Dissertation Title

The Determinants of Foreign Direct Investment in South East European Countries, with Special Reference to Macedonia. A Gravity Model Analysis.

Preliminary Research Proposal
For the PhD Dissertation in Economics
[Economics Track]

University of Ljubljana
Faculty of Economics
Ljubljana, Slovenia

Written and Presented By

Bardhyl Dauti

Assigned Tutor
Joze. P.Damjan
ABSTRACT

Ongoing rise of Foreign Direct Investment has been an important element of globalization processes and they have gained significant importance over past decades for accelerating growth and development of economies in transition. Taking into account the importance of FDI in the future economic development of transition economies, the main objective of this study is to examine the determinants of FDI inflow in South East European Economies with a special reference to Macedonia. In the sample are included South East European Countries: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Moldova, Romania, Serbia, Montenegro and Kosovo. The study is organized as follow. In chapter one a short introduction and main objectives of the study are given. Chapter two proceeds with the definition of FDI and the importance of FDI in transition economies. In the second part of this chapter a general discussion on the importance of the FDI to transition economies of South East European Countries is presented, with special reference to Macedonia. In this section some macroeconomic data for these countries are also presented including the overview of trends and characteristics of FDI, based on geographical and sector distribution. In chapter three we give a literature review with theoretical framework identifying the main determinants of FDI and would also review some of the empirical work on the main determinants of FDI. In this regard, within this chapter, we will build up the necessary theoretical model, that will be used for estimation of Foreign Direct Investment in South East European Countries. Chapter four will deal with the econometric methodology that will be used for estimation of FDI determinants. For this purpose, we will employ panel data estimation. The variables that will be analyzed in the study are: Market seeking variables (GDP, GDP growth, Population), resource seeking variables, such as labor cost, proxy by average monthly wages or unit labor cost and efficiency seeking variables, such as openness level of economy, inflation, external debt. Also other variables that explain FDI entry into domestic economy, such as real sector variables: Privatization, financial sector development and private sector share, will be used in the model. Other variables, reflecting internalization factors, location factors, cultural factors, political, legal factors, institutional factors and macroeconomic factors will be analyzed additionally, as crucial determinants of firms foreign market entry decisions. These variables are inflation rate, exchange rate, good management of the government budget. The variables will be used with caution, having regard the problem of multicolinearity. In order to capture the FDI determinants in the best way, for the case of Macedonia, we will use gravity approach. The study will use panel data, from the period 1994 – 2010, in order 1) to account for the importance of different determinants of FDI in European Union Countries and 2) to account for differences between Macedonia and other EU countries. For this purpose we will use panel econometric model, accounting for fixed effect and random effect estimation of gravity model. Dynamic panel model will also be employed, in order to account for the agglomeration effect of FDI. Final section/ chapter will deal with main conclusions and policy implications.
INTRODUCTION

South East European Countries (SEEC) are transforming their economies from socialist into market economies. Due to this change, the policies of these countries have been oriented on attracting more investments from other Developed Countries, especially European Union Countries (EUC). Therefore, governments of respective countries, have tried to apply liberalization policies. These policies were in line with the requirements of stability and growth pact, like clarifying the framework for access to real estate by foreign investors, facilitating the access to land and release of state owned land for investment projects, strengthening institutions in the field of investment promotion programmes, establishment of single institution for providing all the necessary services for efficient registration of foreign companies and improving risk environment for foreign investors. In line with this a large number of countries went through the transition processes paying subsidies to attract FDI. One justification of this is that social returns of FDI exceeds private returns, because of productivity spillovers from FDI to domestic firms. (Haskel. J, Pereira. S, Slaughter.M, 2002), which appeared as positive externalities in the form of raising a country’s technological level, creating new employment and promoting economic growth (Blomstrom M, Kokko A, 2003).

Due to the significance of positive externalities that host countries experiences from inward FDI, the determinants of Foreign Direct Investment have been extensively studied. Host countries benefited from knowledge and technology transfer to domestic firms and to the labour force. Also, they benefited from enhanced competition and improved access for exports abroad, notably in the source country, therefore FDI is considered as important catalyst for the economic transformation of the transition economies. (Blomstrom M, Kokko A, 2003). In this regard, the increased competition in host country local market, will result in the correction of domestic market failures to reflect the spillover benefits. The entry of new foreign firms into the host country market, raises the demand for domestically produced products in the host country, which leads to entry of other new firms and product varieties in the imperfectly competitive sector, and the reduction in the cost of production. This increase in competitiveness attracts further foreign investors, into the country, raising national income and welfare. This motivates the host country to subsidize FDI, in competition with other host countries that see the same potential gains. (Blomstrom M, Kokko; 2003).

Literature Review

The theories of FDI are discussed in terms of concepts related to international economics, international finance and international business. (Zorska, 2005). Foreign Direct Investment theories are mainly based on theoretical hypothesis of imperfect competition and increasing returns to scale. (Xinzhong, 2004). In accordance with different theoretical framework of FDI inflow with respect to determinants associated with investment environment, macroeconomic and investment costs, the theories having significant influences on later studies of FDI flows could mainly be summarized such as FDI theory based on Industrial Organization developed by S. H. Hymer (doctoral thesis in 1960), international product life cycle theory of FDI introduced by Raymond Vernon (1996), substitute theory of FDI for trade by Robert. Mundell (1968), complement theory of FDI by trade by Kojima (1973 – 1985) and OLI theory (Ownership, Location and Internalization advantage) suggested by Dunning. (Xinzhong, 2004). These theories try to explain the determinants of FDI inflow under different assumptions and frameworks.
The earliest FDI theory originated from the industrial organization produced by S. H. Hymer (1968). He argued that FDI flows are not distributed randomly among industries, but rather by competitive conditions (Xinzhong, 2004). According to industrial organization theory, the enterprise determinant for involvement in industries located in other countries is firms ability to generate or acquire income generating assets not available to indigenous firms, sufficient to overcome the advantages which the later firms have in that country, therefore, the net advantage of the foreign firm depends upon the nature of the product supplied in the industry. (Dunning, McQueen 1981).

International product life cycle theory of FDI flows introduced by Raymond Vernon, which represent the first dynamic interpretation of the determinants of FDI flows and trade pattern, explains FDI flows based on the hypothesis of comparative advantage of factor endowments, that is the theory which stressed the information, uncertainty and scale economies (Xinzhong, 2004). Factor endowment theory suggests that differences in endowments and initial conditions among countries explain the geographical pattern of inward FDI (Kinoshita, Campos, 2004), thus, the phenomena of developed countries investing in developing countries might take place. 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 substitute theory of FDI for trade by Robert Mundell (1968), states that international trade is driven by differences in factor endowments and factor price of homogenous products (Xinzhong, 2004). Mundell argued that when high trade impediments deter commodity movements, the relationship between commodity and factor movements are substituted. (Mundell,1968). This relationship implies that the increasing of FDI will decrease the exports from home country to a host country, thus Mundell concludes that capital movements driven by the FDI are perfect substitute for exports. By relaxing the assumption of internationally immobility of productive factors, Mundel develops a standard two good, two factor, two country model. (Mundel, 1957). 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.(Mundel, 1957). Trade barriers largely explain international capital movements in this kind of framework.

K. Kojima introduced the complements theory in late 1970s as a major change to the substitute model (Xinzhog, 2005). Kojima views FDI as extension of the neoclassical theory of trade to embrace cross border of intermediate products. (Dunning, 1988). Kojima’s macroeconomic approach predict that export oriented FDI occurs when the source country invest 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’. Thus complements effect are helpful to increase the international trade between home country and host country. (Xinzhog, 2005).

John Dunning (1981) proposed a more comprehensive theoretical framework of FDI flows. From the rich set of literature that provides the theoretical framework of FDI within the international business concept we have chosen an eclectic approach; the ownership, location and internalization (OLI) Paradigm. It is John Dunning who founded the eclectic theory of FDI, via the so called O-L-I paradigm (ownership-location-internalization), a theory that even today hasn’t lost its actuality and relevance. (Oxelheim et al, 2001). It represents a combination of the three partial theories of FDI, which focused on the ownership advantages, the location advantages and the internalization advantages. At the same time this paradigm offers an answer
to the three crucial questions related to FDI: which firm will invest abroad; where will the investment take place; and why would the firm serve the foreign market via direct investments and not via export?

The ownership advantages or the firm specific advantages take their place among the key determinants of the FDI. In order to overcome the information advantage that domestic enterprises may have over foreign firms, a foreign firm that enters the economy must have some offsetting firm specific advantage (Johnson, 2006). Examples of these advantages include scale economies, brand name, managerial skill or superior technology (Johnson, 2006). Thus, the multinational company decides to take advantage of its own advantages, which derive from the economy of the scope, the managerial and the marketing experience, the advanced technologies as a result of the abundant investments in research and development, the variety (the specifics) of its products and the like.

The location advantages, represent the motives of the firm to make use of the advantages that a certain country offers, such as lower costs for the work force, natural resources and the like. These advantages determine how attractive different locations are for productions (Johnson, A. 2006). They also serve for utilizing the advantage in a foreign market or a host country, and using its location advantage (sales markets, production factors and capabilities, industry clusters, infrastructure, government policies) to serve the firms interest. (Oxelheim et al, 2001). Considering the extent to which the level of the firms organizational and managerial constraints can be handled when deciding upon location specific advantages, and the degree of respective challenges the firm faces with, a firm involvement strategy is build on mutually exclusive or inclusive location basis. (Dunning and McQueen, 1981). Given ownership specific advantages, Dunning has identified several main determinants of location specific advantages for foreign and indigenous firms. They include factors determining the size and rate of growth of consumers, general infrastructure, availability and quality of inputs, policy of governments toward general foreign direct investment, general political, social and economic stability of the country and attitude of local population to foreign firms. Location, also is concerned with both supply and demand oriented variables influencing the spatial distribution of production processes, research and development, and administration of firms (Dunning, 1976). Assuming a certain size and distribution of markets, and each firm is a profit maximizing operating in a price taking situation. Hence, production will be located where costs are lowest (Dunning, 1981). In turn this will depend on the availability and cost of factor inputs, the efficiency at which these are transformed into outputs, and the costs of movement from the point of production to that of marketing. (Dunning, 1976).

The internalization advantages, represent. the motives of the firms to expand their business in order to accomplish lower transactional costs. (Johnson, 2006). If the main MNC doesn’t own the foreign branch offices in their entirety, it will encounter huge (transactional) expenses for monitoring the foreign partner or the foreign markets. Internalization advantage determines how the MNE chooses to use its ownership a dvantage (Johnson, 2006). These advantages, can be achieved through protecting technology know – how, quality, brands and to leverage information and learning within the firms cross – border network of subsidiaries and the joint ventures (Oxelheim et al, 2001). In terms of internalization theories (Dunning 1981, Backley and Cason 1975) explain the FDI as a result of the greater efficiency, which is achieved if the coordination of the international production remains in the hands of the firm-investor. The advantages of the internalization come to the fore in circumstances when the commercial barriers or the transport costs are high, the risk from inappropriate employment of the specific knowledge
in the firm is high, when important information asymmetries between the potential buyers and the sellers exist, and the like. The theories of the internalization are especially relevant for the 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 condition 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).

The empirical literature has identified different factors likely to influence the strategy of MNEs toward foreign operations. These factors include the structure investment portfolios and risk exposures, competitive strengths and weaknesses of MNEs, their bargaining power with governments, their product portfolios, their liquidity position and so on. (Dunning, 1986). However the role of entrepreneur within the theory of the firm gives satisfactory explanation of the dynamics of ownership advantage (Dunning, 1986). Also a firm financial strength affect its ability to engage in foreign direct investment. In addition, (Oxelheim, et al, 2001), found that firm size has been assumed to be a good proxy for financial strength in earlier FDI research. Their findings confirm and enhance the eclectic theory via emphasizing the financial power of the company as a stirring force of FDI. According to them, there is greater possibility that certain companies will indulge into foreign direct investment. Thus, the companies listed on stock exchange market are more likely to engage in Multinational activities. (Oxelheim, et al, 2001). Firms listed in prestigious capital market follows some proactive strategies, in order to increase their market value. These strategies include: providing information to investors using globally recognized accounting and disclosure standards, maintaining strong bank relationship at home and abroad and maintaining strong credit rating. (Dunning 1988). Also when the firm has access to competitively price strategy, and reduces its financial and operating exposures, its monitoring cost and taxation, increases its likelihood to engage in FDI. (Oxelheim, et al, 2001).

Obviously when several quality alternatives exist on choosing the classification of FDI theories, different approaches can be made. In this research work we shall accept the classification that categorizes the FDI theories into the following groups:

- Theories of market-seeking FDI;
- Theories of resource-seeking FDI;
- Theories of efficiency-seeking FDI;

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 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 it can be measured by GDP per capita. Also trade related variables, specifically, openness variable can be viewed as market seeking variable. (Valerija and Lorena, 2006).

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. (Kinoshita and Campos, 2002). 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). (Kinoshita and Campos, 2002) argue that this type of FDI is
intended to serve not only the local market but also the home and third country markets, therefore, availability of resources and the availability of cheap and skilled labour 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 from geographically dispersed activities in the presence of economies of scale and scope. (Johnson, 2006). The membership of countries into EU, seems to have attracted more efficiency seeking FDI (Kinoshita and Campos, 2004). Resource seeking FDIs are driven by motives for exploiting natural resources or agricultural production in the host country (Johnson, 2006). 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 amount of FDI inflow.

In the 90s by analyzing the Microeconomics approach of the location of FDI activity (Dunning, 1998), states that FDI decisions, will not depend only from the type of activity, in which foreign investors are likely to be engaged, but also from the motives for the investment and whether it is new or sequential one. The achievement is that, now he succeeds to differentiate between the motives and determinants of FDI, in comparison to the 70s. In the motives for the investment is included market or efficiency seeking FDI, and moreover asset seeking FDI which is geared less to exploiting existing ownership specific advantages of an investing firm. (Dunning, 1990). 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.

Distance as a resource seeking variable has been used successfully as a variable in gravity models explaining international trade. Increasing distance implies lower affinity, resulting in higher costs of investment and more costly adoptions of goods to local preferences. As concern to gravity estimates of FDI, the empirical literature is rich. The use of gravity model in explaining FDI flows is supported theoretically. The most well known theoretical framework is Dunning’s (1958) eclectic OLI (Ownership, Location, Internalization) paradigm. In this framework the market size and the proximity of markets are rather influential factors for FDI decision. Casson (1987), Ethier (1986), Ethier and Markusen (1991, 1996), Rugman (1986), and Williamson (1981) have focused on OLI. In these studies, the important determinant of location choice is the destination consumption market. Woodward (1992), Barrel and Pain (1999), Haufler and Wooton (1999), Yeaple (2001) agreed that market size is one of the most important factors of FDI inflows (Chakrabarti, 2003). However, there are few empirical studies based on the regional data. The paper by Broadman and Recanatini (2005) can be mentioned here. Broadman and Recanatini use as a dependent variable different variants of net FDI inflow into Russian regions. For explanatory variables they use different indicators of regional development (mostly taken from Goskomstat) that characterize economic development, physical infrastructure, policy framework, civic society and institutional development, geography, and social stability. They use panel data for the period of 1995-2000. Broadman and Recanatini found with different panel data models that market size, infrastructure development, policy environment and agglomeration effects appear to explain much of the observed variation of FDI flows across Russia’s regions.

A number of empirical studies, which analyze bilateral FDI flows through the framework of gravity model, have appeared also. Frenkel, Funke, Stadtmann (2004) examined the determinants of FDI flows to emerging economies. They used OLS estimators for panel data of bilateral FDI flows from the selected developed countries to emerging economies to test the crude form of gravity model

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1In gravity models distance function as a transport cost proxy but also as a proxy for the affinity between the trading economies (Johnson A. 2006).
and its several specifications. In order to capture the home and the host countries effects and the time effects they used two-component model with dummy variables. They found that while market size and distance play an important role for FDI flows, other economic characteristics like risk and economic growth in host countries are also crucial for attracting international investment projects. Buch, Kokta, Piazolo (2003) investigated FDI redirection from Southern Europe to the Central and Eastern European countries, using also gravity model equation. They used a two-step panel vector auto regression (VAR) estimation suggested by Breitung (2002) for panel data set of bilateral outward stocks of FDI of seven OECD countries to 31 recipient countries. As the cointegration techniques restrict the number of explanatory variables, Buch et al. used only two variables in their specification of the gravity model. The first one is the volume of bilateral trade as a proxy for the degree of integration between two countries. The second variable is GDP per capita. They found no clear evidence that trade and FDI are substitutes or complements, and that there is a significant and positive impact of GDP per capita. Bevan and Estrin (2004) used gravity approach for studying the determinants of FDI from Western countries to Central and Eastern European. They used also panel dataset of bilateral flows and found that the most important factors are unit labor costs, market size and distance.

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Variables used in the gravity model, suggested by empirical literature. (Bevan and Estrin, 2004)
Objectives and Research Question

South East European Countries in comparison with other transition economies of Central East European Countries lagged well behind the former, in terms of economic performance, due to Balkan crisis that the region of SEE has experienced during the past decade. (Blomstrom and Kokko, 2003). The slow progress of these countries also can be attributed to inconsistent macroeconomic stabilization policies. In global context, transition European countries, including SEE have relatively small fraction of FDI of world total amount (UNCTAD, 2010). However, the situation has been improved over time since their share is increasing constantly compared to other parts of the world, thus reinforcing a successful reintegration of these countries into the world economy.

The focus of this dissertation will be South East European Countries, having regard the classification according to EBRD approach: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Moldova, Romania, Serbia, Montenegro and Kosovo. A special focus will be emphasized on Macedonia. All of these countries are on good shape to cope with competitive pressure, put forward by Copenhagen criteria for EU enlargement, therefore an emphasis on the development processes of their domestic and foreign policies that influence foreign investors on investment decision making into these countries, will be outlined during my research. Therefore, considering the importance of foreign direct investment into these countries, for further development of market economy, during my research I will outline the research question, whether FDI’s into these countries are driven by market seeking, resource seeking and efficiency seeking factors.

Research Hypothesis

The scope of the model will be formulated, at a relatively aggregated level, considering the FDI in service and production sectors. In this regard, on my research work, I will test, Ownership, Location and Internalization hypothesis related determinants of Foreign Direct Investment. Therefore, according to theory that explains OLI (Ownership, Location and Internalization Advantages), I will test market seeking variables, resource seeking variables and efficiency seeking variables.

Market seeking variables include the examples of market demand FDI, as the size of the local market, measured by absolute GDP, quality of market demand, measured by GDP per capita and trade.

Market Size – Many empirical studies (Anderson, 1979; Buch et al 2003; Dunning 1980; Kim 2000) have employed GDP as a proxy of market size and GDP per capita as a proxy for national income. These variables, usually are included in many empirical studies to represent the location or internalization advantage of the host countries. GDP and FDI are important to be considered. The coefficient for GDP represents the patterns of overall distribution of FDI, which is market-seeking rather than resource-seeking. Market size and its potential are expected to be strongly significant for the inflow of foreign investment to Macedonia. GDP, GDP per capita, or the GDP growth rate is the national income indicator of the size of economies, which is related to total of production, consumption, and distribution of goods and services of a country, as identified by Gopinath and Echeverria (2004). The GDP Growth Rate will be included in the model. This variable is often used for the size of and growth of market demand and supply. The expected sign of market size variables should be positive.

GDP per capital income is defined as a proxy for the country capital labor ratio. Bergstrand (1989) found that if GDP per capita is significant and negative, it means the country has labor intensive production. In terms of production, if GDP per capita is significantly positive, it could imply that a country has high rate of luxury goods consumption. Therefore, the expected sign of
the coefficient of GDP per capita, could be positive or negative, depending on the nature of FDI. If FDI attracts the Macedonian domestic service market, GDP per capita should be positive, due to higher purchasing power in Macedonia. Otherwise, if FDI is driven by production factors and export to other countries, GDP per capita should be negative, since it means that Macedonian labor market is cheap, and imply relatively low labor costs in Macedonia. In terms of Gravity model, GDP per capita have been employed in many empirical studies (Dascal et al 2002), and it considers the idea that as income increases, the effect of FDI in Macedonia may increase. Therefore, the expected sign of GDP per capita coefficient can be positive or negative, depending on the Macedonian government strategy on attracting foreign direct investment.

**Distance.** Distance in this study represents the distance between the capital of Macedonia, Skopje, and the capital cities of investing partners of EU 27. This variable is included in the model to count for the transportation, public infrastructure and operating costs associated with placing the personnel abroad, costs of local tax laws and regulations, languages and cultural differences. The expected sing of the coefficient Distance is negative, since it is a proxy of all possible investment barriers which inhibit foreign investment by distance. It implies that increases in these investment costs will have a negative effect on FDI flows into Macedonia. Distance is the most important determinant of transaction flows in foreign investment. Guerin (2006) presented distance as a proxy for information costs, rather than transport costs, in the FDI and equity flows.

**Trade** - The ratio of total trade (exports plus imports) to GDP is usually used to indicate the degree of openness of host country economy. Trade is included in the model to examine whether trade complements FDI activity. Trade is considered to proxy the openness level of the economy. Significant positive coefficient of trade would imply, higher openness of the Macedonia’s economy and easy effort of investors to invest in and trade with Macedonia. Hence the trade coefficients included in the model is expected to be positive. In the study, Trade refers to total imports plus total exports from Macedonia to an investing partner $i$ in year $t$. However, Macedonia may prefer FDI to trade, due to the fact that FDI would improve Macedonia’s openness level of the economy. However, the expected effect may vary by the type of investment regarding the local markets, or export orientation, the host country foreign exchange control, laws and applied capital taxation. (Skuflic L, Botric V, 2006). The empirical studies indicate that, the higher openness is, the more favorable attracting FDI inflow will be, especially for the export oriented FDI inflow. Consequently, the variable of openness is expected to have a positive effect on FDI inflow. However, from some empirical studies it has been indicated that different effects of FDI inflow may take place. For example, high trade barriers cause the market oriented FDI inflow, and make a substitute for imports. As a result of this, the variable of openness may have negative effect on FDI.

**The average exchange rate** is introduced as one of the explanatory variables in order to see the effect of exchange rate on FDI. The exchange rate used here is Euro per national currency. That is the host exchange rate. In addition, the host exchange rate may generate a mixed effect on FDI inflows, especially in the case of FDI being able to be a substitute for exporting from home country to host country because of tariff and the competitive price of goods in host country when it is the strength of home currency. This means that the higher host exchange rate means strength of home currency, which isn’t favorable for exports of home country to host country so as to attract FDI inflows for substitute of exports from home country to host country. On the other hand, the high host
exchange rate implies the depreciation of national currency. This will discount remittances and returns on FDI so as to deter FDI inflows potentially. Exchange rate is included in the model to count for resource seeking factors of FDI. A volatile exchange rate was first introduced in the Gravity Model by Bertrand (1985, 1989). In terms of trade, an increase in the value of an importing country’s currency implies a depreciation of the Macedonian denar and is expected to have a positive impact on exporting products that are produced in Macedonia. A higher value investing partner currency enables investors to invest in the Macedonian economy more inexpensively, thus the amount of FDI will rise. The coefficient of Exchange Rate is expected to be positive because most investors take advantage of the depreciation of the Macedonian denar to reduce their costs of investment (Bajo-Rubio and Sosvilla - Rivero, 1994; Blonigen, 1997; Froot and Stein, 1991).

**Inflation Rate** - The rate of inflation will be introduced as explanatory variable in order to gain information about investors yield. The expected effect may vary by the time when the investment is being made. The empirical studies indicate that relatively low average inflation rate means lower macroeconomic risk and therefore a higher capital flow is expected to be attracted. On the other hand, if the investment has happened before the inflation period, it is expected that the growth of product prices, the investor has invested in, should be positively associated with further FDI. The inflation rate is measured by the changes in the CPI which is as weighted average of price of goods and services consumed. High inflation rate indicate, high macroeconomic risk and unstable economic policy. Risk averse investors (or risk moderate investors) would reduce their FDI in the countries with high inflation rate, because investors do not want to risk their expected profit from investments. As a result, the exposure of foreign investors to inflation risk, will make the investors to increase price of their produced goods, and this, in turn, will decrease the volume of investment. Foreign investors who transfer profits to their home countries would benefit if the inflation rate in their countries is high since the currency would have more value when converted to domestic currencies. In this case, foreign investors’ profits are higher as a result of the appreciated exchange rates. Thus, the expected sign for Inflation Rate of the investing partners will be positive which implies an increase of the average price level and the purchasing power in investing country’s economies.

**Wage Rate** – is used in the model to proxy the labor cost of the economy. It also proxies the recourse seeking FDI. The coefficient of wage rate could be positive or negative. Significant positive coefficient of wage rate means that foreign investors are cost sensitive and they seek for low labor cost. Wage rate is considered to capture the intensity and costs of labor in production of the investing partners. The low wage of local labor decreases the expansion of foreign investment. The higher level of wage rate stimulates FDI outflows to substitute for labor cost of production. Thus, the expected sign of the coefficient of wage rate is expected to be positive, since investors consider different production locations in Macedonia to make sure that they will find a lower wage rate in Macedonia than in other countries.

**Unit Labor cost** as predicted by the theory, lower input costs in the host country should increase the profitability of the firm, which indicates a negative coefficients on unit labor cost. Therefore we expect a negative relationship between FDI and unit labor cost.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Expected Sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>GDP in investing partner i and Macedonia.</td>
<td>++</td>
</tr>
<tr>
<td>GDP per capita</td>
<td>GDP per capita in investing partner i and Macedonia.</td>
<td>+/-; +/-</td>
</tr>
<tr>
<td>GDP growth rate</td>
<td>GDP growth rate in investing partner i and Macedonia.</td>
<td>++</td>
</tr>
<tr>
<td>Distance</td>
<td>The geographical distance between the capital cities of investing partner i and Macedonia</td>
<td>-,-</td>
</tr>
<tr>
<td>Trade</td>
<td>Exports and imports between Macedonia and investing partner i</td>
<td>++</td>
</tr>
<tr>
<td>Exchange Rate</td>
<td>Value of bilateral exchange rate Denar per investing partner i’s currency</td>
<td>++</td>
</tr>
<tr>
<td>Wage Rate</td>
<td>A basic wage per hour in EUR of investing partner i</td>
<td>++</td>
</tr>
<tr>
<td>Inflation Rate</td>
<td>Percentage at the consumer price in investing partner i</td>
<td>++</td>
</tr>
<tr>
<td>Unit Labor Cost</td>
<td>Ratio of the annual average wage to GDP per capita; source</td>
<td>++</td>
</tr>
</tbody>
</table>

**Expected Scientific Contribution**

The scientific contribution of the study will be on developing the theories of foreign direct investment and its practical implication on the region. The research question that I address has not been undertaken before and studied on a research basis, for the specified sample. South East European Region, is on a good shape for developing integration policies, therefore they have increased their openness level toward other more developed countries, like European Union Countries. The research study will help the region to develop practical policies, concerning integration issues, which are in line with the policies of converging the economies of the region, toward more developed economies. The countries in the region of South East Europe are pretending to become member’s of European Union, and hence in a second step to be integrated in European Monetary Union (EMU), and therefore, the practical contribution of my research, will be on helping the country, to develop economic policies, which are in line with the requirements of European Commission (EC Treaty).

**Methodology and Data**

As concern to the methodology in this research, the research will be based on the comprehensive literature reviews that exist on Foreign Direct Investment. I will analyse the gravity models that have been studied before and try to explain the advantages and disadvantages. In order to estimate an empirical gravity model, we will use data obtained from EBRD, World Bank, IFS, that will enable me to analyze the determinants of FDI in SEECS. The scope of the models will be formulated on aggregated level

In the case of our sample of countries, we will chose a combination of traditional and nontraditional determinants presented on the literature. In this section I will try to empirically assess the determinants of FDI in the SEECS. The panel data set used in this analysis cover 9 countries and runs yearly from 2000 – 2010. The database will be build upon data avaliable at EBRD, World Bank and International Financial Statistics.

Following Frengel, Funke, Stadtmann (2004) approach of estimating the determinants of FDI flows and Buch, Kokta, Piazolo (2003) approach of investigating FDI direction from Southern Europe to the Central and Eastern European countries, using gravity model equation, I will estimate the bilateral FDI flows from the selected EU 27 countries to transition economies of South East European Countries. In this regard, I will use a two – step panel vector
autoregression (VAR) estimation suggested by Breitung (2002) for panel data set of bilateral outward stocks of FDI. Additionally, I will estimate the gravity model of FDI direction from EU 27 Countries to Macedonia. Empirical studies of bilateral FDI flows using the Gravity Model have been based on the proposition that transactions between regions are determined by their national incomes (such as GDP, GDP per capita, GNP) and their geographical distance. The following table presents a summary of the variables that will be used in the gravity model.

The Gravity Model will identify the flows of FDI from EU investing partner to SEEC and Macedonia, which can be explained by the supply side of investing partners, demand conditions of SEEC and Macedonia, specifically and other economic factors, such as regional integration. To explain the pattern and the effect of FDI inflow in SEEC, each choice variable is considered independently. The reduced form of related choice variables is given below:

\[ FDI = f(GDP, CAP, GDPGR, D, T, X, WGE, INFL, ULC) \]  \hspace{1cm} (1)

Where: FDI is foreign direct investment, GDP is gross domestic product, CAP is gross domestic product per capita, GDPGR is gross domestic product growth rate, D is distance, T is trade, X is exchange rate, WGE is wage ratio, INFL is inflation rate, EU is SEEC - European Union economic cooperation.

For estimation purposes, the extended gravity equation for FDI inflows, applied to equation 1, in log – linear form expressed as below follows:

\[
\ln FDI_{it} = a + B_1 \ln (GDP_\text{it} \times GDP_\text{it}) + B_2 \ln (CAP_\text{it} \times CAP_\text{it}) + B_3 (GDPGR_\text{it}) + B_4 \ln DIS_{it} + B_5 \ln TRADE_{it} + B_6 \ln X_{it} + B_7 \ln (WGE_{it}) + B_8 (INFL_{it}) + B_9 (ULC_{it} \times ULC_{it}) + \varepsilon_{it} \]  \hspace{1cm} (2)

Where

- \( FDI_{it} \) represents the bilateral flow of FDI inflow from investing partner \( i \) to Macedonia in year \( t \).
- \( GDP_\text{it} \) represents the gross domestic product of investing partner \( i \) in year \( t \).
- \( CAP_\text{it} \) represents the gross domestic product per capita of investing partner \( i \) in year \( t \).
- \( GDPGR_\text{it} \) represents the gross domestic product growth rate of investing partner \( i \) in year \( t \).
- \( DIS_{it} \) represents the geographic distance between investing partner \( i \) and Macedonia in year \( t \).
- \( TRADE_{it} \) represents the total amounts of imports and exports between investing partner \( i \) and Macedonia in year \( t \).
- \( X_{it} \) represents the exchange rate (computed by taking the nominal exchange rate and multiply by the ration of DEN/investing partner \( i - s \) currency in year \( t \)).
- \( WGE_{it} \) represents the wage rate of investing partner \( i \) in year \( t \).
- \( INFL_{it} \) represents the inflation rate of investing partner \( i \) in year \( t \).
- \( \varepsilon_{it} \) represents the error term.
- \( ULC_{it} \) represents the unit labor cost of investing partner \( i \) in year \( t \).
- \( ULC_{it} \) represents the unit labor cost in Macedonia.
Equation 2 is the extended Gravity Model of FDI inflow to South Easter Europe and Macedonia. Individual effects \((a)\) are included in the regressions to test whether they are fixed or random using the Breusch - Pagan's Lagrange multiplier test and Hausman specification test (Baltagi, 2005; Bangai and Manzocchi, 1999; Stock and Watson, 2003). In order to find the best approximation of the extended Gravity Model, the Hausman test will be used to test whether the random effects model is more efficient than the fixed effects model.

This study uses panel data from 1980 to 2004. Thus, the general structure of the panel data model can be written as follows (Baltagi, 2005; Kang, 2003):

\[
Y_{it} = a + B'X_{it} + \varepsilon_{it}
\]

The data set consists of multiple observations. The subscript \(t = 1\ldots T\) indicates time series observations and the subscript \(i = 1\ldots N\) indicates cross-sectional observations units such as households, individuals, firms, countries, etc. (Baltagi, 2005). The term \(a\) is the intercept coefficient, \(B\) is the slope of the coefficients to be estimated, \(X_{it}\) represents the explanatory variables, and \(\varepsilon_{it}\) is an error term, assuming \(E(\varepsilon_{it}) = 0\) and \(Var(\varepsilon_{it}) = \sigma^2\). The variations across individual countries or the time effect of this structure can be analyzed with a simple shift of regression function, including both one-way error component and two-way error component models for fixed and random effects models, respectively.
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