). Asset seeking FDI include firms that are seeking investment locations that provide skilfull labor (Dunning, 2000).

Within the framework of OLI paradigm, one of the most recent developments in the study of FDI theories is the Investment Development Path (IDP) theory, which was firstly introduced by Dunning in 1981 and later on developed on by this author and others (Dunning 1986, 1988, 1993, 1997; Durán and Úbeda 2001, 2003). The IDP theory assumes that FDI activities depend from the level of economic development, proxied by GDP and GDP per capita and the country net outward FDI, which is defined as a difference between outward FDI stock and inward FDI stock. The pattern IDP goes through five progress stages. These five stages makes possible for the country to advance from the position of inward FDI to the position of outward FDI.

In the first stage country faces negative net outward investment level, thereby being focused on receiving more FDI rather than investing abroad. This case is most likely present for countries with less locational advantage (low per capita GDP, insufficient skilful labor, unsuitable infrastructure or even high political and economic instability). In this regard, both inward and outward FDI stock is less likely to happen in these countries and multinational corporations prefer to access these countries through trade.

The second stage of IDP assumes that countries that come from the first stage are catching up with regard to development level, thus increasing net inward stock of FDI, while the net outward stock of FDI still remains low or insignificant. At this stage the country improves it locational advantage (GDP and GDP per capita and infrastructure), through governmental development programmes, through subsidies, low tarrifes and incentives. This leads to the improvement of skillful labor and the integration of home country firms into the production chain of MNCs. This allows the firms to advance their ownership specific advantages, which induces the emergence of outward FDI stock to countries at lower stages in IDP, with a purpose of exploring new markets and building up export platform strategies to other regions (market seeking FDI) and to less extent to countries at higher stages in IDP, in order to obtain capacities and assets (asset-seeking FDI).

The third stage of IDP include emerging countries that have growing net outward FDI position, which is a result of gradual increase of net outward FDI and gradual decrease

of inward FDI stock. This stage of IDP is associated with significant increase of country locational advantage (GDP per capita, infrastructure) and ownership advantages of domestic firms (scale economies, brand name, managerial skill or advanced technology). Competitive home firms will engage in resource seeking FDI in less developed economies and in market and asset seeking FDI in more industrialized economies. The role of the government at this stage is still on increasing cooperation between home firms and MNCs, applying efficient regulation policies for reduction of market failures.

In the fourth stage MNCs are looking for strategic assets. The country location advantages are significantly higher and there is some extent of inward FDI stock into the developed countries originated from less developed countries, which arise for market and asset seeking purpose. The government's policies are: providing fair competition among home and host firms, reducing market failures and supporting infant industries. In the fourth stage of IDP, newly developed countries in terms of locational advantages, like Ireland or New Zeeland, still have low outward FDI stock, which contributes to negative outward investment position. This is due to the lack of comparative advantages that these countries face in terms of knowledge capital or technology - intensive intangible assets, in relation to more advanced countries (Duran and Ubeda, 2001).

In the fifth stage of IDP, most developed countries: i.e. United States, Japan, United Kingdom or Germany, records significant amounts of both inward and outward FDI stock. This is a consequence of increasing similarity between developed countries in terms of economic profile (factor endowment similarities at labour and capital base). At this stage MNCs activities are less dependent upon home and host country characteristics, which are almost identical, but rather on the localization advantages of MNCs. The countries net outward investment position at this stage will converge to zero, due to short run fluctuations of exchange rates and business cycles (Dunning and Narula, 1996a). Dunning and Narula (1996a) suggest that country IDP position at stage five vary with respect to country specific economic structures (market size, availability of natural resources, technological and organizational capabilities).

However, the empirical evidence of literature of the determinants of FDI identifies three key important factors, which are in relation to the FDI incentives. These factors are: investment improving environment factors, macroeconomic factors and investment cost factors. **The investment environment improving factors** include the openness level of economies, government expenditure as a share of GDP, the development level of infrastructure, and business environment conditions. **Macroeconomic factors** include the growth rate of the economy and the gross domestic product per capita. **Cost related factors** include the exchange rate, lending rate of interest, and real tax revenue. They also include the cost and the quality of labour and distance.

Theoretical research regarding the relationship between FDI and trade has focused on the relationship between whether these flows are complements or substitutes. (Johnson, 2006). Theories developed within this framework vary according to relaxation of immobility assumption. The openness of a host country's economy may encourage FDI inflows, and a relatively closed economy may discourage FDI inflow. If production factors are assumed to be perfectly immobile internationally then no conclusion can be obtained about the relationship between FDI and trade. It has been found that if capital mobility is present, and the assumption of identical production function is relaxed, then capital movement becomes a perfect substitute for trade (Blonigen, 2005; Dunning, 1977). However, Markunsen (1983) by introducing the reasons for trade which are not based on relative factor endowments, but on the conditions such as external economies of scale and different production technologies, found a complementary relationship between FDI and trade.

Macroeconomic factors are also important for location-specific advantages of FDI. The hypothesis of FDI-led economic growth is actually based on the endogenous growth model, which states that foreign investment associated with other factors – such as capital, human capital, exports and technology transfer – have had significant effects in driving economic growth. The theoretical and empirical literature implies that Foreign Direct Investment, as a part of foreign financing, has a strong positive growth impact on the recipient economy (Ledyaeva and Linden, 2006). The positive effect of FDI on economic growth may be due to technological spillovers, employment effects and productivity improvements (Zorska, 2005). In this regard, FDI's contribution to growth comes through transferring advanced technology from the industrialized to developing economies. To the extent where economic growth through FDI is promoted, FDI may have a positive impact that is similar to domestic investment, along with partly alleviating the balance of payment deficits in the current account (Chong, 2004). The level of economic development is expressed by per capita GDP. A higher economic developing level shows strong purchasing power and good economic performance. This variable also means that the economy with a high per capita GDP has high labor productivity, good local infrastructure and investment environment. Thus, economic development levels should have a positive relationship with FDI inflows.Cost-related factor variables include exchange rate, interest rate, real tax revenue, annual average wage rate, unit labour cost and distance. Exchange rate variables may be a measurement of rate of return on FDI to explain the level of FDI inflows, that is, it determines the value of repatriated profits or remittances. The theoretical analysis about the relation of FDI with exchange rates shows explicitly that relative FDI inflows are a function of relative real exchange rates, and that exchange rates affect foreign direct investment, and the impact is significant, especially in short run (Xing, 2006). Therefore, if one host country devalues its currency against that ofthe

source country more than the other does, FDI into the former country will be expected to increase relative to other country.[3]

The quality of institutions is an important determinant of FDI activity, particularly for less developed countries. There are several reasons why quality of institutions may matter for attracting FDI. One is rooted in the results of growth literature (Quéré et al., 2005). By raising productivity prospects, good governance infrastructure may attract foreign investors. The other reason is that poor institutions can bring additional cost to FDI (Blonigen, 2005). Also, low quality institutions imply a high level of corruption and poor infrastructure, which lead to increase the cost of doing business, thus diminishing FDI activities. Therefore, good institutions are supposed to exert their positive influence on development through the promotion of investment in general, which faces less uncertainty and a higher expected rate of return (Quéré et al., 2005). Distance as a resource-seeking variable has been used successfully as a variable in gravity models explaining international trade[4]. Increasing distance implies lower affinity, resulting in higher costs of investment and more costly adoptions of goods to local preferences. Transition-specific variables are also important in determining FDI inflow[5]. EBRD (2004) has introduced several factors that should be taken into account when judging about the progress of an economy's transition process. These factors include measures of large and small scale privatization of enterprises, restructuring of enterprises, price liberalization, trade liberalization, infrastructure, legal reforms, the exchange system, as well as financial indicators.

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[3]The justification for this is that, given other factors determining FDI, such as market size, growth, labor skills, political and economic stability and regulatory framework constant, MNEs are likely to invest in countries which devalues their currency, in order to benefit from low production cost, since the wealth and production cost effects are positively associated with devaluation.

[4]In gravity models distance function as a transport cost proxy but also as a proxy for the affinity between the trading economies (Johnson A. 2006).

[5] These variables include large scale privatization, corruption and quality of institutions.

4 DETERMINANTS OF FOREIGN DIRECT INVESTMENT IN SOUTH EAST EUROPEAN COUNTRIES AND NEW EUMEMBER STATES

4.1 Introduction

Foreign Direct Investment (FDI) is considered as the main source of foreign capital for transition economies of South East European Countries (SEECs) and New European Member States (EU-NMS), (UNCTAD, 2013). This development occurred with the process of transition from socialism to capitalism and the integration of the economies of SEECs and EU-NMS into the international economic structures through trade and capital flows (Buch et al., 2003). Moreover, FDI in transition 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., 2001; Bevan and Estrin, 2004).

Therefore, analyzing the driving factors of FDI flows from developed to transitional economies has received increased attention in recent years (Bevan and Estrin, 2004; Mateev, 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, although it 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 chapter is using panel data on bilateral FDI flows from individual developed source economies to transition developing host economies between 1994 and 2010, to analyze empirically the determinants of inward FDI flows to host economies of SEEC-5[6] and EU-NMS-10[7], 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 and EU-NMS-10 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). Therefore, the empirical strategy of the chapter 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, 2002). These FDI flows are mainly coming from continental Europe and therefore several major global economies like the USA,

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[6]Albania, Bosnia and Herzegovina, Croatia, Macedonia and Serbia
[7]Bulgaria, Romania, Slovenia, Slovak Republic, Czech Republic, Hungary, Poland, Latvia, Lithuania and Estonia

Canada and Japan are under-represented in this study. Hence, EU-14 countries[8] will be considered as the main source countries of FDI due to their main importance in terms of FDI in the SEE and CEE regions.

The empirical approach follows the models of Buchet 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 inflows in the host countries.

The empirical literature on FDI, moreover, 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 flows into transition economies is driven by factor cost considerations or market opportunity (Bevan and 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 inflow 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 chapter is organized as follows. The next section presents the theoretical background of the gravity model applied to studies of FDI flows. 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 next 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..

4.2 Background of the Gravity Model

In the last two decades, gravity model analysis has been widely used in empirical studies of trade flows and foreign direct investments (Eichengreen and Irwin, 1998). The model is based on Newton's law of universal gravitation.

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

The law states that all objects attract each other with a force of gravitational attraction. This force of gravitational attraction is directly dependent upon the masses of both objects and is inversely proportional to the square of the distance which separates their centres. In economic terms, with respect to foreign investments, this model means that investment flows between two countries (gravitational attraction) is determined by the countries' GDPs (their masses) and inversely related to the distance between the two countries (generally their capital cities). A simple version of the gravity model is typically specified as:

$$f_{ij} = a \frac{y_i y_j}{d_{ij}} \quad (4.1)$$

Where f_{ij} stands for the value of FDI from country i to country j, the y_i and y_j are the respective national income values of country i and j, d_{ij} is a measure of distance between them. Distance can be taken as a measure of the transaction and physical costs of foreign investments. These costs generally include: the transportation and communication costs, the cost of language and cultural barriers, the cost of movement of personnel, as well as the information costs of institutional and legal factors, like local property rights, domestic regulations and tax systems, which are assumed to increase with distance (Bevan and Estrin, 2004). Besides physical distance, the extended gravity model applied in this study identifies the flows of FDI from the core 14 EU investing countries to 5 SEE countries and 10 EU New Member States (NMS). This analysis can be explained by the supply side of investing partners, demand conditions of host countries, and other economic factors (such as institutional factors), which can either assist or resist the movements of investment flows.

4.3   Literature review of FDI determinants using the 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, explored 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 impact 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 link between FDI and trade; and third, they studied whether an increase 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 important 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 (2007), 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 Enterprises, telecommunication and transport infrastructure are of special significance of 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 significant 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.

Bloningen (2014) using Bayesian approach examined three different measure of Foreign Direct Investment; FDI stock, affiliate sales and cross-border merger and acquisition activity (M&A). The author explored the probability of inclusion of standard variables employed in prior empirical studies explaining FDI models. The author provided an evidence of no support for inclusion of many variables used in priod FDI studies. The variables with high inclusion probabilities in FDI models are traditional gravity variables, cultural proximity, distance, source and host country GDP per capita, relativ labor endowments and regional trade agreements. Variables with little support for inclusion are trade openness, host country business environment, host country infrastructure and host country institutions.

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

4.4   Summary of variables used in gravity models

The Gravity Model is mostly used in empirical models of investment and trade studies. (Anderson, 1979; Bergstrand, 1985, 1989 ;Ratnayake and Townsend, 1999; Brenton et al., 1999; Buch et al., 2003; Bevan and Estrin, 2004); argue that the Gravity Model can be used to discriminate between alternative trade theories and adjusted to a pattern of investment flows. The following table presents a summary of the variables that are commonly used in estimation of the Gravity Model.

	Anderson (1979)	Bergstrand (1985, 1989)	Agarwal and Ramaswami(1992)	Deardorff (1995)	Brenton et al (1999)	Buchet al.	Ratnayak(1999)	Stone and Jeon (1999)	Anderson and Wincop (2003)	Ismail and Yusoff (2003)	Kumar and Zajc (2003)	Becan and Estrin (2004)	Egger and Pfaffermayr (2004a)	Rose and Spiegel (2004)	Porter and Rey (2004)
Adjacency		X							X					X	
Capital endowment													X		
Country grouping		X			X	X	X	X			X	X	X	X	X
Distance	X	X		X	X	X	X	X	X		X	X	X	X	X
Exchange Rate		X												X	
GDP growth rate															
Government, legal system							X								X
Infrastructure													X		
Inflation Rate			X		X										
Interest rate										X					
Investment Risk, restrictions			X		X	X			X			X			
Labor endowment										X		X	X		
Language							X							X	
Market size and potential				X											
National Income	X	X		X	X	X	X	X	X	X	X	X	X	X	
Physical endowment													X		
Population	X	X			X		X	X			X			X	
Price				X											
Tax Rate		X			X								X		
Trade						X		X	X		X	X			X
Transport cost		X		X					X						
Unemployment rate															
Wage rate										X					

Table 13: Different variables used in estimation of the Gravity Model.

Notes: Summary papers with empirical studies.

4.5   Trends in FDI

In this section we illustrate the extent of intra- European FDI flows, using aggregate level data at both inflow and outflow levels in the European region, providing the trends and patterns of FDI flows between countries. Our focus is on selected SEECs and EU-NMS of CEECs. Table 14 shows average amounts of FDI inward and outward, at both flows and stock levels, at current prices and current exchange rates in millions of US dollars, at two time periods, from 1994 to 2000 and from 2001 to 2010. The source of the data used in the tables 14 and 15 is from UNCTAD. The EU-14 countries continue to dominate, both as sources and destinations of FDI and in terms of both stocks and flows, leaving well behind other EU–NMS-10 countries and SEE-5 countries with insignificant recorded amounts. Table 14 shows that between 1994 and 2010 the respective amounts of inward and outward FDI flows and stocks to and from European Region and Euro Area almost doubled, thus making the European Area and individual EU-14 countries important for international business operations. In general, the leader country in terms of outward FDI is the United Kingdom followed by France, Germany, Belgium and Austria. The situation for CEECs and SEECs is different. The amounts of inward FDI are higher than the respective outward level. The leader country in terms of inward FDI among the CEECs is Poland, followed by Hungary and the Czech Republic. On the other side, among the SEECs, Croatia and Serbia remain on top with higher records of inward FDI at both flow and stock levels.

Table 15 shows inward and outward FDI at both flow and stock level as a per cent of the world's total, for individual EU-14 countries, EU-NMS-10 and SEE-5 countries. From table 15 we see that 14 individual EU countries have recorded a higher share of world total inward and outward FDI. However the outward share of these countries during the second period, from 2001 to 2010, in comparison to the first period, from 1994 to 2000 fell slightly, from 53.04 percent to 46.59 percent. The situation is even worse with the outward stock level. However, the EU-14 countries still remain the leader countries in terms of outward FDI at both stock and flow level, in comparison to EU-NMS-10 and SEE-5. The last two groups of countries in both time periods have recorded higher amounts of inward FDI, at both flow and stock level, rather than outward FDI at both levels. Among the group of EU countries the leader country in terms of inward FDI at flow level, during the second period 2000-2010, is the United Kingdom (7.1 per cent), France (5.01 per cent), followed by Germany (4.73 per cent) and Belgium (4.71 per cent). The same countries recorded a high share of outward flows of FDI as well, during the first decade. However, the situation changed dramatically for these countries during the second sample period from 2001 to 2010, recording a lower share of FDI outflows. On the other hand, the situation with EU-NMS-10 and SEE-5 countries is different. The share of inward FDI is higher than the share of outward FDI, at flow and stock level. The leading country in terms of global

share of inward FDI among the EU-NMS-10 is Poland, followed by Hungary and the Czech Republic.

Table 14: Inward and outward FDI (flows and stocks) in EU, EU-NMS-10 and SEE-5 countries

	Inward flows		Outward flows		Inward Stock		Outward Stock	
	1994–00	2001–10	1994–00	2001–10	1994–00	2001–10	1994–00	2001–10
EU - 14 countries	265,849	391,644	377,522	553,276	1,645,834	4,912,901	2,115,248	6,472,344
Austria	3,870	8,207	2,551	13,698	21,696	104,625	15,705	101,160
Belgium	39,483	70,876	37,9	62,117	146,726	569,554	114,117	548,808
Denmark	10,168	3,199	8,865	7,431	34,771	124,305	37,624	146,744
France	29,309	54,962	65,578	96,380	354,866	858,734	556,204	1,254,361
Finland	4,493	4,970	9,138	5,375	92,553	63,816	25,836	95,386
Germany	45,274	37,338	57,797	71,413	191,437	532,518	345,940	1,061,246
Greece	831	2,037	371	1,950	12,716	31,937	3,519	22,912
Ireland	8,558	9,069	2,489	15,740	63,575	199,510	20,316	145,903
Italy	5,730	19,961	8,433	34,415	89,403	261,634	140,230	316,584
Netherland	27,036	33,043	37,724	59,643	151,649	528,453	215,009	709,787
Portugal	2,350	4,503	2,735	3,095	24,176	80,169	8,215	48,384
Spain	15,488	36,556	21,874	56,383	118,731	446,289	64,210	400,376
Sweden	20,241	15,565	17,557	23,090	49,725	221,887	86,745	252,042
United Kingdom	53,011	91,351	104,437	102,541	293,803	889,464	481,570	1,368,646
EU-NMS-10 countries	15,334	41,043	525	8,802	59,061	401,636	3,456	45,492
Bulgaria	453	4,609	-2,53	152	1,271	23,928	82	592
Romania	907	6,039	-1,84	94	3,127	39,328	126	744
Slovenia	175	752	17	614,	2,235	9,651	541	4,982
Slovak, R	1,042	3,470	57	431	2,777	33,963	290	1,747
Czech, R	3,027	6,427	84	1,110	11,896	78,872	561	6,809
Hungary	3,303	4,229	244	1,833	16,664	68,771	649	10,856
Poland	5,436	12,238	76	3,540	17,206	119,440	802	14,797
Latvia	344	775	-5,30	104	1,242	7,002	215	495
Lithuania	343	973	6	208	1,205	9,170	14	1,035
Estonia	300	1,526	47	710	1,435	11,507	170	3,430
SEE-5 Countries	1,035	5,420	57	621	3,153	34,531	826	3,331
Albania	70	513	0	17	296	1,680	0	62
Bosnia and Herzegovina	55	549	0	9	496	3,754	0	116
Croatia	669	2,587	57	452	1,615	22,043	821	3,118
Macedonia	79	320	0	0	233	2,757	4	61
Serbia	161.15	766.22	0.24	62.14	510.61	6,919	0	581
EU-NMS-10/EU-14	5.77	10.48	0.14	1.59	3.59	8.18	0.16	0.70
SEEC-5/EU-14	0.39	1.38	0.02	0.11	0.19	0.70	0.04	0.05
SEEC-5 /EU-NMS-10	6.75	13.21	10.86	7.06	5.34	8.60	23.90	7.32

Notes: The data are declared as average amounts for two time periods. The data are in millions of US dollar, at current prices and current exchange rates.
Source: UNCTAD, 2013; own calculation.

On the other side, among the SEECs, Croatia and Serbia remain on top with higher records of the share of inward FDI at both flow and stock level. These trends explain that less-developing countries are still moreover concentrated on attracting foreign

capital rather than investing their capital in other countries, which is in favour of the argument that less-developing countries are in stage of investment development path where they are by definition net importers of FDI.

Table 15: Inward and outward FDI in EU-14, CEE and SEE, as a per cent of world total

	Inward flows		Outward flows		Inward Stock		Outward Stock	
	1994–00	2001–10	1994–00	2001–10	1994–00	2001–10	1994–00	2001–10
EU-14 countries	35.61	34.83	53.04	46.59	31.64	41.33	45.49	45.73
Austria	0.65	0.65	0.40	1.04	0.45	0.74	6.63	0.66
Belgium	4.71	5.85	4.22	5.11	3.03	3.02	2.13	3.63
Denmark	1.29	0.31	1.17	0.64	0.66	0.96	0.68	1.03
France	5.01	5.15	8.69	8.52	7.01	6.04	10.0	8.97
Finland	0.63	0.48	1.31	0.47	0.25	6.51	0.47	0.68
Germany	4.73	3.46	9.45	5.40	3.97	3.99	6.61	7.61
Greece	0.19	0.17	0.03	0.15	0.27	0.24	0.07	0.15
Ireland	0.94	1.01	0.32	1.39	1.26	1.60	0.41	0.94
Italy	0.91	1.96	1.57	2.52	1.83	1.93	2.67	2.18
Netherland	3.78	3.11	5.93	5.83	3.05	4.05	4.14	5.01
Portugal	0.36	0.44	0.35	0.34	0.50	0.59	0.14	0.33
Spain	2.40	3.31	2.74	4.73	2.53	3.30	1.14	2.66
Sweden	2.91	1.32	2.60	2.07	0.95	1.62	1.67	1.77
UK	7.10	7.61	14.26	8.38	5.88	6.74	8.73	10.11
EU-NMS-10 countries	2.53	3.42	0.08	3.58	1.11	2.98	0.00	2.5
Bulgaria	0.06	0.35	0.00	0.01	0.02	0.15	0.00	1.21
Romania	0.15	0.49	0.00	0.01	0.05	0.26	0.00	0.00
Slovenia	0.04	0.07	0.00	0.05	0.05	0.07	0.32	0.03
Slovak. R	0.19	0.36	0.01	0.03	0.05	0.24	0.12	0.01
Czech. R	0.45	0.62	0.02	0.08	0.22	0.56	0.01	0.04
Hungary	0.66	0.40	0.03	0.15	0.33	0.51	0.01	0.07
Poland	0.88	1.03	0.01	0.25	0.31	0.83	0.02	0.08
Latvia	0.06	0.06	0.00	0.01	0.02	0.05	0.00	0.00
Lithuania	0.05	0.08	0.00	0.02	0.02	0.06	0.00	0.01
Estonia	0.05	0.13	0.01	0.05	0.03	0.08	0.00	0.02
SEE-5	0.14	0.43	0.01	0.03	0.06	0.11	0.01	0.01
Albania	0.01	0.04	0.00	0.01	0.04	0.11	0.00	0.00
BAH	0.01	0.04	0.00	0.00	0.01	0.03	0.01	0.00
Croatia	0.09	0.21	0.01	0.04	0.03	0.15	0.02	0.02
Macedonia	0.01	0.03	0.00	0.00	0.00	0.02	0.00	0.00
Serbia	0.03	0.05	0.00	0.01	0.00	0.04	0.00	0.01

Notes: The data are declared as average amounts for two time periods. The data are declared as FDI in per cent of world total.
Source: UNCTAD, 2013; own calculation.

The previous section has highlighted the trends of FDI for European Area Countries (EU-14), New Member States of EU (EU-NMS-10) and South East European Countries (SEE-5). However to explain the rise of intra - regional FDI flows between these groups of countries, the following section undertakes an empirical investigation of some of the possible determinants of FDI flows from EU-14countries to the rest of

the EU-NMS countries and SEE countries over the period 1994-2010, by considering FDI outflow level from EU-14 countries to the rest of the region. We use a gravity model framework that is commonly used to rationalize outward FDI flows from OECD economies to understand intra European FDI flows.

4.6   Methodology, empirical approach and data

In line with theoretical framework of FDI determinants, we consider the role of geography in explaining FDI pattern among SEE and CEE countries and other policy factors either resisting or promoting FDI by using the conceptual framework of the gravity model. To capture the geographical relevance in explaining FDI patterns among SEE and CEE countries, we will consider distance as a proximity determinant of FDI, including regional grouping dummy variables, like World Trade Organization membership and bilateral FDI agreement. These integration variables are included in the model to consider the competitive advantage of host countries by gaining economies of scale and reducing investment barriers between SEE countries and CEE member states. This perception is also derived from the business network theory of FDI (Girod and Rugman, 2005). The explanatory variables denoting market size, such as GDP for both home and host countries are included in the model to measure the effect of economic size on FDI flows. This perception is derived from the eclectic paradigm theory of FDI to consider the motivations of FDI either efficiency or market seeking (Dunning et al., 2001). Other institutions-related determinants, such as corruption perception index, world governance indicators on control of corruption, regulatory quality, government effectiveness, rule of law, political risk, and voice and accountability, are in the model in line with the perceptions of efficiency seeking considerations of FDI. The variable of schooling is considered in the model to account for host country human capital development andalso efficiency-seeking considerations of FDI. To explain the pattern and effects of inflows of FDI to SEECs and new member states of CEECs, each explanatory variable is considered independently. The reduced form of the model including related selected variables is given below:

$$
lnfdi_{ij,t} = a_{ij} + u_t + b_0 lngdp_{i,t-1} + b_1 lngdp_{j,t-1} + b_2 ln\left|gdpc_{i,t-1} - gdpc_{j,t-1}\right| \\
+ b_3 lnx_{jt} + b_4 lny_{jt} + b_5 lny_{jt} \times d + d + \varphi + \delta + \theta + \varepsilon_{ij,t} \quad (4.2)
$$

Where $fdi_{ij,t}$ is a bilateral FDI flow 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 $\left|gdpc_{i,t-1} - gdp_{j,t-1}\right|$ 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 and 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 institutional determinants of inward FDI flow in SEE-5 countries. The EU-NMS-10 country group is taken as control group. ε_{ijt} is the standard error term.

4.7　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 (4.3)[9]:

$$
\begin{aligned}
lnfdi_{ij,t} = {} & a_{ij} + u_t + b_0 lngdp_{i,t-1} + b_1 lngdp_{j,t-1} + b_2 lnd_{ij} \\
& + b_3 ln\left|gdpc_{i,t-1} - gdpc_{j,t-1}\right| + b_4 smctry_{ij} \\
& + b_5 wto_{jt} + b_6 bfdi_{jt} + b_7 lnbex_{ji,t} + b_8 lnsch_{jt} + b_9 lntp_{jt} + b_{10} lncpi_{jt} \\
& + b_{11} lncc_{jt} + b_{12} lnrq + b_{13} lngov_{jt} + b_{14} lnrl_{jt} + b_{15} lnpr_{jt} \\
& + b_{16} lnva_{jt} + b_{17} lncc_{jt} \times d + b_{18} lnrq_{jt} \times d + b_{19} lngov_{jt} \times d \\
& + b_{20} lnrl_{jt} \times d + b_{21} lnpr_{jt} \times d + b_{22} lnva_{jt} \times d + d + \varphi + \delta + \theta \\
& + \varepsilon_{ij,t} \quad (4.3)
\end{aligned}
$$

Where i denote 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, distance, language, cultural and border similarities, world trade organization membership of host economy, bilateral FDI agreement, 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.

4.8　Data description and hypothesis

Along the lines of previous research, the dependent variable fdi_{ijt} is defined as the bilateral flow of FDI from source country i to host country j at time t. The source of this

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[9]Description of the variables used in the empirical model is given in appendix1 .Descriptive statistics of the variables employed in the model is given in appendix 2. Correlation matrix of the variables used in the model is given in appendix 3.

data is the OECD. The FDI stocks are measured at current prices and current exchange rate in millions of US dollar.

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)[10]. 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 towards 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, 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

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[10]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.

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[11]. 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 $lnbex_{jit-1}$ 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 $lbex_{jit}$ 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 educationalattainment 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, 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

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

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. Transition progress is included in the model as policy

determinants of FDI to reflect the main transition characteristics of SEE-5 and EU-NMS-10 countries. It is expected that the transition progress will be positively associated to bilateral FDI flows. 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 flows, 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 flows, to denote institutional factors affecting FDI flows 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 host country institutional variables and SEE dummy variable d. These variables 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 flows 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.

4.9 Econometric issues

We use different estimation methodologies to estimate the determinants of bilateral FDI flows from EU-14 to SEE-5 and EU-NMS-10 countries. In this regard, in the study we consider both static panel models and dynamic panel models. Additionally, other estimation techniques are considered in the study, in order to deal with the problem of zero observations in the dependent variable. We start with estimation of the robust Least Square Dummy Variable (LSDV) estimates accounting for time fixed effects, source countries fixed effects and host countries fixed effects and country-pair (index)

fixed effects. An advantage of LSDV estimates is that by adding the dummy for each country we 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, due to the presence of zero FDI flows in the FDI data matrix, we also present the results from Poisson Pseudo Maximum Likelihood Estimation technique (PPMLE) and Random EffectsTobit (RET) estimation technique (Peracchi, 2004; Santos and Silva, 2006). These estimation methodologies are presented in the study, in order to deal with the problem of negative observations in the bilateral FDI flow matrix. This problem can arise due to reporting statistical problems and measurement errors (Razin et al., 2002). In this regard, to solve the problem of negative observations in the dependent variablewe transform the dependent variable, by replacing the negative values of the bilateral FDI flow data with zero values. By this transformation we take care of negative values and the coefficients from an OLS regression can still be interpreted as elasticity's for large values of the dependent variable (Guerin, 2006). The advantages of using PPMLE is that they deal with the problem of zero FDI flows, provide unbiased and consistent estimates in the presence of heteroscedasticity, all observations are weighted equally and the mean is always positive (Henderson and Millimet, 2008; Westerlund and Wilhelmsson, 2009; Silva and Tenreyro, 2008).

It has been frequently argued that 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 or random effects with generalized least squares 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 and Bover, 1995; Blundell and Bond, 1998).

One of the advantages of system GMM is that it utilizes a bigger subset of instruments.[12] However the drawback of GMM estimation technique is over fitting the endogenous variables, by increasing the number of instruments, thus leading to biased and inconsistent estimates (Roodman, 2008). The "system GMM" estimation technique is more suitable for the panel data models with large number of individuals and few

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[12]System GMM is more persistent than difference GMM particularly with a higher persistence of the dependent variable and a lower time dimension (Blundell and Bond, 1998), The improvement in efficiency is enhanced by the ability of system GMM to use more information by generating more instruments not only for the lagged dependent variable, but for other regressors as well, which might themselves exhibit high inertia.

number of time periods (small T, large N panels), with explanatory variables that are not strictly exogenous (Roodman, 2008).

4.9.1 Selection of the appropriate specification among static panel models

We perform several tests to choose the appropriate specification. For the purpose of testing we have also considered the baseline regressions of FE and RE estimates. First we check for the relevance of panel effect among observations. Using Breusch - Pagan Lagrange Multiplier test (BPLM)[13] we reject the null that variances across entities are zero, and we find significant presence of panel effect and conclude that random effect is more appropriate in relation to OLS estimates. However, the output from the Hausman test suggests choosing fixed effect estimates for interpreting the results.[14]To see if time effects are needed when running fixed effects we test for joint significance of the dummies for all years equally 0[15]. The parameter test indicates that there is time specific effect on bilateral FDI. Therefore, time specific effects are needed.

Table 16: Performed tests of the static panel models

Testing		
Hausman Test:	χ^2 (19) [p> χ^2]	188.39 [0.00]
Breusch - Pagan LM test:	χ^2(1) [p> χ^2]	589.84 [0.00]
Parameter Test:	F(16, 1400) [p>F]	4.36 [0.00]
Robust FE vs Robust RE: Sargan – Hansen statistic,	SH - statistics [p - value]	152.226 [0,00]
Wooldridge test: Robust RE vs Robust FE:	F(16, 195); [p>F]	5664.16 [0.00]
Wald Test for heteroscedasticity:	χ^2 (175) [p> χ^2]	5393.36 [0.00]
Wooldridge test for autocorrelation	F(1, 139)[p>F]	23.619 [0.00]

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

To verify the robustness of the baseline results we also control for time effects for particular years in our sample. The F - test justifies the use of time dummies for particular years of our sample. However, the suggested baseline FE and RE estimates suffer from autocorrelation and heteroscedasticity[16]. Therefore, to control for no

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[13]Using Breusch and Pagan Lagrangian Multiplier (LM) test we decide to choose between random effect estimates and a simple OLS regression, The null hypothesis in the LM test is that variances across entities are zero, The p - value of 0,00, suggest for the relevance of panel effect in relation to simple OLS estimates.

[14] The p value of Hausman test of 0,000 suggest that we have sufficient evidence to reject the null hypothesis that random effect estimates provide consistent estimates, Therefore we consider fixed effect estimates for interpreting the results.

[15] The F test of 4.36 and the associated p - value, obtained from the parameter test of0,00, indicate that we reject the null hypothesis that all years coefficients are jointly equal to zero, therefore time fixed effects are needed,

[16]Group wise heteroscedasticity Wald test and Wooldridge test for autocorrelation are performed to check whether the data suffer from heteroscedasticity and autocorrelation, The χ^2 value of the Wald Test of 5393.36 with the associated p - value obtained after using Wald test for heteroscedasticity in the FE regression model suggest the presence of heteroscedasticity in the data. Also the F test value of 23.619, associated with the p - value of 0,000 obtained from the Wooldridge test for auto-correlation, suggest the presence of autocorrelation in the data, making the estimated coefficients biased.

autocorrelation and homoscedasticity, we have employed robust estimates of fixed effects and random effects. The associated p - values of the Sargan − Hansen statistic suggest that robust fixed effect provides consistent and unbiased estimates[17]. However, the problem with estimating FDI flows, using gravity equation, is the multilateral resistance terms (MRTs). To proxy MRTs, following Rose and van Wincop, (2001); Feenstra, (2004); Baldwin and Taglioni, (2006) we use country fixed effects for host countries and source countries, time fixed effects and country-pair fixed effects. (Columns 3-7). Moreover, the LSDV models with time, country and pair dummies are employed to control for common external shocks and unobserved country-fixed effects.

4.10 Results

In this section we present the empirical results. We discuss the economic interpretation of models summarized in table 17, 18 and 19. We check the robustness of the model to changes in specification. 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.

4.10.1 Discussion of results from static models

In this section we present the estimated coefficients of the augmented gravity model using robust Fixed Effect (FE) estimates (column 1), robust FE with year dummy (column 2) and and robust LSDV estimate (column 3-7). Column (3) show the results with time fixed effects. Column (4) and (5) show results for time invariant host country and source country fixed effects and for time varying host country and source country fixed effects, respectively. Finally, column (6) and (7) presents a specification where pair effects are also added. Among LSDV estimates, to interpret the results we consider robust LSDV estimates, counting for time and pair dummies (column 7). Moreover, the LSDV estimates with time and country-pair dummies fit the data much better than does the robust FE estimates. R-square for the LSDV estimates is 79.4 per cent, compared with 42 per cent for fixed effects. In all cases the gravity coefficients appear to show the same effect on the flow of FDI from EU-14 source countries to SEE-5 and EU-NMS-10 countries. In all cases the gravity coefficients appear to show the same effect on the flow of FDI from EU-14 source countries to SEE-5 and EU-NMS-10 countries. 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, the results are consistent with a transaction cost analysis of FDI in which FDI

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[17]The p - value of 0,000 obtained from Sargan - Hansen statistics (xtoverid), suggest that we have sufficient evidence to reject the null that robust random effect estimates are consistent, suggesting to choose robust fixed effect estimates for interpreting the estimated coefficients.

flows are attracted between relatively large economies, but the gains from overseas production diminish with distance from the source country. Also the significant coefficients of gravity related factors support Bloningen (2014) Bayesian study for consistently high inclusion probability of gravity related variables in FDI studies. 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 country market is an important determinant for foreign investors. A negative and significant coefficient of distance indicates that FDI flows 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 estimates from columns 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 0.191 and 0.448 respectively. An increase in source and host country GDP by 10 per cent, increases bilateral FDI flow from source to host country, on average by 1.9 and 4.4 per cent, respectively, ceteris paribus. An increase in the road distance between capital cities of source and host country by 1 per cent will decrease bilateral FDI flows from source to host countries, on average, by 6.5 per cent, ceteris paribus.

The findings from the robust LSDV and robust FE models (columns 2 and 4) are confirming a positive effect of absolute difference of GDP per capita between countries on the size of bilateral FDI flow. The positive sign of this variable may be attributed to the fact that high income EU-14 countries will focus their investments more to relatively low income EU-NMS-10 and SEE-5 countries. Based on the concept of factor cost differentials the results confirm that differences in wage levels between countries are compensated by productivity (Bergstrand, 1989). The estimated elasticity of absolute difference of GDP per capita variable is 0.488 in the model of LSDV estimates (column 7). An increase in GDP per capita differences between countries by 1 per cent, increase bilateral FDI flow from source to host countries, on average, 0.4 per cent, 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. 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 flow, indicating that host country WTO membership is associated with an increase of FDI.

Table 17: Results from static panel models: Robust FE and Robust LSDV estimates

VARIABLES	(1) RobustFE	(2) Robust FE	(3) LSDV	(4) LSDV	(5) LSDV	(6) LSDV	(7) LSDV
Log of GDP in source country (-1)	0.220**	0.191	0.506***	0.083	0.020	0.191*	0.191*
	[2.27]	[1.59]	[10.74]	[0.84]	[0.20]	[1.82]	[1.82]
Log of GDP in host country (-1)	0.341**	0.488*	0.856***	0.214*	0.311	0.488**	0.488**
	[2.31]	[1.79]	[14.87]	[1.76]	[1.13]	[1.96]	[1.96]
Log abso. diff. of GDP capita (-1)	0.712**	0.488	1.268***	0.996***	0.883***	0.488*	0.488*
	[2.49]	[1.39]	[10.87]	[5.71]	[4.60]	[1.76]	[1.76]
Log of distance			-1.028***	-1.527***	-1.56***	-2.061***	-6.53***
			[-11.99]	[-15.13]	[-15.40]	[-17.24]	[-4.24]
Same country			0.212	-0.912***	-0.93***	19.841***	-0.090
			[1.18]	[-3.84]	[-4.02]	[3.82]	[-0.05]
WTO membership.	0.799***	0.539**	0.566***	0.878***	0.606***	0.539***	0.539***
	[4.02]	[2.55]	[3.20]	[5.05]	[3.08]	[2.97]	[2.97]
Bilateral FDI agreement	0.052	-0.028	0.515***	0.016	-0.028	-0.028	-0.028
	[0.28]	[-0.15]	[5.46]	[0.15]	[-0.26]	[-0.18]	[-0.18]
Log of bilateral exports (-1)	0.037	0.005	0.275***	0.185***	0.174***	0.005	0.005
	[1.49]	[0.18]	[8.31]	[5.99]	[5.40]	[0.17]	[0.17]
Log of schooling	1.178***	0.460	-0.293	1.001***	0.397	0.460	0.460
	[4.50]	[1.13]	[-1.60]	[5.44]	[1.27]	[1.56]	[1.56]
Log of transition progress	3.684***	1.717*	-1.117	2.673***	1.125	1.717*	1.717*
	[3.86]	[1.85]	[-1.03]	[3.27]	[1.08]	[1.90]	[1.90]
Log of corruption perception index	0.159	-0.389	0.555	0.121	-0.523	-0.389	-0.389
	[0.37]	[-0.85]	[1.42]	[0.31]	[-1.22]	[-1.01]	[-1.01]
Log of control of corruption	-0.323	-0.219	0.255	-0.352	-0.030	-0.219	-0.219
	[-0.61]	[-0.40]	[0.58]	[-0.81]	[-0.06]	[-0.48]	[-0.48]
Log of regulatory quality	1.093	0.928	0.212	1.271*	0.697	0.928	0.928
	[1.38]	[1.12]	[0.36]	[1.88]	[0.98]	[1.40]	[1.40]
Log of government effectiveness	0.823	1.643**	-0.371	0.841	1.506**	1.643***	1.643***
	[1.10]	[2.11]	[-0.81]	[1.36]	[2.31]	[2.65]	[2.65]
Log of political risk	-1.064***	-0.697*	-1.121***	-1.050***	-0.807**	-0.697**	-0.697**
	[-3.01]	[-1.68]	[-3.29]	[-3.31]	[-2.12]	[-2.12]	[-2.12]
Log of voice and accountability	0.925	1.322	2.110**	0.097	0.846	1.322	1.322
	[0.67]	[0.98]	[2.25]	[0.08]	[0.70]	[1.25]	[1.25]
Log or rule of law	1.044*	1.055*	-0.826**	0.445	0.437	1.055**	1.055**
	[1.95]	[1.95]	[-2.21]	[0.94]	[0.90]	[2.20]	[2.20]
Log of control of corruption*d	1.116	1.143	-0.303	0.663	0.662	1.143*	1.143*
	[1.55]	[1.56]	[-0.47]	[0.96]	[0.98]	[1.82]	[1.82]
Log of regulatory quality*d		-1.771	-3.402***	-3.012***	-2.408**	-1.771*	-1.771*
		[-1.36]	[-4.27]	[-3.05]	[-2.53]	[-1.72]	[-1.72]
Log of government effectiveness*d	-0.501	-1.002	1.307**	-0.446	-0.826	-1.002	-1.002
	[-0.56]	[-1.06]	[2.32]	[-0.58]	[-1.04]	[-1.30]	[-1.30]
Log of political risk*d	0.455	0.325	1.779***	0.792	0.696	0.325	0.325
	[0.74]	[0.52]	[4.22]	[1.39]	[1.19]	[0.58]	[0.58]
Log of voice and accountability*d	-1.747	-2.502*	-1.858	-0.075	-1.125	-2.502*	-2.502*
	[-1.17]	[-1.70]	[-1.36]	[-0.05]	[-0.77]	[-1.91]	[-1.91]
Log or rule of law*d	-2.391*						
	[-1.71]						
SEE-dummy			9.864***				
			[2.69]				
Constant	-33.538***	-29.911***	-20.347***	-17.288***	-15.10**	-22.77***	32.169**
	[-5.77]	[-4.13]	[-5.81]	[-3.18]	[-2.44]	[-3.61]	[2.37]
Observations	1,611	1,611	1,611	1,611	1,611	1,611	1,611
R-squared	0.427	0.455	0.627	0.687	0.697	0.794	0.794
Year dummy	No	Yes	Yes	No	Yes	Yes	Yes
Host country dummy	No	No	No	Yes	Yes	No	Yes
Source country dummy	No	No	No	Yes	Yes	No	Yes
Index (country-pair dummy)	No	No	No	No	No	Yes	Yes
Number of groups	175	175	175	175	175	175	175

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

The robust LSDV model predicts that bilateral FDI flow between two WTO member countries is 71.42 per cent higher than bilateral FDI flow between countries that are not WTO members[18]. Focusing on LSDV estimates (column 4), the estimated impact of transition progress on FDI is 1.717, 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 flow into host countries by 1.71 per cent, ceteris paribus.

The robust fixed effect estimates shows that the estimated elasticity of rule of law index in the EU-NMS-10 countries is 1.044 per cent. For SEE-5 countries it is -1.347 per cent (1.044-2.391). The difference of 2.3 per cent or 2.3 percentage points less for SEE-5 countries is statistically significant at 1 per cent level of significance. We conclude that the size of inflow of FDI vary with respect to the index of rule of law between SEE-5 and EU-NMS-10 countries. The results from robust FE estimates indicate that 1 per cent increase in rule of law index is associated to, on average, 1.044 per cent increase of bilateral FDI flow in EU-NMS-10 countries, originated from EU-14 countries. On the other hand, the same result indicate that 1 per cent increase in the rule of law index, decreases bilateral FDI flow from EU-14 to SEE-5 countries, on average, by 1.34 per cent, ceteris paribus. The coefficients size in absolute value above one of rule of law index, for both group of countries, indicate that foreign investors are sensitive to changes in the rule of law index for both group of countries.

The robust LSDV estimates accounting for time invariant host country and source country fixed effects (column 4) show that the estimated elasticity of regulatory quality for the base group of EU-NMS-10 countries is 1.271 per cent. For SEE-5 countries it is -1.741 per cent (1.271-3.012*1). The difference of 3.012 per cent less for SEE-5 countries is statistically significant at 1 per cent level of significance. Thus, we conclude that the size of inward FDI flow 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 1.2 per cent increase of FDI flow in EU-NMS-10 countrie and 1.74 per cent decrease of FDI flow in SEE-5 countries, ceteris paribus. Hence, sound regulation policies that promote private sector developments in SEE-5 countries are not contributing to inflow 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 may 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. On the other hand the

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

regulation policies that promote private sector development in EU-NMS-10 countries contribute to inflow of FDI in the base group of EU-NMS-10 countries.

4.11 Robustness check

Table 18 reports the results from the alternative estimation techniques for the traditional gravity equation. Column (8) report the estimates from Poisson pseudo-maximum likelihood estimation technique (PPML), column (9) report the Random Effect Tobit estimates (RET). PPML and RET estimates are considered due to their robustness to heteroscedasticity (Santos and Silva, 2006; Peracchi, 2004). All of these estimates are added as a robustness check to the above mentioned LSDV and robust FE estimates. Considering Tobit random effect estimates and Poisson estimates, the estimated results are significant (the likelihood-ratio test (χ^2) reported in the last row of each table is a test of the significance of the random-effect estimates and Poisson estimates). The first point to remind is that gravity coefficients are always positive and statistically significant are really similar to LSDV estimates, ranging from 0.1 to 0.3 for source country GDP, 0.1 to 0.4 for host country GDP. Comparing the results of PPML and LSDV, the following observations are to be considered. The distance elasticity is considerably larger under LSDV compared to PPML and RET (-6.539 compared to -0.362 and -1.195). This finding supports confirms Santos Silva and Tenreyro's (2006) evidence that PPML estimates in gravity models generally provide lower absolute values of distance and trade cost variables.

The differences of the estimated coefficients size between different estimation techniques seems to suggest that these differences are driven either by the large number of zero observations in the sample or by heterogeneity of the data, once considering the fact that in the selected sample we have included different countries that differ with respect to macroeconomic development and institutional level of development. Therefore, the presences of heterogeneity in the estimates raise the question of the best specified model. To check for this, following Santos Silva and Tenreyro (2006), we applied Ramsey-Reset test, to test for the model specification.

The Ramsey-Reset test is performed by adding an additional explanatory variable constructed as $(x'b)^2$ where b denotes the vector of estimated parameter and check for its significance. The p-values of this test close to zero indicate serious misspecification problem. The p-value of the Ramsey-rest test is extremely small in PPML estimates, suggesting serious misspecification, whereas on the RET estimates the p-value of this test seems to fulfil the condition of best specification.

The estimated elasticity's of bilateral exports and schooling are positive and statistically significant at 1 per cent level, in RET estimates. The estimated elasticity of bilateral exports in RET Tobit it is 0.125 per cent.

Table 18: Results from alternative estimates

VARIABLES	(8) Poisson Random Effect	(9) Random EffectTobit
Log of GDP in source country (-1)	0.117***	0.332***
	[4.28]	[4.87]
Log of GDP in host country (-1)	0.190***	0.628***
	[6.83]	[8.89]
Log absolute difference of GDP capita (-1)	0.362***	0.621***
	[6.28]	[4.92]
Log of distance	-0.362***	-1.195***
	[-6.09]	[-7.01]
Same country	-0.080	0.174
	[-0.51]	[0.32]
WTO membership.	0.483***	1.098***
	[7.00]	[8.31]
Bilateral FDI agreement	0.144**	0.168
	[2.42]	[1.29]
Log of bilateral exports (-1)	0.062***	0.125***
	[3.79]	[4.07]
Log of schooling	-0.016	0.660***
	[-0.30]	[5.03]
Log of transition progress	0.471	2.372***
	[0.92]	[2.88]
Log of corruption perception index	-0.129	-0.282
	[-0.86]	[-0.87]
Log of control of corruption	0.370*	0.196
	[1.79]	[0.50]
Log of regulatory quality	-0.353	0.369
	[-1.31]	[0.63]
Log of government effectiveness	-0.061	-0.141
	[-0.29]	[-0.29]
Log of political risk	-0.364***	-1.281***
	[-2.89]	[-4.60]
Log of voice and accountability	0.565*	0.030
	[1.76]	[0.04]
Log or rule of law	-0.153	0.015
	[-0.72]	[0.04]
Log of control of corruption*See dummy	-0.305	-0.153
	[-1.09]	[-0.28]
Log of regulatory quality*See dummy	-1.218***	-2.127***
	[-2.99]	[-2.62]
Log of government effectiveness*See dummy	0.822***	0.120
	[2.81]	[0.20]
Log of political risk*See dummy	0.247	1.536***
	[1.02]	[3.18]
Log of voice and accountability*See dummy	0.427	0.652
	[1.05]	[0.80]
Constant		0.153
		[0.09]
Ramsey-rest test (p-value of the square of the fitted values)	0.000	0.730
_cons	-5.347***	
	[-3.53]	
_cons	-2.725***	
	[-11.88]	
Siguma u		1.136***
		[16.71]
Sigma e		1.200***
		[80.96]
Number of observations	1,611	1,611
Number of groups	175	175
Likelihood ratio	-4614.2844	-5980.2875
p-value of the Wald χ²(22)	0.0000	0.0000

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

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 flow, on the other hand, confirms the complementarities between bilateral exports and bilateral FDI flows.

The estimated elasticity of schooling in RET estimates is 0.660 indicating that a 10 per cent increase in tertiary school enrolment will increase bilateral FDI flow, from EU-14 to SEE-5 and EU-NMS-10 countries, on average, by 6.6 per cent, ceteris paribus. 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.

The estimated coefficient of political risk in the Tobit model (column 9), for EU-NMS-10 countries is -1.281 per cent. For SEE-5 countries it is 0.255 per cent (-1.281 +0.536). The difference of 1.536 per cent, or above half percentage point more for SEE-5 countries, is statistically significant at 1 per cent level of significance. The coefficients size, below 1 in absolute value of political risk indexes for SEE-5 countries, indicates that foreign investors are not sensitive to changes in political risk indexes in SEE-5. Focusing on RET estimates, a 1 per cent increase in the political risk index (associated with host country governmental destabilization by unconstitutional means), increases the average bilateral FDI flow in SEE-5 countries by 2.5 per cent, ceteris paribus. This finding indicates that foreign direct investment that comes from EU-14 source countries is very sensitive to host SEE-5 countries governmental destabilisations through unconstitutional means[19].

4.11.1 Discussion of results from dynamic panel models

In this section we use generalized method of moments (GMM) estimator proposed by Arrellano-Bond (1991) and Arrellano-Bover (1995)/Blundell-Bond(1998) suggested by Roodman (2006). In all case the dependent variable, gross domestic product for host and source country and bilateral exports are endogenous and other explanatory variables are treated as exogenous. We use the institutional related variables as instrumental variables for the endogenous variables, in order to overcome the endogeneity problem. Following Roodman (2006), we exclude distance and dummy variables like: smctry, bilateral FDI agreement and WTO membership, since using all the explanatory variables used in LSDV estimates increases the number of instruments, thus overfiting the endogenous variable (Roodman, 2006).

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[19]The political risk variable and the interaction term of political risk with SEE-dummy are found to be significant in LSDV estimates accounting for time fixed effects.

Table 19: Results robust system GMM

VARIABLES	(10) Robust Two step-System GMM	(11) Robust Two step System GMM
Log of lagged dependent variable (-1)	0.317***	0.311***
	[5.00]	[4.87]
Log of GDP in source country	1.492*	1.615**
	[1.85]	[2.17]
Log of GDP in host country	0.894*	0.943*
	[1.68]	[1.75]
Log of difference in GDP per capita	1.304***	1.208***
	[3.18]	[3.00]
Log of bilateral exports	-0.317	-0.375
	[-0.60]	[-0.74]
Log of schooling	-0.668	-0.802
	[-1.14]	[-1.24]
Log of transition progress	0.295	-0.602
	[0.08]	[-0.14]
Log of corruption perception index	0.055	0.301
	[0.04]	[0.19]
Log of control of corruption	0.487	0.261
	[0.47]	[0.22]
Log of regulatory quality	-0.786	-0.824
	[-0.35]	[-0.32]
Log of government effectiveness	-0.052	0.426
	[-0.05]	[0.40]
Log of political risk	-0.085	0.029
	[-0.13]	[0.04]
Log of voice and accountability	3.228	2.678
	[1.42]	[1.09]
Log of rule of law	-0.300	-0.148
	[-0.32]	[-0.15]
Log of control of corruption*d	-2.215*	-1.988
	[-1.75]	[-1.57]
Log of regulatory quality*d	-1.453	-0.690
	[-0.90]	[-0.40]
Log of government effectiveness*d	2.233	2.032
	[1.36]	[1.19]
Log of political risk*d	0.894	0.514
	[0.89]	[0.46]
Log of voice and accountability*d	0.327	-0.086
	[0.15]	[-0.04]
Constant	-47.504**	0.311***
	[-2.37]	[4.87]
Observations	1,173	1,173
Number of groups	155	155
Arellano-Bond test for AR(1)	0.000	0.000
Arellano-Bond test for AR(2)	0.982	0.808
Number of instruments	46	43
Wald statistics, p value	0.000	0.000
Sargan test of overid. restrict, p value	0.506	0.479
Hansen test of overid. restrict, p-value	0.787	0.592
Hansen test excluding group p-value	0.481	0.237
Differ-in-Hans, test of exog. of instr. p-value	0.961	0.916
Hansen test excluding group	0.872	0.751
Difference (null H = exogenous)	0.345	0.281

Notes: Dependent variable is log bilateral FDI flow. Z-statistics in brackets, ***, ** and * indicate significance of coefficients at 1, 5 and 10 per cent, respectively. Internal instruments are used for endogenous variables (lagged dependent variable, GDP in host country, GDP in source country and bilateral exports). Lag limits are 2/3 for the lagged dependent variable and 2/4 for endogenous regressors. The collapse option is always used. Year dummies are included but not shown. Column (11) show the results with transformed dependent variable treating as zero values the negative observations in the matrix of the dependent variable.

Particularly, we use system GMM estimates and report robust two - step GMM estimates which provides standard errors that are robust to heteroscedasticity and serial correlation (Roodman, 2006). We address the downard bias of standard errors in two-step GMM by using the proposed correction term by Windmeijer (2005), which is implemented by the xtabond2 stata command. Moreover the advantages of system GMM estimators is that it utilized biger subset of instruments, not only for the lagged dependent variable, but also for other explanatory variables, which might themselves show evidence of high inertia (Arrellano and Bover 1995; Blundell and Bond, 1998) and effect stationary (Hayakawa, 2007).

The disadvantage of system GMM is related to causing fast growth of instruments count with time dimension, resulting in overfit of endogenous variable and a fail to remove the endogenous component (Roodman, 2008). The presences of endogenous component potentially can weken the Sargan/Hansen statistics of over identifying restrictions (Bowscher, 2002). We use internal instruments for the lagged dependent variable to avoid the difficulty of finding valid external instruments. To deal with the instruments explosion, following Roodman (2008) we consider lag limit of the dependent variable and other endogenous regressors and collapse the instruments.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.

Following Roodman (2008) suggestion for choosing appropriate system GMM specification, based on the p - value[20] of 0.25 obtained from Sargan test[21], we can choose both models of the robust system GMM estimates, for interpreting the results (Bowsher, 2002). Moreover, based on Hansen test of over identifying restrictions and Hansen test of the exogeneity of GMM instruments, the diagnostic tests are providing evidence of validity of instruments and validity of instruments for endogenous components and system GMM should be considered for estimation purpose.

The estimates from this specification are confirming theoretically expected results. According to the results from column 7 the estimated coefficient of the lagged dependent variable is positive and significant, suggesting that bilateral FDI flow is subject to persistence effects. The results confirm that the increase of agglomeration effect of FDI by 10 per cent, results in an increase of current FDI flow into host SEE-5 and EU-NMS-10 countries, by 3.1 per cent, ceteris paribus. Host and source country GDP are positive and significant as expected and confirmed in the LSDV and FE

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[20] The Bowsher results suggest that merely keeping the instrument count below N does not safeguard the Sargan-test, The danger is compounded by a tendency among researchers to view p-values on specification tests above 'conventional significance levels of 0.05 or 0.10 with complacency, Those thresholds, thought to be conservative when deciding on the significance of a coefficient estimate, are liberal when trying to rule out correlation between instruments and the error term, A p-value as high as, say, 0.25 should be viewed with concern.(Roodman, 2008).

[21] The Sargan test is used for testing the validity of instruments, extremely large and small p - values of this test weakens the validity of instruments. As much instruments we include in the regression model, the Sargan test becomes sufficiently powerful to reject Ho for the validity of instruments.

estimates. Absolute difference of GDP per capita is also positive and significant, indicating that 1 per cent increase in the absolute difference of GDP per capita between countries, increases bilateral FDI flow from source to host countries, on average, by 1.3 per cent, ceteris paribus. This result means that in dynamics differences in wage levels between countries can be compensated by productivity (Bergstrand, 1989). The positive impact of absolute difference in GDP per capita between countries on bilateral FDI flow also confirm the hypothesis related to cost comparative differences and combined tastes between countries, that high income EU-14 countries will focus their investments more to relatively low income EU-NMS-10 and SEE-5 countries. 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.

4.12   Conclusions

This chapter has identified significant determinants ofFDI flows into the SEE-5 transition economies and 10-New Members of European Union Countries, and highlighted theimplications of different institutional factors for FDI flows. 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 flow from the EU-14 countries. Guided by the economic theory and empirical investigation, we specify static, non - linear 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 panel data analysis we have found that FDI flows are significantly influenced by both gravity factors (distance, GDP) and non-gravity factors (bilateral exports, schooling, WTO, transition progress and governance indicators of rule of law, regulatory quality and political risk). 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 coefficient of schooling is a signal that foreign investors are considering efficiency - seeking considerations for positive FDI decisions. On the other hand, the positive and significant coefficient of bilateral exports supports the complementarity relationship between FDI and exports in the host countries of FDI.

The LSDV estimates suggest that bilateral FDI flow into SEE-5 and EU-NMS-10 countries is determined by host country WTO membership, transition progress and regulatory quality. These results confirm the importance of institutions for FDI flows in SEE-5 and EU-NMS-10 countries. Moreover the findings from LSDV estimates suggest that bilateral FDI between SEE-5 and EU-NMS-10 countries vary with respect to development in regulatory quality index. The negative and significant coefficient of the interaction term of regulatory quality index with SEE means that the size of regulation policies in the private sector for SEE-5 countries is found to be a critical factor in foreign capital accumulation in the form of FDI.

The robust FE estimates finds that bilateral FDI flow between SEE-5 and EU-NMS-10 countries vary with respect to rule of law index, providing positive estimated elasticity of rule of law index for EU-NMS-10 countries and negative estimated elasticity of rule of law index for SEE-5 countries. With respect to SEE-5 countries, this finding may be attributed to the fact that foreign investment countries are not confident on the improvements of contract enformcement policies, property rights and the court system of SEE-5 countries and hence they act negatively with respect to investment location decisions in SEE-5 countries.

The estimates from the robustness check, using RET results, based on transformed dependent variable, confirm the importance of institutional related factor for the size of bilateral FDI flow. These estimates suggest that the size of inward FDI flow between SEE-5 and EU-NMS-10 countries vary with respect to political risk index.The coefficients size of the political risk index for SEE-5 countries confirm that foreign investors are sensitive to political destabilization of host country governments of SEE-5 countries.

The economic importance of the findings of this chapter is on providing an analytical foundation for the evaluation of country policies and institutions aimed atmaking South East European Countries and New EU member states more attractive to foreign investors. In line with this finding, the chapter provides guidance on which major 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 contributes to the literature in the field of FDI determinants of transitioning countries. This chapter contributes to the literature by introducing the institutional determinants of FDI in transition countries when applying the standard methodology of the gravity model to the dataset of SEE and NMS countries. In this study we have 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.

5 FOREIGN DIRECT INVESTMENT AND TRADE; EVIDENCE FROM SOUTH EAST EUROPEAN COUNTRIES AND NEW MEMBER STATES OF THE EUROPEAN UNION

5.1 Introduction

The increased rivalry and competition in international markets have led to significant changes of the pattern of exports and FDI during the last two decades. In this regard, world total trade in goods (export flow of goods), which amounted to6.7 trillions of US dollar in 1990, had increased almost six times in 2013 to 37.6 trillions of US dollar (UNCTAD, 2013). The evolution of FDI also follows intensive increasing patterns as well. The world level of the stock of inward FDI was twelve times higher in 2013 (25.4 trillions of US dollar) than in 1990 (2.0 trillions of US dollars) (UNCTAD, 2013).

The relationship between FDI and exports has received extensive attention in the recent empirical evidence. On theoretical grounds, predictions concerning the relationship between FDI and exports crucially depend on whether FDI is horizontal or vertical (Amiti and Greenaway, 2000). Theories of horizontal FDI which are based on production of homogenous goods in multiple countries (Markusen, 1984) predict a negative relationship between FDI and exports, thus FDI and exports may be considered as a substitutes to each other, whereas theories on vertical FDI (Helpman, 1984), which are based on a geographically fragmented production process by stages predict a positive relationship between FDI and exports, thus FDI and exports may be considered as complements to each other. Linking to the country characteristics, horizontal FDI operates under conditions of large absolute market size, similar relative factor endowments, moderate and high trade costs and trade barriers, high tariff barriers and the existence of large economies of scale at firm level and low economies of scale at plant level (Shatz and Venables, 2000). On the other hand, vertical FDI operates under conditions of small absolute market size, different relative factor endowments, low trade costs and trade barriers and low tariff barriers. Trade costs, on the other hand, have a negative influence on the location of vertical FDI (Shatz and Venables, 2000), making for example the Central and Eastern European countries interesting for this sort of FDI from Western industrialized countries (Markusen et al., 1996).

Based on a theoretical framework on the relationship between FDI and exports, it is not straightforward to state whether FDI and exports have been used as a complementary or ways of substitution in serving international markets. The empirical literature has provided both complementary and substitute relationship between FDI and exports (Lipsey and Weiss, 1981; and 1984; Blomström et al., 1988; Ramstetter, 1991).

Drawing on a theoretical framework developed by Markusen et al. (1996), the main aim of this chapter is to provide empirical evidence concerning the relationship between FDI and export, in the European region, based on country characteristics. The

theoretical model described in this chapter provides a unified theory considering both vertical and horizontal FDI. The focus of this chapter is to investigate empirically the relationship between bilateral FDI flows between countries and trade (at both export and import level) using bilateral data for the OECD-20 Countries and 5 South East European Countries (SEE-5) and 10 new member states of European Union countries (EU-NMS-10) countries over 17 years. The study will try to answer the primary research question: Do FDI inflows have a significant and positive effect on trade, suggesting that export-platform FDI may be important for the SEE and EU-NMS countries.

The chapter is organized as follows. The next section describes a theoretical approach to the studies on horizontal and vertical FDI. Section three proceeds with a presentation of empirical studies concerning the relationship between FDI, country characteristics and exports, using aggregate level dat. Section four describes the data, presents the methodology and the empirical study. Section five presents results obtained by estimating the empirical model framework. The last section summarizes the results and concludes.

5.2 Theoretical approach and empirical literature

The theory of multinational firms originated from the theory of capital flows (Caves, 1971). The empirical literature of this theory suggests that FDI activities should be directed from capital–abundant countries capital–scarce countries (Dunning, 1977; 1981; Caves, 1996). Consequently, this theory by itself was insufficient to explain the FDI activities in similar countries in terms of relative factor endowments. This fact led to new developments of a new "Trade theory" that captures Trade and FDI activities, at the same time, based on the idea of increasing returns to scale and imperfect competition to the traditional capital flow models (Dunning, 1981). The "capital flow" theory later on was split into two parts: the theory of vertical FDI and horizontal FDI. "Vertical FDI" dominate in cases when the firm geographically separates the production stages and "horizontal FDI" dominates when the firm produces homogenous products in different locations (Carr et al., 2001). However, there is no clear cut distinction between vertical and horizontal FDI, since horizontal FDI are viewed as vertical FDI in cases when the affiliates draw some headquarter services from the parent company, even when the firm duplicates the same production activity in multiple countries (Carr et al., 2001). Thus, each horizontal FDI has some vertical ties.

5.2.1 Horizontal FDI

The horizontal-FDI is that multinational firms arise because trade barriers make exporting costly. The formal setup is one in which firms have a high-fixed-cost headquarters and one or more production plants. When trade costs are low, a firm

produces all output in domestic plants and serves foreign consumers through exports. When trade costs are high, a firm becomes multinational by building production plants at both home and abroad, each serving just that country's consumers. This type of FDI is called horizontal because the multinational does the same activities in all countries. (Carr et al., 2001).Therefore, theoretical concepts of horizontal FDI suggest the presence of positive trade costs. The best way to describe horizontal FDI is through costs and benefit analysis. On the one hand, there are costs associated with horizontal FDI activities that are incurred in different locations, which arise from establishing an affiliation instead of serving the market by exports and dealing with a new country, and on the hand there are benefits, which arise from low transportation costs, low tariffs and proximity to the local market. Therefore, if the benefits outweigh the costs, a multinational enterprise will conduct a horizontal FDI.

Theoretical models on horizontal FDI date back to the studies of Markusen (1984; 1995) and Brainard (1993). Further developments of the horizontal model of FDI were conducted by Markusen and Venables (1998, 2000). Markusen and Venables (1998) extended the aforementioned models to a full multi-country framework, allowing for the mix of multinational and local firms in each country. In the former, multinationals dominate in countries that are similar in size, factor and technology endowments. In the latter, the authors show that dissimilarity in relative factor endowments reduce the horizontal activity of MNE.

5.2.2 Vertical FDI

The vertical FDI is that multinationals arise to take advantage of international factor-price differences. When factor prices differ across countries, firms become multinational by locating production in countries where manual-labour costs are low (Carr et al., 2001). The theoretical modelling of vertical FDI was driven by cost – factor differences across countries in factor endowments. Vertical FDI takes place in cases when the production process is fragmented geographically in different locations, in order to exploit relative factor cost differences between countries (Hanson et al., 2003).

Closely related to the term vertical FDI is the literature on outsourcing and fragmentation (Feenstra, 1998). These terms are more general and include often the geographical separation of production that takes place outside the firm (Feenstra, 1998). Vertical FDI can also be viewed as ''export platform FDI'' (Ekholm et al., 2003). Export platform FDI defines the produced output in a host country, which is sold to a third market and not in the parent or local market, subject to conditions that the location where the output can be sold is chosen on the basis of cost considerations. (Ekholm et al., 2003). Vertical FDI are also seen as trade creation, since products at different stages are shipped between different locations (Yi, 2003).

The modelling of vertical FDI is based on the idea that different parts of the production process have different input requirements. Since input prices are different in different countries it becomes economically profitable to split production stages in different locations, conducting for example labour-intensive production stages in countries with relatively low labour cost (i.e. low wages), or capital intensive production stages in countries with low cost of capital (low expenses for tangible assets such as cost of plants or machinery or intangible assets such as trademarks, research and development, etc). Similar to the case of horizontal FDI, vertical FDI can also be analyzed based on the principle of cost – benefit analysis. The benefits arise from lower production costs in the new location. The costs arise from the production chain, driven by differences in factor prices in multiple countries, thus making countries with cheap cost factors more likely for investment. Theoretical models on vertical FDI date back to the studies of Helpman (1984, 1985) and Helpman and Krugman (1985). These models were based on the extended Heckscher-Ohlin trade theory with two factors of production and two sectors, one perfectly competitive with constant returns to scale and the other producing differentiated products under increasing returns to scale (Helpman and Krugman, 1985). Helpman (1984) showed that MNCs fragment the production capacity only when countries differ significantly in relative factor endowments.

5.3   Previous empirical studies

The empirical literature of the theories of vertical and horizontal FDI is scant, due to insufficient evidence of empirical data. Official aggregate data on FDI statistics do not distinguish between vertical and horizontal FDI, thus making empirical studies possible only at firm level. However, initially there were two groups of empirical studies on vertical and horizontal FDI. The first tried to explain the total amount of FDI, stock or flow level between two particular countries (Carr et al., 2001; Markusen and Maskus, 2001). The second group of studies estimated the export share of total sales of the affiliate companies, with respect to relevant country characteristics (Hanson et al., 2001; Blonigen et al., 2002; Braconier et al., 2003). The first seminal work on the nature of the relationship between trade and FDI was done by Mundell (1957). The latter studies were based on the Heckscher – Ohlin (HO) traditional model that tried to explain this relationship in different ways.

Brainard (1993) develops a factor-proportions model of trade, which is a slightly modified HO model with differentiated goods and differences in technology between countries. The basic prediction of the model is that a rich country outsources its production of standardized goods into low labour cost country, which in turn exports back these goods (Damijan et al., 2002). Brainard (1993), using disaggregated level data on a cross-section of industry-country pairs for 1989 from the US Bureau of Economic Analysis (BEA), covering bilateral trade flows and affiliate sales between the US and its 27 trading partners, found weak evidence of factor proportion

motivations for multinational activity. Factor proportion differences are strongest in explaining the portion of affiliate sales that is destined for export back home, which accounts for 13 per cent of foreign affiliate production and between 2 and 8 per cent of US affiliate production, while local affiliate sales are decreasing in differences in capital and skilled labor endowments. However, the effect of freight factors on the level of affiliate sales is not robust. This finding may be partially explained by the presence of some vertical affiliate activity, which would be consistent with the negative relationship between transport costs and affiliate sales destined for export to the home market documented above. Above all, Brainard (1993) discusses the role of scale effects at the firm and plant level in relation to transportation costs. In this regard, the author found a substitution relationship between FDI and trade (FDI appears as a alternative activity to exports), if trade costs are larger than the fixed costs from establishing a new plant.

Brainard (1997) found strong empirical support for horizontal FDI between similar countries. She showed that the share of local sale by affiliates is increasing in trade costs and trade barriers. In addition, the sale of foreign affiliates of US firms is higher in countries with higher transport costs and tariffs. Thirdly, the US multinationals serve the foreign market more through FDI and less through exports, the latter being the scale of corporate operations relative to the scale of production. Here scale economies in headquarters are stronger relative to scale economies in production, which also supports horizontal FDI. These results confirm the main characteristics of horizontal FDI to be used as market access in remote markets.

Brainard (1997a), using firm level data from the Annual Survey of US Direct Investment Abroad, at a bilateral level between US and 90 partner countries, yielding approximately 70,000 firm country – time observations, found that labour in the United States does compete at the margins with labour abroad via multinational production, thus there is a vertical separation of activities to take advantage of wage differentials, with affiliates in developing countries performing the activities that are most sensitive to labour costs. Considering factor price endowments, the results confirmed that parent employment responds very little to variations in affiliate wages, and therefore affiliate employment actually expands when wage in countries at different level of development fall.

Brainard (1997b), using firm – level panel of foreign manufacturing affiliates owned by US multinationals, summing up to approximately 60,000 firm – country – year observations, for the period between 1983 and 1992, found evidence that affiliate activities in developing countries appear to be complementary for affiliate activities in industrialized countries. The results of the paper suggest that multinationals with affiliates in countries at different stages of development decompose production across borders into complementary stages that differ by skill intensity.

Hanson et al. (2001), following Brainard (1997), estimated the share of exports in total sales of the foreign affiliate, using GDP per capita as a skill measure, by employing data on multinational activities of US firms. The authors introduced additional FDI types as, for example, wholesale and export platforms, and found strong evidence for vertical FDI and export platform FDI.

Carr et al. (2001), estimating a sample spanning 12 two–digit industries, including manufacturing and non – manufacturing sectors for 58 countries and two years (1989 and 1994) found that the affiliate exports are higher in countries that have larger markets, higher average incomes, lower tax rates, English – speaking populations and closer proximity to the United States. These findings indicate that local sales are more attractive in larger markets, and in smaller markets affiliate sales are oriented toward exports more than local sales and the sales are directed more toward exports in high – productivity countries and the low taxes induce affiliates to become export platforms. Considering only manufacturing industries, the authors found that higher tariffs, non – tariff barriers, and transport costs are all associated with lower affiliate exports both in absolute terms and relative to local affiliate sales, implying that higher trade barriers seem to dissuade affiliates from exporting. Thus, these results do not apply to export platforms – FDI and prove a clear evidence of vertical FDI[22]. The results of this study also suggest that affiliate imports for further processing are higher in large economies, with higher average incomes and lower tax rates and transport costs. These results suggest that vertical FDI respond in a qualitatively similar manner to country and industry characteristics.

Blonigen et al. (2002), using pool inward and outward U.S affiliate sales data from 1986 through 1994, U.S samples with alternative proxies for key variables, as well as a sample of FDI activity across OECD countries, found that the key variables identifying vertical MNE motivations have the expected sign and are statistically significant. The authors also provided evidence that the negative relationship between FDI activity and dissimilarity in skilled – labour abundance is also found using data that include a wider variety of parent and host countries, including data for the OECD. The authors did not find support in any of these data sets for rejecting the horizontal model of FDI.

Markusen and Maskus (2003), in their paper Discriminating among the alternative theories of multinational enterprise, using a panel of cross – country observations over the period 1986-1994, from the U.S. Department of Commerce, found strong evidence of the presence of direct investment between countries both in size and relative endowments. However, the results of the study provided strong support for the Knowledge-Capital (KK) model, with no significant distinction from the horizontal

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[22]This may be because higher barriers provide affiliates with a captive local market, making local sales relatively attractive, or because higher barriers raise the cost of importing intermediate inputs, making goods produced by affiliates less competitive on the world market.

model of FDI. A principal message of the study is that a vertical model of FDI is a poor characterization of the overall pattern of world FDI activity, a finding consistent with the results in Brainard (1993; 1997)

Braconier et al. (2003), by employing the difference in relative wage premium and not relative factor endowments, argue that factor prices are the main force behind MNE decision and not factor endowments. Combining US – Swedish data the authors found significant support of vertical FDI, particularly in countries with relatively cheap unskilled labour.

Head and Ries (HR, 2003), do not examine the substitution - complementarily issue between trade and FDI. Their paper, however, is important due to their extension of the Helpman, Meiltz and Yeaple (HMY, 2004) model. HR allow for additional factors, such as differences in wages (average productivity of economy) between countries, which may also be important in explaining vertical FDI, and is in line with differences in factor endowments (Mundell, 1957). Using data on 1070 large Japanese firms in 1989 they show that when a host country offers no cost advantage the investors abroad are more productive than exporters. Allowing for low-cost foreign production reverses this pattern as low productivity firms are most attracted to relocate production to a low-cost foreign country. Evidence provided in these studies is not general in the sense that so far only the patterns of production of MNCs from developed countries have been studied. It is obvious that among developed countries a horizontal type of FDI is most likely to occur HMY emphasize some of the determinants of horizontal FDI (total factor productivity, fixed costs, and trade costs).

Helpman, Melitz and Yeaple (HMY, 2004) develop a model of the firm's choice between exports and horizontal FDI. They are the first to consider the heterogeneity in productivity (after controlling for capital intensity) as a key factor in a firm's decision whether to supply only domestic markets or to supply also foreign markets, either through exports or FDI. Firms decide for these three options depending on their productivity. The least productive firms may choose to exit, more productive firms to serve only domestic markets, relatively more productive to serve domestic markets through local production and foreign markets through exports, and the most productive firms engage in FDI. They provide simple evidence of this pattern by using firm level data and regressing firm's labour productivity on industry dummies, capital intensity, total capital and several dummy variables. They find a 15% higher productivity of firms that have FDI as opposed to exporters. Next they test the standard hypotheses proximity-concentration trade-off and confirm the results of Brainard (1997), i.e. horizontal FDI substitute for trade.

5.4   Description of the data

In our empirical exercise, we use bilateral panel level data for OECD countries[23], SEE-5[24] and EU-NMS-10[25] for the period from 1994 to 2010. The dataset contains information on country characteristics based on aggregate level data (Gross Domestic Product, Gross Domestic Product per capita, labour skill endowments, capital endowments and trade costs) and detailed information on the country's exports, imports and foreign direct investments stocks between different countries. Considering the aggregate nature of the data, this study is focused on country level data, using bilateral panel data set between countries. The dataset we use contains complete information on trade (export and import flows) and investment stocks at bilateral level for all countries for the period from 1994 to 2010. The original data set contains 35 countries. All of these countries had trade (export and import) and foreign direct investment flows among them. The FDI flows and Trade flows data were obtained from the OECD database. The data that provide country information characteristics were obtained from the World Bank dataset and UNCTAD.

5.4.1   Descriptive statistics

In this section we illustrate the dynamics of outward foreign direct investment flows from OECD-20 countries to SEE-5 and EU-NMS-10 countries as a share of GDP, in relation to the dynamics of bilateral export and import flows as a share of GDP from SEE-5 and EU-NMS-10 to OECD-20 countries, during the period 1994-2010.

5.4.1.1   FDI and Trade in South East European Countries

The data presented in Table 20 clearly outline the relationship between FDI stock as a share of GDP from source OECD-20 to host SEE-5 and trade flows as a share of GDP (bilateral exports and imports) back fromSEE-5 to OECD-20 countries. From 1994, when total stock of outward FDI as a share to GDP to SEE-5was 1.33 per cent to 2010 it decreased by 0.45 percentage points, to 0.88 per cent, whereas the export flows from SEE-5 to importing countries, during the same period, have increased by 0.07 percentage points, from 0.36 to 0.43 per cent. Also, the data presented in Table 20 outlines a very significant correlation between bilateral outward FDI stock from host to source countries and the increase of import flows from SEE-5 to OECD-20 countries. Focusing on the observed period, from 1994- 2010, the data confirm that SEE-5 import flows as a share of GDP from OECD-20 have increased at marginal level by 0.49 percentage points, from 0.50 to 0.94 per cent. However, although the bilateral FDI

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[23]Austria, Belgium, Denmark, France, Finland, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain, Sweden, the United Kingdom, the United States, Canada, Israel, Norway, Turkey and Switzerland.
[24]Albania, Bosnia and Herzegovina, Croatia, Macedonia and Serbia.
[25]Bulgaria, Romania, Slovenia, the Slovak Republic, the Czech Republic, Hungary, Poland, Latvia, Lithuania and Estonia.

stock as a share of GDP from source to host countries has decreased enormously, during the last decade, 2000-2010 trade flows (both exports and imports, at bilateral level) from SEE-5 to OECD-20, have increased only at a marginal level.

Table 20: Outward FDI stock at bilateral level from OECD-20 countries to SEE-5 countries and trade flow (export and import) from SEE-5 to OECD-20 countries, during the period 1994-2010

Year	Exports/	Change	%	Imports	Change	%	FDI stock	Change	%
1994	0.36			0.50			1.33		
1995	0.31	-0.05	-14.38	0.59	0.09	18.14	1.10	-0.23	-17.04
1996	0.28	-0.03	-9.27	0.59	-0.00	-0.48	1.19	0.09	8.36
1997	0.28	0.01	1.82	0.69	0.10	16.47	1.29	0.10	8.50
1998	0.29	0.00	1.44	0.64	-0.05	-7.21	1.59	0.30	23.00
1999	0.33	0.04	14.48	0.70	0.06	10.16	2.11	0.52	32.59
2000	0.38	0.05	16.31	0.74	0.04	5.53	2.91	0.80	37.71
2001	0.34	-0.04	-10.51	0.75	0.00	0.61	3.01	0.10	3.54
2002	0.29	-0.05	-14.97	0.72	-0.03	-3.95	3.88	0.87	28.82
2003	0.33	0.04	14.85	0.84	0.12	17.05	4.02	0.14	3.72
2004	0.43	0.09	28.15	1.09	0.25	29.69	4.18	0.16	3.91
2005	0.44	0.02	4.15	1.05	-0.04	-3.47	4.00	-0.18	-4.23
2006	0.50	0.06	13.21	1.04	-0.01	-1.30	5.38	1.38	34.43
2007	0.48	-0.02	-4.46	1.13	0.09	8.88	0.85	-4.53	-84.18
2008	0.41	-0.07	-14.53	1.16	0.03	2.79	0.72	-0.13	-15.46
2009	0.40	-0.01	-3.45	0.94	-0.22	-19.27	0.70	-0.02	-2.33
2010	0.43	0.04	9.02	0.94	0.00	0.46	0.88	0.17	24.57

Notes: FDI stock data in table 20 represent the value of the stock of direct investments held at the end of the reference period, in millions of US dollar as a share of GDP. The data on FDI stock represent the outward stock of FDI from source OECD-20 countries into SEE-5 countries as a share of GDP to SEE-5 countries. Bilateral exports and imports are converted into millions of US dollar. The data on bilateral exports represent the export level of SEE-5 countries to OECD-20 countries, as a share of GDP to exporting SEE-5 countries. The data on bilateral imports represent the import level of SEE-5 countries from OECD-20 countries, as a share of GDP to importing SEE-5 countries.
Source: OECD, 2014; own calculation.

Table 21: Outward FDI stock at bilateral level from OECD-20 countries to EU-NMS-10 countries and trade flow (export and import) from EU-NMS-10 to OECD-20 countries, during the period 1994-2010.

Year	Exports	Change	%	Imports	Change	%	FDI	Change	%
1994	1.50			1.67			0.21		
1995	1.48	-0.02	-1.61	1.65	-0.02	-1.08	0.23	0.03	12.39
1996	1.60	0.12	8.37	1.87	0.22	13.60	0.42	0.19	80.86
1997	1.83	0.22	13.87	2.13	0.26	13.74	0.36	-0.06	-15.00
1998	1.77	-0.05	-3.00	2.03	-0.10	-4.56	0.48	0.13	35.30
1999	1.88	0.11	5.97	2.06	0.03	1.41	0.69	0.20	41.82
2000	2.14	0.26	13.88	2.23	0.17	8.38	0.92	0.23	33.40
2001	2.06	-0.08	-3.88	2.12	-0.11	-5.13	1.06	0.15	15.98
2002	2.01	-0.05	-2.20	2.02	-0.10	-4.90	1.18	0.11	10.74
2003	2.06	0.05	2.44	2.03	0.01	0.64	1.29	0.11	9.32
2004	2.17	0.11	5.44	2.14	0.12	5.67	1.37	0.08	6.35
2005	2.14	-0.03	-1.33	2.08	-0.07	-3.05)	1.27	-0.10	-7.27
2006	2.22	0.08	3.66	2.17	0.09	4.50	1.43	0.16	12.93
2007	2.12	-0.10	-4.60	2.12	-0.05	-2.44	1.61	0.17	12.05
2008	2.11	-0.01	-0.52	2.11	-0.01	-0.60	1.40	-0.20	-12.61
2009	2.05	-0.06	-2.85	1.84	-0.26	-12.53	1.68	0.27	19.46
2010	2.42	0.37	18.31	2.17	0.33	17.82	1.73	0.05	2.83

Notes: FDI stock data in table 21 represent the value of the stock of direct investments held at the end of the reference period, in millions of US dollar. The data on FDI stock represent the outward stock of FDI from source OECD-20 countries into EU-NMS-10 countries, as a share of GDP to host EU-NMS-10 countries. Bilateral exports and imports are converted into millions of US dollar. The data on bilateral exports represent the export level of EU-NMS-10 countries to OECD-20 countries, as a share of GDP to exporting EU-NMS-10 countries. The data on bilateral imports represent the import level of EU-NMS-10 countries from OECD-20 countries, as a share of GDP to importing EU-NMS-10 countries.
Source: OECD, 2014; own calculation.

5.4.1.2 FDI and Trade in New European Union Member States

Table 21 illustrates the dynamics of outward bilateral FDI stock as a share of GDP from source OECD-20 to host EU-NMS-10 countries, in relation to EU-NMS-10 trade flows as a share of GDP (exports and imports) from to OECD-20 countries. The data presented in Table 21 confirms that, during the observed period from 1994 to 2010, there is some sort of correlation between the increase of outward FDI stock from OECD-20 to EU-NMS-10 countries and the increase of both EU-NMS-10 import flows from OECD-20 countries and EU-NMS-10 export flows to OECD-20 countries. During the observed period, FDI outward stock as a share of GDP from OECD-20 to EU-NMS-10 has increased by 1.52 percentage points, from 0.21 per cent to 1.73 per cent, whereas EU-NMS-10 export flows back to OECD-20 and EU-NMS-10 import flows from OECD-20 countries, during the observed period, have increased 0.92 percentage points and 0.5 percentage points respectively.

Focusing on the year of 2010, the data presented in Tables 20 and 21 confirm that the outward stock of FDI as a share of GDP from OECD-20 to SEE-5 is 1.96 times lower than the outward stock of FDI as a share of GDP from OECD-20 to EU-NMS-10 countries. Also, the export and import flow as a share of GDP from SEE-5 to OECD-20 in comparison to the export and import flow as a share of GDP from EU-NMS-10 to OECD-20 countries are 5.6 and 2.30 times lower, respectively. In figure 1 and 2, we examine the relationship between bilateral FDI outward stock from OECD-20 to SEE-5 and EU-NMS-10, and trade (exports and imports) at bilateral level from SEE-5 and EU-NMS-10 to OECD-20.

Figure 1: Relationship between outward FDI stock as a share of GDP from OECD-20 to SEE-5 and bilateral exports and imports as a share of GDP from SEE-5 to OECD-20.
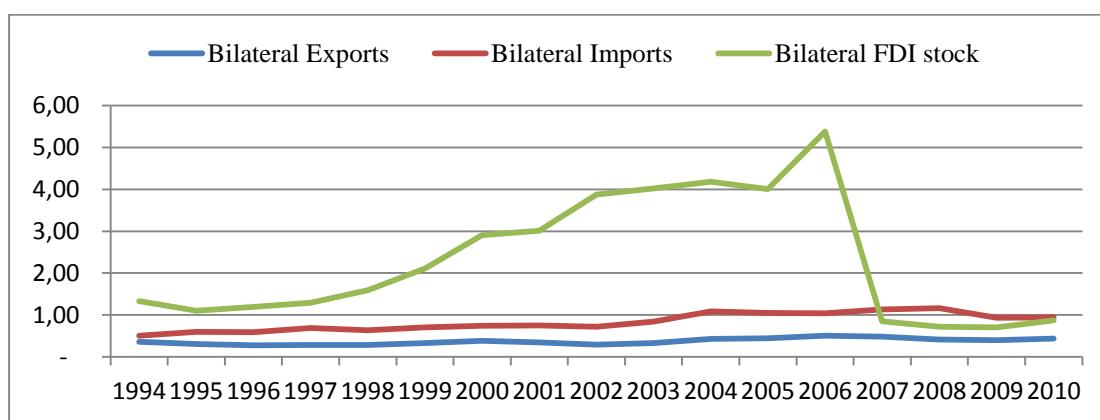
Source: OECD, 2014 own calculation.

The highest relative increase of the FDI outward stock from OECD-20 to EU-NMS-10 countries is registered between 2003 and 2004 and from 2006 to 2007, whereas this increase in SEE-5 countries is observed between 2001 and 2006.

Figure 2: Relationship between FDI outward stock as a share of GDP from OECD - 20 to EU-NMS-10 and bilateral exports and imports as a share of GDP from EU-NMS-10 to OECD-20
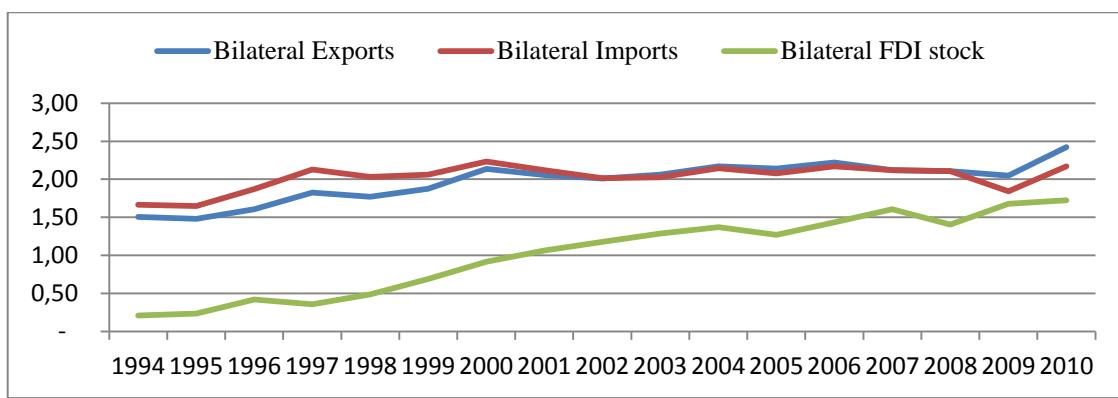
Source: OECD, 2014 own calculation.

The increase of FDI outward stock from OECD-20 to SEE-5 countries up to 2006 can be attributed to improvements of country-specific factors of SEE countries, the increased macroeconomic performance of SEE-5 countries and the improvement of SEE-5 country policies toward the attraction of foreign capital, such as subsidies and tax breaks. Moreover, the increased presence of foreign capital in the SEE-5 countries, has led also to the increase of trade performance of SEE countries, at both export and import level, thus enabling the SEE-5 countries to increase their trade flow to OECD-20 countries.

5.5   The Gravity Model applied to trade studies

The Gravity Model has been applied in many empirical studies in economics explaining different types of flows such as migration, commuting, tourism and commodity shipping (Bergstrant, 1985). The gravity equation has described trade flows between countries (Deardoff, 1995).The first econometric studies of trade flows based on gravity equations were developed by Tinbergen (1962) and Pöyhönen (1963).

According to the core literature of empirical studies on the Gravity Model, the gravity equation specifies that a flow from origin i to destination j can be explained by economic forces at the flow's origin, economic forces at the flow's destination and economic forces either aiding or resisting the flow's movement from origin to destination. Bergstrant's (1985) study provided important theoretical justification for the Gravity Model applied for 15 OECD country trade flows. Bergstrand (1985) provided a theoretical foundation for the Gravity Model based on the constant elasticity of substitution principle derived from utility functions. The gravity equation as specified by Bergstrand is given as follows:

$$x_{ij,t} = \beta_0 gdp_i^{\beta_1} gdp_j^{\beta_2} d_{ij}^{\beta_3} a_{ij}^{\beta_4} \varepsilon_{ij} \quad (5.1)$$

Where $X_{ij,t}$ is the US dollar value of the flow from country i to country j at time t, gdp_i (gdp_j) is the US dollar value of the nominal gdp in i (j), D_{ij} is the distance from the economic centres of i to that of j, a_{ij} is any other factor (s) either aiding or resisting trade between i and j, and u_{ij} is a log – normally distributed error term with $E(lnu_{ij})=0$.

In the general form of the gravity model, exports from country i to country j are explained by the economic sizes (gdp) of country i and j's population, geographical distance and a set of dummies incorporating either institutional factor, trade preferences or factor endowment country characteristics. The basic model is specified as (Martinez - Zarzoso and Nowak - Lehm, 2003; 2004).

$$x_{ij,t} = \beta_0 gdp_i^{\beta_1} gdp_j^{\beta_2} pop_i^{\beta_3} pop_j^{\beta_4} d_{ij}^{\beta_5} a_{ij}^{\beta_6} \varepsilon_{ij} \quad (5.2)$$

Where x_{ij} is exports of goods from country i to country j. gdp_i and gdp_j are the gdp of the exporter and importer, pop_i and pop_j are the populations of exporter and importer, d_{ij} is the distance between the two countries. A_{ij} represents any other factor impacting exports between countries and u_{ij} is the error term. For estimation purpose, the model in equation 5.2 is expressed in the log form.

$$lnx_{ij,t} = \beta_0 + \beta_1 lngdp_{i,t} + \beta_2 lngdp_{j,t} + \beta_3 lnpop_{i,t} + \beta_4 lnpop_{j,t} + \beta_5 lnd_{ij} + \beta_6 lna_{ij}$$
$$+ \varepsilon_{ij} \tag{5.3}$$

Alternatively, equation (5.2) uses a GDP per capita variable instead of population, and is represented as follows:

$$x_{ij,t} = \eta_0 gdp_i^{\eta_1} gdp_j^{\eta_2} \left(\frac{gdp_i}{pop_i}\right)^{\eta_3} \left(\frac{gdp_j}{pop_j}\right)^{\eta_4} d_{ij}^{\eta_5} a_{ij}^{\eta_6} \varepsilon_{ij} \tag{5.4}$$

Where gdp_i / pop_i are the exporter gdp per capita and gdp_j/pop_j is the importer gdp per capita. Expressing equation (5.4) in log linear form yields.

$$lnx_{ij,t} = \eta_0 + \eta_1 lngdp_i + \eta_2 lngdp_j + \eta_3 ln\left(\frac{gdp_i}{pop_i}\right) + \eta_4 ln\left(\frac{gdp_j}{pop_j}\right)$$
$$+ \eta_5 lnd_{ij} + \eta_6 lna_{ij} + \varepsilon_{ij} \tag{5.5}$$

Following Bergstrand (1989), the theoretical framework on the gravity equation explaining trade patterns among countries, equation (5.5) will be applied in this study, where a will include measures of factor endowment considerations at labour and capital base.

5.6   Methodology and empirical approach

The empirical evidence that test the relationship between FDI and exports, is mainly based on a two factor country model, considering two factors of production and two sectors (Maruknesn et al., 1998). In this chapter, we extend this approach by including more than two countries, like SEE-5 and EU-NMS-10 countries as exporting (partner) countries and OECD countries as reporting (importing) countries. Considering country characteristics, the framework of the study will link these country characteristics to the relationship between FDI and trade to generate the hypotheses: It is expected that FDI from OECD-20 to SEE–5 and EU–NMS–10, will have an effect on increasing the exports and imports from SEEC–5 and EU–NMS-10 to OECD-20. In line with Markusen's et al. (1998) theoretical framework concerning the relationship between FDI and Trade, we consider the role of country characteristics as well as trade costs in explaining FDI and Trade pattern among SEE-5 and EU-NMS-10 countries. In this regard, we will investigate empirically the relationship between inward FDI and exports

and imports using bilateral data for the OECD-20 and SEE–5 and EU-NMS-10 countries over 17 years. We will use FDI stock data and Trade flows data (both export and import flows) in both directions, from OECD-20 to SEE–5 and EU-NMS-10 as well as from SEE-5 and EU-NMS-10 to OECD-20. The empirical analysis applies a modified model of gravity equation to a panel of bilateral observations of SEE-5 and EU-NMS-10 trade flows (exports and imports), from OECD-20 countries. Two different equations are estimated one for SEE-5 and EU-NMS-10 export flows to OECD-20 and the other one for SEE-5 and EU-NMS-10 import flows from OECD-20. The reduced form gravity equation of related choice variables is given below:

$$lnx_{ji,t} = \mu_t + \beta_0 lnfdi_{ij,t-1} + \beta_1 ln|gdp_{i,t-1} - gdp_{j,t-1}|$$
$$+ \beta_2 ln|gdpc_{i,t-1} - gdpc_{j,t-1}| + \beta_3 lnd_{ij} + \beta_4 ln\alpha_{jt} + \varepsilon_{ij,t} \quad (5.6)$$

Where x_{jit} stands for exports (or imports) flows from country j to country i in year t. FDI_{ijt-1} is inward stock of FDI in host country j from source country i in year t. The FDI variable is lagged by one period (n=1) in order to allow the FDI the grace period before is starts at impacting host country's exports (imports). $|gdp_{i,t-1} - gdp_{j,t-1}|$ and $|gdpc_{i,t-1} - gdpc_{j,t-1}|$ is the absolute difference between countries i and j gdp and gdp per capita. Both variables are lagged by one period in order to avoid the problem of endogeneity between gross domestic product and exports as the dependent variable. d_{ij} is the distance between exporting and importing countries. a_{jt} denote the country's j explanatory variables. The ε_{ijt} is the usual standard error.

5.6.1 Empirical model

For estimation purposes, we extend the reduced form equation for estimating bilateral relationship between Trade and FDI between SEE-5, EU-NMS-10 and OECD-20 countries is given[26]. The estimated gravity equation is the following:

$$lnx_{ji,t} = \mu_t + \beta_0 lnfdi_{ij,t-1} + \beta_1 ln|gdp_{i,t-1} - gdp_{j,t-1}|$$
$$+ \beta_2 ln|gdpc_{i,t-1} - gdpc_{j,t-1}| + \beta_3 lnd_{ij} + \beta_4 contig + \beta_5 smctry$$
$$+ \beta_6 lnop_{j,t-1} + \beta_7 ln|skill_{i,t-1} - skill_{j,t-1}|$$
$$+ \beta_8 ln|cap_{i,t-1} - cap_{j,t-1}| + \beta_9 lnfdi_{ij,t-1} \times see + see + \varepsilon_{ij,t} \quad (5.7)$$

The dependent variable in the model is the bilateral exports (imports) in goods from exporting (importing) country j (SEE-5 and EU-NMS-10) to importing (exporting) country i (OECD-20), in year t, calculated in millions of US dollars. The variables of absolute difference of gdp and gdp per capita between partner countries represent

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[26]Description of variables used in the empirical model is given in the appendix 4. The descriptive statistics of the data used is given in appendix 5 and the correlation matrix between bilateral FDI with bilateral exports and bilateral FDI with bilateral imports, between countries is given in the appendix6 and 7, respectively.

differences in economic mass and income level of trading partners. Both variables are used in absolute difference terms, in order to avoid the problem of negative values[27]. The variables of absolute difference of gdp also reflect the absolute differences between export supply and import demand between trading partners. Absolute difference of gdp per capita, on the other hand, denotes the comparative cost differences and combined similarities in tastes between trading countries (Frankel et al., 1995). To capture the trade costs, the model will include the distance variable $dist_{jt}$ to reflect natural barriers (Carr et al., 1998). The dummy variables of counting and smctry are the standard gravity variables. These variables denote the alternative estimates of trade costs. op_{jt} indicates country j's overall trade openness measured by the sum of exports and imports over GDP, dskill is the absolute difference in the relative skill endowments between country i and j at time t, dcap is the absolute difference in the relative capital endowments between country i and j at time t. The variables of absolute difference of GDP, GDP per capita, skill endowment and capital endowment are used in the model to represent the country characteristics of the trading partners. The interaction between FDI and SEE dummy, fdi_{ijt}*see, is included in the model to estimate the difference in the effects of FDI on trade between the two groups of host countries. ε_{ijt} is the usual standard error. The data covers OECD-20 bilateral relationships with 5 SEE and 10 EU NMS countries, for the period 1994-2010.

5.7   Expected correlations

Market sized variables: gdp and gdp per capita are included in the model in absolute difference terms in order to capture the effect of the difference in market size and income level of development on trade (export and import) flow between trading partner countries. According to standard trade theory, we would expect that an increase in the difference in GDP between partner countries will reduce the trade volume between countries, since trade is expected to maximize when countries are of equal size (Helpman and Krugman, 1985). Hence, based on this argument, we expect a negative relationship between the absolute difference in terms of a country's market size and trade (export and import) flow from source to host countries. However, according to standard gravity model applied in trade studies, we expect positive impact of the absolute difference of GDP between trading partners on the size of bilateral trade (export and import) flow. Hence, the difference between import demand of OECD-20 countries and export supply of SEE-5 and EU-NMS-10 countries is expected to be positively related to trade potentials between partner countries.

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[27] Moreover, some of the developed OECD countries; i.e. Portugal, have lower GDP and GDP per capita levels recorded during the observed period, 1994 - 2010, in comparison to EU-NMS-10 countries, i.e. Poland. The same logic applies with SEE-5 countries. Turkey, for example as a part of the sample of OECD countries has lower GDP per capita level than Croatia. Hence, by considering the absolute difference of GDP and GDP per capita between developed OECD countries and EU-NMS-10 and SEE-5 countries, we take care of negative observations in the matrix of the respective variables of absolute differences of GDP and GDP per capita.

The absolute difference of gdp per capita variable is included in the model in line with the perceptions of the theoretical foundations of Heckscher-Ohlin theory and Linder's theory on international trade (Frankel et al., 1995). However, none of the both theories can predict the relation between trade (export and import) and GDP per capita levels found empirically. Based on the concept of cost comparative differences and combined tastes between countries, it is expected that high income OECD countries will trade more with 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 trade (at both: export and import level). The use of the GDP and GDP per capita variables in absolute difference terms is motivated by Frankel et al. (1995) study. Moreover, considering the theoretical considerations on international trade of Helpman and Krugman (1985) Heckscher-Ohlin and Linder's preference-based theory (1953); the effects of country characteristics, denoted by GDP and GDP per capita on trade, do not accord well by including the respective levels of GDP and GDP per capita for both trading partners, but, rather by considering the absolute differences of GDP and GDP per capita between trading countries (Frankel at al, 1995)[28]. The source of the data for both variables is UNCTAD.

Foreign Direct Investment: We also include fdi_{ijt-1} as an explanatory variable, on its own, denoting the inward stock of bilateral FDI into SEE-5 and EU-NMS-10, originated from OECD-20. This variable is included in the model to allow for factors outside this model that may affect the relationship between FDI and trade. The FDI variable is defined as the bilateral outward stock of Foreign Direct Investment (FDI) from country i to country j at time t-1[29]. The use of FDI stock variable instead of its alternative of FDI flow has two key advantages: First, the stock variable avoids the problem of multicolinearity between trade and investment flows, given that such flows are simultaneously affected by the same economic variables. Second, the use of FDI stock is a more correct approach, since the lagged FDI flows do not have impact on trade. Hence, the use of FDI stock variable is moreover able to capture the time lag effects which are not the case with FDI flows. It is expected that the stock of FDI will have a significant and positive effect on trade, suggesting that export-platform FDI may be important for the SEE and EU-NMS countries. The source of this data is OECD. FDI stock is measured at current prices and current exchange rate in millions of US dollars.

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[28]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 trade between different countries, with respect to income level. This is a reflection that all countries posses comparative advantages or preferences for something.

[29]The FDI stock variable contains a large number of zero observations and negative values. To avoid this problem we transform the FDI stock variable. Therefore, to account for negative observations in the matrix of bilateral FDI stock variable, we transform this variable by treating the negative values the same as zero values. By this transformation we take care of negative observations, and the coefficients from an OLS regression can still be interpreted as elasticity's (Guerin and Manzochi, 2006).

Factor endowment variables: To capture the effect of the difference in relative factor endowments on export and import flow between source and host countries, we have included in the model $dskill_{ijt}$ variable denoting the absolute difference in the relative skill endowments between country i and j, measured by difference of employment in service sector (as a per cent of total employment), between country i and country j and $dcap_{ijt}$ variable denoting the absolute difference in the relative capital endowments between country i and j, measured by gross fixed investments relative to total employment, in terms of the absolute difference of the OECD-20 ratio less the ratio for country j (SEE-5 and EU-NMS-10). According to standard trade theory, it is expected that an increase in differences in relative endowments will increase trade flow, since trade increases with differences in relative factor endowments (Helpman and Krugman, 1985). Hence it is expected that the coefficient of skill endowment to be significantly and positively related to bilateral trade. The source of the data consisting relative factor endowments proxies is the World Bank database.

Trade cost: The trade cost variable in this study is represented by the distance between source and host country. The variable of distance lnd_{ijt} represents the gravity factor. Distance between source and host country is expected to have a negative effect on the size of export flows, due to costly adoptions of goods to local preferences (Johnson, 2006) and high transportation costs (Bevan and Estrin, 2000; Resmini, 2000). The variable distance lnd_{jt} is measured by the actual route distance from the economic canters (generally, capital cities) between source and host countries, in kilometres. This variable is used in the model to proxy the transaction, transportation cost and physical cost of trade. The source of this variable is: CEPPI. According to Resmini (2000) greater distance presents weaker trade ties between the source country and host country, thus providing for lower trade flow levels. Typically, empirical studies proxy trade costs with bilateral distance. Hence, it is expected that an increase in trade costs reduces trade volumes. Additionally, to capture information costs, the study considers other standard gravity variables like conting and smctry, indicating whether two countries are contiguous or the 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. The source of the data for conting and smctry is CEPII.

Openness: The variable of openness denoted by $lnop_{jt}$ will be included in the model to account for the openness level of the SEE and EU-NMS countries (Bos and De Laar, 2004). This variable is measured by the sum of exports and imports in goods and services over GDP. The variable of openness is used to capture the de jure liberalization of trade and foreign exchange transactions. The fewer restrictions an importing country imposes on trade the higher will be trade flow from an exporting country. Therefore, a positive relationship between trade openness and trade flow is expected. The source of the data consisting of openness variable, like exports, imports and GDP, is UNCTAD.

The main relationship we are interested in is between FDI and trade. Whether trade and FDI are complements or substitutes depends on whether FDI is horizontal or vertical. A negative relationship between FDI and trade suggests the domination of horizontal FDI; hence, FDI and trade are substitutes. In this regard, in case of the horizontal FDI, we expect a negative coefficient of the FDI stock variable, since horizontal FDI should decrease bilateral exports and imports. Alternatively, a positive relationship between FDI and trade, favours the domination of vertical FDI, hence FDI and trade are complements. Vertical FDI should increase imports of intermediates and exports of final goods.

5.8   Econometric issues

We use different estimation methodologies to estimate the determinants of bilateral trade flows (at export and import level). In this regard, in the study we consider static panel models, non-linear panel models and dynamic panel models. We start with robust fixed effects (FE) estimates. An advantage of LSDV estimates is that by adding the dummy for each country, we estimate the pure effect of each individual explanatory variable, accounting also for unobserved heterogeneity (Greene, 2013).

However, due to the presence of zero export and import flows in the export and import data matrix, we also present the results from Poisson Pseudo Maximum Likelihood (PPML) estimation technique (Sivla and Tenreyro, 2006), Random Effect Tobit (RET) estimation technique (Peracchi, 2004) and the standard Heckman correction for selection bias (Heckman, 1979). These estimation methodologies are presented in the study in order to deal with the problem of large numbers of zero observations in the bilateral export and import flow matrix. In this regard, to solve the problem of negative observations in the dependent variable, we transform the dependent variable by treating the negative observations of the export and import data as zero values. By this transformation we take care of negative observations, and the coefficients from an OLS regression can still be interpreted as elasticity (Guerin, 2006). The advantages of using PPML and RET is that they deal with the problem of zero export flows, provide unbiased and consistent estimates in the presence of heteroscedasticity as all observations are weighted equally and the mean is always positive (Henderson and Millimet, 2008; Westerlund und Wilhelmsson, 2009; Silva and Tenreyro, 2008).

To check for the robustness of our results obtained using the static panel data techniques, we also run dynamic panel data regression using Arrellano-Bover/Blundell/Bond estimation procedure (Arrellano and Bover, 1995; Blundell and Bond, 1998).

5.9 Relationship between bilateral exports and FDI

5.9.1 Testing the appropriateness of econometric estimations

This section aims at testing the relationship between bilateral FDI stock and exports at bilateral level between countries. In particular, we investigate whether FDI and exports are substitutes or complements. Tables 23, 24 and 25 present the results, when the dependent variable is the bilateral exports from SEE-5 and EU-NMS-10 to OECD- 20 countries. The Breusch and Pagan Lagrangian Multiplier (LM) test confirm the relevance of panel effect in the data.[30] This is evidence of significant difference across countries; therefore we can choose a simple RE regression in relation to pooled OLS. To choose the appropriate specification among FE and RE estimates, we have used Hausman test[31]. The Hausman test is used to test the null hypothesis that the regressors and individual effects are not correlated in order to distinguish between a FE model and a RE model.

Table 22. Testing the relationship between exports and FDI

	Testing	
Hausman Test:	χ^2 (7) [p> χ^2]	203.81 [0.00]
Breuch - Pagan LM test:	χ^2(1) [p> χ^2]	3184.11 [0.00]
Parameter test:	F(16, 1695) [p>F]	100.81 [0.00]
Robust FE vs Robust RE: Sargan-Hansen statistic:	SH - statistics, χ^2 (7) [p> χ^2]	68.405 [0.00]
Wald Test for heteroscedasticity:	χ^2 (213)[p> χ^2]	9.4e+29 [0.00]
Wooldridge test for serial correlation:	F(1, 179)[p>F]	96.611 [0.00]

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

Hausman test suggests a strong rejection of the null hypothesis that RE estimates provide consistent estimates, indicating that country specific effects are correlated with regressors. This suggests that a FE model is more appropriate and the RE estimates are not consistent. To test for heteroscedasticity, we have used modified Wald test for group wise heteroscedasticity in the FE regression model. Using the Wald test,[32] we conclude the presence of heteroscedasticity in the data. The Wooldridge test for autocorrelation is used to test for autocorrelation in the panel. Using this test, we reject the null hypothesis of no serial correlation and conclude the data does have first – order autocorrelation.[33] However, in order to control for no auto – correlation and homoscedasticity, we have also provided the robust estimates from FE and RE models (robust RE estimates are not shown in the table). Using Sargan – Hansen statistic, we

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[30]The null hypothesis in the LM test is that variances across entities are zero. The chi - square of 3184.11 and the associated p - value of 0.00, from the LM test, is evidence that we can reject the null and conclude that random effects are appropriate.

[31] The p-values of 0.00 from Hausman test suggest to choose FE estimates in relation to RE estimates

[32]The null hypothesis from this test is that there is homoscedasticity in the data (constant variance). The associated p - value from 0,000 of the Wald test is sufficient evidence to reject the null hypothesis of homoscedasticity in the data. Hence the data suffer from heteroscedasticity problem.

[33]The p - value associated with the Wooldridge test for serial correlation is 0,00. This is a sufficient evidence to reject the null hypothesis of no - serial correlation in the data.

reject the null that robust RE estimates are consistent, suggesting to choose robust FE estimates for interpreting the results (column 3).[34] To see if time effects are needed when running fixed effects we test for joint significance of the dummies for all years equal to 0[35]. The parameter test indicates that there is time specific effect on bilateral exports. Therefore, time specific effects are needed. To verify the robustness of the baseline results we also control for time effects for particular years in our sample. The F - test justifies the use of time dummies for particular years of our sample. Therefore we have also reported the selected appropriate estimates of robust FE estimates counting for year dummies. However, the problem with estimating trade flows, using gravity equation, is the multilateral resistance terms (MRTs). To proxy MRTs, following Rose and van Wincop, (2001); Feenstra, (2004); Baldwin and Taglioni, (2006) we use country fixed effects for importers and exporters and time fixed effects. Moreover, the models with time and country fixed effects are employed to control for common external shocks and unobserved country - fixed effects.

5.9.2   Discussion of results from static panel estimates

In this section we present the empirical results when the dependent variable is the bilateral exports from SEE-5 and EU-NMS-10 to OECD-20 countries. Column (1) reports the results from robust FE. Column (2) reports the results from robust FE with year dummies. We discuss the economic interpretation of models summarized in table 23 and 24, bearing in mind that significant coefficients from robust FE and robust LSDVwhich are suggested by the testing procedures, should be considered for interpretation of the results.

To distinguish the effect of FDI stock on exports between SEE-5 and EU-NMS-10 countries, we have included the interaction terms between SEE dummy and FDI stock. By this interaction[36] we test the hypothesis that the effect of the inward stock of FDI on the bilateral exports, in exporting countries, is different between SEE-5 countries and EU-NMS-10 countries. Focusing on the results of FE with year dummy (column 2), the estimated coefficient of bilateral FDI stock for EU-NMS-10 countries, in the equation of bilateral exports is 0.061 (0.064-0.137*0), per cent. For SEE-5 countries it is -0.073 per cent (0.064-0.137*1). The difference of 0.137 percentage point less for

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[34]The Sargan - Hansen statistics of 68.405 and the associated p - value with this test of 0,000 suggest to reject null hypothesis of Sargan - Hansen test that robust random effect estimates provide unbiased and consistent estimates.

[35] The associated p-value, obtained from the parameter test of 0.000, indicates that we reject the null hypothesis that all year coefficients are jointly equal to zero, therefore time fixed effects are needed.

[36]The presence of a significant interaction indicates that the effect of one predictor variable on the response variable is different at different values of the other predictor variable. It is tested by adding a term to the model in which the two predictor variables are multiplied. Adding an interaction term to a model drastically changes the interpretation of all of the coefficients. If there were no interaction termB_1would be interpreted as the unique effect of inward FDI stock on bilateral exports. Since the interaction indicates that the effect of inward FDI stock on bilateral exports is different for different values of SEE dummy (2 alternative values of SEE dummy; SEE=1 if countries are part of SEE sample, 0=otherwise; capturing the benchmark category of countries of EU-NMS-10 countries), the unique effect of inward FDI stock is not limited to B_1, but also depends on the values of SEE dummy variable.

SEE-5 countries is statistically significant at 1 per cent level of significance (column 2 and 7). Thus, we conclude that there is sufficient evidence against the hypothesis that the size of bilateral exports does not vary with respect to the level of inward FDI stock, between SEE-5 and EU-NMS-10 countries. These results indicate that 10 per cent increase in the bilateral FDI stock from OECD-20 countries to SEE-5 countries, on average, decreases bilateral exports from SEE-5 to OECD-20 countries by 0.7 per cent, ceteris paribus.

Table 23: Results from Static Panel Models. The relationship between exports and FDI

VARIABLES	(1) Robust Fixed Effects	(2) Robust Fixed Effects
Log of bilateral FDI stock (-1)	0.261***	0.064***
	[11.62]	[2.64]
Log of abs difference in GDP (-1)	0.137**	0.005
	[2.01]	[0.18]
Log of abs difference in GDP per capita(-1)	0.501***	0.080
	[4.33]	[0.92]
Log of distance		
Contingency		
Language, cultural and border similarities		
Log of openness	0.820***	0.312**
	[4.98]	[2.26]
Log of absolute difference in skill endowment	0.025	0.030
	[0.39]	[0.55]
Log of absolute difference in capital endowment	0.097**	0.039
	[2.51]	[1.63]
Log of interaction term, FDI (-1) * SEE-5 dummy	-0.153***	-0.137***
	[-4.92]	[-3.22]
SEE-5 dummy		
Constant	-6.986***	1.900*
	[-5.01]	[1.82]
Observations	1,931	1,931
R-squared	0.518	0.753
Number of groups	213	213
Time dummies	No	Yes
Exporting country dummy	No	No
Importing country dummy	No	No
Country-pair dummies (index dummies)	No	No

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

The positive coefficient of bilateral inward FDI stock in the benchmark category of EU-NMS-10 countries indicate that 10 per cent increase in bilateral inward FDI stock from OECD-20 to EU-NMS-10 countries, result on increase of bilateral exports from exporting EU-NMS-10 countries to importing OECD-20 countries, by 0.6 per cent, ceteris paribus.

However, the coefficients size, below 1 in absolute value, of inward FDI stock for both group of countries , indicate that export potentials of exporting SEE-5 and EU-NMS-10 countries to OECD-20 countries are not sensitive to changes in the inward FDI stock in host SEE-5 and EU-NMS-10 countries originated from OECD-20 countries. This result is supported in LSDV estimates accounting for time and country - pair fixed effects (column 6) and LSDV estimates with country (exporting and importing) fixed effects, time fixed effects and country pair fixed effects (column 7).

The coefficient of SEE dummy in first case (column 6) is economically large and statistically significant. This coefficient measures the FDI differentials between SEE-5 and EU-NMS-10 countries, assuming inward FDI stock is zero. Since inward FDI stock is continuous variable, it is unlikely that it equals zero often, if ever, so the coefficient of SEE dummy can be virtually meaningless by itself. Negative coefficient for SEE dummy, in all relevant LSDV estimates, shows that the level of SEE-5 exports to OECD-20 is lower in comparison to the level of EU-NMS-10 imports to OECD-20. On the other hand positive relationship between exports and FDI stock between EU-NMS-10 and OECD-20 countries confirms of the complementarities between stock of FDI and exports in EU-NMS-10 of countries. In other words the stock of inward of FDI into EU-NMS-10 countries seems to be trade inducing. This result suggests that increasing the stock of inward FDI from the origin countries, in the exporting countries, works as a channel through which exports expand in exporting countries. This expansion can be either from inter-industry, intra-industry or intra-firm trade (Magalhaes and Africano, 2007). However, to clarify this issue, an industry and intra - firm research level study needs to be performed, which is not the case of this study. The estimated positive coefficient of FDI stock for EU-NMS-10 countries, indicates that FDI in these countries are vertically oriented, targeting mainly geographically fragmented production process by stages. The estimated negative coefficient FDI stock for SEE-5 countries, indicates that inward FDI stock in SEE-5 countries, originated from OECD-20 countries are horizontally oriented, which are based on production of homogenous products. (Amiti and Greenaway, 2000), thus FDI and exports may be considered as substitutes for each other in the selected SEE-5 countries.

The relevant FE estimates i.e. columns 1, 2, 6 and 7 show positive and significant effect of openness on exports. The positive and significant coefficient of openness indicate that, as de jure trade becomes more liberalized, the export flows from SEE-5 and EU-NMS-10 to OECD-20 countries increase. Focusing on LSDV estimates (column 7), 10 per cent increase in openness degree of exporting countries, is associated, on average with 3.1per cent increase of export flows, ceteris paribus. Trade costs substituted by distance variable are negatively related to bilateral exports, in all relevant estimates, as expected (column 7). The results are confirming that a 1 per cent increase in distance between exporting and importing countries reduces bilateral exports activity between countries, on average, by 7.4 per cent, ceteris paribus.

We find that the coefficient of contingency, in the robust LSDV estimates is positively associated to bilateral FDI stock, as expected. The robust LSDV model (column 7) predicts that bilateral export flow between two contingent countries is 89.07 per cent higher than bilateral export flow between two non contingent countries[37]. This result means that contingency has strong effect in LSDV estimates (with average enhancement effect of 89.07 per cent). Also, the robust LSDV model accounting for country (exporting and importing) fixed effects and time fixed effects predicts that bilateral export flow between two similar countries in terms of culture and language is 40.91 per cent higher than bilateral export flow between two non similar countries.

Table 24: Results from Robust LSDV Models. The relationship between exports and FDI

VARIABLES	(3) LSDV	(4) LSDV	(5) LSDV	(6) LSDV	(7) LSDV
Log of inward FDI stock (-1)	0.438***	0.197***	0.119***	0.064***	0.064***
	[26.87]	[11.81]	[6.62]	[3.58]	[3.58]
Log of abs difference in GDP (-1)	0.326***	0.106**	-0.003	0.005	0.005
	[11.71]	[2.21]	[-0.10]	[0.20]	[0.20]
Log of abs diff in GDPc (-1)	-0.602***	0.272***	-0.033	0.080	0.080
	[-5.98]	[2.82]	[-0.26]	[0.84]	[0.84]
Log of distance	-0.523***	-0.955***	-1.180***	-1.024***	-0.747***
	[-10.10]	[-15.76]	[-19.66]	[-22.77]	[-4.05]
Contingency	0.291***	0.062	0.111*	3.834***	0.637***
	[2.78]	[0.86]	[1.67]	[26.98]	[3.52]
Same country	-0.352***	0.391***	0.343***	3.307***	0.459
	[-3.19]	[3.21]	[3.00]	[6.61]	[0.43]
Log of openness	-0.562***	1.306***	0.572***	0.312***	0.312***
	[-4.39]	[7.68]	[2.98]	[2.75]	[2.75]
Log of abs diff. in skill endow	-0.005	0.108	0.141**	0.030	0.030
	[-0.08]	[1.56]	[2.43]	[0.57]	[0.57]
Log of abs diff in capital endow	0.024*	0.105***	0.085***	0.039***	0.039***
	[1.77]	[4.99]	[5.33]	[2.71]	[2.71]
Log of inward FDI stock (-1)* SEE-5	0.039	0.090***	0.109***	-0.137***	-0.137***
	[0.92]	[3.28]	[3.99]	[-4.60]	[-4.60]
SEE-5 dummy	-1.822***	0.000	0.000	-1.952***	-0.429
	[-8.06]	[.]	[.]	[-10.16]	[-0.49]
Constant	11.567***	-0.011	9.507***	10.191***	6.684***
	[9.73]	[-0.01]	[7.01]	[7.57]	[3.66]
Time FE	Yes	No	Yes	Yes	Yes
Exporter FE	No	Yes	Yes	No	Yes
Importer FE	No	Yes	Yes	No	Yes
Country-pair FE	No	No	No	Yes	Yes
Observations	1,931	1,931	1,931	1,931	1,931
R-squared	0.692	0.829	0.863	0.968	0.968

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

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[37]The formula to compute this effect is $\left(e^{0.637} - 1\right) \times 100$ where 0.637 is the estimated coefficient of contingency.

All the estimated coefficients in LSDV models have the expected signs, the only exception are the coefficients of openness and same country that seem to have a negative impact if we do not control for country fixed effects and consider only year fixed effects (columns 3).

5.9.3   Robustness check

In table 25 we report the alternative estimation techniques from PPML, RET and stage two of Heckman's selection model (column 8, 9 and 10, respectively). These estimates are considered in the study due to the robustness to heteroscedasticity (Santos and Silva, 2006). Stage two of Heckman's selection model must be considered to check for the problem of zero export flows. First we estimate a probit regression where the export flows determinants are regressed on the dependent variable, bilateral exports$_{jit}$ equal to 1 when country j (SEE-5 and EU-NMS-10) exports to country i (OECD-20) and 0, otherwise (when country j does not export to country i). In the second stage we calculate the inverse mills ratio as a bias correction term and then run an OLS regression considering the specified regressors in the selection equation of the heckman model and the calculated inverse mills ratio as an additional regressor. Following Helpman et al. (2008) and Martin and Pham (2008), we omit the regressors related to the fixed costs, namely gravity coefficient of trade costs, distance. From the table below we see that RET and PPML estimates provide significant results[38]. As expected, in all estimates, presented in table below, the number of observations is greater than in the standard LSDV and FE estimates: 2,287 in Heckman model and 2,141 in RET and PPML model compared to 1,931 in LSDV model. This difference shows that there a large number of negative observations present in the dataset, which is a usual case for gravity models, explaining trade flows. All the reported results that deal with the issue of zero export flows provide different coefficients size and significance level. For example the inward FDI stock elasticity is considerably larger under Heckman model, (0.427 per cent), compared to PPML and RET estimates with estimated respective values of (0.067per cent) and (0.197 per cent). The estimated elasticity of distance is again larger in LSDV estimates compared to PPML model (-0.390 compared to -0.114). The finding that trade cost variables, namely distance, generally provides lower values in PPML estimates than LSDV estimates supports Santos Silva and Tenreyro's (2006) findings. These differences with respect to estimated economic impact of the explanatory variables on the dependent variable are driven either by the large number of zero export flows in the sample or by the heterogeneity of the data. The significant coefficient of the Mills ratio confirms that correcting for sample selection bias is not justified. However, because heterogeneity is likely to be present in the data, once considering the fact that in the selected sample we have included SEE-5, EU-NMS-10

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[38]The likelihood-ratio test (χ^2) reported in the last row of both RET and PPML estimates is a test of the significance of the random-effect estimates and Poisson estimates.

and OECD-20 countries that normally vary significantly with respect to macroeconomic level of development, we check for the best specified model.

Table 25: Robustness check: Alternative estimates from the relationship between exports and FDI

VARIABLES	(8) Random Effect Tobit	(9) Random EffecPPML	(10) Heckman Two stage	(11) Selection variables	(12) Probit Equation First stage	(13) OLS Second stage
Log of bilateral FDI stock (-1)	0.212***	0.066***	0.427***	0.057**		
	[13.03]	[10.57]	[25.36]	[2.13]		
Log of abs difference in GDP (-1)	0.088***	0.059***	0.383***	0.052	0.181***	0.364***
	[3.15]	[6.02]	[15.78]	[1.46]	[3.39]	[9.84]
Log of abs difference in GDPc (-1)	-0.086*	-0.080***	-0.561***	-0.100	0.525***	1.302***
	[-1.73]	[-4.17]	[-11.04]	[-1.24]	[8.08]	[10.38]
Log of distance	-0.710***	-0.124***	-0.665***			
	[-4.45]	[-5.54]	[-13.47]			
Contingency	0.851	0.015	0.242	-0.110		
	[1.52]	[0.23]	[1.63]	[-0.49]		
Same country	-0.515	-0.058	-0.298	0.502*		
	[-0.69]	[-0.71]	[-1.58]	[1.81]		
Log of openness	0.816***	-0.069	-0.878***	-1.628***	-0.284	-1.084***
	[6.53]	[-1.56]	[-4.54]	[-8.50]	[-1.13]	[-5.97]
Log of abs. diff. in skill endowment	-0.212***	0.011	-0.039	-0.430***	0.216**	0.195**
	[-3.45]	[0.57]	[-0.68]	[-4.40]	[2.46]	[2.35]
Log of abs diff. in capital endowment	0.191***	0.011*	0.082***	0.167***	0.136***	0.236***
	[7.90]	[1.72]	[3.62]	[5.88]	[3.74]	[8.70]
Interaction: FDI (-1)*SEE-5 dummy	-0.098***	0.027*	-0.053	-0.193***		
	[-2.88]	[1.86]	[-1.26]	[-4.43]		
SEE-dummy	-1.206***	-0.473***	-1.698***	-0.211		
	[-4.55]	[-6.19]	[-9.78]	[-0.87]		
Mills ratio			1.187*			
			[1.94]			
Invmills ratio						0.779
						[1.03]
Sigma_u	1.517***					
	[19.13]					
Sigma_e	0.713***					
	[60.90]					
_cons		2.511***				
		[8.76]				
_cons		-4.266***				
		[-14.35]				
Constant	4.171***		12.34***	8.96***	-5.727***	-10.51***
	[3.12]		[12.96]	[7.79]	[-4.59]	[-6.35]
Ramsey-Reset test (p-value)	4.08	-3.83	1.48	1.48	1.40	
Observations	2,141	2,142	2,287	2,287	1,755	1,755
Censored observations			146			
Uncensored observations			2,141			
Number of groups	241	241				
Log likelihood	-2730.23	-4135.22			-179.27	
Wald χ²	714.98	448.32	2454.72			
Prob > χ²	0.0000	0.0000	0.0000			

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

To check for this, following Santos Silva and Tenreyro (2006), we applied heteroscedasticity - robust Ramsey RESET test (Ramsey, 1969), which is performed by checking the significance of an auxiliary regressor constructed as $(x'b)^2$, where b denotes the vector of estimated parameters[39]. The p-value of the Ramsey-rest test is larger in RET estimates, suggesting that the RET model seems to pass this test. Therefore, based on Ramsey-reset test we chose RET model for interpreting the results.

The factor endowment coefficients at labour and capital base are both significant at 1 per cent level of significance. The estimated elasticity of skill endowment difference is very low, (in absolute value below 1), -0.212 per cent, meaning that exports are not sensitive to changes in skill endowment differences between trading partners, indicating that a considerable increase of skill endowment differences between trading partners by 10 per cent decreases bilateral exports, on average, by only 2.1 per cent, ceteris paribus. The positive coefficient of capital endowment difference is confirming the standard trade theory that export increases with differences in relative capital endowments (Helpman and Krugman, 1995). However, again the size of the coefficient of capital endowment differences between countries is very low, meaning that its impact on exports, although positive, is economically very small, confirming that a sizeable increase of the country differences with respect to relative capital endowment by 10 per cent, increases export performance of exporting countries by only 1 per cent, ceteris paribus. This result is also supported in LSDV estimates accounting for time and country pair fixed effects (column 6).

5.10 Results from dynamic panel model

To deal with the endogeneity problem associated with lagged dependent variables and other regressors that exchibit endogeneity, we use Arrellano-Bond (1991) and Arrellano-Bover (1995)/Blundell-Bond (1998), GMM estimator. Principally we rely on robust two-step "system GMM" estimates which are robust to heteroscedasticity and serial correlation problems (Roodman, 2006). Following Windmeijer's (2005) proposed correction term which is used in order to deal with the downward bias of standard errors; we apply the *xtabond2* stata command. We consider the lagged dependent variable, bilateral FDI stock and openness as endogenous variables. We exclude distance and other gravity related dummy variables to not allow the overfitting of the endogenous regressors and increasing the number of instruments.

Other regressors, like absolute difference in GDP and GDP per capita and absolute differences in labor and capital endowments are treated as strictly exogenous regressors, specified in the iv equation. We keep SEE dummy variable in the model to allow for interaction term between SEE-5 dummy variable and our variable of interest, namely inward FDI stock. To deal with the instruments explosion, following Roodman

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[39]The *p-values* of this test close to zero indicate serious misspecification problem.

(2008) we consider lag limit of the dependent variable and other endogenous regressors and collapse the instruments.

Table 26: Results from robust system GMM. Relationship between exports and FDI

VARIABLES	(14) Robust System GMM	(15) Robust System GMM
Log of lagged bilateral exports	0.843***	0.750***
	[12.74]	[9.16]
Log of bilateral FDI stock	0.085**	0.151***
	[2.04]	[2.93]
Log of abs difference in GDP	0.042*	0.047*
	[1.67]	[1.84]
Log of abs difference in GDP per capita	-0.099*	-0.188**
	[-1.82]	[-2.41]
Log of openness	-0.499**	-0.128
	[-2.02]	[-0.53]
Log of absolute difference in skill endowment	-0.075	-0.014
	[-1.46]	[-0.27]
Log of absolute difference in capital endowment	0.017	0.007
	[1.25]	[0.64]
Log of interaction term, FDI (-1) * SEE-5 dummy	0.012	-0.009
	[0.29]	[-0.29]
SEE-5 dummy	-0.378	-0.283
	[-1.23]	[-1.26]
Constant	3.377***	2.504**
	[3.54]	[2.25]
Observations	2,101	1,870
Number of groups	223	213
Arellano-Bond test for AR(1)	0.000	0.000
Arellano-Bond test for AR(2)	0.923	0.771
Number of instruments	31	35
Wald statistics, p value	0.000	0.000
Sargan test of overid. restrict, p value	0.316	0.017
Hansen test of overid. restrict, p-value	0.953	0.579
Difference-in-Hansen tests of exogeneity of inst.		
GMM instruments for levels		
Hansen test excluding group	0.978	0.844
Difference (null H = exogenous	0.521	0.165
gmm(L.LBEX, collapse lag(1 2))		
Hansen test excluding group	0.971	0.559
Difference (null H = exogenous)	0.550	0.445
gmm(LNFDIS, collapse lag(4 7)		
Hansen test excluding group	0.936	0.673
Difference (null H = exogenous)	0.763	0.377
gmm(OP1, collapse lag(4 7))		
Hansen test excluding group	0.772	0.367
Difference (null H = exogenous)	0.930	0.687

Notes: Dependent variable is log bilateral export flow from SEE-5 and EU-NMS-10 countries to OECD-20. Z-statistics in brackets, ***, ** and * indicate significance of coefficients at 1, 5 and 10 per cent, respectively. Column (14): Internal instruments are used for endogenous variables (lagged dependent variable, bilateral FDI stock, and openness). Lag limits are 1/2 for the lagged dependent variable and 4/7 for endogenous regressors. The collapse option is always used. Year dummies are included but not shown. Column (15) shows the results with transformed dependent variable by treating the negative observations as zero values. Internal instruments are used for endogenous variables (lagged dependent variable, bilateral FDI stock, and openness). Lag limits are 1/2 for the lagged dependent variable and 4/7 for endogenous regressors.

Both system GMM estimates confirm that bilateral exports in the estimated coefficient of the lagged dependent variable is positive and significant, suggesting that bilateral export flow is subject to persistence effects.

Table 26 report the results from robust "system GMM estimates". Column (14) reports the estimates with untransformed dependent variable. Column (15), report the results when we control for negative observation in the bilateral exports data, by treating the negative bilateral export values as zero values. Both results indicate that the increase of agglomeration effect of exports by 10 per cent, results in an increase of export flows from exporting countries by 7.5 and 8.4 per cent, ceteris paribus (column 15 and 14, respectively), suggesting that bilateral exports are subject to persistence effects.

Considering country characteristics, we find that bilateral exports increase with the differences in GDP and decrease with differences in GDP per capita (The coefficient of difference in GDP is positive and significant and the coefficient of per capita GDP is negative and significant). The positive and significant coefficient of difference in GDP indicate that differences between import demand of importing OECD-20 countries and export supply of exporting SEE-5 and EU-NMS-10 countries is positively related to trade potentials. Interpreting the results from "system GMM" estimates (column 15), 10 per cent increase in terms of absolute GDP difference between the trading partners, increases the exports flows by 0.4 per cent, ceteris paribus. The same estimates confirm that, 10 per cent increase in terms of absolute GDP per capita difference between countries decreases the exports flows of exporting countries, by 1.8 per cent, ceteris paribus. These results indicate that high developed OECD-20 countries have high propensity for trade with SEE-5 and EU-NMS-10 relatively low developed countries (column 15).

However the size of the estimated coefficients of GDP and GDP per capita differences are very small, (below one in absolute value), indicating that export flows are not sensitive to changes on export supply and import demand conditions as well as comparative cost differences and combined similarities in tastes between trading partners. This is evidence that export flows are not concerned with the movements in absolute differences of GDP and GDP per capita between trading partners, since the impact of both variables on export flows is economically very small and statistically significant at 10 and 5 per cent level of significance (column 15).

5.11 Relationship between bilateral imports and FDI

5.11.1 Testing the appropriateness of econometric estimations

In this section we test the relationship between SEE-5 and EU-NMS-10 import flows from OECD-20 countries and bilateral FDI outward stock from OECD-20 to SEE-5 and EU-NMS-10 countries, in relation to country characteristics, like GDP and GDP

per capita and factor endowment variables at labour and capital base. As mentioned above the OLS model does not take into account individual effects and to test it we have used Breuch and Pagan test. This test confirms the presence of panel effect in the data[40]. Next, we have estimated the FE and RE model (results not shown in the table). Considering the baseline regressions of FE and RE, Hausman test suggest that RE model does not obtain consistent parameter estimates suggesting the existence of individual fixed effects[41]. Following we have respected the same procedures as in the previous section and we test for the existence of heteroscedasticity and autocorrelation in the model of imports. The group wise heteroscedasticity test showed that the disturbances are heteroscedastics[42]. On the other hand they are serially correlated[43] invalidating the statistics inference. To control for no serial correlation and homoscedasticity in the data, we estimate the robust FE and RE models, which are robust to heteroscedasticity and serial correlation, at the same time. A Sargan Hansen statistic is performed in order to choose among robust RE and robust FE estimates for interpreting the results[44].

Table 27: Testing the relationship between imports and FDI

	Testing	
Hausman Test:	χ^2 (7) [p> χ^2]	321.45 [0.00]
Breuch - Pagan LM test:	χ^2(1) [p> χ^2]	5366.41 [0.00]
Parameter test:	F(16, 1702) [p>F]	150.76 [0.00]
Robust FE vs Robust RE: Sargan-Hansen statistic:	SH - statistics, χ^2 (7) [p> χ^2]	153.039 [0.00]
Wald Test for heteroscedasticity:	χ^2 (213)[p> χ^2]	32906.83 [0.00]
Woldridge test for serial correlation:	F(1, 180)[p>F]	103.147 [0.00]

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

The Sargan test suggests a strong rejection of the null hypothesis that robust random effects estimates are consistent therefore we chose robust fixed effect estimates for interpreting the results. Again to check for the need of time effects when running fixed effects we test for joint significance of the dummies for all years equal to 0. The parameter test indicates that there is time specific effect on bilateral imports. Therefore we also control for time effects in the robust FE model for the years in our sample.

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[40]The null hypothesis in the LM test is that variances across entities are zero. The associated p - value of 0.00, from the LM test, is evidence that we can reject the null and conclude that random effects are appropriate.

[41]The associated chi - square values of 321.45 and p - values of 0.00 in the Hausman test, suggest that we have sufficient evidence to reject the H_o that the RE estimates are consistent. Therefore, we chose results FE estimates.

[42]The null hypothesis from this test is that there is homoscedasticity in the data (constant variance). The associated p - value from 0,000 of the Wald test is sufficient evidence to reject the null hypothesis of homoscedasticity in the data. Hence the data suffer from heteroscedasticity problem.

[43]The p - value associated with the Wooldridge test for serial correlation of 0,00 suggest to reject the null hypothesis of no - serial correlation in the data

[44]The associated p - value of 0,000 from the Sargan - Hansen statistics suggest to reject null hypothesis of Sargan - Hansen test that robust random effect estimates provides unbiased and consistent estimates. Therefore, we choose robust fixed effect estimates for interpreting the results.

5.11.2 Discussion of results from static panel models

The results from the static panel models estimating the relationship between bilateral imports, FDI, trade cost and country characteristics are shown in table 28 and 29. Among static panel models, the testing procedure has suggested to use the robust FE estimates and robust LSDV estimates for interpreting the results.

Table 28: Results from Static Panel Models. The relationship between imports and FDI

VARIABLES	(1) Robust FE	(2) Robust FE
Log of bilateral FDI stock (-1)	0.208***	0.055***
	[10.45]	[3.12]
Log of abs difference in GDP (-1)	0.130***	0.012
	[2.78]	[0.63]
Log of abs difference in GDP per capita(-1)	0.390***	-0.025
	[3.80]	[-0.43]
Log of distance		
Contingency		
Language, cultural and border similarities		
Log of openness	0.675***	0.083
	[5.51]	[1.02]
Log of absolute difference in skill endowment	0.041	0.004
	[0.68]	[0.11]
Log of absolute difference in capital endowment	0.001	-0.043**
	[0.05]	[-2.15]
Log of interaction term, FDI (-1) * SEE-5 dummy	-0.058**	-0.048**
	[-2.12]	[-2.06]
SEE-5 dummy		
Constant	-3.679***	5.298***
	[-3.13]	[6.78]
Observations	1,938	1,938
R-squared	0.524	0.803
Number of groups	213	213
Time dummies	No	Yes
Exporting country dummy	No	No
Importing country dummy	No	No
Country-pair dummy	No	No

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

The positive and significant coefficient of bilateral FDI stock for benchmark category of EU-NMS-10 countries indicates that the stock of inward of FDI seems to be trade inducing. This result suggests that increasing the stock of inward FDI from the origin OECD-20 countries, in the importing EU-NMS-10 countries, works as a channel through which EU-NMS-10 imports expand. However, as in previous case, to distinguish the effect of FDI stock on imports between SEE-5 and EU-NMS-10 countries, we have included an interaction terms between SEE dummy and FDI stock.

Referring to robust LSDV estimates, (column 7), the estimated coefficient of bilateral FDI stock for EU-NMS-10 countries, in the equation of bilateral imports is 0.055 per cent (0.055-0.048*0). For SEE-5 countries it is 0.007 per cent (0.055-0.048*1). The difference of 0.048 percentage point less 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 bilateral imports does not vary with respect to the level of inward FDI stock, between SEE-5 and EU-NMS-10 countries. The estimated coefficient size below 1 in absolute value for SEE-5 countries, indicate that SEE-5 bilateral imports are not sensitive to changes in inward FDI stock originated from OECD-20 countries, indicating that a considerable increase in the bilateral FDI stock from OECD-20 countries to SEE-5 countries, by 10 per cent, the size of bilateral imports from SEE-5 to OECD-20 countries, on average, increases by only 0.07 per cent, ceteris paribus. This result suggests that the impact of inward FDI stock in the host SEE-5 countries from source OECD-20 countries, although positive, is economically very small.

Table 29: Results from LSDV Models. The relationship between imports and FDI

VARIABLES	(3) LSDV	(4) LSDV	(5) LSDV	(6) LSDV	(7) LSDV
Log of inward FDI stock (-1)	0.428***	0.216***	0.168***	0.055***	0.055***
	[32.25]	[18.46]	[14.36]	[4.83]	[4.83]
Log of abs difference in GDP (-1)	0.359***	0.050	-0.038	0.012	0.012
	[13.70]	[1.34]	[-1.41]	[0.79]	[0.79]
Log of abs diff in GDPc (-1)	-0.388***	0.216***	-0.060	-0.025	-0.025
	[-8.23]	[3.45]	[-1.00]	[-0.54]	[-0.54]
Log of distance	-0.527***	-0.683***	-0.830***	-0.792***	-0.530***
	[-11.83]	[-15.04]	[-18.70]	[-23.25]	[-7.01]
Contingency	0.260***	0.400***	0.444***	1.458***	1.123***
	[3.62]	[5.77]	[6.86]	[21.15]	[12.49]
Same country	-0.588***	-0.280***	-0.316***	-0.025	0.498
	[-6.95]	[-2.82]	[-3.49]	[-0.15]	[1.27]
Log of openness	-0.902***	0.797***	0.211	0.083	0.083
	[-9.82]	[4.64]	[1.14]	[1.08]	[1.08]
Log of absolute diff. in skill endow.	-0.155***	-0.029	-0.027	0.004	0.004
	[-4.28]	[-0.72]	[-0.83]	[0.14]	[0.14]
Log of abs diff. in capital endow	-0.006	0.022	0.006	-0.043***	-0.043***
	[-0.49]	[1.27]	[0.44]	[-3.48]	[-3.48]
Log of inward FDI stock * SEE-5	-0.048	0.035*	0.044**	-0.048***	-0.048***
	[-1.45]	[1.71]	[2.22]	[-2.94]	[-2.94]
SEE-5 dummy	-0.457***	-0.817***	-1.526***	1.087***	-1.441***
	[-2.78]	[-4.06]	[-7.25]	[9.49]	[-8.93]
Constant	11.773***	2.675***	10.147***	11.574***	11.778***
	[19.41]	[2.79]	[9.58]	[17.05]	[8.96]
Time FE	Yes	No	Yes	Yes	Yes
Exporter FE	No	Yes	Yes	No	Yes
Importer FE	No	Yes	Yes	No	Yes
Country-pair FE	No	No	No	Yes	Yes
Observations	1,938	1,938	1,938	1,938	1,938
R-squared	0.724	0.845	0.875	0.978	0.978

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

The average bilateral imports in the benchmark category of EU-NMS-10 countries are 0.055 per cent, meaning that 10 per cent increase of FDI in EU-NMS-10 countries, originated from OECD-20 countries is associated with an increase of EU-NMS-10 bilateral imports from OECD-20 countries, by 0.5 per cent, ceteris paribus. The positive relationship between inward stock of FDI and imports confirm the complementarities between FDI and imports in SEE-5 and EN-NMS-10 countries. Based on the relationship between bilateral FDI stock and bilateral imports between countries, the equation of imports provide an evidence that FDI in SEE-5 and EU-NMS-10 countries are vertically oriented, targeting mainly geographically fragmented production process by stages.

In all LSDV estimates, trade costs substituted by distance variable are negatively related to imports, as expected. The results are confirming that a 10 per cent increase in distance between exporting and importing countries reduces bilateral imports by 5.3 per cent, ceteris paribus. We find that the coefficient of contingency, in the robust LSDV estimates is positively associated to bilateral imports, as expected. The robust LSDV model (column 7) predicts that bilateral import flow between two contingent countries is 207.40 per cent higher than bilateral import flow between two non contingent countries[45]. This result means that contingency has strong effect in LSDV estimates (with average enhancement effect of 207.40 per cent). On the other hand, contrary to expectations the coefficient of same country, indicating border, language or cultural similarities is found to have a strong and negative enhancement effect in LSDV estimates with year dummy and LSDV estimates with time invariant and time variant exporting and importing country fixed effects (Columns 3, 4 and 5). Time variant country (exporting and importing) fixed effects provide an evidence that bilateral imports between two countries in terms of culture, language and border similarities is lower, on average by 12.71 per cent than bilateral import flows between two non similar countries. The effect of absolute differences in capital endowments is statistically significant and negative in all relevant estimates (Columns 2, 6 and 7). The coefficient of capital endowment difference between countries indicate that SEE-5 and EU-NMS-10 imports decreases from OECD-20 countries as the factor endowment differences increases between countries. However, the absolute value of the coefficient of absolute difference in capital endowment below 1 indicates that import flows of SEE-5 countries are not sensitive to movements in the capital endowment differences between trading partners, meaning that a considerable increase of the capital endowment differences between trading partners, by 10 per cent, decrease import flows of SEE-5 and EU-NMS-10 countries by only 0.4 per cent, ceteris paribus (column 7).

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[45]The formula to compute this effect is $\left(e^{0.584}-1\right)\times 100$ where 1.123 is the estimated coefficient of contingency.

5.11.3 Robustness check

As in previous case we apply PPML, RET and two stage Heckman estimation techniques to test the relationship between imports and FDI, as a robustness check to previous fixed effect estimates.

Table 30: Robustness check: The relationship between imports and FDI

VARIABLES	(8) Random Effect Tobit	(9) PPML	(10) Heckman Two stage	(11) Selection variables	(12) Probit equation	(13) OLS Second stage
Log of bilateral FDI stock (-1)	0.152***	0.063***	0.392***	0.051*	0.181***	0.364***
	[10.67]	[11.77]	[26.95]	[1.89]	[3.39]	[9.84]
Log of abs difference in GDP (-1)	0.084***	0.069***	0.428***	0.067*	0.525***	1.302***
	[3.45]	[8.47]	[19.80]	[1.88]	[8.08]	[10.38]
Log of abs difference in GDPc (-1)	-0.185***	-0.067***	-0.427***	-0.079		
	[-4.27]	[-4.11]	[-9.71]	[-0.96]		
Log of distance	-0.799***	-0.127***	-0.733***			
	[-5.24]	[-7.39]	[-16.85]			
Contingency	0.842	0.004	0.219*	0.026		
	[1.56]	[0.08]	[1.71]	[0.11]		
Same country	-0.729	-0.081	-0.517***	0.367	-0.284	-1.084***
	[-1.01]	[-1.38]	[-3.21]	[1.31]	[-1.13]	[-5.97]
Log of openness	0.743***	-0.157***	-1.222***	-1.445***	0.216**	0.195**
	[6.73]	[-4.23]	[-7.59]	[-7.60]	[2.46]	[2.35]
Log of abs. diff.in skill endowment	-0.161***	0.004	-0.086	-0.508***	0.136***	0.236***
	[-2.98]	[0.27]	[-1.62]	[-4.83]	[3.74]	[8.70]
Log of abs. diff. in capital endowment	0.099***	0.008	0.070***	0.175***		
	[4.66]	[1.53]	[3.44]	[5.95]		
Interaction, FDI (-1) * SEE-5 dummy	-0.061**	-0.002	-0.100***	-0.185***		
	[-2.08]	[-0.19]	[-2.76]	[-4.14]		
SEE dummy	-0.453*	-0.145**	-0.631***	-0.125	0.181***	0.364***
	[-1.82]	[-2.33]	[-4.17]	[-0.51]	[3.39]	[9.84]
Mills ratio			0.973*			
			[1.66]			
Invmills ratio						0.779
						[1.03]
Sigma_u	1.464***					
	[19.20]					
Sigma_e	0.619***					
	[61.02]					
Cons_		2.786***				
		[11.84]				
Cons_		-6.084***				
		[-8.20]				
Constant	7.388***		13.142***	7.876***	-6.77***	-15.14***
	[5.90]		[16.69]	[6.87]	[-7.83]	[-9.28]
Ramsey-reset test (p-value)	0.11	-1.92	3.07	0.63	-1.32	
Observations	2,155	2,155	2,287	2,287	1,755	1,755
Censored observations			132			
Uncensored observations			2,155			
Number of groups	243	243				
Log likelihood	-2414.12	-4146.95			-179.27	
Wald χ²	603.78	502.20	2625.55			
Prob > χ²	0.0000	0.0000	0.0000			

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

To estimate the two stage Heckman selection model, first we estimate a probit regression model where the explanatory variables specified in the selection part of the Heckman two stage model are regressed on the dependent variable, bilateral imports$_{jit}$ equal to 1 when country j (SEE-5 and EU-NMS-10) imports from country i (OECD-20) and 0, otherwise (when country j does not import from country i).

In the second stage we calculate the inverse mills ratio and run an OLS regression, considering the specified explanatory variables in the selection equation[46] of the Heckman model and the calculated inverse mills ratio. From the table below we see that RET and PPML estimates provide significant results[47]. However all the reported results that deal with zero observations in the dependent variable provide different coefficients size and significance level of the estimated coefficients, which differences, as in previous case, are most likely driven by large fraction of zero import flows data or heterogeneity of the sample data. Due to heterogeneity presence in the data we apply Ramsey-Reset test, to check for the accuracy of the estimated model. The p-value of Ramsey-reset test suggests that Heckman'smodel passed this test.

Focusing on the Heckman estimates we find that bilateral imports increase (decrease) with the differences in bilateral GDP (GDP per capita), between trading partner countries. The positive and significant coefficients of difference in GDP indicate that differences between export supply of exporting OECD-20 countries and import demand of importing SEE-5 and EU-NMS-10 countries is positively related to trade potentials. An increase in country differences with respect to GDP between trading partner countries, by 10 per cent, will increase import flows, on average, by 0.4 per cent, ceteris paribus. On the other hand, the estimated elasticity of GDP per capita difference is negative and statistically significant at 1 per cent level of significance, indicating that SEE-5 and EU-NMS-10 import flows from exporting OECD-20 countries, decreases as the absolute difference of GDP per capita level between trading partner countries increases. Focusing on the same estimates (column 10), 10 per cent increase in GDP per capita difference between countries leads to, on average, 0.4 per cent decrease of import flows. Again, considering the coefficients size of both country characteristics variables, below 1 in absolute value, we find that import flows are not sensitive to changes on export supply and import demand conditions as well as comparative cost differences and combined similarities in tastes between trading partners.

5.11.4 Results from dynamic panel model

As in previous case, to consider the endogeneity problem associated with lagged dependent variables and other endogenous regressors we use robust two step "system

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[46]In the selection equation, following Martin and Pham (2008), we omit the explanatory variables associated with the fixed costs, namely gravity coefficients of trade costs, distance.

[47]The likelihood-ratio test (χ^2) reported in the last row of both RET and PPML estimates is a test of the significance of the random-effect estimates and Poisson estimates.

GMM" estimates. We follow Windmeijer (2005) proposed correction term to consider the downward bias of standard error which is applied by the xtabond2 stata command. The lagged dependent variable, bilateral FDI stock and openness are endogenous variables.

Table 31: Results robust system GMM. The relationship between imports and FDI

VARIABLES	(14) Robust System GMM	(15) Robust SystemGMM
Log of lagged bilateral imports	0.903***	0.881***
	[15.44]	[13.79]
Log of bilateral FDI stock	0.064*	0.080*
	[1.69]	[1.91]
Log of abs difference in GDP	0.014	0.020
	[0.83]	[1.12]
Log of abs difference in GDP per capita	-0.072**	-0.078**
	[-2.04]	[-2.21]
Log of openness	-0.010	-0.021
	[-0.06]	[-0.13]
Log of abs difference in skill endowment	-0.015	-0.017
	[-0.55]	[-0.63]
Log of abs difference in capital endowment	-0.013	-0.014
	[-1.35]	[-1.49]
Log of interaction term, FDI (-1) * SEE-5 dummy	-0.026	-0.033
	[-1.06]	[-1.41]
SEE-dummy	0.100	0.130
	[0.60]	[0.86]
Constant	1.339**	1.444**
	[2.04]	[2.17]
Observations	2,115	2,115
Number of groups	223	223
Arellano-Bond test for AR(1)	0.000	0.000
Arellano-Bond test for AR(2)	0.418	0.433
Number of instruments	33	33
Wald statistics, p value	0.000	0.000
Sargan test of overid. restrict, p value	0.363	0.430
Hansen test of overid. restrict, p-value	0.433	0.511
Difference-in-Hansen tests of exogeneity of instrument		
GMM instruments for levels		
Hansen test excluding group	0.573	0.738
Difference (null H = exogenous)	0.244	0.214
mm(L.LBIM, collapse lag(1 2))		
Hansen test excluding group:	0.244	0.285
Difference (null H = exogenous)	0.728	0.798
gmm(LNFDIS, collapse lag(4 5))		
Hansen test excluding group:	0.413	0.510
Difference (null H = exogenous)	0.399	0.413
gmm(OP, collapse lag(4 5))		
Hansen test excluding group:	0.511	0.533
Difference (null H = exogenous)	0.318	0.394

Notes: Dependent variable is log bilateral import flow from SEE-5 and EU-NMS-10 countries to OECD-20 countries. z-statistics in brackets, ***, ** and * indicate significance of coefficients at 1, 5 and 10 per cent, respectively. Column (14): Internal instruments are used for endogenous variables (lagged dependent variable, bilateral FDI stock, and openness). Lag limits are 2/3 for the lagged dependent variable and 4/6 for endogenous regressors. The collapse option is always used. Year dummies are included but not shown. Column (15) shows the results with transformed dependent variable capturing the zero and negative observations in the matrix of the dependent variable.

To control the increase of the number of instruments, we exclude distance and other gravity related dummy variables to not allow the over fitting of the endogenous regressors. Again, we keep see dummy variable in the model to interact it with our variable of interest, inward FDI stock. Other regressors like absolute difference in GDP and GDP per capita and absolute differences in labor and capital endowments are treated as exogenous. To deal with the instruments explosion, following Roodman (2008) we consider lag limit of the dependent variable and other endogenous regressors and collapse the instruments.

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. Both system GMM estimates confirm that the estimated coefficient of the lagged dependent variable is positive and significant, suggesting that the increase of agglomeration effect of imports by 1 per cent leads to, on average, to 0.9 per cent increase of import flows (model 10, 11), suggesting that import flows are subject to persistence effects. Also, the results from model 9, confirm negative and statistically significant coefficient of skill endowment variable, indicating that 1 per cent increase in absolute difference in skill endowment between countries, on average, decreases bilateral imports, by 0.01 and 0.005 per cent, respectively, ceteris paribus.

5.12 Conclusions

The relationship between FDI and trade has been extensively studied. Some papers find a positive relationship between FDI and trade and some find a negative relationship. This chapter tests the hypothesis related the relationship between inward FDI stock and Trade, in a link to country characteristics, using bilateral level data between FDI and trade. The data set covers the trade flows (both export and import flows) from 5 SEE countries and 10 New Member States of EU countries, to 20 OECD countries and the FDI stock from OECD-20 countries to 10-New Member States of EU countries and 5-SEE countries, over the period 1994-2010. The gravity model has been used to study the hypothesis of complementarities or substitutability on a panel analysis.

Using different estimation techniques from LSDV, Heckman selection and "system GMM" the relationship between FDI and Trade (both exports and imports) is tested for both group of countries, SEE-5 and EU-NMS-10. To distinguish the effect of FDI on Trade we have used an interaction term of FDI with SEE-dummy, considering the EU-NMS-10 countries as a benchmark category of investigation.

In all relevant estimates, based on the relationship between stock of inward FDI and exports, the findings of the study showed mixed evidence, thus supporting both Helpman (1984) theoretical predictions on positive relationship between FDI and exports for EU-NMS-10 countries and Markunsen (1984) theoretical prediction on negative relationship between FDI and exports, for SEE-5 countries. On the other hand,

based on the relationship between FDI and imports, the results of the study supported Helpman's (1984) theoretical predictions on positive relationship between FDI and imports for both EU-NMS-10 and SEE-5 group of countries.

The confirmed positive relationship between FDI and trade (exports and imports) for EU-NMS-10 supports the judgment that FDI and trade in EU-NMS-10 countries are likely to be complements to each other. For the period under analysis, 1994-2010, the inward FDI stock, originated from OECD-20 countries in the EU-NMS-10 economies, act as a trade channel that stimulates the expansion of trade of EU-NMS-10 countries. In this regard the stock of inward FDI has an estimate that is positive, significant and very similar in value. This suggests that OECD foreign investments into EU-NMS-10 have an overall neutral impact on EU-NMS-10 trade balances. This may be due to the fact that the positive balance of trade effects in some sectors cancel out negative balance of trade in other sectors. Hence, vertical FDI associated with high value added activities may have greater impact on exports rather than imports. On the other hand, vertical FDI associated with low value added activities may serve as an import expansion of intermediate products.

Regarding the negative relationship between FDI and exports in SEE-5 countries, the study supports the judgement that FDI and exports in SEE-5 countries are expected to be substitutes to each other. Regarding the positive relationship between FDI and imports in SEE-5 countries, the study supports the judgement that FDI and imports in SEE-5 countries are most likely to be complements to each other. The confirmed relationship with regard to exports, imports and FDI, provide an empirical evidence for the mixed nature of FDI in SEE-5 countries.

Moreover, these findings with regard to the relationship between FDI and Trade for both groups of countries are also supported in the consistent estimation methods that take into account fixed effects associated to unobserved effects to each country. Regarding the country characteristics, the study finds that trade (both exports and imports) are positively determined by the differences in GDP between countries and negatively by the differences in GDP per capita between countries.

Summarizing the findings with regard to the relationship between trade (export and import) and country characteristics, the study indicate that trade (both export and import) of SEE-5 and EU-NMS-10 countries increase as the export supply of exporting countries and import demand of importing countries increases. On the other hand, the negative coefficient the GDP per capita difference between countries is a reflection that countries differ significantly with respect to tastes, preferences and income levels. These finding, with regard to the relationship between trade (export and import), FDI and country characteristics are supported in all estimation techniques, (LSDV, Heckman selection model and "system GMM").

Trade cost substituted by the distance variable is found to be significant, negative as expected and confirmed in trade studies using gravity model. The factor endowment considerations at capital base captured by the dcap variables is negative and significant in the equation of exports and imports whereas the factor endowment consideration at labour base is proved to be significant and positive in system GMM in the equation of imports.

The policy implication of the results of this undertaken study are that the internationalization of OECD countries foreign companies, through FDI, does improve the external economic conditions, with respect to export performance of SEE and New EU member states countries. Moreover, the results of this study, using an augmented Gravity Model, are providing an empirical assessment of the relationship between FDI and trade (at export and import level), that well contributes to the debate about the nature of FDI into host countries, originated from source countries.

6 DETERMINANTS OF FDI IN SOUTH EAST EUROPEAN COUNTRIES AND NEW EUMEMBER STATES: CALCULATION OF FDI POTENTIALS IN MACEDONIA

6.1 Introduction

This chapter investigates the potential level of foreign direct investments (FDI) in Macedonia. In this regard, the chapter will consider estimation of bilateral FDI stocks between OECD-20 countries and EU-NMS-10 and SEE-5 using an augmented Gravity Model, based on a panel data – set for the period 1994-2010. Macedonia is selected as a case study, in order to test how the model of the determinants of FDI applies to a semi – developed country. Moreover, the Macedonian government has taken important steps with regard to promotion of the country to foreign investors, such as significant institutional reforms. Also, FDI in Macedonia are considered as crucial source of GDP growth, increase of employment and exports (Krstevska and Petrovska, 2012) and a main driving force for enhancement of the transition process in the country. Therefore, considering the importance of FDI for Macedonia's economy, the chapter outlines the actual and potential determinants of FDI in Macedonia from source OECD-20 countries.

The chapter is organized as follows. The next section presents stylized facts for Macedonia. Section three presents the results from LSDV obtained by estimating the augmented gravity model framework used in chapter 4. Section five presents the calculation of FDI potentials in Macedonia at stock levels from individual EU-14 source countries. The last section concludes the study.

6.2 Stylized facts about Macedonia

The global financial turmoil during the years from 2007 to 2009 had a significant negative impact on international capital flows in the form of FDI. Global inward FDI at flows level fell dramatically in 2009 by 39 per cent with regard to 2007, (UNCTAD, 2014) and enjoyed an unsteady rise in subsequent years (UNCTAD, 2014). The SEE countries in general and Macedonia as a small transition country, could not avoid the negative effect of the global financial turmoil on the country FDI statistics. In this regard, Macedonia recorded decrease in inward FDI by approximately 40 per cent, from 2007 to 2009, with insignificant recovery in the subsequent. Moreover, FDI in Macedonia are mostly tied with privatization projects and realized through Mergers and Acquisitions (M&A), which are sensitive to business cycles. FDI flows in Macedonia rose in 2007 and decreased in 2009, due to the global financial crisis. As a result, the country realized a lower share of inward FDI in national gross fixed capital formation. However, total inward FDI stock has considerably increased, reaching USD 4,369 million in 2010. Investment slowdown in Macedonia can be seen from the decreasing

number and value of investment projects (both M & A and Greenfield), followed by just a slight recovery in 2010.

Table 32: Indicators of FDI in Macedonia

Indicators	2006	2007	2008	2009	2010	2011	2012	2013
Inflow (USD, millions)	432.5	692.5	585.7	201.4	211.9	468.1	92.5	333.9
Outflow (USD, millions)	0.2	-1.2	-13.8	11.2	1.8	-0.0	-7.7	-1.5
Inward stock (USD, millions)	2,763.8	3,746.7	4,131.6	4,525.5	4,439.3	4,781.0	4,943.0	5,533.5
Outward stock (USD, millions)	62.0	38.3	67.7	84.7	96.1	99.8	121.9	95.3
Inflow (% of gross fixed capital formation)	30.7	34.4	22.2	8.3	8.9	21.9	4.2	14.2
Outflow (% of gross fixed capital formation)	0.0	-0.1	-0.5	0.5	0.1	-0.0	-0.4	-0.1
Inward stock (% of GDP)	42.1	45.9	42.0	48.6	46.8	46.0	51.6	54.0
Outward stock (% of GDP)	0.6	0.8	0.9	1.0	1.2	1.2	1.0	1.0
Value of cross - border M&A sales (USD, millions)	280	53	57	0	46	27	0	0
Number of cross - border M&A sales projects	5	20	2	0	1	8	7	2
Number of FDI Greenfield projects	27	9	26	18	14	25	32	25

Notes: FDI stocks are presented at book value or historical cost, reflecting prices at the time when the investment was made.
Source: UNCTAD, World Investment Report 2014: Annex Tables.

Table 33 reports the dynamics of inward FDI stock in Macedonia by source countries. The sample of source countries for FDI presented in table 31 consists of the investing partner countries that have mostly invested in Macedonia during the period 2004-2012. It is important to note that European Union countries are the main source countries of FDI in Macedonia, with proportional share of total investment, ranging from 77 per cent in 2004 to 82 per cent in 2013. The increasing share of EU countries in total investment stock in Macedonia, during the observed period, 2004 - 2012, reflects the attitude of European Union countries toward Macedonia as a potential EU member.

Table 33: FDI stock in Macedonia by geographical origin (millions of US dollar)

	2004	%	2005	%	2006	%	2007	%	2008	%	2009	%	2010	%	2011	%	2012	%
World	2,193	100	2,087	100	2,764	100	3,747	100	4,132	100	4,525	100	4,439	100	4,781	100	4,943	100
Developed Econ.	1,929	88	1,847	89	2,484	90	3,396	91	3,712	90	4,046	89	3,943	89	4,138	87	4,287	87
Europe	1,891	86	1,808	87	2,420	88	3,330	89	3,632	88	3,962	88	3,878	87	4,072	85	4,193	85
European Union	1,691	77	1,610	77	2,211	80	3,065	82	3,328	81	3,650	81	3,644	82	3,876	81	4,041	82
Austria	85	4	68	3	289	10	351	9	466	11	522	12	497	11	539	11	583	12
Belgium	2	0	2	0	1	0	2	0	2	0	2	0	2	0	2	0	22	0
Bulgaria	33	2	32	2	56	2	92	2	120	3	133	3	157	4	156	3	188	4
Croatia	21	1	24	1	40	1	65	2	74	2	80	2	96	2	100	2	113	2
Cyprus	205	9	190	9	240	9	30	1	49	1	69	2	62	1	63	1	76	2
Czech Republic	0	0	0	0	0	0	11	0	1	0	1	0	3	0	1	0	2	0
Denmark	0	0	1	0	2	0	2	0	2	0	2	0	2	0	3	0	6	0
Estonia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	16	0
France	27	1	2	0	0	0	15	0	18	0	38	1	173	4	170	4	178	4
Germany	96	4	76	4	84	3	126	3	92	2	89	2	95	2	112	2	111	2
Greece	360	16	329	16	422	15	570	15	627	15	548	12	576	13	573	12	576	12
Hungary	483	22	413	20	461	17	620	17	571	14	56	1	463	10	448	9	457	9
Ireland	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	0
Italy	44	2	44	2	58	2	68	2	77	2	80	2	78	2	84	2	83	2
Luxemburg	15	1	18	1	33	1	106	3	96	2	89	2	22	0	20	0	25	1
Netherlands	141	6	252	12	279	10	635	17	606	15	754	17	735	17	958	20	1,033	21
Poland	0	0	0	0	1	0	1	0	1	0	1	0	1	0	12	0	9	0
Portugal	0	0	0	0	2	0	3	0	3	0	2	0	2	0	2	0	2	0
Romania	1	0	1	0	0	0	1	0	0	0	1	0	2	0	2	0	2	0
Slovenia	139	6	126	6	167	6	244	7	366	9	564	12	533	12	525	11	479	10
Spain	0	0	0	0	0	0	0	0	0	0	-1	0	0	0	0	0	1	0
Sweden	3	0	3	0	3	0	4	0	- 2	0	5	0	7	0	30	1	28	1
United Kingdom	38	2	31	1	70	3	119	3	160	4	111	2	137	3	62	1	51	1
Switzerland	196	9	194	9	199	7	246	7	279	7	291	6	204	5	164	3	118	2
United States	35	2	35	2	60	2	53	1	67	2	70	2	50	1	55	1	79	2
Canada	1	0	1	0	1	0	3	0	4	0	4	0	6	0	5	0	9	0
Australia	3	0	2	0	3	0	3	0	3	0	3	0	3	0	3	0	3	0
Israel	0	0	0	0	0	0	6	0	6	0	6	0	6	0	2	0	3	0
Turkey	36	2	30	1	37	1	51	1	60	1	72	2	65	1	152	3	192	4
Developing Econom*	160	7	145	7	128	5	136	4	190	5	187	4	245	6	325	7	305	6
Transition Economies	50	2	49	2	93	3	129	3	126	3	168	4	158	4	144	3	150	3
South East Europe	47	2	43	2	87	3	124	3	123	3	165	4	165	4	149	3	150	3
Albania	6	0	4	0	15	1	24	1	33	1	40	1	50	1	47	1	37	1
Bosnia	1	0	0	0	1	0	2	0	3	0	4	0	5	0	6	0	7	0
Montenegro	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0	3	0
Serbia	40	2	39	2	71	3	98	3	87	2	121	3	107	2	97	2	102	2
CIS countries**	3	0	6	0	6	0	5	0	3	0	3	0	-7	0	-4	0	0	0
Unspecified	8	0	16	1	22	1	34	1	43	1	53	1	28	1	22	0	10	0

Notes:Developing economies consist of African and Asian developing countries: China, Hong Kong, Taiwan, Singapore, Pakistan, Lebanon, Saudi Arabia and Syrian Arab Republic, Latin America (Belize, Panama) and the Caribbean (Bahamas, British Virgin Islands, Cayman Islands, Netherlands Antilles, US Virgin Islands and Cook Islands);**CIS countries consist of: Azerbaijan, Russian Federation, Ukraine and Uzbekistan.
Source: UNCTAD database, based on data from the National Bank of the Republic of Macedonia*.

Figure 3: Total Inward FDI stock in Macedonia by source countries, in 2012 in millions of US dollar
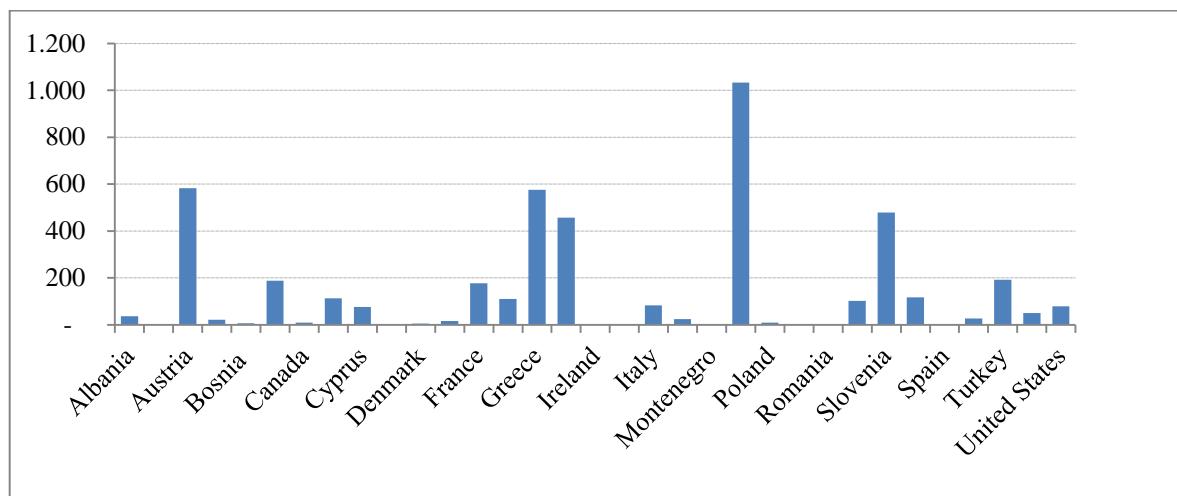
Source: UNCTAD, 2014; own calculation

Geographical breakdown shows that the largest foreign investors in the Republic of Macedonia in 2012 are the Netherlands, Greece, Austria, Slovenia and Hungary (see Table 33). According to the National Bank of the Republic of Macedonia (NBRM, 2014), most of FDI in the country are privatization related transactions. The top investors through privatization and post privatization transactions include: Balkanbrew Holding (Greece), Hellenic Petroleum (Greece), Titan/Holderbank Financiere Glaris (Greece/Switzerland), Balkan Steel (Liechtenstein), Knauf GmbH (Austria), Tobacna (Slovenia), QBE LTD (Great Britain), Duferco Skop (Liechtenstein), National Bank of Greece (Greece), etc. The law on Privatisation gave equal rights to domestic and foreign investors. However, the most FDI through privatisation and post privatization is realised in Macedonian Stock Exchange through a sale of government and Privatisation Agency's securities. In 1998 the government established the agency for Reconstruction and Development, which has been active in coordinating and promoting FDI. As conclusion, the objectives FDI policies in Macedonia, within the Stability Pact Framework, will be the following: Clarifying the framework for access to real estate by foreign investors.

1. Facilitating the access to land and release of state owned land for investment projects
2. Strengthening institutions in the field of investment promotion, in order to improve information for investors on land use, and establishment of single institution for providing all the necessary services for efficient registration of foreign companies and
3. Improving risk environment for foreign investors.

6.3   Methodology, empirical approach and data

In this chapter, we use a Gravity Model for the estimation of the determinants of FDI stock in SEE-5[48] and EU-NMS-10[49], originated from OECD-20[50] countries. The relevant estimates will be used for calculation of potential FDI stocks in Macedonia originating from OECD-20 countries. For estimation purposes, the extended gravity equation for FDI stocks in SEE and EU-NMS-10 countries is specified in the equation (4.3)[51] in chapter 4[52].

$$
\begin{aligned}
lnfdi_{ij,t} = {} & a_{ij} + u_t + b_0 lngdp_{i,t-1} + b_1 lngdp_{j,t-1} + b_2 lnd_{ij} \\
& + b_3 ln|gdpc_{i,t-1} - gdpc_{j,t-1}| + b_4 smctry_{ij} \\
& + b_5 wto_{jt} + b_6 bfdi_{jt} + b_7 lnbex_{ji,t} + b_8 lnsch_{jt} + b_9 lntp_{jt} + b_{10} lncpi_{jt} \\
& + b_{11} lncc_{jt} + b_{12} lnrq_{jt} + b_{13} lngov_{jt} + b_{14} lnrl_{jt} + b_{15} lnpr_{jt} \\
& + b_{16} lnva_{jt} + b_{17} lntp_{jt} \times d + b_{18} lncpi_{jt} \times d + b_{19} lngov_{jt} \times d \\
& + b_{20} lnrq_{jt} \times d + b_{21} lngov_{jt} \times d + b_{22} lnrl_{jt} \times d + b_{23} lnpr_{jt} \times d \\
& + b_{24} lnva_{jt} \times d + d + \varphi + \delta + \theta + \varepsilon_{ij,t} \qquad (6.1)
\end{aligned}
$$

Where i denote a source country of FDI (OECD-20), j denotes individual SEE-5 and CEE-10 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, GDP per capita, distance, language, cultural and border similarities, world trade organization membership of host economy, bilateral FDI agreement, trade openness, bilateral exports, 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. 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 OECD. The FDI stock variable contains a

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[48] The SEE-5 countries consist of: Albania, Bosnia and Herzegovina, Croatia, Macedonia and Serbia
[49] The EU-NMS-10 countries consist of the new EU member states countries that entered EU structure in 2004, like: Slovenia, Slovak Republic, Czech Republic, Hungary, Poland, Latvia, Lithuania and Estonia and the new EU member state countries that entered EU structure in 2007 like: Bulgaria and Romania
[50] OECD - 20 countries are: Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Italy, Netherland, Norway, Ireland, Israel, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States and Turkey.
[51] Description of the variables used in the empirical model is given in appendix 8. Descriptive statistics of the variables employed in the model is given in appendix 9 and correlation matrix of the variables used in the model is given in appendix 10.
[52] The difference from chapter 4 is that in this chapter we perform an empirical investigation of the determinants of bilateral FDI stock in SEE-5 and EU-NMS-10 countries originated from OECD-20 countries, whereas in chapter 4 we performed an empirical investigation of bilateral FDI flow in SEE-5 and EU-NMS-10 countries originated from EU-14 countries.

large number of zero observations and negative values[53]. Other explanatory variables and their hypothesized signs are described in chapter 4.

6.4   Econometric issues

As in chapter 4, we use different estimation methodologies to estimate the determinants of bilateral FDI stock from OECD-20 to SEE-5 and EU-NMS-10 countries. In this regard, in the study we consider both static panel models and dynamic panel models. From the static panel models, to control for multilateral resistance terms (MRTs), again we use country fixed effects for host countries and source countries, time fixed effects and country-pair fixed effects (Columns 1-7). To control of zero observations in the dependent variable, as a robustness check we use PPML and RET models. Additionally, we also employ the system GMM estimation technique to consider the endogeneity problem that come from the dependent variables and other endogenous regressors.

6.5   Results

In this section we present the empirical results. We discuss the economic interpretation of models summarized in table 34, 35 and 36. 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.

6.5.1   Discussion of results from static panel models

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 1-5. Additionally, as a benchmark category of these estimates, we also present the results without interaction terms (Column 6). 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. Colum (1) shows the results with time dummies. Column (2) and (3) show results for time invariant host country and source country fixed effects and for time varying host country and source country fixed effects, respectively. Finally, column (4) and (5) presents a specification where pair effects are also added.

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[53]To avoid this problem we transform the FDI stock variable. To account for possible zero and negative observations, we have transformed the dependent variable by treating the negative observations of bilateral FDI data as zero values.

Table 34: Static panel estimates of the determinants of bilateral FDI stock

VARIABLES	(1) Robust LSDV	(2) Robust LSDV	(3) Robust LSDV	(4) Robust LSDV	(5) Robust LSDV	(6) Robust LSDV
Log of GDP in source c. (-1)	0.551***	-0.406	0.009	0.913**	0.913**	0.880**
	[8.38]	[-0.80]	[0.02]	[2.51]	[2.51]	[2.37]
Log of GDP in host c. (-1)	0.764***	0.573**	0.896*	0.668**	0.668**	1.300***
	[10.98]	[2.19]	[1.89]	[2.16]	[2.16]	[4.68]
Log of diff. in GDPc (-1)	1.049***	0.727**	0.732**	-0.370***	-0.370***	-0.294**
	[12.18]	[2.23]	[2.13]	[-2.60]	[-2.60]	[-2.04]
Log of distance	-1.395***	-2.802***	-2.825***	-2.629***	-1.122***	-1.855***
	[-12.03]	[-17.71]	[-17.80]	[-3.63]	[-2.61]	[-4.89]
Same country	0.633***	-1.172***	-1.174***	29.522***	5.272***	-2.091
	[4.94]	[-5.29]	[-5.31]	[6.78]	[2.61]	[-1.28]
WTO membership	0.411**	0.101	0.103	0.086	0.086	0.155
	[2.30]	[0.62]	[0.51]	[0.55]	[0.55]	[1.00]
Bilateral FDI agreement	0.280	0.334*	0.306	0.063	0.063	-0.009
	[1.36]	[1.71]	[1.53]	[0.38]	[0.38]	[-0.05]
Log of bilateral exports (-1)	0.386***	0.273***	0.263***	0.137**	0.137**	0.147**
	[7.21]	[5.51]	[5.26]	[2.10]	[2.10]	[2.13]
Log of Schooling	-0.205	0.956***	0.343	0.313	0.313	0.226
	[-0.99]	[4.55]	[1.14]	[1.31]	[1.31]	[0.88]
Log of Transition progress	5.641***	5.198***	0.755	3.395**	3.395**	0.811
	[4.31]	[4.30]	[0.40]	[2.39]	[2.39]	[0.53]
Log of Corr. perc. index	-0.075	-0.902**	-0.961**	-1.054***	-1.054***	-0.402
	[-0.17]	[-2.03]	[-2.09]	[-2.91]	[-2.91]	[-1.27]
Log of Control of corruption	1.053*	-0.147	0.187	-0.203	-0.203	0.604*
	[1.78]	[-0.29]	[0.34]	[-0.47]	[-0.47]	[1.70]
Log of Regulatory quality	0.250	0.888	1.309*	1.331**	1.331**	0.790*
	[0.33]	[1.30]	[1.71]	[2.33]	[2.33]	[1.72]
Log of Gov. effectiveness	-1.538***	-0.057	0.677	1.206**	1.206**	0.432
	[-3.24]	[-0.10]	[1.02]	[2.48]	[2.48]	[1.05]
Log of Political risk	-0.346	-0.289	-0.262	-0.229	-0.229	-0.206
	[-1.12]	[-0.91]	[-0.73]	[-1.02]	[-1.02]	[-0.95]
Log of Voice and acc..	0.367	-0.532	-0.011	1.049	1.049	-0.765
	[0.38]	[-0.57]	[-0.01]	[1.53]	[1.53]	[-1.29]
Log of Rule of law	-0.847**	0.638	0.136	-0.099	-0.099	-0.692
	[-2.09]	[1.17]	[0.24]	[-0.25]	[-0.25]	[-1.57]
Log of Corr. perc. index*d	3.305***	1.256	1.284	1.438*	1.438*	
	[2.92]	[1.13]	[1.15]	[1.85]	[1.85]	
Log of Transition progress*d	-8.480***	-5.212**	-3.666*	-4.623***	-4.623***	
	[-4.12]	[-2.33]	[-1.68]	[-2.93]	[-2.93]	
Log of Control of corr. *d	-1.299	1.437	0.876	1.820**	1.820**	
	[-1.55]	[1.47]	[0.86]	[2.39]	[2.39]	
Log of Regulatory quality*d	0.014	-0.003	0.006	-0.020	-0.020	
	[0.48]	[-0.11]	[0.19]	[-1.06]	[-1.06]	
Log of Gov. effectiveness*d	2.286***	0.096	0.101	-0.826	-0.826	
	[3.21]	[0.10]	[0.10]	[-1.11]	[-1.11]	
Log of Political risk.*d	0.144	1.536*	1.408*	0.454	0.454	
	[0.30]	[1.81]	[1.70]	[0.95]	[0.95]	
Log of Voice and acc.*d	-1.600	-3.152**	-3.506**	-3.615***	-3.615***	
	[-1.06]	[-2.18]	[-2.38]	[-3.93]	[-3.93]	
Log of Rule of law*d	-0.050	-0.672	-0.827	-1.497*	-1.497*	
	[-0.04]	[-0.51]	[-0.61]	[-1.67]	[-1.67]	
SEE-Dummy	26.358***					
	[4.89]					
Constant	-28.15***	-2.023	-5.551	-15.973***	-31.174***	-4.465
	[-9.45]	[-0.29]	[-0.80]	[-3.11]	[-5.68]	[-0.72]
Observations	1,932	1,932	1,932	1,932	1,932	1,932
R-squared	0.707	0.777	0.780	0.921	0.921	0.917
Time dummy	Yes	No	Yes	Yes	Yes	Yes
Host country dummy	No	Yes	Yes	No	Yes	Yes
Source country dummy	No	Yes	Yes	No	Yes	Yes
Country-pair (index) dummy	No	No	No	Yes	Yes	Yes

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.

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. This means that 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. Focusing on the most used specification, column (5), we find that host country GDP and source country GDP is positive and significant. 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 and efficiency seeking hypothesis of FDI. The estimated gravity coefficients can be interpreted as follows. Source and host country GDP has a positive and significant impact on bilateral FDI stock, with an elasticity of 0.913 and 0.668. An increase in source and host country GDP by 1 per cent, increases bilateral FDI stock from source to host country, on average by 1 and 0.7 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 1.8 per cent, ceteris paribus. The findings from LSDV estimates (column 5) 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 -0.294. However, other LSDV specifications with time invariant host country and source country fixed effects and time varying host country and source country fixed effects; confirm positive relationship of GDP per capita difference with bilateral FDI stock. The negative (positive) sign of this variable may be attributed to the fact that differences in wage levels between countries are (compensated) not compensated by productivity (Bergstrand, 1989). Interpreting the result from pair fixed effects (column 5), 1 per cent increase of GDP per capita absolute differences between countries is associated with, on average, 0.3 per cent decrease of inward FDI stock in the host countries, 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 positively associated to bilateral FDI stock. The model predicts that bilateral FDI stock between countries that share language, cultural and border similarities at the same time is higher than bilateral FDI stock between countries that do not share these similarities (see model 5). The explanation of this result is that countries in the sample that are close to each other do have bilateral FDI activity much more than countries that are distant to each other. The argument holds, since there is significant amountof bilateral FDI activity between close countries of SEE-5 and EU-NMS-10. In favour of this argument is the high share of Slovenian outward FDI stock in the selected SEE-5 countries (see table 7, chapter 2).

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. The estimated coefficient of transition progress for EU-NMS-10 countries, in the equation of FDI is 3.395 per cent (3.395-4.623*0), which is significant at 5 per cent level of significance. For SEE-5 countries it is -1.228 per cent (3.395-4.623*1).The difference for 4.623 per cent less for SEE-5 countries, is economically large and statistically significant at 1 per cent level of significance. This result confirms the hypothesis that the size of bilateral FDI stock between EU-NMS-10 and SEE-5 countries vary with respect to transition progress development. The results confirm that 10 per cent increase in transition progress, which is associated with advancements of host country transition reforms, the size of bilateral FDI stock into host EU-NMS-10 (SEE-5) countries, increases (decreases) by 3.4 and 4.6 per cent, respectively, ceteris paribus.

The estimated elasticity of control of corruption in EU-NMS-10 countries is -0.203 (-0.203+ 1.820*0) per cent, which is not significant. For SEE-5 countries it is 1.671 per cent (-0.203+1.820*0). The difference of 1.820 percentage point more for SEE-5 countries is statistically significant at 5 per cent level of significance. The coefficients size, above 1 for SEE-5 countries, of the control of corruption index indicate that foreign investors are sensitive to misuse of political power by host country elites and governments. Interpreting this result, 1 per cent increases of the extent to which public power is exercised for private gains through corruption channels leads to increase of bilateral FDI stock in the host SEE-5 countries, on average, by 1.820 per cent, ceteris paribus. This result may be atributed to the discriminatory corruption which means that in a exchange for bribe the host country governments offer the briber with the services that is not supposed to be offered.

The same estimates confirm that the estimated coefficient of CPI index for the EU-NMS-10 countries, in the equation of FDI is -1.054, per cent. For SEE-5 countries it is 0.384 per cent (-1.054+1.438). The difference 1.438 per cent, or one and a half percentage point more for SEE-5 countries, is statistically significant at 1 per cent level of significance. 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 0.38 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 elasticity of bilateral exports in robust LSDV estimates is 0.137 per cent. 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. Also, the positive relationship between bilateral exports and bilateral FDI stock, on the other hand, confirms the complementarities between bilateral exports and bilateral FDI stocks. The significant and positive coefficient of bilateral exports indicate that 10 per cent increase in the bilateral exports from country j to country i (from SEE-5 and EU-NMS-10 to OECD-20), increase bilateral FDI stock from country i to country j (from OECD-20 to SEE-5 and EU-NMS-10), on average, by 1.3 per cent, ceteris paribus.

6.5.2   Robustnes check

Table 35 reports the results from PPML and RET estimates, column (7and 8), as a robustness check to the LSDV estimates. Based on the likelihood-ratio test (χ^2) reported in the last row of each table, the estimated results from PPML and RET estimates are significant. The differences of the estimated coefficients size between different estimation techniques seems to suggest that these differences are driven either by the large number of zero observations in the sample or by heterogeneity of the data, once considering the fact that in the selected sample we have included different countries that are different with respect to macroeconomic development and institutional level of development. Therefore, the presence of heterogeneity in the estimates raises the question of the best specified model. To select the appropriate model weperform Ramsey-RESET, which is applied by checking the significance of an additional regressor constructed as (x'b) ², where b denotes the vector of estimated parameters. The p-value of this test is 2.61 in PPML and 5.79 in RET estimates, suggesting the selection of the RET estimates for interpreting the results.

In RET we find significant effect of WTO membership. The enhancement effect of WTO membership is 25.48 per cent. Also bilateral FDI agreement has strong effect in RET estimates (with average enhancement effect of 19.96 per cent). The same results suggest positive relationship between schooling and FDI. The estimated elasticity of schooling in the RET estimates is 0.012 indicating that a 10 per cent increase in tertiary school enrolment will increase bilateral FDI stock, from OECD-20 to SEE-5 and EU-NMS-10 countries, on average, by 0.1 per cent, ceteris paribus. 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.

Table 35: Robustness check: Alternative estimates of the determinants of FDI stock

VARIABLES	(7) Random Effect Tobit	(8) Poisson PPML
Log of GDP in source c. (-1)	0.494***	0.087***
	[5.46]	[3.01]
Log of GDP in host c. (-1)	0.591***	0.102***
	[7.59]	[3.53]
Log of diff. in GDPc (-1)	0.112	0.242***
	[1.22]	[6.79]
Log of distance	-1.506***	-0.303***
	[-8.35]	[-6.13]
Same country	0.892	0.059
	[1.29]	[0.41]
WTO membership	0.227**	0.124**
	[2.26]	[1.98]
Bilateral FDI agreement	0.249*	0.182**
	[1.95]	[2.16]
Log of bilateral exports (-1)	0.217***	0.097***
	[6.27]	[5.18]
Log of Schooling	0.574***	-0.090
	[4.59]	[-1.49]
Log of Transition progress	5.923***	1.064**
	[8.13]	[2.52]
Log of Corruption perception index	-1.276***	-0.364**
	[-5.02]	[-2.57]
Log of Control of corruption	-0.040	0.369*
	[-0.13]	[1.80]
Log of Regulatory quality	1.064***	-0.115
	[2.58]	[-0.46]
Log of Government effectiveness	-0.157	-0.251
	[-0.44]	[-1.24]
Log of Political risk	-0.083	-0.047
	[-0.48]	[-0.47]
Log of Voice and accountability.	0.560	0.393
	[1.04]	[1.40]
Log of Rule of law	-0.161	-0.022
	[-0.53]	[-0.12]
Log of Corruption perc. index*d	1.928***	0.826**
	[3.02]	[2.14]
Log of Transition progress*d	-5.854***	-1.666**
	[-5.05]	[-2.13]
Log of Control of corruption *d	1.344**	-0.265
	[2.56]	[-0.85]
Log of Regulatory quality*d	-1.112	-0.091
	[-1.64]	[-0.21]
Log of Government effectiveness*d	0.052	0.587**
	[0.10]	[1.98]
Log of Political risk.*d	0.578	0.172
	[1.55]	[0.90]
Log of Voice and accountability*d	-2.780***	-0.913**
	[-3.74]	[-2.18]
SEE-Dummy	25.628***	6.671***
	[8.02]	[3.84]
Constant	-25.822***	-7.25
	[-9.55]	[-4.62]
Ramsey-reset test (p-value)	5.79	2.21
Cons_1		-5.941***
		[-5.03]
Cons_2		-2.640***
		[-14.21]
Log-lihelihood	-2458.24	-3647.37
Prob > chi2 (Wald chi - square)	0.000	0.000
Observations	1,932	1,932
Number of groups	203	203

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 estimated elasticity of regulatory quality index for EU-NMS-10 countries is 1.064 (1.064-1.112*0) which is significant at 1 per cent level of significance. For SEE-5 countries it is -0.048 per cent (1.064-1.112*1). The difference of 1.112% less for SEE-5 countries is statistically insignificant. However, the index of regulatory quality for EU-NMS-10 countries, above 1 indicate that sensitivity of foreign investments coming from OECD-20 countries with respect to regulatory quality index developments in EU-NMS-10 countries is relatively high. The results indicate that a 1 per cent increase in regulatory quality index is associated with 1.06 per cent increase of FDI stock in EU-NMS-10 countries, ceteris paribus. This result suggests that sound regulation policies that promote private sector developments in EU-NMS-10 countries are contributing to accumulation of inward stock of FDI.

6.5.3 Discussion of results from dynamic panel models

In this section we use we use system GMM estimates and report robust two - step GMM estimates which provides standard errors that are robust to heteroscedasticity and serial correlation problems (Roodman, 2006). We use Windmeijer (2005) proposed correction term, which is implemented by the xtabond2 stata command. In all case the dependent variable, gross domestic product for host and source country and bilateral exports are endogenous and other explanatory variables are treated as exogenous.Following Roodman (2008) suggestion for choosing appropriate system GMM specification, based on the p - value of 0.25 obtained from Sargan test, we can consider all the below estimates for interpreting the results (Bowsher, 2002). The estimates from robust system GMM are confirming theoretically expected results. According to the results the estimated coefficient of the lagged dependent variable is positive and significant, suggesting that bilateral FDI stock is subject to persistence effects. The results confirm that the increase of agglomeration effect of FDI by 10 per cent, results in an increase of current FDI stock into host SEE-5 and EU-NMS-10 countries, by 8 per cent, ceteris paribus. The estimated elasticity of the GDP per capita absolute difference coefficient is 3.726 per cent, meaning that 1 per cent increase in the absolute difference of GDP per capita between countries, increases bilateral FDI stock from source OECD-20 countries to SEE-5 and EU-NMS-10 countries, on average, by 3.7 per cent, ceteris paribus. 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.

Table 36:Robustness check. System GMM results

VARIABLES	(9) System GMM	(10) System GMM
Log of lagged dependent variable (-1)	0.911***	0.657***
	[9.59]	[5.86]
Log of GDP in source country	-0.010	0.138
	[-0.06]	[0.46]
Log of GDP in host country	-0.121	-0.146
	[-0.34]	[-0.18]
Log of difference in GDP per capita	0.081	0.126
	[0.71]	[0.27]
Log of bilateral exports	0.104	0.279
	[0.65]	[1.04]
Log of schooling	0.142	1.354
	[0.60]	[1.10]
Log of transition progress	1.519	8.577
	[0.55]	[1.40]
Log of corruption perception index	-0.068	2.874
	[-0.09]	[1.01]
Log of control of corruption	-0.163	-0.944
	[-0.20]	[-0.80]
Log of regulatory quality	-0.569	-2.912
	[-0.33]	[-0.74]
Log of government effectiveness	-0.662	-1.989
	[-0.87]	[-0.82]
Log of political risk	-0.040	-0.320
	[-0.21]	[-0.74]
Log of voice and accountability	1.276	-0.069
	[0.93]	[-0.02]
Log of rule of law	-0.243	-1.212
	[-0.88]	[-1.42]
Log of corruption perception index*d	0.006	2.417
	[0.01]	[0.48]
Log of transition progress*d	0.090	-4.823
	[0.07]	[-0.88]
Log of control of corruption*d	0.666	0.283
	[1.17]	[0.15]
Log of regulatory quality*d	0.323	1.743
	[0.44]	[0.62]
Log of government effectiveness*d	0.293	1.378
	[1.10]	[0.49]
Log of political risk*d	-1.532	-0.010
	[-1.32]	[-0.01]
Log of voice and accountability	0.237	-0.048
	[0.19]	[-0.01]
Log of rule of law	0.911***	0.190
	[9.59]	[0.99]
Constant	-3.589	1.491
	[-0.81]	[0.38]
Observations	1,687	1,687
Number of groups	194	194
Arellano-Bond test for AR(1)	0.000	0.000
Arellano-Bond test for AR(2)	0.958	0.605
Number of instruments	45	45
Wald statistics, p value	0.000	0.000
Sargan test of overid. restrict, p value	0.458	0.560

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. Internal instruments are used for endogenous variables. Lag limits are 2/3 for the lagged dependent variable and 3/4 for endogenous regressors. The collapse option is always used. Year dummies are included but not shown. Column (10) shows the results with transformed dependent variable capturing the zero and negative observations in the matrix of the dependent variable. Lag limits are 2/3 for the lagged dependent variable and 3/4 for endogenous regressors and 3/5 for endogenous regressors.

6.6 Calculating potential inward FDI stock in Macedonia

To calculate the actual and potential bilateral FDI stock in Macedonia, we have considered the coefficients from robust LSDV estimates, accounting for the LSDV results without interaction terms (column 6, table 34). The potential FDI stocks in Macedonia are calculated using host country dummy coefficient of Macedonia, source country dummy coefficients of different OECD-20 countries and year dummies.

The calculations of FDI potentials in Macedonia are considered for the period 2007-2015. Due to the fact that the end period of the data that is used for estimation purpose is 2010, the calculation of FDI potentials are considered up to 2010 based on the data provided for the dependent variable, actual FDI stocks and other explanatory variables used in model (6). The calculation of FDI potentials for the period 2011-2015 is based on estimated data of bilateral FDI stock and other explanatory variables using 3 years moving average calculation. In this regard, for the period 2011-2015, for calculation purpose we have used the year dummy of 2010.

Table 37:Actual and Potential FDI stock in Macedonia, originated from OECD-20 countries, in total

	2007	2008	2009	2010	2011	2012	2013	2014	2015	Average
Actual FDI stock	2,035.2	2,262.7	2,521.5	2,598.3	2,460.8	2,526.9	2,528.6	2,505.4	2,520.3	2,439.7
Difference of act. FDI stock		227.4	258.8	76.7	-137.4	66.0	1.7	-23.2	14.8	
Percentage change of act FDI		11.1	11.4	3.0	-5.2	2.6	0.1	-0.9	0.6	
Potential FDI stock	1,281.4	1,729.7	1,385.7	1,802.1	1,799.7	1,793.0	1,809.0	1,803.6	1,803.1	1,689.7
Difference of pot. FDI stock		448.2	-344.0	416.3	-2.4	-6.6	15.9	-5.4	-0.4	
Percentage change of pot FDI		34.9	-19.8	30.0	-0.1	-0.3	0.8	-0.3	-0.0	
Ratio (Actual over Potential)	1.6	1.3	1.8	1.4	1.4	1.4	1.4	1.4	1.4	1,4
Difference (Actual-Potential)	753.8	532.9	1,135.8	796.2	661.1	733.8	719.7	701.9	717.2	750.3
Percentage change (act-pot)	58.8	30.8	82.0	44.2	36.7	40.9	39.8	38.9	39.8	45.7

Notes: The data on actual and potential FDI stock in Macedonia are in presented in total, in millions of US dollar. Actual and potential FDI stocks are summed up for each individual source OECD-20 countries.
Source: own calculation, using estimations from gravity model (6)

The values of actual bilateral FDI stocks in Macedonia, from the origin OECD-20 countries in total for the period 2007-2015, are presented in table 37. The results from table 37 show that, according to Gravity model (model 6), the actual FDI stock in Macedonia originated from OECD-20 countries is higher than the calculated potential FDI stock[54]. During the observed period, 2007-2010, we detect that actual inward FDI stock in Macedonia, registered a constant increase. Analysing by years, after 2010, we observe that actual FDI stock, in total, recorded an increasing rate with decreasing tendency[55], possibly due to global economic and financial turmoil, which clearly reduced the capabilities of Macedonia's economy to attract more FDI. This argument is

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[54]Potential FDI-stock is obtained as the value which would prevail if the entire Macedonian inward FDI would be determined by variables and parameters estimated by the model (Nilsson, 2000; Fidrmuc and Fidrmuc, 2003; Derado, 2013)

[55]The increasing rate of inward FDI stock in Macedonia, in total from 2010 to 2011 although is positive(3.04 per cent), this rate of increase is low in comparison to the registered increase of inward FDI stock in Macedonia, from 2007 to 2008, and from 2008 to 2009, by 11.1 and 11.1 per cent, respectively.

reflected from the fact that from 2010 to 2011, the rate of total inward FDI stock in Macedonia, originated from developed OECD-20 countries decreased by 5.2 per cent.
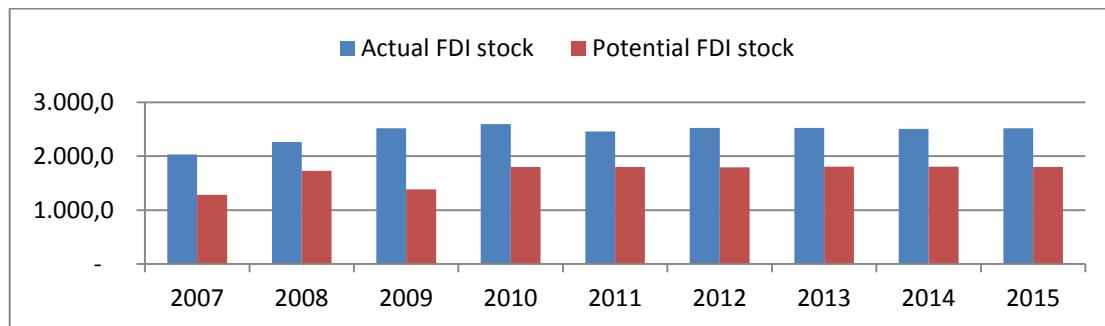

Figure 4: Ratio of actual-to-potential level of Macedonia's inward FDI-stock for the period 2007-2015, in total

From 2007 to 2015, the total inward FDI stock in Macedonia, on average, was realized approximately 45.7 per cent higher than the level predicted by the gravity model. This difference is relatively smaller in 2011, around 36.7 per cent and much larger in 2009, around 82 per cent. As depicted in table 37, the ratio of actual to potential FDI stock is higher than 1 for the whole observed period, 2007-2015, once confirming the fact that the actual FDI stock in Macedonia, originated from OECD-20 countries, in total, was higher than potential FDI stock predicted by the model (figure 4)

Table 38: FDI actual in Macedonia in the period 2007-2015, by country of origin (in million of US dollar)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	Average	%
Austria	289.0	273.4	465.6	522.3	420.4	470.7	453.5	453.6	464.5	423.7	17.3
Belgium	38.9	2.0	2.0	2.0	1.6	1.6	1.6	1.6	1.6	5.9	0.2
Canada	3.4	4.4	4.1	5.5	4.7	4.7	4.9	4.8	4.8	4.6	0.2
Denmark	1.0	2.0	2.0	2.4	2.1	2.2	2.2	2.2	2.2	2.0	0.1
Finland	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
France	12.1	18.1	37.7	173.0	76.3	95.7	115.0	95.7	102.1	80.6	3.3
Germany	98.6	92.2	89.3	95.5	92.3	92.4	93.3	92.7	92.8	93.2	3.8
Greece	622.8	599.7	527.7	515.7	547.7	530.4	531.2	536.4	532.7	549.4	22.5
Ireland	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Israel	6.3	5.8	5.7	5.8	5.8	5.8	5.8	5.8	5.7	5.8	0.2
Italy	53.4	77.3	80.5	78.2	78.7	78.7	78.6	78.8	8.8	75.9	3.1
Netherland	494.8	606.2	754.2	735.5	698.6	729.5	721.1	716.4	722.3	686.5	28.1
Norway	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Portugal	2.6	3.2	2.3	2.1	2.5	2.3	2.2	2.4	2.3	2.4	0.1
Spain	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Switzerland	245.1	283.0	289.7	198.9	257.2	248.6	234.9	246.9	243.5	249.8	10.2
Sweden	4.0	4.2	5.1	6.8	5.4	5.8	6.0	5.7	5.8	5.4	0.2
Turkey	51.3	60.6	71.3	64.1	65.3	66.9	65.4	65.9	66.1	64.1	2.6
UK	92.5	159.8	110.5	137.0	135.8	127.8	133.5	132.4	131.2	128.9	5.3
USA	52.7	67.4	69.9	49.7	62.3	60.7	57.6	60.2	59.4	60.0	2.5
Total	2072.2	2263.3	2521.7	2598.7	2460.8	2527.7	2511.4	2505.4	2520.3	2442.4	100.0

Notes: Actual FDI stock data is the inward FDI stock in Macedonia from OECD-20 countries: FDI/TNC database, based on data from the National Bank of the Republic of Macedonia.
Source: National Bank of Republic of Macedonia.

The data on actual FDI stock presented in table 38 confirm that the highest level of inward FDI stock in Macedonia, between the period 2007-2015, on average, was recorded from relatively close countries to Macedonia, like: Netherland (28 per cent), Greece (22.6 per cent), Austria (17.3 per cent) and Switzerland (10.3 per cent).

Table 39: FDI potentials in Macedonia in the period 2007-2015, by country of origin
(in million of US dollar)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	Average	%
Austria	59.6	76.5	70.8	84.2	80.1	81.0	81.9	81.0	81.3	77.4	4.6
Belgium	38.9	50.5	43.6	52.2	51.2	50.7	51.4	51.1	51.1	48.9	2.9
Canada	29.7	36.3	34.8	37.9	36.4	36.4	36.9	36.6	36.6	35.7	2.1
Denmark	41.8	50.7	52.0	53.4	52.6	52.5	52.7	52.4	52.5	51.1	3.0
Finland	38.8	46.6	46.7	9.2	34.2	30.0	24.5	29.5	28.0	31.7	1.9
France	63.5	85.3	79.1	94.6	90.0	90.9	92.0	91.0	91.4	86.4	5.1
Germany	105.9	148.2	96.6	169.4	159.5	162.0	164.2	162.0	162.9	147.8	8.7
Greece	112.6	159.0	103.6	182.6	171.8	173.8	176.5	174.2	175.0	158.8	9.4
Ireland	38.9	45.4	44.6	50.0	47.9	48.2	48.8	48.3	48.4	46.7	2.8
Israel	27.7	34.7	34.8	37.9	35.9	36.2	36.7	36.2	36.4	35.1	2.1
Italy	214.0	314.0	194.5	360.2	339.8	344.3	349.2	344.8	346.4	311.9	18.5
Netherland	76.8	103.2	82.7	113.1	108.3	109.3	110.5	109.4	109.8	102.5	6.1
Norway	35.8	43.8	44.1	46.8	45.0	45.3	45.7	45.3	45.5	44.1	2.6
Portugal	35.3	42.4	40.6	45.2	43.2	43.4	44.0	43.5	43.6	42.4	2.5
Spain	44.9	62.4	51.2	65.8	64.2	63.8	64.7	64.2	64.3	60.6	3.6
Sweden	39.2	47.3	44.8	49.1	47.6	47.6	48.1	47.8	47.8	46.6	2.8
Switzerland	39.7	50.1	48.2	56.8	52.9	53.8	54.6	53.8	54.1	51.5	3.1
Turkey	136.1	197.5	159.1	156.0	202.3	188.5	189.8	195.5	191.7	179.6	10.6
UK	55.9	78.3	61.8	79.7	78.9	78.3	79.2	78.8	78.8	74.4	4.4
USA	46.4	57.7	52.1	58.1	57.9	57.0	57.8	57.6	57.5	55.8	3.3
Total	1,281.4	1,729.7	1,385.7	1,802.1	1,799.7	1,793.0	1,809.0	1,803.6	1,803.1	1,689.7	100.0

Notes:The data on potential FDI stock are calculated using the estimations from model 6.
Source: own calculation. Data on FDI potentials for the period 2011-2015 are based on estimated data for the period 2011-2015.

The data on potential FDI stock presented in table 39, confirm that during the observed period 2007-2015, on average, the highest level of potential FDI stock in Macedonia, is recorded from Italy (18.5 per cent), Turkey (10.6 per cent), Greece (9.4 per cent) and Germany (8.7 per cent). With other words, these data confirm that relatively more distant OECD countries, recorded less actual FDI stock and high potentials of FDI stock in Macedonia, once again confirming that actual FDI stock in Macedonia is significantly determined from gravitational attraction.

The comparison of actual and potential bilateral FDI stocks is presented in table 40. Observing by individual OECD-20 origin countries of FDI, the data confirm relatively strong gravitational character of Macedonian inward FDI stock, as outlined by the indicator of actual to potential FDI stock in Macedonia in table 40.The comparisons show that based on the gravity model (model 6), the realized level of FDI stock is over the potential during the years from 2007 to 2015, for some of the OECD-20 countries, such as Austria, Greece, Netherland and Switzerland (see table 40).

In general, the main factors that contribute the most to closing the gap between potential and realized FDI stock for the countries that show high realization degree of FDI stock in Macedonia are gravity related factor of distance and other gravity related factors proxying GDP and GDP per capita in source countries. This judgement is supported by the fact that less distant countries to Macedonia, and that are economically well developed, possess relatively large market sizes i.e. Greece, Austria, Switzerland and the Netherland have shown high realization level of FDI stocks in Macedonia.

Table 40: Actual to potentials FDI in Macedonia in the period 2007-2015, by country of origin

	2007	2008	2009	2010	2011	2012	2013	2014	2015
Austria	4.9	3.6	6.6	6.2	5.2	5.8	5.5	5.6	5.7
Belgium	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Canada	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Denmark	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Finland	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
France	0.2	0.2	0.5	1.8	0.8	1.1	1.3	1.1	1.1
Germany	0.9	0.6	0.9	0.6	0.6	0.6	0.6	0.6	0.6
Greece	5.5	3.8	5.1	2.8	3.2	3.1	3.0	3.1	3.0
Ireland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Israel	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Italy	0.2	0.2	0.4	0.2	0.2	0.2	0.2	0.2	0.2
Netherland	6.4	5.9	9.1	6.5	6.5	6.7	6.5	6.5	6.6
Norway	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Portugal	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Spain	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweden	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Switzerland	6.2	5.7	6.0	3.5	4.9	4.6	4.3	4.6	4.5
Turkey	0.4	0.3	0.4	0.4	0.3	0.4	0.3	0.3	0.3
UK	1.7	2.0	1.8	1.7	1.7	1.6	1.7	1.7	1.7
USA	1.1	1.2	1.3	0.9	1.1	1.1	1.0	1.0	1.0

Source: own calculation.

Figure 5 presents the ratios of realized to potential FDI for selected years. The ratio of actual to potential FDI below 1 show that Macedonia received less FDI than is predicted by the model. Also there exists more scope for receiving new FDI. The ratio of actual to potential FDI above 1 shows that it has received more FDI than potentially expected.
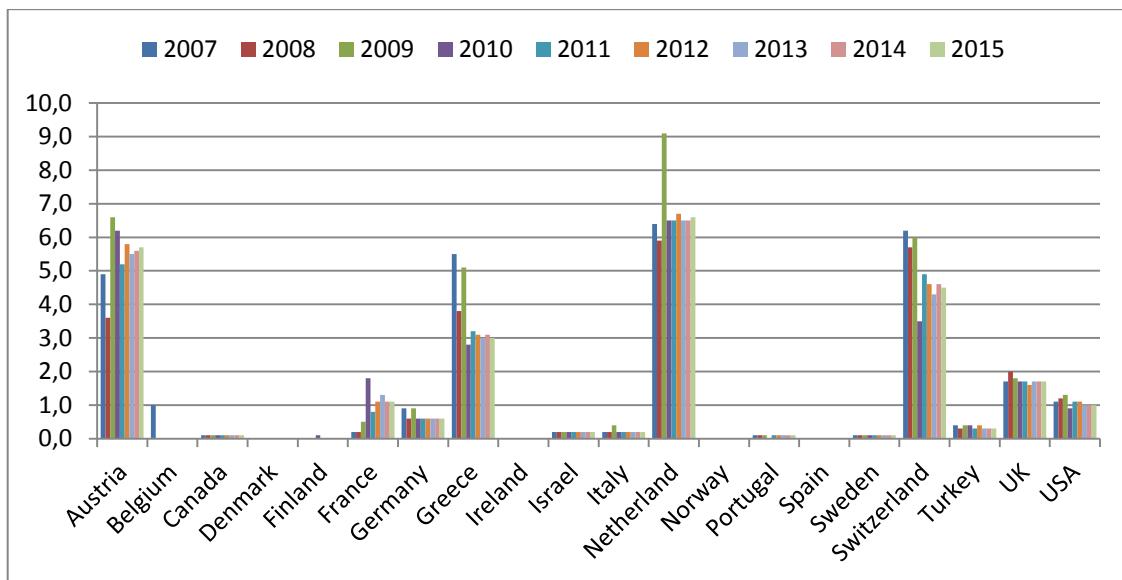
Figure 5: Ratio of potential-to-realized level of Macedonian inward FDI-stock in the year 2007and 2015, by country of origin

Source: OECD, 2014; own calculation

Regarding the selection of explanatory variables in the model (GDP, GDP per capita, distance, bilateral FDI agreement, WTO membership, bilateral exports, corruption perception index, schooling, transition progress and interaction terms of governance indicators with FDI), it can be said that the Macedonian capacity to induce economic growth and structural reforms, and continue with institutional reforms, will appear as the critical factors in attracting more FDI in the future.

6.7   Conclusions

This chapter has identified significant institutional determinants ofFDI stocks into host countries of SEE-5 and EU-NMS-10, and highlighted theimplications of different institutional factors for FDI flows. Using an augmented Gravity Model, we focused the research mainly on the importance of gravity and institutional factors as primary determinants of FDI in the host countries. As expected, all of these determinants play an important role in determining a firm's foreign market entry decision. Moreover, host country institutional related factors appeared to significantly determine bilateral FDI stock from the OECD-20 countries. The estimates show that gravity factors like market size and income level related variables are important determinants of FDI. Negative and significant coefficient of distance indicates that, as expected, FDI is determined by gravity factors. Moreover, the study confirms that foreign investor's motives to SEE-5 and EU-NMS-10 are driven by market seeking seeking considerations.

Based on a panel data analysis we have foundthat FDI stocks into SEE-5 and EU-NMS-10 countries are significantly influenced by both gravity factors (distance, GDP in host country, GDP in source country, cultural, language and border similarities) and

non-gravity factors (bilateral exports, schooling, transition progress CPI index, control of corruption, regulatory quality, WTO membership and bilateral FDI agreement).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 are a signal that foreign investors are considering efficiency - seeking considerations for positive FDI decisions.

These results of the study confirm the importance of institutions for FDI stocks in SEE-5 and EU-NMS-10 countries. The LSDV estimates predict that bilateral FDI stock between SEE-5 and EU-NMS-10 countries vary with respect to development in transition progress, CPI index and control of corruption. The robustness check estimates, using RET results, based on transformed dependent variable, confirm the importance of institutional related factor for the size of bilateral FDI flow. These estimates suggest that bilateral FDI stock into SEE-5 and EU-NMS-10 countries is also determined by host country WTO membership and bilateral FDI agreement. Also the findings from RET estimates confirm that the size of inward FDI flow between SEE-5 and EU-NMS-10 countries vary with respect to regulatory quality index, i.e., perceptions of SEE-5 and EU-NMS-10 countries governments to promote private sector developments.

The estimated values of potential FDI in Macedonia reveal that a further increase in inward FDI can be achieved only upon realization of further economic growth and better improvement of transition and institutional specific factors. Therefore, Macedonia's institutions should be focused on creating conditions for sustainable economic growth, thus reducing the gap between actual level of FDI in Macedonia and its potential level, originated from source OECD-20 countries.

The findings of the study can provide an analytical foundation for the evaluation of country policies and institutions aimed at making SEE-5 and EU-NMS-10 countries more attractive to foreign investors. The findings also suggest that strong emphasis should be placed by host country policy makers in improving the efficiency of government institutions, controlling corruption and bureaucracy and improving the general economic conditions. These should also help policy makers in designing strategies for attracting more FDI.

7   CONCLUSION OF THE THESIS, LIMITATIONS OF THE STUDY AND POLICY IMPLICATIONS

This chapter presents a summary of empirical findings of the study. Section 7.1 discusses the conclusion drawn from empirical models. Section 7.2 discusses the policy implications of the research findings. Section 7.3 identifies the limitations of the study. Section 7.4 provides suggestions for future research.

7.1   Summary and empirical findings

Considering the importance of FDI for speeding up the transition process in SEE countries, the objective of the study was to compare and contrast the theories of FDI, like the Eclectic Paradigm, Resource-Based Theory and Business Network theory, through evaluating the determinants of FDI into SEE-5 and EU-NMS-10. The literature on Eclectic Paradigm, Resource - Based Theory, Business Network Theory, New Economic Geography and Investment Development Path is reviewed in chapter 3.

The Eclectic Paradigm provides the analytical basis for an international production and foreign investments. The concepts of this theory are based on the assumptions of ownership factors, location factors and internalization factors. This theory allows the researcher to evaluate the spillover - effect of FDI on host country economic performance and the competitive advantages of FDI to further develop the FDI policies for governments.

The Resource - Based Theory of FDI develops a model of FDI that explains the strategy of achieving sustainable competitive advantages. This theory applied on the studies of FDI, explains the performance indicators in the FDI model. The theory explains also the FDIs applied at firm level data which possesses natural, financial, physical, human and organizational resources.

The Business Network Theory of FDI considers the relationship between strategic alliances and firms or countries oriented on FDI activities. This theory analyzes the resources in foreign markets, like technological know - how and management expertise. The Business Network Theory develops a model of FDI that explain firms or country's competitive advantage in terms of economies of scale and scope, operational efficiency, reduction of trade barriers and unfair competition.

The first empirical chapter of the thesis evaluates the determinants of FDI in SEE countries and 10-EU-NMS countries. Using a Gravity Model, the study examines the FDI flows between different locations and their geographical distance in SEE economies.

To answer the research objectives of the study, an augmented form of the Gravity Model, derived from the standard conventional Gravity Model is employed, extended with other variables capturing the theoretical frameworks of the theories of FDI, like OLI Paradigm, Business - Network Theory and Resource Based theory of FDI. The estimated Gravity Model examines the determinants of FDI in South East European Countries and 10 new EU member states, using panel data covering the time period 1994-2010 and EU-14 major investing partners.

The explanatory variables in the FDI model includes: GDP, GDP per capita, distance, cultural and language similarities, bilateral exports, WTO membership, Bilateral FDI agreement, schooling, corruption perception index, transition progress, governance indicators of control of corruption, regulatory quality, rule of law, voice and accountability, government effectiveness and political risk. The governance indicators are interacted with SEE dummy variable in the estimated FDI model, in order to differentiate the institutional determinants of FDI flows between SEE-5 and EU-NMS-10 countries. The benchmark category is considered in EU-NMS-10 countries. The results from the estimated model support the claim that the extended Gravity Model specification can be used to determine the inflows of FDI in SEE countries, from EU-14 investing partners.

In the FDI models, we have considered both static and dynamic panel models, as well as other estimation techniques like Poisson-Pseudo Maximum Likelihood estimation, Random Effect Tobit and the second stage Heckman selection model. These methodologies are considered as a robustness check to standard panel fixed effect model and robust LSDV models. Additionally these alternative estimation techniques are used to deal with the problem of large number of zero FDI flows between countries. Among the static panel estimates, the robust fixed effect estimates, robust fixed effects with least square dummy variable, accounting for year dummies, host country dummies, source country dummies and country group dummies gives more plausible results and these models, after testing for diagnostics are confirmed as more appropriate for interpreting the results. Generally speaking, all the used estimation methodologies confirm the expected results.

The positive signs of the variables of GDP in both source and host countries, denoting the economic size of the respective countries, and the negative sign of distance, confirm that bilateral FDI flows between countries is determined by gravity factors, as expected. The estimated signs of these variables also confirm the market seeking and efficiency seeking considerations of FDI. On the other hand, the estimated positive signs of the variables of schooling, confirm that the size of bilateral FDI flows between countries, is determined also by resource seeking considerations, thus confirming the hypothesis, deriving from the location advantages of the OLI - Paradigm, theoretical framework of FDI.

The Business - Network Theory of FDI, is considered in the study through involving the integration related variables, in the research empirical model, like WTO membership and bilateral FDI agreement. Both variables confirm positive influence on bilateral FDI flows, thus confirming that the size of the flows of FDI from EU-14 to SEE-5 is determined by the integration of the SEE-5 countries, into WTO and engagements of SEE-5 countries into bilateral agreements for FDI flows with EU-14 countries.

Transition progress is considered in the model, as a choice variable to capture the speeding up of the transition reforms in the SEE-5 host country institutions, in relation to advancements of reforms in large and small scale privatization, etnerprise restructuring, competition policy, banking reformes and interest rate liberalization, securities markets and non-bank financial institutions and infrastructure reforms. The empirical results, confirm the importance of transition progress and institutional reforms on the size of bilateral FDI activity between countries.

The quality of institutions in the study is captured through six worldwide governance indicators, like control of corruption, rule of law, government effectiveness, regulatory quality, political risk and voice and accountability, estimated on per centile rank values. These variables are included in the model in line with theoretical framework of location and internalization advantages of FDI, derived from the theoretical framework of OLI - paradigm, which refer to specific advantages related to the direction of investment and incentive advantages related to the reasons for undertaking FDI. From the institutional factors the study finds that the size of bilateral FDI flow vary with respect to the indexes of rule of law, political risk and regulatory quality. The rule of law index is found to be statistically significant in robust FE estimates for both group of countries, EU-NMS-10 and SEE-5. The increase of rule of law index is confirmed to be positively related to the increase of bilateral FDI flow to EU-NMS-10 countries. On the other hand the increase of rule of law index is confirmed to be negatively related to the size of bilateral FDI flows in SEE-5 countries. The study also finds that foreign investors are sensitive to changes in political risk indexes in SEE-5, meaning that foreign investors are very sensitive to host SEE-5 countries governmental destabilisations policies through unconstitutional means. The study also finds that regulation policies associated with developments in the private sector are positively related to inflow of FDI in EU-NMS-10 countries and negatively to SEE-5 countries.

The second empirical chapter, by using an augmented Gravity Model, evaluates the relationship between FDI and Trade in EU-NMS-10 and SEE-5 countries, in a link to a country characteristics and trade costs. The main hypothesis developed here is whether the size of bilateral inward FDI stockin the host SEE-5 and EU-NMS-10 countries originated from OECD-20 source countries, has positive and significant impact on trade potentials of host countries of FDI, at both export and import level. In this regard

the research model estimates the trade flows from SEE-5 and EU-NMS-10 and OECD-20, at export and import level, using panel level data, for a time period: 1994 - 2010. In this regard, in line with Markunsen's et al. (1998) theoretical framework concerning the relationship between FDI and Trade, we provide empirical evidence for the case of SEE-5 and EU-NMS-10 countries, to check whether the nature of FDI into these countries is vertically or horizontally oriented.

In this regard, the literature on Vertical and Horizontal FDI is reviewed additionally, both theoretically and empirically. Vertical FDI is driven by cost differences in factor endowments. This is the case, when the production process is fragmented geographically in different locations, in order to exploit relative factor cost differences between countries, thus targeting mainly production in low cost locations. On the other hand, horizontal FDI is driven by trade costs. Low trade costs allow the firms to produce all the output in domestic locations and serve foreign consumer demand through exports, whereas high trade costs allow the firm to become multinational and produce in many plant locations, at both home and abroad, each serving just that country's consumers. This type of FDI is horizontal in nature, because the firm produces homogenous products in all countries. Therefore, the modeling of horizontal FDI, suggest the presence of positive trade costs.

Based on the relationship between FDI and bilateral exports, the findings of the study suggest that FDI in SEE-5 countries is horizontally oriented. The presence of horizontal FDI into SEE-5 countries is confirmed from the negative relationship between the interaciton term of FDI with SEE-5 dummy and bilateral exports. On the other hand, based on the relationship between FDI and bilateral imports, the study suggests that FDI in SEE-5 countries is of vertical nature. The presence of vertical FDI into SEE-5 countries is confirmed from the positive relationship between the interaciton term of FDI with SEE-5 dummy and bilateral imports. Hence, the study provides mixed evidence about the nature of FDI in SEE-5 countries. On the other hand, based on the concepts of Helpman (1984), the presence of vertical FDI into EU-NMS-10 countries is confirmed from the positive relationship between FDI and Trade (at both export and import level).

In the third empirical chapter we consider an estimation of the determinants of bilateral FDI stocks, between OECD-20 countries and SEE-5 and EU-NMS-10 countries. In this chapter, Macedonia is chosen as a country of special target, in order to see how the model of the determinants of FDI applies to small and open transition country. Also, considering the importance of foreign capital for speeding up the transition process in Macedonia, this chapter, using a Gravity Model, evaluates the potentials of FDI in Macedonia, covering the period 2007-2015. However, to predict the level of potential FDI in Macedonia from individual source OECD-20 countries, we have considered the coefficients of robust LSDV estimates estimates. Moreover these estimates fit the data

much better than does the robust FE estimates, providing higher explanatory power of the model.

The results of the study, confirm that the gravity coefficients of GDP are positively related to the size of bilateral FDI stock from OECD-20 to SEE-5 and EU-NMS-10, as expected. Also other gravity related factors like distance and border and language similarities are showing negative (positive) impact on the size of bilateral FDI stocks between OECD-20 countries and SEE-5 and EU-NMS-10 countries, as expected, thus confirming the importance of gravity factors for determining the size of bilateral FDI stocks in Macedonia. Also, bilateral exports and schooling are confirmed to be positively related to FDI flows, thus providing further evidence that FDIs in both groups of countries are determined by efficiency seeking considerations and on the other hand they are complements to exports. 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. The study confirm that the size of bilateral FDI stock between EU-NMS-10 and SEE-5 countries vary with respect to transition progress, corruption perception index, control of corruption and political risk index.

The study confirms that, unexpectedly foreign investors act positively to misues of political power of host SEE-5 country governments for private gains. This result may be attributed to the fact that in a exchange for bribe the host country SEE-5 governments may offer the briber with the unlegitimate services. The results of this stidy also confirm that the size of bilateral FDI stock in the host countries are negatively associated to the host country political risk indexes. On the other hand, the CPI index is positively associated to the size of bilateral FDI stock in SEE-5 countries indicating that the lowering of the perceptions of host SEE-5 country populations toward corruption presence in the business environments of SEE-5 countries is related to the increase of FDI stock into these countries.

7.2 Policy implications of the research findings and contributions of the thesis

The findings of the study can provide an analytical foundation for the evaluation of country policies and institutions aimed at making Macedonia, SEE-5 countries and 10-New European Member states more attractive to foreign investors. The findings also suggest that strong emphasis should be placed by host country policy makers in improving the efficiency of government institutions, controlling corruption and bureaucracy and improving the general economic conditions.

This research contributes to the literature in several ways. Firstly, it brings together some of the methodologies that were used for estimating FDI determinants.

Traditionally the Gravity Model was estimated using OLS techniques, assuming that the variance of the error term is constant across observations (homoscedasticity) or using panel techniques, assuming that the error is constant across countries or country – pairs. This study among standard estimation techniques has also provided different estimation methods, like Random Effect Tobit estimates, (PPML) estimation technique and Heckman selection model, in order to deal with the problem of large number of zero observations in the dependent variable. To this point, we discuss the fit of different estimation procedures applied to a large dataset of bilateral FDI flows for 29 countries of European region.

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, world governance indicators of voice and accountability, rule of law, government's regulatory quality, government effectiveness, control of corruption and institutional transition progress. These factors have also been considered by the European Commission as the most important detriment for EU accession.

The study additionally provides empirical evidence regarding the nature of FDI in SEE-5 countries, whether the foreign investments into these countries are vertically or horizontally oriented. In this regard, the study also considers political measures for explaining the trade performance of SEE-5 countries, like: human and capital endowments. The positive effect of FDI on trade performance of SEE-5 and EU-NMS-10 countries, can provide suggestions for policy makers of SEE-5 and EU-NMS-10, individual countries to apply country specific policies for attraction of more FDI into these countries, in order to better improve the trade performance of the respective countries.

7.3   Limitations of the study

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 inflows 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. This is done, for the purpose of sample design. 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 inflows of FDI.

The model in the empirical study related to the determinants of FDI does not consider government expenditures and investment risks. This is because this study is focused on economic relationship between Macedonia, SEE-5 and EU-NMS-10 with EU-14 investing partner countries. In this regard, the model of the study that explains the determinants of FDI is generally comparable to the Gravity Models used in other studies.

Data on dependent variable for FDI consider gross flows of foreign capital into a country.This includes actual new investments (i.e. fresh capital) and net reinvested earnings (the portion of current and diverted profits that end up being reinvested into the firm). These two sources of FDI are governed by completely different considerations not the least of which is tax incentives usually associated with reinvesting profits. Moreover, the data on pure investment flows is not avaliable, so we were forced to use the best avaliable data i.e FDI flows. Also the alternative approach, using changes in FDI stocks suffer under a similar problem, since changes due to pure investment and reinvested earnings cannot be separated out.

Data on explanatory variables were collected from various sources which contained a variety of definitions and restrictions according to the different facts and data criteria. Therefore, the findings of the thesis need to be interpreted with caution since they are based on data sources from different databases, like OECD, World Bank, UNCTAD, WGI, EBRD and Transparency International. The choice of 1994 as a beginning year for data was appropriate at the time the data set ended (2010). Seventeen years would provide a more accurate picture with more information for the FDI. If the models had started at an earlier base year, the accuracy would have improved. However, the objective of this study is to provide an indication on determinants of FDI, therefore these issues are not absolutely critical.

7.4   Suggestions for future research

This section suggests recommendations for future research, considering the limitations of this study. There are very few studies that examine the FDI investment in Macedonia and SEE-5 and EU-NMS-10 countries, and especially there are even fewer studies that examine the relationship between FDI and Trade for SEE-5 countries. Research on FDI in SEE-5 and EU-NMS-10 has increased in recent years but many questions still

remain unanswered. In this study, the extended Gravity Model is used to determine the inward of FDI in SEE-5 and EU-NMS-10 countries, at flow level, from the source EU-14 countries, the inward FDI in SEE-5 and EU-NMS-10 from OECD-20 countries, at stock level and the relationship between FDI and Trade between SEE-5, EU-NMS-10 and OECD-20 countries. The time period considered in the study is from 1994 to 2010. Empirical studies in FDI usually appear to focus on the developed countries (both host and home countries). This study focuses the research on mixed countries, with respect to economic development level. In this regard, the Gravity Model of FDI is augmented with institutional related factors. Future research on the determinants of FDI could be focused, moreover on other factors affecting the size of bilateral FDI, like: labor tax and technology. This may be useful for policy makers to develop their FDI environments.

Future FDI studies, based on augmented Gravity Models, can also be explained by political and social factors and different environmental factors. In this regard, important social factors that could be included in the studies of FDI and may explain the size of FDI activity in Macedonia and SEE countries may be: legislation in the workplace, improved healthcare, changes in local people's attitudes, population growth and income distribution. On the other hand, important environmental factors that may explain the size of FDI in Macedonia and SEE countries are administrative, academic and business communities, law and legal, technology, and stake-holders environments.

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APPENDICES

LIST OF APPENDICES

APPENDIX 1: Description of variables used in the model and data sources, for chapter four

Variable name	Measurement unit	Source
$lnfdi_{ijt}$	FDI outflows of Source Country: FDI flow 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	World Bank
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
$lbex_{ijt-1}$	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
$Ltrans_{jt}$	Log of transition progress. The sum of the indexes of overall infrastructure reforms, banking reforms, trade and foreign exchange rate reforms and the index of the securities and non – bank financial institutions	EBRD
$Lcpi_{jt}$	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
$Lgov_{jt}$	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
Lps_{jt}	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
SEE-5 dummy	SEE-5 equal 1 for SEE-5 countries; 0 - otherwise, capturing the benchmark category of EU-NMS-10 countries	Own knowledge

APPENDIX 2: Descriptive statistics of the estimated coefficients for chapter four

Variables	Obs	Mean	Std.Dev	Min	Max
Log of FDI	1619	3.47	2.38	-4.71	9.22
Log of FDI (transformed)	1619	3.56	2.17	0	9.22
Log of GDP in source country (-1)	3569	13.03	1.05	10.93	15.10
Log of GDP in host country (-1)	3569	10.09	1.21	7.57	13.17
Log of difference in GDP per capita (-1)	3570	10.01	2.70	4.15	28.46
Log of distance	3570	7.15	.58	4.00	8.10
Language, border and cultural similarities	3570	.02	.16	0	1
WTO membership	3570	.67	.46	0	1
Bilateral FDI agreement	3570	.67	.47	0	1
Log of bilateral exports	3145	4.80	2.29	0	10.68
Log of schooling	3556	3.66	.45	2.32	4.49
Log of transition progress	3570	2.47	.16	1.38	2.56
Log of Consumer Price Index	3570	1.33	.29	.69	1.90
Log of Control of Corruption	3570	3.90	.48	1.92	4.46
Log of Regulatory Quality	3570	4.12	.371	2.87	4.52
Log of Government Effectiveness	3570	3.96	.50	1.92	4.44
Log of Rule of Law	3570	3.91	.49	2.20	4.46
Log of Political Risk	3570	3.91	.53	1.34	4.48
Log of Voice and Accountability	3570	4.11	.33	2.48	4.49
Log of Control of Corruption*see dummy	3570	1.15	1.65	0	4.14
Log of Regulatory Quality *see dummy	3570	1.23	1.76	0	4.25
Log of Government Effectiveness*see dummy	3570	1.16	1.67	0	4.26
Log of Rule of Law*see dummy	3570	1.23	1.76	0	4.25
Log of Political Risk*see dummy	3570	1.11	1.60	0	4.21
Log of Voice and Accountability*see dummy	3570	1.25	1.78	0	4.23
SEE-5 dumy	3570	0.35	0.47	0	1

APPENDIX 3: Correlation matrix between variables employed in the model of chapter four

	LFDI	LGDP_S1	LGDP_H1	LDIFGDPC	LD	SMCTRY	WTO	BFDIA	LBEX	LSCH	LTP1	LCPI	LCC
LFDI	1.0												
LGDP_S	1.0	1.0											
LGDP_H	0.2	0.2	1.0										
LDIFGD	0.5	0.5	0.0	1.0									
LD	0.3	0.3	0.2	0.0	1.0								
SMCTRY	-0.3	-0.3	0.1	0.0	-0.2	1.0							
WTO	0.2	0.2	-0.2	0.0	0.0	-0.6	1.0						
BFDIA	0.2	0.2	-0.1	0.3	-0.1	0.0	0.0	1.0					
LBEXX	0.2	0.2	-0.1	0.1	0.0	0.0	0.0	0.2	1.0				
LSCH	0.6	0.6	0.3	0.6	0.1	-0.2	0.1	0.3	0.1	1.0			
LTP1	0.2	0.2	0.0	0.3	0.0	0.1	-0.1	0.4	0.2	0.3	1.0		
LCPI	0.2	0.2	-0.1	0.3	-0.1	-0.1	0.1	0.6	0.3	0.5	0.3	1.0	
LCC_pr	0.2	0.2	-0.1	0.3	-0.2	-0.1	0.1	0.4	0.1	0.3	0.5	0.5	1.0
LRQ_pr	0.2	0.2	-0.1	0.4	-0.2	-0.1	0.1	0.4	0.1	0.4	0.4	0.5	0.8
LGOV_pr	0.2	0.2	-0.1	0.3	-0.1	-0.1	0.1	0.5	0.2	0.5	0.4	0.8	0.7
LPS_pr	0.2	0.2	-0.1	0.4	-0.2	-0.2	0.1	0.5	0.2	0.4	0.4	0.7	0.7
LVA_pr	0.2	0.2	-0.1	0.4	-0.2	-0.1	0.1	0.5	0.1	0.4	0.3	0.6	0.7
LRL_pr	0.3	0.3	-0.1	0.4	-0.2	-0.1	0.1	0.5	0.1	0.5	0.4	0.6	0.8
LCC_prs	0.2	0.2	-0.1	0.4	-0.2	-0.1	0.1	0.5	0.1	0.5	0.4	0.6	0.8
LRQ_prs	-0.2	-0.2	0.1	-0.3	0.1	-0.1	0.0	-0.5	-0.1	-0.3	-0.3	-0.4	-0.5
LGOV_prs	-0.2	-0.2	0.1	-0.3	0.1	-0.1	0.0	-0.5	-0.1	-0.3	-0.3	-0.3	-0.5
LPS_prs	-0.2	-0.2	0.1	-0.3	0.1	-0.1	0.0	-0.5	-0.1	-0.3	-0.3	-0.3	-0.5
LVA_prs	-0.2	-0.2	0.1	-0.3	0.1	-0.1	0.0	-0.5	-0.1	-0.3	-0.3	-0.3	-0.5
LRL_prs	-0.2	-0.2	0.1	-0.3	0.1	-0.1	0.0	-0.5	-0.1	-0.4	-0.3	-0.4	-0.5
SEE dummy	-0.2	-0.2	0.1	-0.3	0.1	-0.1	0.0	-0.5	-0.1	-0.3	-0.3	-0.3	-0.5

	LRQ_pr	LGOV_pr	LPS_pr	LVA_pr	LRL_pr	LCC_prs	LRQ_prs	LGOV_prs	LPS_prs	LVA_prs
LRQ_pr	1.0									
LGOV_pr	0.9	1.0								
LPS_pr	0.8	0.8	1.0							
LVA_pr	0.9	0.8	0.8	1.0						
LRL_pr	0.9	0.8	0.8	0.9	1.0					
LCC_prs	-0.7	-0.5	-0.6	-0.7	-0.6	1.0				
LRQ_prs	-0.7	-0.5	-0.7	-0.7	-0.6	1.0	1.0			
LGOV_prs	-0.6	-0.4	-0.6	-0.7	-0.6	1.0	1.0	1.0		
LPS_prs	-0.7	-0.5	-0.6	-0.7	-0.6	1.0	1.0	1.0	1.0	
LVA_prs	-0.7	-0.5	-0.7	-0.7	-0.6	1.0	1.0	1.0	1.0	1.0
SEE-D	-0.7	-0.5	-0.7	-0.7	-0.6	1.0	1.0	1.0	1.0	1.0

APPENDIX 4: Description of variables for chapter five

Variable name from the model	Measurement unit	Source
Xjit	Bilateral trade (exports and imports) in goods from SEE-5 and EU – NMS - 10 to EU-14 countries. In millions of US dollar. In logarithm	OECD
lnfdi$_{ijt-1}$	FDI outward stock of Source OECD - 20 Countries: FDI stock from source OECD - 20 countries to host SEE–5 and EU–NMS–10 countries. In millions of US dollar. In logarithm	OECD
lndifgdp$_{ij,t}$	Difference in GDP between OECD - 20 countries and SEE–5 and EU–NMS–10 countries. Gross Domestic Product (GDP) measured in millions of US dollar. At current prices. In logarithm	UNCTAD
lndifgdpc$_{ij,t}$	Difference in GDP per capita between OECD - 20 countries and SEE–5 and EU– NMS–10 countries. GDP per capita, is measured as the ratio of GDP to Population	UNCTAD
lnop$_j$	Openness: (Export of goods and services + Imports of goods and services)/GDP. in logarithm	Own calculation. UNCTAD
Lndistancet$_{ij,t}$	Distance in kilometers between capital cities of host and source countries, in logarithm	CEPII
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
Contig	Dummy variable that take value one when two countries are contiguous, 0 otherwise	CEPII
lndskillij,t	Difference in employment in service sector (as a per centage of total employment), between source OECD-20 and host SEE-5 and EU-NMS-10 countries.	World Bank
lndcapi$_{j,t}$	Gross fixed capital formation in relative to total employment. The absolute difference of the country i (OECD-20) ratio less the ratio for country j (SEE-5 and EU-NMS-10), was taken	World Bank
FDIijt*SEEdummy	Interaction terms between bilateral FDI stock and SEE dummy	Own knowledge
SEE-dummy	SEE-5 equal 1 for SEE-5 countries; 0 - otherwise, capturing the benchmark category of EU-NMS-10 countries	Own knowledge

APPENDIX 5: Descriptive Statistics of the variables used in chapter five

Variable	Obs	Mean	Std.Dev	Min	Max
Log of bilateral exports	4,414	4.42	2.62	-12.43	12.26
Log of bilateral exports (transformed)	4,414	4.53	2.31	0.00	12.26
Log of bilateral imports	4,488	4.97	2.03	-7.39	12.26
Log of bilateral imports (transformed)	4,488	4.99	1.98	0.00	12.26
Log of bilateral FDI stock (transformed)	5,099	2.37	3.04	0.00	11.57
Log of bilateral FDI stock	2,306	5.09	2.58	-4.71	11.57
Log of absolute difference in GDP	5,099	12.91	1.39	3.04	16.53
Log of absolute difference in GDP per capita	5,099	9.91	0.78	3.23	11.42
Log of distance	5,100	7.34	0.74	4.09	8.96
Contingency, dummy variable	5,100	0.04	0.19	0.00	1.00
Same country, dummy variable	5,100	0.02	0.14	0.00	1.00
Log of openness	4,899	4.57	0.34	3.40	5.16
Log of absolute difference of labour endowment	5,098	2.71	0.76	-2.30	4.01
Log of absolute difference of capital endowment	5,099	9.96	1.82	1.84	14.19
Log of bilateral FDI stock*SEE dummy	5,100	0.35	1.34	0.00	11.57
Log of bilateral FDI stock*SEE dummy	2,306	0.74	1.90	-1.70	11.57
SEE-5 dummy	5,100	0.33	0.47	0	1

APPENDIX 6: Correlation matrix between bilateral exports and explanatory variables for chapter five

	LBEX	LNFDIS	LDGDP	LDGDPC	LDIST	CONT	SMCTRY	LOP	LDEMS	LDCAP1	LNFDSD	SEE
LBEX	1.0											
LNFDIS	0.7	1.0										
LDGDP	0.2	0.2	1.0									
LDGDP	0.0	0.3	0.1	1.0								
LDIST	-0.3	-0.3	0.4	0.0	1.0							
CONT	0.3	0.2	0.0	-0.1	-0.5	1.0						
SMCTRY	0.1	0.2	-0.1	0.0	-0.5	0.6	1.0					
LOP1	0.1	0.0	0.1	0.0	-0.1	0.1	0.1	1.0				
LDEMS	-0.1	0.1	0.1	0.4	0.2	-0.1	-0.1	-0.4	1.0			
LDCAP	0.0	0.1	-0.1	0.2	0.0	0.0	0.0	0.3	-0.1	1.0		
LNFDIS	-0.2	0.0	0.1	0.1	-0.2	0.0	0.1	-0.2	0.1	0.1	1.0	
SEE-D	-0.4	-0.2	0.1	0.1	-0.1	0.0	0.1	-0.3	0.2	0.1	0.9	1.0

APPENDIX 7: Correlation matrix between bilateral imports and explanatory variables for chapter five

	LBIM	LNFDIS	LDGDP	LDGDPC	LDIST	CONT	SMCTRY	LOP	LDEMS	LDCAP1	LNFDSD	SEEd
LBIM	1.0											
LNFDIS	0.8	1.0										
LDGDP	0.3	0.1	1.0									
LDGDPC	0.1	0.3	0.1	1.0								
LDIST	-0.3	-0.3	0.4	0.0	1.0							
CONT	0.3	0.2	0.0	-0.1	-0.5	1.0						
SMCTRY	0.1	0.2	-0.1	0.0	-0.5	0.6	1.0					
LOP1	0.0	0.0	0.1	0.0	-0.1	0.1	0.1	1.0				
LDEMS	0.0	0.1	0.1	0.4	0.2	-0.1	-0.1	-0.4	1.0			
LDCAP	0.0	0.1	-0.1	0.2	0.0	0.0	0.0	0.3	-0.1	1.0		
LNFDISSD	0.0	0.0	0.1	0.1	-0.2	0.0	0.1	-0.2	0.1	0.1	1.0	
SEE-D	-0.2	-0.2	0.1	0.1	-0.1	0.0	0.1	-0.3	0.2	0.1	0.9	1.0

APPENDIX 8: Description of variables used in the model and data sources, for chapter six

Variable name	Measurement unit	Source
$lnfdi_{ijt}$	Outward FDI stock from source country: FDI stock from source country to host country at current year, in millions of US dollar	OECD
$lngdp_{i,t}$	GDP in source country, millions of US dollar	UNCTAD
$lngdp_{j,t}$	GDP in host country, millions of US dollar	UNCTAD
$lndifgdpc_{ij,t}$	Difference in GDP per capita between source country and host country, in PPP (constant 2005 international$), in logarithm	World Bank
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
$lbex_{ijt-1}$	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)	World Bank
$Ltrans_{jt}$	Log of transition progress. The sum of the indexes of overall infrastructure reforms, banking reforms, trade and foreign exchange rate reforms and the index of the securities and non – bank financial institutions	EBRD
$Lcpi_{jt}$	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
$Lgov_{jt}$	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
Lps_{jt}	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
SEE-dummy	SEE-5 equal 1 for SEE-5 countries; 0 - otherwise, capturing the benchmark category of EU-NMS-10 countries	Own knowledge

APPENDIX 9: Descriptive statistics of the estimated coefficients for chapter six

Variable	Obs	Mean	Std.Dev.	Min	Max
Log of FDI	2306	5.09	2.58	-4.71	11.57
Log of FDI(transformed)	2306	5.14	2.46	0.00	11.57
Log of GDP in source country	5100	13.10	1.20	10.93	16.53
Log of GDP in host country	5100	10.10	1.21	7.57	13.18
Log of difference in GDP per capita	5100	9.91	0.78	3.23	11.42
Log of distance	5100	7.39	0.70	5.48	9.11
Language, border and cultural similarities	5100	0.02	0.14	0.00	1.00
WTO membership	5100	0.68	0.47	0.00	1.00
Bilateral FDI agreement	5100	0.80	0.40	0.00	1.00
Log of bilateral exports	4413	4.42	2.62	-12.43	12.26
Log of schooling	5080	3.66	0.45	2.33	4.50
Log of transition progress	4760	3.31	0.23	2.30	3.57
Log of Consumer Price Index	5100	1.33	0.30	0.69	1.90
Log of cotrol of corruption	5100	3.90	0.49	1.92	4.46
Log of regulatory quality	5100	4.12	0.37	2.87	4.52
Log of government effectiveness	5100	3.97	0.51	1.92	4.44
Log of political risk	5100	3.92	0.53	1.35	4.49
Log of voice and accountability	5100	4.12	0.33	2.49	4.49
Log of rule of law	5100	3.91	0.49	2.21	4.46
Log of Consumer Price Index*see dummy	5100	0.35	0.51	0.00	1.48
Log of transition progress*see dummy	4760	1.12	1.51	0.00	3.47
Log of cotrol of corruption*see dummy	5100	1.15	1.66	0.00	4.15
Log of regulatory quality*see dummy	5100	1.24	1.76	0.00	4.25
Log of government effectiveness*see dummy	5100	1.16	1.67	0.00	4.27
Log of political risk*see dummy	5100	1.11	1.60	0.00	4.22
Log of voice and accountability*see dummy	5100	1.26	1.79	0.00	4.23
Log of rule of law*see dummy	5100	1.24	1.76	0.00	4.25
SEE-dummy	5100	0.33	0.47	0.00	1

APPENDIX 10: Correlation matrix between variables employed in the model of chapter six

	LFDI	LGDP_S	LGDP_H	LDIFG~Ca	LDISTW	SMCTRY	WTO	BFDIA	LBEX_1	LSCH	LTP	LCPI	LCC_pr	LRQ_pr
LFDI	1.0													
LGDP_S	0.2	1.0												
LGDP_H	0.5	0.0	1.0											
LDIFGDPC	0.3	0.2	0.0	1.0										
LDISTW	-0.3	0.4	0.1	0.0	1.0									
SMCTRY	0.2	-0.2	0.0	0.0	-0.4	1.0								
WTO	0.2	0.0	0.3	-0.1	0.1	-0.1	1.0							
BFDIA	0.1	0.0	0.2	0.1	0.1	-0.1	0.2	1.0						
LBEX_1	0.7	0.3	0.6	0.0	-0.3	0.1	0.2	0.0	1.0					
LSCH	0.2	0.0	0.3	0.0	0.0	-0.1	0.4	0.2	0.3	1.0				
LTP	0.4	0.0	0.5	0.0	0.0	0.0	0.6	0.4	0.4	0.6	1.0			
LCPI	0.1	0.0	0.2	-0.1	-0.1	0.0	0.3	0.1	0.3	0.6	0.7	1.0		
LCC_pr	0.2	-0.1	0.3	-0.1	0.0	0.0	0.4	0.1	0.4	0.6	0.7	0.9	1.0	
LRQ_pr	0.2	0.0	0.2	-0.1	0.0	0.0	0.5	0.1	0.3	0.6	0.8	0.8	0.8	1.0
LGOV_pr	0.2	-0.1	0.2	-0.1	-0.1	0.1	0.4	0.1	0.3	0.5	0.8	0.8	0.8	0.8
LPS_pr	0.2	-0.1	0.3	-0.1	0.0	0.1	0.5	0.0	0.4	0.4	0.7	0.7	0.8	0.8
LVA_pr	0.2	-0.1	0.3	-0.1	0.0	0.0	0.4	0.1	0.4	0.5	0.7	0.8	0.9	0.9
LRL_pr	0.2	-0.1	0.3	-0.1	0.0	0.0	0.4	0.1	0.4	0.6	0.7	0.8	0.9	0.9
LCPIS	-0.2	0.1	-0.3	0.1	-0.1	0.1	-0.4	0.0	-0.3	-0.4	-0.5	-0.5	-0.5	-0.6
LTPS	-0.2	0.1	-0.3	0.1	-0.1	0.1	-0.5	-0.1	-0.4	-0.4	-0.5	-0.5	-0.6	-0.7
LCC_prs	-0.2	0.1	-0.3	0.1	-0.1	0.1	-0.5	0.0	-0.4	-0.4	-0.5	-0.5	-0.5	-0.7
LRQ_prs	-0.2	0.1	-0.3	0.1	-0.1	0.1	-0.4	-0.1	-0.4	-0.4	-0.5	-0.5	-0.6	-0.7
LGOV_prs	-0.2	0.1	-0.3	0.1	-0.1	0.1	-0.4	-0.1	-0.4	-0.4	-0.5	-0.5	-0.5	-0.7
LPS_prs	-0.2	0.1	-0.3	0.1	-0.1	0.1	-0.4	-0.1	-0.4	-0.4	-0.5	-0.5	-0.5	-0.7
LVA_prs	-0.2	0.1	-0.3	0.1	-0.1	0.1	-0.5	-0.1	-0.4	-0.4	-0.5	-0.5	-0.6	-0.7
LRL_prs	-0.2	0.1	-0.3	0.1	-0.1	0.1	-0.4	-0.1	-0.4	-0.4	-0.5	-0.5	-0.6	-0.7
SEEd	-0.2	0.1	-0.3	0.1	-0.1	0.1	-0.5	-0.1	-0.4	-0.4	-0.5	-0.5	-0.6	-0.7

	LGOV_pr	LPS_pr	LVA_pr	LRL_pr	LCPIS	LTPS	LCC_prs	LRQ_prs	LGOV_prs	LPS_prs	LVA_prs	LRL_prs	SD
LGOV_pr	1.0												
LPS_pr	0.8	1.0											
LVA_pr	0.8	0.8	1.0										
LRL_pr	0.8	0.8	0.9	1.0									
LCPIS	-0.4	-0.6	-0.7	-0.6	1.0								
LTPS	-0.5	-0.7	-0.7	-0.6	1.0	1.0							
LCC_prs	-0.5	-0.6	-0.7	-0.6	1.0	1.0	1.0						
LRQ_prs	-0.5	-0.7	-0.7	-0.6	1.0	1.0	1.0	1.0					
LGOV_p	-0.4	-0.6	-0.7	-0.6	1.0	1.0	1.0	1.0	1.0				
LPS_prs	-0.5	-0.6	-0.7	-0.6	1.0	1.0	1.0	1.0	1.0	1.0			
LVA_prs	-0.5	-0.7	-0.7	-0.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
LRL_prs	-0.5	-0.7	-0.7	-0.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
SEEd	-0.5	-0.7	-0.7	-0.7	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

APPENDIX 11: List of Abbreviations

BPLM	Breusch - Pagan Lagrangian Multiplier
CEECs	Central East European Countries
CEE-10	10 Central East European countries
EBRD	European Bank for Reconstruction and Development
EU-NMS	European Union new member states
EU-NMS-10 10	European Union new member states
EU	European Union
EU-14	14 member states of European Union
FDI	Foreign Direct Investment
FE	Fixed Effects
RE	Random Effects
GMM	General Method of Moments
IMF	International Monetary Fund
LSDV	Least Square Dummy Variable
MNC	Multinational Company
MNE	Multinational Enterprise
NBRM	National Bank of Republic of Macedonia
OECD	Organization for Economic Cooperation and Development
OECD-20	20 member countries of Organization for Economic Cooperation and Development
OLI	Ownership, Location and Internalization
OLS	Ordinary Least Square
RE	Random Effects
SEE	South East European Countries
SEE-5	5 South East European Countries
UNCTAD	United Nations Conference on Trade and Development
WTO	World Trade Organization

APPENDIX 12: DALJŠI POVZETEK

Neposredne tuje naložbe so bile ocenjene kot eden izmed glavnih dejavnikov, ki je povzročil relativno stopnjo rasti, ki so jo doživela gospodarstva Jugovzhodne Evrope.Trend naraščanja priliva NTI je omogočil globoko liberalizacijo in preobrazbo gospodarstev v regiji JV Evrope, s čimer se je povečala stopnja odprtosti in povezovanja gospodarstev JVE na svetovnih trgih. Poleg tega je članstvo držav JVE v Evropski uniji (EU) na novo spodbudilo NTI, kar pomeni da so se ponudile bolje ugodnosti za gospodarsko prihodnost teh držav, ko se soočajo z izzivi na enotnem evropskem trgu. Kljub ključni vlogi, ki jo je NTI imel v gospodarstvih Jugovzhodne Evrope, so empirični dokazi, precej skopi, splošno bolj opisni. Namen tega dela je zagotoviti nekaj več trdnih dokazov o testiranih dodelitvah hipotez povezanih s časom in lokacijami bruto celotnih prilivov NTI v gospodarstvih JV Evrope. Za ta namen, z uporabo letnih podatkov za obdobje 1994-2010 smo uporabili krovno analizo med državami. Različne metode ocenjevanja se uporabljajo odvisno od pojavov, ki segajo od standardnih statičnih tehnik, dinamičnih tehnik in nelinearnih tehnik ocenjevanja.

Prejšnje raziskave o determinantah NTI v državah JVE se nanašajo na velikost trga oz. dejavnike, ki so pomembni za neposredne tuje naložbe v gospodarstvih Jugovzhodne Evrope (glej Botrić in Skuflic, 2006) in gravitacijskih dejavnikov, ki pojasnjujejo vzorec NTI v državah JV Evrope (Mateev, 2008). Drugi dejavniki, za katere se je ugotovilo, da imajo pomembne učinke so geografska bližina, trgovinske ovire, davčne politike in davčne spodbude, stroški dela in regionalno povezovanje. Po Dimitri et al. (2005), gravitacijski faktorji pojasnjujejo velik del prilivov NTI v tranzicijskih gospodarstvih, vključno z državami Jugovzhodne Evrope, vendar okoljska politika je tudi zelo pomembna za tuje neposredne naložbe. Janicki in Wunnava (2004) sta ugotovila, da je, mednarodna trgovina morda najpomembnejši determinanta neposredne tuje naložbe v tej regiji. V tej disertaciji, ki se nanaša na naložbeno ozračje v regiji Jugovzhodne Evrope, bomo zajeli več političnih in institucionalnih spremenljivk, kot so tveganje, indeks korupcije in prehodne specifične spremenljivke, kot je članstvo v WTO v državi gostiteljici in dvostranski sporazumi o neposrednih tujih naložbah. Politični in institucionalni dejavniki so po mnenju Evropske komisije najpomembnejši oz škodljivi za vstop v EU. Zato glede na zahteve držav JVE, da postanejo del strukture EU, ugotovitve te disertacije zagotavljajo koristen analitični okvir za politike, da se odločijo, katere glavne makroekonomske, prehodne in institucionalne determinante NTI bodo uporabljene v razvojnih strategijah držav JVE.

Ta doktorska disertacija preučuje različne teme, povezane z determinantami NTI. Tri empirična poglavija, preučujeta determinante dvostranski FDI pretokov med državami, učinke NTI na trgovino - tako na izvozni kot na uvozni ravni - in izračun morebitnih zalog neposrednih tujih naložb v Makedoniji po gravitacijskem modelu. Na podlagi tega, primarno raziskovalno vprašanje je kateri dejavniki motirivajo, privabljajo in ohranjajo tuje investicije v državah Jugovzhodne Evrope? V zvezi s tem, raziskovalna vprašanja, ki se obravnavajo v disertaciji, so:

1. Ali je res, da zemljepis (geografija) pojasnjuje tokove NTI in amplitude v regiji Jugovzhodne Evrope, ali obstajajo drugi razlogi, ki se nanašajo na državo, sektor - in posebne politike posameznih držav?

2. Ali prilivi NTI pomembno in pozitivno vplivjo na trgovino, kar kaže, da je lahko izvozna platforma FDI pomembna za države JV Evrope?

3. Glede na geografski položaj in druge značilnosti posameznih držav, kakšen je obseg prilivov neposrednih tujih naložb v Makedoniji, če bi Makedonija normalizirala svojo gospodarsko politiko in bi bila ozko vključena v EU na enak način, kot so obstoječe članice EU med seboj?

Da bi odgovorili na ta raziskovalna vprašanja, bomo v študiji poskušali zagotoviti pregled neposrednih tujih investicij (NTI), kot Eklektične Paradigme, na podlagi, Teorijah o virih NTI, Teorijah o Raziskovanju Trga za NTI, Teorijah o ucinkovitosti NTI, ter Gravitacijskih modelih, zadnja pomaga pojasniti vzorce NTI v JVE gospodarstvu v Makedoniji. Makedonija je izbrana kot ciljna država s posebnim poudarkom, da bi videli, kako se model determinant NTI izkazuje v na-pol razviti tranzicijski državi. Poleg tega je makedonska vlada sprejela pomembne ukrepe v zvezi s promocijo države za tuje vlagatelje. Raziskave bodo prikazale podaljšan Gravitacijski model, da bi ocenili determinante priliva NTI v JVE gospodarstvih, ki se opira prav na institucionalne determinante Tujih Neposrednih Naložb.

Disertacija je razdeljena nasedem poglavij. Prvo poglavjepredstavljauvod, ciljeraziskave, in obsegdela. Drugo poglavje opisuje industrijske vzorce NTI. To poglavje analizira pomen NTI zatranzicijska gospodarstva Jugovzhodne evropske države. Študija preučuje trende prilivov tujih neposrednih naložb, ki temeljijo na geografski insektorski porazdelitviv SEECs in primerjavo tehzalogzzalogami Srednje vzhodnih evropskih držav (SVE) in drzav Evropske unije(EU). Poglavje preučuje tudipomenNTIv tranzicijskih gospodarstvih petih državah Jugovzhodne Evrope. V tem poglavjuso nekateri makroekonomski podatki oizbranem vzorcu (SEE-5), deset novih držav članic Evropske unije (v nadaljevanju NDC-EU-10) in 14 držav članic Evropske unije, vključno z trendi in značilnostmi NTI.

Dinamika NTI v tranzicijskih gospodarstvih JVE-5 in NDC-EU-10, potrujejo, da je JVE, v primerjavi z gospodarstvi držav Srednje in Vzhodne Evrope, zaostajala tudi zaradi balkanske krize, v regiji JVE, v preteklih desetletjih. Počasen napredak teh držav, pripišemo tudi nedosledni makroekonomski stabilizacijski politiki. V globalnem kontekstu, JVE-5 je imela relativno majhen del celotnega zneska svetovnih NTI, v zadnjem desetetju. Vendar pa se je stanje izboljšalo s časom, saj delež tujih neposrednih naložb v skupni višini na svetovni ravni neposrednih tujih naložb, stalno narašča v primerjavi z drugimi deli sveta, s čimer sekrepi ponovna uspešna vključitev

teh držav v svetovno gospodarstvo. Druga razlaga za to so lahko uspešna pogajanja med državami JVE in EU, kar bi sčasoma privedlo do njihovega članstva v EU, to pa pomeni, da je regija uspešno zaključila svojo prehodno obdobje, pustila za seboj nacionalne konflikte in uničujoče posledice prejšnjih vojn ter politične in etične konflikte. Države JVE so postale bolj atraktivne lokacije za tuje investitorje, še posebej po letu 2005, ko se je spremenilo dojemanje tujih investitorjev o gospodarskih razmerah v državah Jugovzhodne Evrope. To trend sprememb je mogoče pripisati izboljšanju makroekonomskih politik za stabilizacijo in skladnih pogojev za naložbe v regiji Jugovzhodne Evrope. Analiziranje stanja NTI v JV-5 državah potrjuje, da so glede naložb, Avstrija, Madžarska, Nizozemska, Italija in Slovenija ene glavnih evropskih vlagateljic, ki predstavljajo visok delež naložb investicijskih družb v JVE-5 državah. Razlogi, za visoke investicijske deleže teh evropskih držav v Jugovzhodni-5 državah se lahko pripiše na dejstvo, da se na trgu iščejo motivi in učinkovitost NTI, ki zagotavljajo nizke stroške delovne sile in dostop do domačih trgih držav JV Evrope.

Trejte poglavje so pregledi konvencionalne literature NTI. To poglavje obdeluje (anketira) literature, sledi empirične dokaze, ki označujejo glavne determinante Neposrednih Tujih Naložb v JVED. V tem poglavju je predstavljen Gravitacijski model trgovine in neposredne tuje naložbe, da bi razvili empirični model v naslednjem poglavju. To poglavje predstavlja pregled teorij Tujih Neposrednih Investicij (TNI), ki obravnavajo vprašanje: Kaj motivira multinacionalne družbe (MND), da poslujejo v gospodarstvih v tranziciji? Zato je namen tega poglavja opredeliti pomembne dejavnike, ki vplivajo na odločitve multinacionalnih družb, da vlagajo v tranzicijska gospodarstva. Poglavje vsebuje pregled ustrezne literature, ki se osredotoča na agregatno raven neposrednih tujih naložb v okviru treh glavnih teorij NTI: Koncept Eklektične Paradigme, Teorije virov in Teorijo Poslovnega Omrežja, teorijo Nove ekonomske geografije in teorijo investicijskega razvoja. Poglavje je sestavljeno iz štirih delov. Prvo poglavje ponuja pregled teorij NTI. Drugi del vsebuje pregled koncepta Eklektične Paradigme sledi-Teorija virov in Teorija poslovnega omrežja. Oddelek tri, empirično dokazuje jedro literature, povezane z neposrednimi tujimi dejavniki Naložbe v tranzicijskih gospodarstvih, ki temeljijo na teoretičnem okviru Eklektične Paradigme. Zadnji del se ukvarja z lokacijskimi prednostnimi determinantami NTI ter se osredotoča na tuje neposredne naložbe za izboljšanje okolja, povezane z makroekonomskimi dejavniki in dejavniki, povezani s stroškovnimi dejavniki NTI.

Poglavje štiri izvaja empirični pregled glavnih determinant za neposredne tuje naložbe v državah JV Evrope. Namen tega poglavja je, da na podlagi krovnih podatkov dvostranskih pretokov NTI prikaže prehod iz posameznih razvitih izvornih gospodarstvih v razvojne domače ekonomije med letoma 1994 in 2010, ter analizira empirične determinante vhodnih tujih neposrednih naložb v gospodarstva gostiteljic JVED-5[56] in NDC-EU-10[57], s poudarkom na velikosti trga, stroških transakcij in

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[56]*Albanija, Bosna in Hercegovina, Hrvaška, Makedonija in Srbija*

vladnih politik kot determinant NTI. Zato se bo empirična strategija poglavja osredotočila na lokacijske prednosti za NTI, označene z velikostjo izvornih tržnih dejavnikov držav gostiteljic in lastništvu in internalizacijo prednosti neposrednih tujih naložb, označenih z razdaljo, institucionalnimi dejavniki države gostiteljice, in tranzicijskim progresom (Dunning, 2002). Ti tokovi neposrednih tujih naložb v glavnem prihajajo iz celinske (kontinentalne) Evrope in zato so večja svetovna gospodarstva, kot sta ZDA in Japonska, premalo zastopane v tej študiji. Zato EU-14[58] držav, obravnavajo kot glavne države izhodnih NTI zaradi njihovega glavnega pomena v smislu neposrednih tujih naložb v JVE in NDC-EU regiji. Ocenjen empirični model predpostavlja, da so dvostranske NTI v JVE-5 in EU-NDČ-10državah v funkciji BDP vira EU-14 in gostitelj JVE-5 EU-NDČ-10držav, absolutna razlika BDP na prebivalca med virom in državo gostiteljico, razdaljo, jezikom, kulturo in čezmejne podobnosti, članstva v Svetovni trgovinski organizaciji gospodarstva gostiteljice, dvostranski sporazum NTI, odprtost trgovine, dvostranskih izvozih iz države gostiteljice, v države izvora, država, šolanja, prehodnega napredka, indeks zaznavanja korupcije in svetovnega upravljanja kazalnikov, kot so nadzor nad korupcijo, regulativna kakovost, učinkovitost oblasti, vladavina prava, politično tveganje in glasovanje in odgovornosti.

Za namene ocenjevanja smo uporabili različne metodologije ocenjevanja, da bi ocenili determinante dvostranskih pretokov NTI iz EU-14 v JVE-5 in EU-NDČ-10države. V zvezi s tem, v študiji obravnavamo statične krovne modele robustnih fiksnih učinkov in najmanjše kvadrate Dummy Variabil (LSDV), ki se časovno spreminjajo med gostiteljico in izvirno državo ter državo partnerico FE. Prednost ocen LSDV je, da smo z dodajanjem kvadratov za vsako državo ocenili čisti učinek posamezne pojasnjevalne spremenljivke, ki predstavlja tudi neupoštevano heterogenost (Greene, 2013). Ta metodologija opredeljuje tudi individualno - glede na državo in časovne učinke. Za namene ocenjevanja moramo upoštevati tudi ocene Random Effect Tobit in Poisson - Pseudo ocenjevanja (PPML), upoštevajoč problem nič in negativnih observacij v dvostranski NTI podatkovni bazi. Dinamični krovni model iz sistema Splošnih Metodov Momentov (GMM), so uporabljeni še dodatno, da bi se ukvarjali s problemom endogenosti, ki prihaja iz odvisnih spremenljivk in drugih endogenih regresorjev. To poglavje identificira pomembne determinante FDI pretokov v tranziciji SEE-5 in v 10 novih članicah državah Evropske unije, in poudarja posledicerazličnih institucionalnih dejavnikov za tokove neposrednih tujih naložb.

Z uporabo dokazljivega gravitacijskega modela, smo se osredotočili na raziskave predvsem na pomen institucionalnih in povezanih prehodnih dejavnikov, kot odločilnih dejavnikov, ki v veliki meri pojasnjujejo obseg neposrednih tujih naložb v tranziciji. Toliko več, vsi ti dejavniki igrajo pomembno vlogo pri omejitvah podjetij za vstop na

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[57]*Bolgarija, Romunija, Slovenija,Slovaška ,Češkaa,Mađarska,Poljska, Latvija, Litvanija in Estonija*
[58]*Avstrija, Begija, Danska, Finska, Francija,Nemčija,Grčija,**Ir**ska,Italija,Nizozemska,Portugalija,
Španija, Švedska in Združeno Kraljevstvo*

tuje trge. Poleg tega so SEE-5 in EU-NMS-10 drzav gostiteljice povezani institucionalni dejavniki bistveno odločujoci pri dvostranskem pretoku NTI iz EU-14 držav. Izhajajoč iz ekonomske teorije in empirične preiskave, smo določili statične, ne-linearne in dinamične modele. Od vseh ocen, smo ugotovili, da so gravitacijski dejavniki, kot je velikost trga v državi gostiteljici in državi vira, pomemben dejavnik za tuje vlagatelje. Negativni in pomemben koeficient oddaljenosti kaže, da FDI omejijo gravitacijski dejavnikov, kot je bilo pričakovano. Na podlagi krovne analize podatkov smo ugotovili, da na tokove neposrednih tujih naložb vplivajo gravitacijski dejavniki (na daljavo BDP) in ne-gravitacijski dejavniki (dvostranski izvoz, šolanje, STO, tranzicijski progress in upravljanje in vladavina prava, kakovost predpisov in politično tveganje). Pozitivni in pomembni koeficienti dejavnikov velikosti trga (BDP) kažejo da je FDI, odvisen od trga gostiteljice in izvirne države. Tudi pozitivni in pomembni koeficienti šolanja so znak, da tudi tuji vlagatelji upoštevajo učinkovitost − o.z. iščejo dejavnike za pozitivne odločitve NTI. Po drugi strani, pozitiven in pomemben koeficient dvostranskega izvoza podpira razmerje komplementarnosti med TNI in izvozom v državah gostiteljicah NTI.

LSDV ocene kažejo, da je dvostranski pretok FDI med JVE-5 in EU-NDČ-10 določen s članstvom države gostiteljice STO tranzicijskim napredkom in kakovostjo predpisov. Ti rezultati potrjujejo pomen institucij za pretok NTI v JVE-5 in EU-NDČ-10 države. Poleg tega ugotovitve iz ocen LSDV kažejo, da je dvostranski FDI med JVE-5 in EU-NDČ-10 različen glede na razvoj v indeksu regulativne kakovosti. Negativen in pomemben koeficient interakcij pomeni da velikost regulacijskih politik v zasebnem sektorju, s SEE lutko,je za JVE-5 kritičen dejanik akumulacije tujega kapitala v obliki neposrednih tujih naložb.

Robustna ocene FE ugotavlja, da je dvostranski pretok NTI v JVE-5 in EU-NDČ-10državah različen glede na pravila in predpise, oziroma obstaja pozitivno ocenjena elastičnost pravil in predpisov v EU-NDČ-10državah in negativno ocenjene elastičnosti pravil in predpisov v JVE-5 državah. V zvezi z JVE-5 državami je to ugotovitev mogoče pripisati dejstvu, da so slabe naložbe tujih držav v SEE-5, ker le-te niso prepričanekatere ve politiko glede in izvrševanja pogodbe, lastninskih pravic in sodnega sistema in zato se odločijojo negativno v zvezi z Odločitvami o naložbenih lokacijah v JVE-5 držav.

Po ocenah iz pregleda robustnost, ki uporabljajo rezultate RET, ki temelji na transformiranih odvisnih spremenljivkah, potrjujejo pomen institucionalno povezanih dejavnikov za velikost dvostranskega toka NTI. Te ocene kažejo, da je   velikost vhodnih tokov NTI med See-in EU-NDČ-10državav različna glede na indeks političnega tveganja.Veliki koeficienti indeksa političnega tveganja za JVE-5 državav potrjujejo, da so tuji investitorji občutljivi na politično destabilizacijo vlad gostiteljic državav JVE-5 državav.

To poglavje prispeva k literaturi z uvedbo institucionalne determinante TNI v tranzicijskih državah, pri uporabi standardne metodologije gravitacijskega modela OECD v JVE-5 in NDČ-10 državah V tej študiji smo utrdili model gravitacije na račun držav gostiteljic in institucionalnih povezanih dejavnikov, ki se nanašajo na naložbeno ozračje v JVE-5 in EU-NDČ-10državah.

Glavni cilj petega poglavja je, da zagotvaljanjeempiričnih dokazov o razmerju med neposrednimi tujimi naložbami in trgovino (izvozom in uvozom), v Evropski regiji, ki temelji na značilnostih držav. Nabor podatkov vsebuje informacije o značilnostih držav, ki temeljijo na agregatnihpodatkih (Bruto domači proizvod, bruto domači proizvod na prebivalca, delovne dotacije o usposabljanju, kapitalske dotacije in trgovinski stroški) in podrobnih podatkih o izvozu v državah, uvozu in tujih zalogah neposrednih naložb med različnimi državamiin v zvezi s tem, bomo glede na značilnosti držav in naravo podatkov,vštudijiposkusili odgovoriti na osnovno raziskovalno vprašanje: Ali imajo prilivi NTI pomemben in pozitiven vpliv na trgovino, kar pomeni, da je lahko FDI izvozna platforma pomembna za JVE-5 in EU-NDČ-10države in generira hipotezo: Ali lahko pričakujemo da neposredne tuje naložbe iz OECD-20 do JVE-5 in EU-NDČ-10, vplivajo na povečanje izvoza in uvoza iz JVE-5 in EU-NDČ-10do OECD-20.

Poudarek tega poglavja je empirično raziskati odnos med dvostranskimi zalogami tujih neposrednih naložb med državami in trgovinami (tako na izvozni in uvozni ravni), ki uporabljajo dvostranske krovne podatke za OECD države (Avstrija,Belgija, Danska, Francija, Finska, Nemčija, Grčija, Iska, Italija,Nizozemska, Portugalija, Španija, Švedska Združeno Kraljevstvo,ZDA,Kanada, Izrael, Noveška,Turčija in Švicarska), JVE-5(Albania, Bosnia and Herzegovina,Croatia,Macedonia in Serbia) in NDC-EU-10(Bolgarija,Romunija,Slovenija,Slovaška,Republika,ČeškaRepublika,Mađarska,Poljska,Latvija, Litvanija in Estonija) za obdobje od leta 1994 do leta 2010. Uporabili bomo NTI in trgovinske pretoke v obeh smereh, od OECD-20 do JVE-5 in EU-NDČ-10 kot tudi iz JVE-5 in EU-NDČ-10do OECD-20 državah.

Za namene ocenjevanja smo uporabili obstoječi gravitacijski model trgovine. Odvisna spremenljivka v modelu je dvostranski izvoz (uvoz) blaga iz izvozno (uvoznih) državah j (JVE-5 in EU-NDČ-10), v uvozno (izvozne) države in (OECD-20) v letu t, izračunanih v milijonih ameriških dolarjev.Ocenjeni empirični model predpostavlja, da je dvostranska trgovina (izvoz in uvoz) med državami funkcija absolutne razlike med BDP in BDP na prebivalca med partnerskimi državami, ki predstavljajo razliko v gospodarski masi in ravnijo dohodka trgovinskihpartnerjev, spremenljivk standardnegravitacijske razdalje med državami, skupne jezikovne in kulturne podobnosti med državami, stopnjo odprtosti JVE-5 in EU-NDČ-10, absolutne razlike v relativni spretnosti ustanovitvenega kapitala med državami in absolutne razliek v relativnih kapitalskih dotacij med državami. Absolutne razlike vspremenljivkah BDP,

BDP na prebivalca, spretna opremljenost in kapitalska opremljenost se uporabljajo v modelu, z namenom da predstavijo značilnosti držav trgovinskih partnericah.

Imamo tudi JVE lutke, z določanje razlik med JVE in EU-NDČ-10, državami, da bi razlikovali splošnetrgovinske pretoke (izvoz ali uvoz) med JVE-5 in EU-NMS-10 državami. Interakcija med NTI in JVE lutko, fdiijt*see, je vključen v model za oceno, neposrednih tujih naložb v JVE-5 oziroma dopolnitev ali nadomestilo za trgovino (izvoz ali uvoz).

Ponovno so standardni krovni modeli iz FE, RE in metodologije ocenjevanja FE-LSDV uporabljeni v tem poglavju, tako na izhodiščni kot tudi na visoki ravni. Poleg tega se v študiji štejejo nelinearne tehnike ocenjevanja, kot PPMLE in RET, da bi se spravili s problem om brez opazovanj odvisnih spremenljivk. Tudi zaradi prisotnosti endogenosti, ki izhaja iz odvisne spremenljivke (dvostranskega izvoza in dvostranskega uvoza) in drugih endogenih regresorjev (vhodni NTI, odprtost), uporabljamo Arrellano-Bover/Blundell-Bond (1995) GMM tehnike za ocenjevanje. Toliko več Roodmanove ocene so (2008), grobe ocene dvostopenjskega GSM, ki zagotavlja standardne napake, ki so robustne, do heteroscedastičnosti in serijske korelacije (Roodman, 2006).

V vseh ustreznih ocenah, ki temeljijo na razmerju med zalogami vhodnih neposrednih tujih naložb in izvozom, ugotovitve študije so pokazale, mešane dokaze, s čimer podpirajo tako Helpman (1984) teoretično napoved o pozitivenem sorazmerju med TNI in izvozom za EU-NDČ-10države in Markunsen (1984) teoretično napoved o negativniem sorazmerju med TNI in izvozom za države JVE-5.

Potrjen pozitiven odnos med TNI in trgovino (izvozom in uvozom) za EU-NMS-10 podpira presojo, da FDI so -10 EU-NMS da se verjetno dopolnjujejo medsebojno. Zato, vertikalni FDI povezan z visoko dodano vrednostjo, imajo lahko večji vpliv na izvoz namesto uvoz. Po drugi strani, vertikalni NTI povezan z nizko dodano vrednostjo se lahko uporabi kot razitev uboya vmesnih proizvodov.

Glede na negativni odnos med TNI in izvozom v SEE-5 države, študija podpira presojo, da bo potrebno da se FDI in izvoz v JVE-5 države nadomeščajo medsebojno. Glede na pozitiven odnos med TNI in uvozom v SEE-5 države, študija podpira presojo, da se neposredne tuje naložbe in uvoz v SEE-5 države morajo najverjetneje nadopolnjevati medsebojno. Potrjena povezava v zvezi z izvozom, uvozom in FDI, zagotavljajo empirične dokaze o mešane naravi NTI v SEE-5 državah.

Glede na značilnosti posameznih držav, študija ugotavlja, da je trgovina (tako izvoz in uvoz) pozitivno določena z razlikami v BDP med državami in negativno z razlikami v BDP na prebivalca med državami.

Povzetek ugotovitve glede sorazmerja med trgovino (izvozom in uvozom) in značilnosti držav, raziskava kaže, da se je trgovina (tako izvoz in uvoz) v JVE-5 in EU-NDČ-10povečala zaradi povečanega izvoza držav izvoznic in povezanega uvoznega povpraševanja držav. Po drugi strani, negativni koeficient BDP na prebivalca med državami je odraz, da se države bistveno razlikujejo glede na okuse, želje in ravni dohodka. Te ugotovitve v zvezi z razmerjem med trgovino (izvozom in uvozom), NTI in držav značilnosti so podprte v vseh tehnikah ocenjevanja, (LSDV, Heckman izbrani model in "sistem GSM,").

Trgovinski stroški nadomeščeni z spremenljivko daljave je ugotovljeno, je pomembno negativna kot je bilo pričakovano in potrjena v trgovinskih študijah z uporabo gravitacijskega modela. Dejavnik kapitala je negativen in pomemben v enačbi izvoza in uvoza, medtem ko se je dejavnik dela izkazal za pomemben in pozitiven v sistemau GSM v enačbi uvoza.

V poglavju šest ocenimo determinante dvostranskih zalog tujih neposrednih naložb, med OECD-20 državah in JVE-5 in EU-NDČ-10 državah. V tem poglavju je Makedonija izbrana kot ciljna država, da bi videli, kako se model determinant NTI izkaže vmajhni in odprtitranzicijskidržavi. Tudi, če upoštevamo pomen tujega kapitala za pospešitev procesa tranzicije v Makedoniji, v tempoglavju, z uporabo grativacijskega modela, ocenjujemo potenciale NTI v Makedoniji, ki zajema obdobje od 2007-2015. Poleg tega, da bi napovedali stopnjo potencialnih NTI v Makedonijiiz posameznega vira OECD-20 držav, smo upoštevali izvedljive koeficiente LSDV. Potenciali NTI so izračunani za obdobje 2007-2015. Primerjave izvedene na podlagi gravitacijskega modela, kažejo da imajo NTI več možnosti, v obdobju od leta 2007 do leta 2015, za nekatere od OECD-20 držav, kot so Avstrija, Grčija, Nizozemska, Velika Britanija in Svica. Po drugi strani pa je raven izvora neposrednih tujih naložb za Makedonijo, za večino držav kot so Belgija, Kanada, Danska, Finska, Francija, Irska, Izrael, Nizozemska, Norveška, Portugalska, Španija, Švedska, ZDA in Velika Britanija, bistveno višja od ustreznih dejanskih ravneh.

Na podlagi krovne analize smo ugotovili, da na zaloge NTI v JVE-5 in EU-NDČ-10 močno vplivajo oba gravitacijska dejavnika (na daljavo, BDP v državi gostiteljici, BDP v izvorni državi, kulturne, jezikovne in mejne podobnosti) in non-gravitacijski dejavniki (dvostranski izvoz, šolanje, CPI indeks, nadzor korupcije, regulativna kakovost, članstvo STO in dvostranski sporazum FDI). Pozitivni in pomembni koeficienti velikosti dejavnikov trga (BDP) za oba vira tako za izvirno državo in državo gostiteljico kaže, da je FDI določen opazovanjem trgov gostiteljice in izvirna država. Tudi pozitiven in pomemben koeficient šolanja je znak, da tuji vlagatelji upoštevajo učinkovitost – pri sprejemanju pozitivnih odločitev za NTI.

Ti rezultati študije potrjujejo pomen institucij za staleže NTI v JV-5 in EU-NDČ-10. Po ocenah LSDV je dvostranska izmenjava NTI med JVE-5 in EU-NDČ-10variabilna

glede na razvoj v tranzicijskem obdobju, indeks CPI in nadzor korupcije. Ocene blagajniške robustnosti, s pomočjo rezultatov ret, ki temelji na transformirani odvisne spremenljivke, potrjujejo pomen institucionalno povezanih dejavnikov za velikost dvostranskega toka NTI. Te ocene kažejo, da je dvostranski NTI v JV-5 in EU-NDČ-10 določen tudi s članstvom države gostiteljice STO in dvostranskega sporazuma NTI. Tudi ugotovitve RET ocenami potrjujejo, da velikost vhodnih tokov NTI med JVE-5 in EU-NDČ-10razlikujejo glede na indeks regulativne kakovosti, oz., zaznav JVE-5 in EU-NDČ-10 vlad, naj spodbujajo razvoj zasebnega sektorja.

Izsledki študije lahko zagotovijoanalitičnopodlago za oceno politike in institucij držav, katere cilj je, da bi Makedonija, JVE-5 države in 10 novih evropskih držav članic postale bolj privlačne za tuje vlagatelje. Ugotovitve kažejo tudi, da morajo oblikovalci politike države gostiteljice močno poudariti izboljšanje učinkovitosti državnih institucij, nadzor korupcije in birokracije in izboljšanje splošnihgospodarskih razmer.

Ta raziskava prispeva k literaturi na več načinov. Prvič, združuje nekaj metodologij, ki so bile uporabljene za ocenjevanje NTI determinant. Tradicionalno smo Gravitacijski model ocenili z uporabo OLS tehnik, ob predpostavki, da je spremenljivka napake konstantna čez opazovanja (Homoscedastičnost) ali uporaba korvne tehnike, ob predpostavki, da je napaka stalna v državah ali državah- parih. Ta študija med standardnimi tehnikami ocenjevanja uporablja tudi različne metode ocenjevanja, kot so ocene Random Effect Tobit in (PPML) ocenjevalne tehnike, da se ukvarjajo s problemom velikega števila nepazovanj priodvisnih spremenljiv kah. Do te točke, bomo razpravljali o fit različnih postopkih CCD dvostranskega NTI za 29 držav evropske regije. Glede na prispevke empiričnih dokazov, je študija gravitacijskega modela najboljzastopljena pri raziskavah prehoda države gostiteljice in institucionalno povezanih dejavnikov, ki se preučujejo, naložbeno ozračje v JVE-5 in EU-NDČ-10 državah. Za ta namen je bilo več političnih in institucionalno povezanih spremenljivk, vključenih v model, kot je članstvo v STO, dvostranski sporazum NTI, indeks zaznave korupcije, kazalci svetovnega upravljanja z glasom (glasovanjem) in odgovornostmi, pravne države, kakovost predpisov vlade, vladne učinkovitosti, obvladovanje korupcije in institucionalni prehodni napredek. Ti dejavniki so bili upoštevani tudi s strani Evropske komisije kot najbolj škodljivi za vstop v EU.

Študija dodatno zagotavlja empirične dokaze glede narave NTI v JVE-5 državah, ali so tuje naložbe v teh državah navpično ali vodoravno usmerjene. V zvezi s tem meni, da študija upošteva tudi politične ukrepe za pojasnjevanje trgovinske uspešnosti v JVE-5 državah, kot so: človeške in kapitalske dotacije.Pozitiven učinek NTI na uspešnost blagovne trgovine JVE-5 in EU-NDČ-10držav, lahko zagotovi predloge za oblikovalce politik v JVE-5 in EU-NDČ-10, da posamezne države, lahko uporabijo posebne politike držav za privabljanje več neposrednih tujih naložb v te države, da bi bolje izboljšali učinkovitost blagovne trgovine v posameznih državah. Politične aplikacije

izidov v tej raziskavi kažejo, da internacionalizacija tujih podjetij v državah CCD, preko NTI, ne izboljša uspešnosti zunanjih ekonomskih pogojev, v zvezi z izvozom in uvozom v JVE in nove države članice EU.

Omejitve raziskav v tej doktorski disertaciji se nanaša na nabor podatkov, tehnik ocenjevanja in spremenljivk, ki se uporabljajo.Velikost vzorca ki je uporabljen v tej študiji, je omejen na število 24 vlagateljev, na informacije, ki so pridobljeni iz OECD. Čeprav niz podatkov vključuje več kot 70% celotnih prilivov NTI v JVE-5 izvira iz 14.parnerskih držav Evropske unije, kot so EU-NMS- 10 države (Bolgarija, Slovenija, Slovaška, Češka republika, Poljska, Madžarska, Estonija, Latvija, Litvanija), za JVE-5 države, so izključene iz vzorca držav izvora neposrednih tujih naložb, in te države, se štejejo kot države gostiteljice tujih neposrednih naložb za EU-14 držav. To se naredi, za namen oblikovanja vzorca.Različna izbira študija, kjer bi se EU-NMS-10 držav, prav tako štele kot virne države NTI, za JVE-5, med drugimi EU-14 državami, bi izboljšala rezultate raziskav študije, kot je skrb za determinante NTI v JVE-5 državah. Poleg tega so med državami EU-14 držav, samo del evropske monetarne unije (EMU), kot so: Avstrija, Belgija, Finska, Francija, Nemčija, Grčija, Irska, Italija, Nizozemska, Portugalska in Španija, medtem druge države kot so: Danska, Švedska, Združeno kraljestvo uporabljajo svojo nacionalno valuto. To lahko vodi do pristranskih ocen vpliva regionalnega povezovanja na pritok neposrednih tujih naložb.

Model empirične raziskave, povezanih determinant NTI, ne upoštevajo državnih izdatkov in naložbenih tveganj. To je zato, ker je ta študija osredotočena na gospodarske odnose med Makedonijo, JVE-5 in EU-NMS-10 z EU-14 državami vlagateljicami. V zvezi s tem, model študije, ki pojasnjuje determinante NTI, je na splošno primerljiv s gravitacijskimi modeli, ki se uporabljajo v drugih študijah. Podatki o pojasnjevalnih spremenljivk so bili zbrani iz različnih virov, ki vsebujejo vrsto definicij in omejitev v skladu z različnimi dejstvi in merilnimi podatki. Zato je treba ugotovitve iz teze, razlagati previdno, saj so v tezi uporabljeni podatki iz različnih baz podatkov, kot so OECD, Svetovna banka, UNCTAD, WGI, EBRD in Transparency International. Podatki so izbrani od leta 1994, kot začetek in se nabor končuje z letom (2010). Sedemnajst let bi zagotovilo natančnejšo sliko z več informacijami o NTI. Če bi modele začeli bolj zgodaj oziroma vzeli zgodnjejše bazno leto, bi se natančnost izboljšala. Vendar pa je cilj te študije zagotoviti navedbo o determinantah NTI, zato ta vprašanja niso nujno kritična.