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**THE IMPACT OF CORPORATE INCOME TAX RATE AND TAX
INCENTIVES ON FOREIGN DIRECT INVESTMENT IN SOUTH-
EAST EUROPE**

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LIST OF ABBREVIATIONS

ATR	Average tax rate
CEE	Central-Eastern Europe
CIS	Commonwealth of Independent States
EATR	Effective average tax rate
EMTR	Effective marginal tax rate
ETR	Effective tax rate
EU	European Union
FDI	Foreign Direct Investment
FPI	Foreign Portfolio Investment
GDP	Gross Domestic Product
GNP	Gross National Product
IMF	International Monetary Fund
MNE	Multinational enterprise
OLI	Organization, Location and Internalization
OLS	Ordinary Least Squares
OECD	Organization for economic Co-operation and development
SEE	South-East Europe
STR	Statutory Tax Rate
U.S.	United States
UNCTAD	The United Nations Conference on Trade and Development

INTRODUCTION

Many countries try to attract foreign direct investments (hereinafter: FDI) in order to promote their economic development. FDI is considered as an important factor which can promote technological development, increase employment and raise economic growth. Host countries benefit from FDI through generating new jobs and new technologies positively affecting economic growth and employment. In the past twenty years, FDI benefits in transition (host) economies are apparent throughout domestic savings via foreign capital and through financial accumulation (Wolff, 2007). Also, Wolff (2007) argues that FDI contributes to structural changes due to its effect on enterprise restructuring in the process of privatization, while FDI related to industrial restructuring accelerated the process of privatization. On the macroeconomic level, in transition economies, FDI is found to affect domestic income and economic growth due to a spillover effect (Silajdzic & Mehic, 2016), and by stimulating domestic investments (Mehic, Silajdzic, & Babic-Hodovic, 2013). Domestic income is also assumed to be positively affected by taxing wages and profits of new foreign- owned enterprises e.g. through the property tax. Furthermore, FDI enhances the increase in exports, especially through manufacturing activities. In the past few decades, FDI started to attract a lot of attention not only for its role in countries' economic growth but also due to the process of globalization and FDI effects on mobility of labor and capital, followed by subsequent global shifts in production. In this new global context, FDI is expected to help countries access foreign markets and promote international trade.

According to The United Nations Conference on Trade and Development (hereinafter: UNCTAD) (2007, p. 245), "FDI is defined as an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise or affiliate enterprise or foreign affiliate)". The investment is considered as a direct investment because of the investor's tendency to control and influence business operations. UNCTAD (2007) also sees FDI as a strong and direct link between countries, the way of investment through which channels of international trade are built. The presence of FDI in the host country (recipient) can influence competitive position of a country and increase its attractiveness for further investments (OECD, 2002). Moreover, FDI inward flows are also a good proxy indicator for the overall economies' attractiveness.

By UNCTAD (2014), FDI flow to developed countries was 39% out of total global FDI share in 2013. The same amount of share was distributed in 2012. While FDI flows were in decrease towards the US, in Europe FDI flows has increased. In 2013 share of 52% out of global FDI inflows was distributed across developing countries having Asia the largest host area. Since our focus is on transition economies it is important to mention that FDI to transition economies accounted to US\$126 billion in 2013 which is

about 9% of total FDI inflows. In recent years, there were significant shifts in aggregate FDI inflows to EU where inflows were focused on small developed countries mainly due to tax favors, especially for special purpose entities. Those countries which attracted the most FDI are Belgium, Netherlands, Luxembourg and Ireland. Transnational companies located a large number of their financial and treasury functions in these countries. As research by Estrin and Uvalic (2013) indicates, the Balkan region attracts a small share of FDI inflows intended to transitional economies. Considering that Romania and Bulgaria are populated as the rest of South East European (hereinafter: SEE) countries, it is reasonable to expect that they attract a greater amount of FDI than all other SEE countries combined. For instance, in 2010, the Western Balkan countries attracted 5.8% of FDI flows while Romania and Bulgaria attracted 8.9% of FDI flows. Although Balkan countries increased their share of FDI from 9.4% in 2000 to 14.7% in 2010 in total FDI inflows to transition economies, it is still one- third of total FDI volume intended for Central and Eastern Europe and Baltic countries. Decrease in FDI inflows in the period of recession from 2007 to 2008 has been documented.

Favorable economic environment along with political stability are factors that often determine investment decisions for goals of maximizing profit and minimizing costs. FDI is often categorized as being either horizontal or vertical depending on the motive of investments, function and the purpose that multinational corporation serves in a host country. It is very hard to distinguish the difference between these two. The aim of horizontal FDI according to Demekas, Horváth, Ribakova and Wu (2005) is to source local production and expand its market activities in the host country if there is potential for profitable activities rather than focusing on export. The vertical FDI type is predominantly oriented towards minimizing production costs with the general purpose of serving regional and global market demand via expanding host market export activities. Vertical FDI is location oriented and used by transnational companies in order to maximize productive efficiency and minimize transaction costs. Accordingly, investors locate their activities in different countries.

Dunning (1988) provides an overall theoretical framework where he elaborates on FDI determinants and the key elements in attracting or deterring FDI inflows. Importantly, Dunning (1988) developed a conceptual framework focusing on motives of FDI by analyzing reasons and strategies of multinational corporations' to invest abroad. In terms of motives for FDI he classified multinational enterprises (hereinafter: MNEs) as market seekers, natural resource seekers and as efficiency seekers.

The first ones are oriented towards market size and growth of the host country. Market seekers take into consideration the market size and market growth in the host country where production technology is replicated. On the other side, natural resource seekers are focused on exploiting resources in a host country including natural resources as well

as other resources such as labor that are often associated with cost efficiency. Notwithstanding this, MNEs classified as efficiency seekers are the most concentrated on technological and innovative capabilities and capacity of the host economy assumed to pose a significant competitive advantage. These investors are also concerned about economic policies, demand patterns, and institutional framework.

According to Estrin and Uvalic (2013), SEE countries are characterized by three most important FDI determinants which encompass the size of a domestic economy, a distance between home and host countries and an institutional quality. In terms of the size of the domestic economy, SEE countries are relatively small except Romania, which GDP is found to positively affect FDI. Being a European Union member is suggested to positively affect FDI while being significantly distanced from main Western investors affects the attraction of FDI negatively. The third factor, institutional quality has an important impact on FDI inflows in SEE (Estrin & Uvalic, 2013; Silajdžić & Mehić, 2012).

EU members tend to attract more FDI mainly due to the quality of their institutional indicators. Moreover, Estrin and Bevan (2004) find that institutional quality speeds up the process of joining the EU. Their study did not find the clear distinction between EU membership and institutional quality and whether it works independently but it is clear that announcement of joining the EU itself leads to a greater share of FDI inflows. Furthermore, Rojec and Penev (2011) pointed on strengths of Western Balkan economies which are crucial for attracting FDI and they include: stable macroeconomic environment, fast economic growth, geographical distance from major EU markets, good business environment, stable and relatively well-developed financial system, high share of young people involved in primary and secondary education, qualified and low cost labor force, well developed telecommunication sector, protection rights for investors, and the adoption of Stabilization and Association Agreement with EU, CEFTA and other bilateral trade agreements. Besides positive, there are negative factors affecting attraction of FDI which include: a small domestic market with low per capita income, relatively high country risk, a slow progress in structural and institutional reforms, weak export, high unemployment, and corruption. Rojec and Penev (2011) advice that best policy for attracting FDI is to join EU, given the importance and the quality of institutional factors found in their study.

Apart from common FDI determinants, tax policy is often considered important determinant of FDI particularly among developing countries and found to be an important determinant of FDI in transition economies. The role of taxation in transition economies as FDI determinant has been investigated by Bellak and Leibrecht (2009). They used gravity model with the application of effective average tax rates on the bilateral level in order to explain FDI flows to Central and Eastern European countries. Their study suggests that FDI is positively related to home and host market size but

inversely related to unit labor costs and a distance between home and host countries. Importantly their study found that location choices of multinational enterprises are affected by tax rate and infrastructure. However, their econometric analysis shows that countries are not necessarily in the need for a decrease of their corporate tax rates because high corporate tax rates do not negatively affect the attractiveness of FDI. Notwithstanding this, the results of their empirical analysis indicate that the level of infrastructure endowment affects the tax-rate sensitivity of FDI implying that countries with inferior infrastructure endowment need to cut corporate tax rate to attract FDI in short run. Other authors like Djankov, Ganser, McLiesh, Ramalho and Shleifer (2010) were interested in the effect of corporate tax not only on FDI but also on aggregate investments and business activity in general. Their cross-country evidence shows that foreign direct investment (FDI), business activity and aggregate investment are negatively affected by corporate taxes (Djankov et al., 2010). Furthermore, Djankov et al. (2010) suggest that 10 percentage points increase in effective corporate tax rates will reduce FDI by 2.3 and investment rate by 2.2 percentage point. Along with these results, Djankov et al. (2010) conclude that there is a positive relationship between corporate tax rate and aggregate debt to equity ratio.

According to Bénassy-Quéré, Fontagné and Lahrèche-Révil (2000), the lower tax burden on business activities has been shown as beneficial. However, countries with low tax rates are not the only one that made success in attracting FDI. Countries with high corporate tax burden but with developed infrastructure, developed market net and political stability have also succeeded in attracting foreign capital (Bénassy-Quéré et al., 2000).

A number of studies found that low tax rates fail to attract FDI at a significant rate, while FDI investors are not encouraged with high corporate tax rates (Bénassy-Quéré, Fontagné, & Lahrèche-Révil, 2005). For instance, Bénassy-Quéré et al. (2005) find that the low tax rate has not been found as an important determinant of FDI inflows even though the increase in nominal and effective tax rate is negatively related to FDI. Similarly, Hunady and Orviska (2014) relying on panel data analysis found an insignificant impact of statutory and effective tax rate on FDI. They found other factors like labor costs and openness of the economy particularly influential on the FDI attractiveness.

Vartia (2008) based her empirical approach on investment theory which indicates that corporate taxes affect the cost of capital and affects investment by increasing the user cost of capital. So, empirical analysis on a sample of different industries of OECD countries shows that decrease of 2.6% of the cost of capital induced by the decrease of 5 percentage points in corporate tax rate results in the increase in investment by 1.0% and -2.6% in the long run. Related to user cost of capital, depreciation allowances tend to reduce user cost affecting an increase in investment. Consequently, the impact of

depreciation allowances depends on the level of corporate tax rate since deduction of depreciation allowances from tax liability is determined by the corporate tax rate. Moreover, Vartia's (2008) empirical testing indicates that in high corporate tax rate countries, an increase in depreciation allowances have a high impact on investment due to the reduction in the long-run user cost of capital.

Tax policies, specifically tax incentives could have an important role in FDI location decisions. However, tax incentives' effects are hard to evaluate. Nowadays, developed European countries follow the trend of lowering tax rates because of tax competition while developing countries compete over tax incentives in order to attract FDI having their corporate tax rate low. According to Klemm and Van Parys (2012), tax holidays and tax rates do affect FDI, unlike investment allowances. Policy makers more often suggest investment allowances and accelerated depreciation as tax incentive measures rather than tax holidays. However, tax holidays are apparently more valuable for profitable investment than investment allowances. Tax holidays are widely accepted incentives in developing countries besides tax cuts. Although a tax holiday may attract investment in a short period Clark (2000) suggests that they need to be avoided, because they tend to bring revenue loss to those countries whereas incentive is given to the creation of new business from already existing in targeted activities.

Hence, Demekas, Horváth, Ribakova, and Wu (2005) found that tax holidays as institutional variables do not affect FDI, while high corporate tax burden significantly affect FDI. This finding implies that developing and transition economies including SEE countries could gain a lot from making their policies right. Implementing tax incentives in developing countries often goes in the wrong direction, because those policy actions need international organizations' technical assistance and expertise (Bazó, 2008). In addition Bazo (2008) stated that tax incentives may seem attractive to investors, but that does not grant that they will work because investment needs safe investment climate, political stability, reduced corruption for a profitable outcome. Moreover, there are some negative effects associated with tax incentives including distortion of tax and economic system through for instance eroding tax base (Bazó, 2008).

Easson and Zolt (2002) discussed disadvantages of tax incentives. These authors associate different types of costs with negative effects of tax incentives like revenue costs, resource allocation, enforcement costs and those related to corruption. Easson and Zolt (2002) also discussed positive tax incentive effects. Those are capital transfers, increased employment, and transfer of new technologies. Spillover effects are also one of the benefits caused by FDI, as FDIs are attracted by tax incentive measures. Spillover effect would mean new investment which causes an increase in employment, an increase in spending power and an increase in government tax revenues. Yet, these benefits are hard to measure. Mintz (2006) tried to explain the tax policy structure in

developing countries and their changes as well. Mintz's (2006) research concludes that many countries have left incentives and have relied on lower corporate tax rates which in turn have been shown as profitable for FDI. There are several reasons that Mintz (2006) listed as possible for leaving tax holiday as the most popular tax incentive. One of the reasons is that tax holidays are provided to firms entering to market, which is detrimental for existing firms. This forces the government to provide other incentives for fair competition between international and domestic companies. Some companies tend to misuse tax holidays. Substantial revenue costs arise from tax holidays, causing taxes paid under tax holiday to be above those taxes paid from a post-holiday period.

Tax system plays an important role in every country, especially in developing countries. Taxation is aimed at encouraging investment and inducing economic growth, while foreign direct investment with the usage of an appropriate policy framework is assumed to promote economic development, principally by enhancing technological upgrading of industries and promoting regional competition. According to OECD (2016) data, European countries have decreased corporate tax rates in the past few years (2000-2015). It is evident that Balkan countries have the lowest tax rates comparing to developed EU countries, except Germany which rate decreased to 15%. Low tax rates are considered important tax incentives. Most European countries use taxation measures and keep lowering their tax rates. Most of the SEE countries have a flat corporate tax system and the lowest in Europe. The lowest tax rates belong to Bosnia and Herzegovina, Macedonia, Albania and Bulgaria while Croatia, Serbia, and Romania have the highest rates among SEE group of countries. Another characteristic is that these countries have not changed their tax rates to the significant extent through the years, especially from 2008, except in the case of Serbia. On the other side, developed countries and mainly EU countries in the past couple of years have changed taxes very often.

SEE countries implement a large number of tax incentives. The dominant corporate income tax incentives are a tax credit, tax holiday, loss carried forward and accelerated depreciation with the exception of Federation of Bosnia and Herzegovina and Macedonia. If we mark the use of tax holidays there are significant differences across countries, while accelerated depreciation, tax credit, and losses carried forward have almost the same characteristics. The structure and number of tax incentives are largely defined through development and achievement in becoming EU member. Countries that have entered EU have differences in tax administration, in incentives as well leading Croatia and Romania who emphasize on key development areas like research, development, education and employment. They have investment incentives as well. Albania, Macedonia, and Bosnia and Herzegovina fall behind when we look at the number of incentives, its structure, and tax rates. The most perspective non-EU country is Serbia which has different incentives in terms of institutional infrastructure and as

well the highest tax rate along with Romania and Croatia which are EU members. Tax incentive that is mutual for all SEE countries is double taxation treaty.

This thesis is divided into four sections. The first section explains the definition and objectives of foreign direct investment and its role in the world economy. Moreover, this section is focused on the evolution of the main FDI theories, at the same time explaining the importance of the Dunning's Paradigm as fundamental FDI theory. This section also describes the difference between traditional FDI determinants and FDI determinants in transition economies. The second section describes the role of and the structure of corporate income taxes. The main emphasis is put on the explanation of the effect of corporate tax rates on FDI inflows by reviewing available literature. The following section explains the role of tax incentives as important taxation element. In this section we reviewed the types of tax incentives and what effect each type of tax incentive has on FDI. The final fourth section explains the methodology used for examining the impact of corporate tax rates and tax incentives on FDI in SEE region. In this section we explained the variables used for estimation by making a comparison with variables used in previous research. This section discusses the results of the different estimation methods applied while investigating the impact of corporate income tax and tax incentives on FDI. The results point to the importance of corporate income tax and specific tax incentives in understanding the FDI inflows to SEE transition countries. The conclusions and policy implications are elaborated in section five of the thesis.

1 FOREIGN DIRECT INVESTMENT

1.1 Foreign Direct Investment: and overview

FDI has been considered as a very important element of economic integration worldwide. FDI is often considered to be a factor of great importance for technological improvement such as transfer of know-how technology and financial stability between investor and recipient economies. In addition, it is a type of cross-border investment where investing country's goal is setting up an enduring interest in the enterprise in another country. Accordingly, an enduring interest indicates a substantial impact on a management of an enterprise in another country. According to UNCTAD (2007, p. 245), "foreign direct investment (FDI) is defined as an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise or affiliate enterprise or foreign affiliate)". An equity ownership is a point of differentiation between FDI and other types of investment like foreign portfolio investment (hereinafter: FPI). De Mooij and Ederveen (2003) explain that FPI usually denotes to

investment in financial assets like stocks and bonds mostly channeled through mutual and pension funds.

Over the last decade, FDI has significantly affected the accelerated economic development and increased economic growth of transition economies. FDI tends to convey more advantages than disadvantages to the socio-economic development of the host (recipient) country. Its significance lies in the duration and in the nature of investment which makes crucial difference from other types of capital investment (Barrell & Holland, 2000). The goal of FDI is to utilize the managerial impact it has over the foreign enterprise as well as to create pan-commercial relations. Silajdzic and Mehic (2016) found that in the period between 2000 and 2011, FDI employs positive effects on economic growth in ten Central and East-European (hereinafter: CEE) countries included in their study. As their study reveals, FDI has a greater effect on economic growth in recipient countries with satisfactory absorptive capacity. In their previous research which included seven SEE countries within period 1998-2007, Mehic, Silajdžić and Babić-Hodović (2013) proved that FDI has statistically significant and positive impact on the economic growth in the countries investigated.

According to UNCTAD (2015), FDI investment into transition economies and particularly investments to Russian Federation and Kazakhstan has been the lowest in the past ten years. In 2015, investment to transition economies amounted to only \$35 billion, meaning that FDI flows decreased by 38%. FDI flows are unequally distributed across transition subgroups which include: SEE and Commonwealth of Independent States (hereinafter: CIS) which includes former Soviet countries. In relation to improved macroeconomic performance and investor's risk insight due to EU accession process, FDI inflows in SEE rose by 6 per cent and amounted to \$4.8 billion, while in CIS countries FDI fell to \$30 billion or by 42%. The increase in FDI investments to SEE is associated with increase in investments mainly from the western European countries. These FDI flows were mainly distributed towards manufacturing industry like chemical industry, food and tobacco, textile industry, automobile and pharmaceutical industry. According to UNCTAD (2015) World Investment Report the amount of FDI flows for Albania stayed above \$1 billion, in Macedonia decreased, while FDI flows in Serbia and Montenegro recorded an increase. The main investors for SEE region are Austria, Netherlands, Italy and Greece along with China and United Arab Emirates who have recently increased their investment activities. UNCTAD (2015) predicts that FDI flows towards transition economies in 2016 will increase in the range between \$37 and \$47 billion after an experienced drop in 2015, excluding possible political tensions and conflicts in the region. SEE's FDI inflows are expected to increase following intensified regional integration and EU accession process. In 2015, increase in greenfield investment encouraged projections for FDI recovery for the next couple of years.

According to UNCTAD (2015), FDI inflows in developed countries in 2015 amounted to \$962 billion and it almost doubled. After three consecutive years of reduced investments, in 2015 developed countries have experienced the highest level of investment since 2007. A large rise in inward FDI flows was recorded in Europe. Accordingly, the share of FDI inflows among developed economies increased from 41% in 2014 up to 55% in 2015 in total global FDI. In contrast, as noted previously transition economies recorded a decline in FDI inflows. The reasons for such a decrease in SEE economies could partly be explained by weakened domestic markets and rising political tensions in the region. The Netherlands has the leading role as the biggest investor in Europe with the amount of \$113 billion in outflows followed by Ireland which outflows amounted to \$102 billion. Germany is still considered a top investor regardless of decline in its FDI outflows by 11% amounting to \$94 billion in outflows. Other major European investors are Switzerland, Luxembourg, Belgium and France (UNCTAD, 2015).

1.2 General theories of FDI

The development of technologies in the 1960s, the increased international influence of FDI, following the huge rise in foreign capital flows, has been associated with increased interest of economists and international scholars for understanding the emergence of FDI that resulted in the initial constitution of FDI-related theoretical studies. Nowadays, the Dunning's theory of internationalisation is considered a traditional FDI theory that together with its extensions, constitute the most recognized theory of FDI. Unlike early traditional theories that explained the characteristics, motives and activities of the FDI from the perspective of the developed countries (Hymer, 1976; Vernon, 1966), Dunning's theory interacted with the theory of location advantage, monopolistic advantages and internalization and added other characteristics of FDI, which interpreted the motives and conditions of the FDI and gave rise to the analysis of FDI determinants.

Table 1: Determinants of FDI

Factor(Category)	Variable
Social:	<ul style="list-style-type: none"> • Ratio of literacy and school enrolment • Availability of technical and professional workers • Modernization of Outlook • Strength of labor movement • Extent of urbanization

(Table continues)

Determinants of FDI

(continued)

Factor(Category)	Variable
Economic:	<ul style="list-style-type: none"> • GDP (or GNP) • GDP per capita, GDP growth rate, per capita growth rate • Manufactured imports/GDP • Ratio of exports to imports • International liquidity (average annual percentage change) • Purchasing power of currency (change in external value relative to interval value) • Local Credit (ratio of banking system claims on economy to GDP and private sector to GDP) • Ratio of commerce, transport, and communication to GDP • Energy production (equivalent tons of coal per 1000 population) • Degree of economic integration • Ratio of manufacturing to GDP • Ratio of raw material exports to GDP
Political:	<ul style="list-style-type: none"> • Frequency of government change by type and period • Number of internal armed attacks by period • Degree of administrative efficiency • Degree of nationalism • Per capita foreign aid from U.S., non-U.S. sources • Colonial affiliation • Role of government in economy
Policy:	<ul style="list-style-type: none"> • Corporate taxation (typical manufacturing burden) • Tax incentive laws: complexity vs. simplicity • Tax incentives: liberality • Attitude toward joint ventures • Local content requirement • Limitations on foreign personnel

Source: *Root and Ahmed (1978)*

1.2.1 The Early Development of Classical Internationalization Theories

Theories that economists used in 1960's were mainly based on the perfect competition assumptions like Hecker's and Ohlin's (1933) factor endowment theory that was used to explain international capital flow. According to these theories, the difference between the rates of return on investment between countries is responsible for capital flows.

Developed countries with abundant capital started to invest in developing countries due to high rate of return on capital.

In 1960, Hymer (1976) developed a theory of monopolistic advantage based on market imperfections and used an industrial organizational approach to explain the activities of multinational enterprises (hereinafter: MNE). He criticized that previous theories cannot explain the FDI motives through the analysis of the U.S. enterprises. He demonstrated his theory of monopolistic advantage in the doctoral dissertation “The International Operations of National Companies: A Study of Direct Foreign Investment”. Hymer (1976) claims that companies must have specific or monopolistic advantages in order to increase profits in other countries and distinguish themselves from competitors by taking into account the market imperfections. These monopolistic advantages are: economies of scale, tangible and intangible assets, management and marketing expertise, patents, knowledge, raw materials, product efficiency, product differentiation and cost advantages. Regardless, Hymer’s theory is not able to clarify the motives behind MNE’s choice to invest and to export (Hymer, 1976).

1.2.2 Product Life Cycle Theory (1966)

Vernon (1966) considered that the theory of monopolistic advantage was static and based on the internationalization of the U.S. manufacturing companies in the 1960’s, so he introduces the theory of product life cycle. He considered that the previous theory cannot explain how companies decide between export and investment. By combining the monopolistic advantages and advantages of the location altogether with the product life cycle, he developed the first dynamic theory that explained the determinants of international production and trade (Vernon, 1966).

According to Vernon (1966), the product life cycle is divided into three phases:

- 1) The phase of a new product where the product is produced on the domestic market and exported to a foreign market at an early stage of its cycle.
- 2) In the maturing product stage, the investment is more beneficial than the export due to competitors’ entrance and the development of new technology, which affects the increase in production costs. Therefore, investing and producing overseas enables companies to realize economies of scale, to reduce production costs and to enhance competitiveness.
- 3) The standardized product stage allows companies to produce their already standardized products at locations with the low production costs in developing countries.

Buckley and Casson (1976) based their Internalization theory on Coase’s (1937) transaction cost theory which was based on domestic activities of enterprises. Unlike Coase (1937), Buckley and Casson (1976) introduced and explained internalization activities and FDI in their “The Future of Multinational Enterprises” study.

Internalization theory emphasizes that market imperfections and transaction costs are the main drivers of MNEs' investment. Also, companies want to retain their monopolistic advantage and in order to avoid high transaction cost and market uncertainty they decide to increase their profitability with administrative fiat mechanism. The difficulty in the evaluating the price of intermediate products increases transaction costs during transaction process and creates market uncertainty, especially during transferring knowledge and know-how. Patents, trademark and reputation are also intermediate products that face market imperfections. Still, this theory fails to explain the reasons of investment and production in other locations as well as the reasons of location selection (Buckley & Casson, 1976).

1.3 Dunning (1977): Eclectic (OLI) Paradigm of International Production

There are numerous hypotheses which endeavor to clarify the determinants of FDI. Most authors that work on topics related to FDI tend to rely on Dunning's research. Importantly, Dunning (1988) developed a conceptual framework focusing on motives of FDI by analyzing reasons and strategies of multinational corporations' to invest abroad. His Eclectic paradigm of International Production, introduced in 1976, covers the most important theories that explain FDI motives such as factor endowment theory by Ohlin and Heckscher, monopolistic advantage theory by Hymer, transaction cost theory by Coase, internalization theory by Buckley and Casson and location advantages elaborated by Dunning (1977). In fact this theory integrates a lot of internalization theories like those mentioned above. Dunning (1988) was the first who provided a theory which is conceptual framework for FDI analysis, because it explains and highlights the coherence between three factors of monopolistic power: location, internalization and ownership advantages. This theory is called Eclectic paradigm or OLI paradigm. Also, Eclectic Paradigm is considered as leading classic theory that explains internalization activities by multinational corporations. In order to participate in profitable and competitive international activities, MNEs should satisfy three core conditions as following: ownership advantages (O), location advantages (L) and internalization advantages (I) (Dunning, 1977).

Having a comparative advantage, characteristic to the type of company's ownership over the local rivals, is the first condition that company should have. This makes a company a transnational player, so possession of ownership advantages helps company to offset the difficulties of doing business overseas or to cover the minuses of production abroad. Making an advantage of internalization for the placement of company's comparative advantage in foreign market against local companies is the second condition that transnational company should fulfill. Finally, the third condition is fulfilled by combining company's characteristic resources in the country abroad with ownership and internalization advantages. This indicates that company can be better off

with location advantages and production abroad rather than export or production at the home market. Having all these three OLI conditions satisfied, a company can perform FDI activities (Dunning, 1988).

Companies in the absence of location advantages but still having internalization and ownership advantages, decide to produce domestically and export to foreign markets. On contrary, some companies lack location and internalization advantages, so they must sell their comparative advantage and choose licensing. Comparative advantages cannot be transferred within company's structure, so companies decide to transfer intangible assets in external market. Hence, MNEs prefer FDI activities to exporting and licensing, which is explained by Eclectic paradigm (Dunning, 1988).

Dunning (1988) used Hymer's monopolistic theory to develop sub-paradigm called ownership specific advantages. He states that monopolistic or competitive advantages are enough for covering costs resulting from establishing and operating remunerative activities abroad beside costs that existing local and potential producers are facing with (Dunning, 1988).

According to Dunning (1988), ownership advantages can be differed as advantages of ownership assets and ownership transaction. The advantages of ownership asset denote exclusive possession of specific assets like intangible assets and property rights. Intangible assets consider innovation, technology, management proficiency, trademark, reputation etc. Regarding ownership transaction advantages, Dunning (1993) emphasized the function and the purpose of this form of advantages. The advantages of ownership transaction represent the company's ability to catch transaction advantages or costs of transaction during production process like access to resources, product diversity, economies of scale (Dunning, 1993).

The vast majority of prosperous multinational companies tend to foster and develop ownership transaction and assets advantages in the same manner (Dunning, 1988). Different types of multinational companies have numerous types of company specific advantages. A significant number of transnational companies focus on marketing expenses, research and development, skilled labor force mainly with technology and science orientation and products innovation (Dunning, 1988). Majority of companies concentrate on knowledge assets rather than physical assets, because this ownership advantage will attract more FDIs than other assets. Knowledge assets are easily transferable between production facilities at low cost. Companies concentrated on technology frequently have knowledge assets as specific advantages including research and development, know-how, patents, human capital in addition to companies concentrated on labor force (Dunning, 1988).

1.3.1 Location Specific Advantages

Multinational corporations need to decide in which country to place their FDI activities. As denoted by Dunning (1988) and his paradigm on location specific advantages, MNE will undertake FDI activities if it recognizes the possibility of combining transportable semi-finished products from home country with immovable factor endowments or with other semi-finished goods in host country. In order to engage in FDI activities abroad, foreign country's factor endowments need to be attractive for investment as well as to lack the comparative advantage which will make MNE competitive over local enterprises. These conditions are extremely important for making a decision whether to export or invest. If the home country can make profit from comparative advantage in terms of low cost materials and easy accessible resources necessary for the production, then its decision will rely on exporting (Dunning, 1988).

On the other hand, in order to avoid international trade barriers like tariffs and quotas on imports and to bring profit, companies tend to associate company's specific advantages with host country's location advantages. Therefore, foreign affiliates as a result of FDI activities are more reasonable undertaking for greater profit. Location specific advantages mostly depend on the host country, but MNEs can benefit if they use them efficiently (Dunning, 1988).

Location specific advantages can be classified into four categories as follows: natural resources advantages, economic environment advantages, political power and legal environment and cultural and social advantages. Taking into account the first group, MNEs can benefit from distribution of natural and produced resources like energy, geographical location and raw materials. As far as the economic environment advantages, MNEs can benefit from lower prices of inputs, intermediate goods, low cost of skilled labor, market size, low communication and transportation costs along with centralized research and development production. Also, economic advantages include trade barriers (quotas and tariffs) as investment incentives. Cultural and social advantages like language similarities, distance proximity between home and host country and societal advantages like education can contribute MNEs to be better off. Moreover, political stability, institutional framework, sustainable economy along with favorable FDI policies can bring advantage to investment activities of MNEs. MNEs' main drivers for FDI location decisions in the host country are factor endowments and strategic planning of international production (Dunning, 1993).

1.3.2 Internalization Advantages

Dunning (1988) categorized three types of market imperfections or market failures that cause uncertain transaction cost which MNEs try to avoid by internalization. Hence, in the process of international production, transaction cost can be reduced internalizing its comparative advantages or in other words by shifting specific advantages within

affiliates across borders. Such activities induce internal market creation rather than sale of company-specific advantages. Internalization can be explained as process of avoiding market failures distinguished as follows:

- 1) Failures that are result of transaction cost uncertainty and risk i.e. broken contracts.
- 2) Failures that arise from companies' capacity to utilize the economies of scale
- 3) Failures that stem from shifting intangible or intermediate goods like knowledge

We previously mentioned that knowledge is an asset on which most technology-oriented companies rely upon. Regarding the fact that it is intangible good, it becomes very hard to evaluate it. Moreover, market failures occur as result of uncertainty and speculation that intangible asset creates. During transaction process of intermediate goods, market failures that appear are effects of information asymmetry or information shortage. With greater amount of transaction cost there is greater possibility that MNEs will utilize their specific advantages in host markets over the trade with foreign companies (Dunning, 1988).

Through the time Dunning's Eclectic Paradigm has improved and developed. As Vernon (1985) claimed, the paradigm was initially a static model that could not explain relationship between competitors nor the change in international production. In the 1988, Dunning argued that the change in competitors' behavior or MNEs' development would affect the change of OLI parameters, which brings dynamic concept into the paradigm. Later on, in the 1993 and 1995, Dunning improved Eclectic Paradigm by taking into account the characteristics of capitalism alliance and combining OLI parameters with the drivers of MNEs' activities. By doing this, Dunning (1993) succeeded to develop dynamic theoretical system which can explain determinants and activities of internalization as well as the drivers of MNEs.

Classification of activities MNE is performed according to motive and purpose so that four types of activities exist: resource seeking, market seeking, efficiency seeking and strategic assets seeking.

1) Resource seeking investment

MNEs engage in resource seeking investment in order to obtain certain resources at lower price than they could acquire in their own country. The main motives that companies engage in resource seeking investment are secured access to supplies at low costs, low production costs and stable competitiveness. Resource seeking investment can be classified into three sub-categories according to type of resources:

- a) physical resource seeking investment which include raw materials, minerals and energy
- b) labor seeking investment

c) a knowledge seeking investment which includes technology, know-how, marketing skills etc.

Ownership advantages that companies gain from this type investment are capital, company size and access to the market, while government policies like taxes, transportation cost, labor cost and natural resources are considered as location advantages. A constant approach to natural resources at low price ensures internalization advantage (Dunning, 1993).

2) Market seeking investment

The goal of market seeking MNEs is to expand their market by making an investment abroad, mainly because of lower transaction and production costs. An engagement in this activity is more affordable for MNEs than distribution activity. Ownership advantages that arise from market seeking investment are capital and technology, brand promotion, marketing competence, management and organizational techniques. Labor cost, material costs, market size, favorable macroeconomic policies like tariffs, quotas and FDI incentives contribute to location advantages. Internalization advantages encompass lower transaction costs and information costs along with avoidance of buyers' uncertainty (Dunning, 1993).

3) Efficiency seeking investment

MNEs use efficiency seeking investment for the purpose of allocating their economic activities in efficient manner. Also, MNEs use this activity in order to rationalize and restructure ongoing investment activities. MNEs that already possess competitive advantages in terms of economies of scale and scope or geographical diversity can be classified as efficiency seekers. These competitive advantages along with capital and input sourcing are considered as MNEs' ownership advantages. In addition, MNEs possess factor endowments internationally which enables them to effectively control their process of investment and production on the global market. Moreover, this type of MNEs prefer to undertake their investment activities by exploiting natural resources in the developing countries and undertake technology and capital-based investment activities in the developed countries. Location advantages that efficiency seekers have arisen from product concentration and specialization. Horizontal diversification and vertical integration activities contribute to internalization advantages of efficiency seeking MNEs (Dunning, 1993).

4) Strategic asset seeking investment.

With this activity, MNEs are in a position to increase their competitiveness and to promote their strategic goals in the long-term through the acquisition of assets of foreign companies. Also, acquiring the companies' portfolio fulfills the motive of strategic asset seeking investment activity of strengthening MNEs on the global market

and weakening competitors. Ownership advantages of MNEs stem from the acquired capital, the management, the expertise of the branch and the possibility of cooperation. The risk reduction or the risk spread and uncertainty avoidance are considered and MNEs' internationalization advantages, while the location advantages come from technology, markets and other resources (Dunning, 1993).

There are numerous hypotheses which endeavor to clarify the determinants of FDI. Most authors that work on topics related to FDI tend to rely on Dunning's research. Importantly, Dunning (1988) developed a conceptual framework focusing on motives of FDI by analyzing reasons and strategies of multinational corporations to invest abroad. In terms of motives for FDI he classified MNEs as market seekers, natural resource seekers and as efficiency seekers.

The goal of market-seeking FDI is to assist regional and local markets. This type of FDI is also known as horizontal FDI because production technology is replicated in the host economy. One of the variations of this form of FDI is tariff-jumping or export-substituting. The focus of horizontal FDI are local markets, local production along with market growth of the host country. Additionally, tariffs and barriers to trade, as hurdles to local market access, play the encouraging roles for horizontal FDI (Dunning, 1993).

Resource-seeking type of FDI can be described by exploiting host economies' natural resources not accessible to home economies including low-cost labor. This type of FDI is focused on investment in manufacturing sector for the export purposes considering cost-efficiency as the main driver. Resource-seeking type or vertical type differs from horizontal type in relocation of production chain parts from home to host country. The main force of vertical FDI is low cost of labor force. Countries with the abundant natural resources tend to attract more FDI, especially those countries enriched with oil and gas (Dunning, 1993).

Efficiency seekers, as third type of FDI, are the most concentrated on technological and innovative capabilities of the host economy which demonstrate a significant competitive advantage. Efficiency seekers MNEs tend to set their companies where economies of scale and scope exist also taking into consideration about institutional framework and economic policies (Dunning, 1993).

Dunning (1988) was the first who provided a theory which is conceptual framework for FDI analysis because it explains and highlights the coherence between three factors of monopolistic power: location, internalization and ownership advantages. This theory is called eclectic paradigm or OLI paradigm. Unlike greenfield investments where the company is entering an inbred market by building a new factory, FDI investments are overseas transactions between companies within a certain time period and these transactions can be defined through ownership advantages.

De Mooij and Ederveen (2003) explain that ownership advantages of FDI can be in the form of mergers and acquisitions, which is also the most common form of FDI in developing countries and it accounts around 60% of FDI. Also, the ownership advantage may arise in the form of a retained profit of a subsidiary, equipment or investment implant in terms of capitalization and materialization of FDI, and in the form of direct transactions of the parent company in the form of debt or capital (De Mooij & Ederveen, 2003).

1.4 FDI determinants: review of past literature

Singh and Jun (1995) wanted to examine differences between countries with low and high level of FDI inflows and analyze FDI determinants with respect to location specific differences between the two groups relying on a sample of 21 country over the period of 24 years. The study reveals that low-FDI group of countries is more relied on labor intensive determinants. In order to attract more FDI, low-FDI countries should stabilize working environment due to work days lost in production, vital for production efficiency. Unlike low-FDI group of countries, **export** appears to be very significant determinant for the group of high-FDI countries. Besides, FDI is more capital oriented in the high-FDI countries (Singh & Jun, 1995). Perspective of politically stable country is generally associated with higher FDI inflows, where **political risk index** is found to be highly significant determinant of FDI in the group of high-FDI countries. Another determinant that appears to be important for high-FDI countries is **operational risk index** whereas a reasonable level of corporate hospitality makes some developing countries attractive to multinational corporations. On the other side, relatively high revenue costs associated with taxing international trade does not play significant role in deterring FDI flows to high-FDI countries. However, as opportunity costs of foregone trade and inefficiency problems may appear, it is not recommendable to tax international trade (Singh & Jun, 1995). With application of causality tests, Singh and Jun (1995) concluded that the main driver of FDI is export, and especially prominent factor in explaining FDI inflows to manufacturing sector.

Similarly, Barrel and Holland (2000) indicate that export is a variable that describes the best the FDI flows with weak evidence suggesting reverse causality between FDI and exports. They conclude that developing countries should find alternative ways to improve the export performance in already liberalized trade in order to stimulate FDI flows in a pragmatic way. These countries, thanks to FDI which brings new technical advancements in technology and management, can fill gaps in companies' internal capabilities. According to Resmini (2000), FDI is vulnerable to risk in a long-term, therefore, **political stability and macroeconomic stability**, as well as legal regulations related to foreign ownership and profit repatriation are important factors that influence foreign direct investments.

Since FDI has been in focus of many studies but very rarely concerning transition economies, Bevan and Estrin (2004) have done two studies analysing FDI inflows to CEE countries. Scarcity in studies related to FDI in transition economies can be explained by a lack of available data along with a short transition process following CEE countries. Bevan and Estrin (2004) included GDP, investment climate, distance, labor cost and import from major 15 EU investors as explanatory variables in empirical estimation. Authors used **risk rating** to measure investment climate which appear to be important determinant in their study, along with traditional gravity forces such as GDP and distance. FDI is also explained by labor costs. Besides **labor costs**, the study revealed a significant effect of **transportation and infrastructure** on FDI as well.

Labor costs are closely related to unemployment given the impact of existing competition and interest for certain wage. Countries with higher rate of unemployment present attractive markets for labor-costs oriented investment. For this type of investment labor costs play significant role in attracting investments to labor-intensive industries, which seem not to be the case of CEE countries. According to Bevan and Estrin's (2004), labor costs have positive impact on FDI. The results seem plausible since manufacturing wages are associated with higher productivity levels of manufacturing industry. Productivity or efficiency-seeking investments are not driven by low wages, but efficient workforce. A substantial impact on FDI in CEE countries has **accession to EU**. The beneficial consequences of CEE countries joining EU would be noticeable in terms of expanding market potential due to expected increase in GDP along with decrease in transportation costs. EU enlargement would indicate reduction of trade costs at the same time affecting the reduction of tariffs. Another variables specific to transition countries that Bevan and Estrin (2004) introduced are method of privatization and the market share of private business. Both of these variables have demonstrated an expected positive and highly significant effect on FDI.

Estrin and Uvalic (2013) find that the **size of domestic economy, distance and institutional quality** are important factors that explain FDI inflows to Balkan region transition countries. Economies of Western Balkan except of Romania are relatively small, which can explain why GDP of host country positively affect FDI. Related to the distance of Balkan countries from EU and other major trading block, the found distance effect is negative and significant. Due to existence of collinearity between explanatory variables, institutional factors are very hard to interpret. However, in the transition economies their role is significant for FDI inflows. Given that improved institutional quality is precondition for EU membership, EU membership is also closely related to increase in FDI. In addition, the announcement of joining the EU tends to have positive effect on FDI with the assumption that a criterion of an institutional quality has been satisfied (Estrin & Uvalic, 2013).

However it remains unclear whether the announcement affects the FDI because of reduced transaction costs, risks and improved quality of institutional factors or because countries that already have superior institutional framework are accepted as EU members. The study also reveals that western Balkans countries received significantly less FDI compared to other transition economies. The reason for such a negative effect lies in political risk that Western Balkan countries bear due to past conflicts in the region, disintegration and low economic growth. Considering the presence of these negative effects, Western Balkan's concern is increased FDI that will lead to reduced unemployment in its aspiration towards European Union (Estrin & Uvalic, 2013).

According to Carstensen and Toubal (2004), decrease in the unit labor cost and educated labor force positively affect FDI flows in the short run and in the long run. Their study has shown that market potential has strong impact on FDI. The results of their study have shown a positive impact of reduction in tariffs too. In relation to corporate taxation effect on FDI, Carstensen's and Toubal's (2004) study reveals that the decrease in corporate tax rate by 1% brings about \$2 million rise in FDI inflows.

Gondor and Nistor (2012) analyze determinants of FDI in six transition economies. The study incorporated Romania, Bulgaria, Latvia, Lithuania, Poland and Hungary in order to examine their tax systems' effect, and more precisely the effect of tax reforms on FDI in the period from 2000 to 2010. Most of the analyzed countries have undergone taxation reforms by cutting their corporate tax rates and introducing flat rates. These tax reforms resulted mostly in lower overall tax ratios. Following the trend of tax competition among transition countries, majority of these countries have maintained flat tax rates upon previous tax cuts. Gondor and Nistor (2012) by making comparison between old and new EU member countries found that old EU member states attracted more FDI inflows despite their high corporate income tax ratios. In their work Gondor and Nistor (2012) state that tax competition is not the only fiscal tool that can be used for attracting FDI. In contrast, favorable business environment seems more important determinant of FDI in the EU context. Their study shows that countries with higher tax rate attract more FDI. The plausible explanation rests on the assumption of creating favorable business environment by spending collected tax revenues in business-supportive infrastructure and public goods. Importantly, their study indicates that low corporate income tax rate has no effect on FDI in the unfavorable business environments with dominant fiscal uncertainty and tax frauds created by misguided fiscal policies (Gondor & Nistor, 2012).

Casi and Resmini (2010) study reveals that traditional determinants referring to market size, labor costs and GDP growth have positive impact on FDI inflows. Their significant coefficients in this empirical analysis bring further evidence on the importance of traditional factors in determining FDI location. Casi and Resmini (2010) also bring evidence that multinational corporations seem more concentrated on (attracted by)

skilled labor force rather than on cheap labor force. They conclude that MNE's investment preferences are focused on dynamic regions with high labor productivity and high market potential. Their research has also shown that FDI flows are sensitive to functional specializations of regions which indicate that localization strategies of MNEs have been changed. This should be considered during implementation of specific policies designed for FDI attraction. Furthermore, Casi and Resmini (2010) tested the difference between attractiveness of Western-European and Eastern European countries. They found that location decisions of Western-European MNEs are more sensitive to intra-industrial spillovers while location decisions of Eastern-European MNEs are more sensitive to intra-sectoral spillovers. More importantly, they found that Western-European countries prefer to invest in high-tech sector which may deter Eastern-European outsourcing of human capital that is not related to production/manufacturing activities. Moreover, study by Casi and Resmini (2010) indicate that human capital endowment stays the main FDI determinant for both Western and Eastern European MNEs.

Hajkova, Vartia, Yoo and Nicoletti (2007) estimate bilateral FDI in the panel model covering OECD countries in the period of 1990s. The model includes tax indicators for home country, host country and bilateral agreements that control tax treatment of foreign source income. Estimates by Hajkova et al. (2007) indicate that openness, labor costs and regulatory obstacles are more relevant factors for location of FDI and FDI attractiveness than taxation. Moreover their estimates support the assumption that FDI across OECD countries is mostly driven by horizontal motives given the results of positive impact of market size similarity and negative impact of factor dissimilarity. Therefore, findings by Hajkova et al. (2007) suggest that proxies for transportation cost, economies of scale and market size appear to be significant for FDI. Furthermore, certain regression estimates using AETR and METR show a significantly negative impact on MNE's decision to invest. In detail, results suggest that rise in METR by one percentage point on average causes a decrease in FDI stock from 2% to 4.5% in a host country. An increase by one percentage point in AETR also causes FDI stock to fall by 3.5% to 5.5%. Another way to capture the significance of tax planning is to test the impact of statutory tax rate. By replacing AETR and METR, Hajkova et al. (2007) show statistical insignificance of statutory tax rate suggesting that STR compared to bilateral measures of the tax burden is not a relevant tax indicator. Authors also explore the impact of tax systems and possible diversion of FDI caused by changes in tax regimes in host countries. Regression results reveal that shift to an exemption system causes a rise in bilateral FDI stock, *ceteris paribus*. Their findings also reveal that employment protections and tax wedges on labor tend to restrain FDI inflows while market openness, especially through free trade area, tend to increase FDI inflows in the host country. However, there is no clear evidence about different FDI reactions to changes in tax rates across countries that use exception or credit tax system. The most important regression finding in this study suggests that taxation has small but significantly

negative effect on FDI unlike other policies. Thus, according to Hajkova et al. (2007, p. 30), “around 40% of the country specific deviations of FDI from OECD average are explained by policy factors and 60% by non-policy related factors, as well as home and host country-specific effects and time-fixed effects“.

Findings by Demekas, Horvath, Ribakova and Wu (2005) demonstrates that gravity factors like market size, labor cost and geographical position have dominant role in attracting FDI in CEE and SEE countries. The obtained results are in line with previous empirical findings. The impact of traditional gravity forces remains significant even after including privatization-related factors in analysis of FDI inflows. Furthermore, their study finds that free trade and flexible foreign exchange rates with improved infrastructure sector enhance FDI with significant negative impact of labor costs, and high corporate tax rate. The study did not reveal the significant impact of institutional determinants including corruption index and tax holiday. Despite the fact that corruption index and indicators measuring governance do not have direct impact on FDI, they constitute positive investment climate (Demekas et al., 2005).

In their study Demekas et al. (2005) applied test for threshold effects in order to test behavior of FDI above threshold level, which appeared to be 12% of GDP for non-privatization related FDI. The test shows that FDI is primary attracted by gravity factors, but above the threshold level, the importance of institutional factors increases. The obtained results cannot lead to a decisive conclusion on the importance of institutional factors, but it displays changing behavior of FDI. In sum, FDI are determined by traditional factors including low labor cost, market size, and free trade until certain threshold, after which FDI seems more driven by quality of institutional factors (Demekas et al., 2005).

Janicki and Wunnava (2004) examined key determinants of bilateral FDI flows between transition CEE countries and the EU. The study reveals that market size, labor costs, openness to trade and country risk are important determinants of FDI for the eight transition economies examined, namely: Poland, Hungary, Slovenia, Slovak Republic, Romania, Estonia, Czech Republic and Bulgaria. The complementarity between trade and investment indicates that trade integration is the most important variable which is found to positively affect FDI in transition context. Specifically, Janicki and Wunnava (2004) included import (as a share of GDP) in their study as one of the proxies for international trade. The results revealed that FDI will increase by 140.28 million dollars for each country with 1% increase in bilateral imports. Their study also suggests high significance of market size determinant for FDI activities. It is suggested that larger economies with stable markets will attract more FDI inflows. The study uses log GDP as proxy for market size which indicates that an increase in market size positively affects FDI but at a decreasing rate. This means that expanding market prospects, though important for FDI, is associated with diminishing marginal returns. Another

variable found to be important is labor cost. The difference between labor costs of EU and CEE countries showed that labor costs have positive effect on FDI inflow indicating that countries with high labor costs tend to relocate their production to countries with cheaper labor cost (Janicki & Wunnava, 2004).

Moreover, Janicki and Wunnava (2004) find country risk to be significant FDI determinant for CEE countries. According to their study, improved credit rating by one unit exerts increase in investment by \$10.31 million, on average. Credit rating is closely related to financial sector stability that along with macroeconomic and political stability contribute to healthy investment environment, which consequently attracts more FDI. On the other side, FDI is viewed as great mechanism for enhancing growth and development in transition economies.

Jun (1994) empirically examined through which channels home and host country's taxation affect FDI and the extent of that effect. He found that the tax rate of host country has no effect on investment decision of MNE's, but it can affect its financial behavior on the local market. Moreover, manipulating with transfer prices is one of the channels that companies use to shift their taxable income or location ownership. Jun (1994) calculated that the effect of transfer pricing is equal to the difference of corporate tax rates between related countries. In this panel data analysis of inward FDI between U.S. and other 10 investing countries between 1980 and 1989, Jun (1994) estimated that home country's tax rate has significant negative effect on behavior of FDI from resident countries. Hence, this finding suggests that there are other channels through which tax affects FDI, specifically through effective tax rate or location substitution effect. Besides taxation, Jun (1994) also finds exchange rates, research and development are important drivers for companies' decisions to invest.

2 DEFINITION AND OBJECTIVES OF CORPORATE TAX

According to Hyman (2011), taxes are compulsory payments levied on business activities and worker's income. Its purpose is to transfer revenue or resources from individuals to governments. Taxes consist of tax base and tax rate. Tax base is the economic activity on which the tax is imposed grouping base into three categories: income, consumption and wealth. Tax rates are ratios of tax paid on the tax base. Moreover, two types of tax rates can be differentiated: average tax rate and marginal tax rate (Hyman, 2011). The most common corporate income tax is statutory tax rate (hereinafter: STR). Corporate tax may be imposed on several levels of government. Also, STR is crucial for location investment decisions (OECD, 2014). The basic tax rate definitions, tax related terms and measurement concepts are given in Table 2.

Table 2: Tax rate definitions and measurement

Statutory tax rate (STR)	The basic measure of corporate income taxes. It is the marginal rate of tax applied to any additional income including profits and surcharges given the level of allowances.
Tax Base	Percentage of the MNE income available for tax deductions calculated through depreciation allowances and other allowances
Average tax rate (ATR)	Taxes paid by companies divided by a measure of operating surplus.
Effective tax rate (either marginal or average)	Percentage reduction in the financial rate of return on an investment due to the fiscal system of the host country.
Effective marginal tax rate (EMTR)	Measures the gap between pre and post-tax return on a marginal investment project that does not yield economic rent
Effective average tax rate (EATR)	Measures the gap between pre- and post-tax return on an investment project on which companies might earn an economic rent
Bilateral corporate effective tax rates (BEATR)	Refers to the scaled difference between the pre- and post-tax net present values of FDI with a given infra-marginal financial rate of Return

Source: *Coelho (2011)*

2.1 Structure of tax rate

2.1.1 Tax base

According to OECD (2014) corporate tax rate has broad tax base designed to cover all earned income form corporation. Tax base for corporations can be really broad, encompassing normal return on equity capital or pure economic rent. Pure economic rent is described as earning from monopolistic competition or advantage gained from competitive advantage related to production factors. Corporate tax base is created as proxy for return on equity capital meaning that tax rate is imposed on net profits (OECD, 2014). As tax rate depends on the tax base, it implicates that high tax rate does not induce high payments.

2.1.2 Effective tax rates

For the sake of empirically analyzing FDI, ideally, it is believed that the effects of the corporate tax should be analyzed by distinguishing between the average effective tax rate (hereinafter: EATR) and marginal effective tax rate (hereinafter: EMTR). According to Hyman (2011, p. 575), “effective tax rate (ETR) for corporations differ from the statutory rates (STR) because real economic profits differ from taxable

profits”. An inflation rate, depreciation allowances and reduction in real interest rates should be taken into account when calculating ETR. Inflation causes cost of capital to rise, which affects ETR to increase. On contrary, tax preferences like accelerated depreciation cause a decrease in ETR (Hyman, 2011). EMTR refers to the tax burden ratio on an additional investment and has an influence on the decision of how much additional investment to make in a country in which investments have already been made (Jun, 1994).

The definition of average tax rate (hereinafter: ATR) given by Hyman (2011) refers to ratio between the total amount of collected taxes and value of tax base. Marginal tax rate (hereinafter: MTR) is a ratio of an additional collected tax and additional value of tax base as tax base increases. According to Devereux and Sørensen (2006), location decisions of investors are determined by EATR, while the scale of investment is affected by EMTR. EATR refers to ratio of the tax burden on a project and the whole period of the project and has an influence on the decision in which country to place a new investment. EATR is largely determined by the STR (Jun, 1994).

Companies are willing to invest to the point where marginal product is equal to cost of capital. A profit maximizing level of investment is caused by decrease in marginal product associated with the rise in investment. High EMTR causes cost of capital to increase which results in decrease in investment. When deciding to invest, considering pre-tax rate of return on investment (EMTR) is more traditional and common approach compared to considering pre-tax reduction on profit caused by taxation (EATR) (Devereux & Sørensen, 2006).

2.2 Incidence of corporate tax rate

In the long run, investment affected by corporate tax rate may have impact on the output prices and wages. Over time, a decline in the output which may come as a result of high incidence of corporate income tax in corporate sector compared to non-corporate sector causes the increase in the supply of goods, which results in increase in prices of goods in corporate sector. An increase in prices of goods produced by corporate sector affects income of households due to large portion of corporate sector being consumed. Given the reductions in labor and capital inputs usage in corporate sector due to corporate tax effect, wages of labor force tend to decline in the long run. Such changes in corporate sector might not cause a shift of labor to non-corporate sector which depends on the elasticity of substitution in production of factors in both sectors (Hyman, 2011).

2.3 Effects of corporate taxation on FDI

MNEs’ decisions on location in CEE countries are influenced by different set of measures proposed by governments. In order to form attractive location factors for future investors, governments offer fiscal and non-fiscal incentives. In this section, the

accent is put on corporate taxation because of its possible impact on location decisions and FDI's profitability. Empirical studies reveal mixed results on the effects of corporate taxation on FDI. In addition, results from studies focusing on CEE countries suggests a significant increase in investment coming from EU and U.S. given the lower corporate income tax in these countries compared to more developed Western countries. Notwithstanding this, considering the relationship between corporate taxation and FDI, many authors conclude that there is a positive effect of reduced corporate tax rates on FDI. The impact of reduced corporate income tax has been a part of policy debate for a long time. Boskin and Gale (1987) conducted the research which indicates that corporate taxation affects the location of FDI. The research shows that location, labor costs and political considerations are not primary drives of FDI. Instead FDI locational decisions are predominantly defined by changes in corporate tax rates. Similarly, Boskin and Gale (1987) found that FDI would decrease by about 2.9% on average if corporate tax rate increases by 1%. They have also found that FDI raised from retained earnings are more sensitive to corporate tax rates rather than investment financed from transfers. In addition, they suggested that tax rate cuts could increase FDI inflows in between 11% to 20%, on average, *ceteris paribus*. Boskin's and Gale's (1987) extended their study in quantitative sense with other econometric specifications like linear instead of logarithmic and by using long time series. Moreover, they included after-tax rate of return estimates and revised ATR (Boskin & Gale, 1987).

Young (1988) extended Hartman's model using gross national product (GNP) data for the period between 1953 and 1984 in its empirical analysis. His aim was to examine effects of domestic tax and the rate of return on FDI in the U.S. According to Young's (1988) analysis, FDI through retained earnings are more responsive to tax changes than FDI through transfer of new funds. Considering tax rate, FDI's elasticity through retained earnings appears to be between -0.47 and 1.81 while elasticity through transfer of new funds is -0.40 to 0.71. These estimations indicate sensitivity of FDI through retained earning with respect to changes in taxation.

Slemrod (1990) also focused on time series FDI analysis and argued that previous studies are unjustified by improperly specified models and put doubts on FDI data used from benchmark surveys. In order to investigate home country tax effects, Slemrod (1990) introduced new explanatory variables in his regression. In Slemrod's opinion, due to misinterpretation of FDI by Bureau of Economic Analysis in 1974 which in its definition includes investments financed by locally raised funds, he expanded his model by explanatory variables and added dummy variable in order to ensure for possible deflection in extrapolated data from true values of FDI. Previous researches relied on the data from the benchmark surveys, while for non-benchmark data were manipulated, used from quarterly reports. Slemrod (1990) thought that other variables are also related to tax rate and that could have been affected by the tax. So he introduced lagged and current period values into investment equation for testing business cycle effects on FDI,

changes in the relative size of the US economy and variables capturing the effects of changes in relative production costs. He also expanded his research in matter that he used MTR for home and host country, while other studies used ATR, yet postulating that MTR yields objective results.

Constructing a new model and including more variables, Slemrod (1990) found significant elasticity of tax rate on FDI financed from transfer of funds. On the other hand, he did not find significant impact of corporate tax on FDI from retained earnings. He also tested effect of corporate tax on aggregate FDI which incorporates FDI both from retained earnings and transfer funds. Results showed that taxes employ significant negative impact on aggregate FDI. In his research he disaggregated FDI data over the period between 1960 and 1987. His attempt was to investigate whether tax systems of exemption countries differ from foreign tax systems. Based on the method of taxing foreign income from FDI, countries are grouped into two groups. The first group of countries like Canada, Netherlands, West Germany and France, operate under exemption tax system while the other group of countries like United Kingdom, Japan and Italy operate under foreign tax credit system. Consequently he investigated two separate investment series addressing home tax rate influences (Slemrod, 1990).

Mixed results are obtained from empirical tests in which Slemrod (1990) analyzed effect of host country tax rate on inward FDI in the U.S. He expected negative relationship between EMTR and FDI subsidized by transfer funds. Furthermore, for all tested countries, coefficients proved to have negative relationship, except in the FDI equation capturing investments from Canada.

Regression outcomes did not show any significant effect of host country taxation on inward FDI financed by retained earning nor on investment from exemption countries. This effect was not expected although under certain conditions, host country tax effects could be neutralized by home countries that benefit from foreign tax credit. Slemrod (1990) also did not find positive effect of home country tax rates on FDI from exemption countries as he assumed. In theory it is expected to be positive because opportunities for investing under home country taxation are opportunity cost of exemption countries investors in the U.S. Thus, Slemrod (1990) wanted to capture the effect of home country taxation on FDI financed from funds transferred from parent into foreign tax credit countries. Assumption is that higher home country taxes tend to encourage domestic investment and discourage FDI from new transfer funds along with higher repatriation tax rates. But, results showed that there is no less positive or negative effect of home country taxes for countries that benefit from foreign tax credit system than on those from exemption countries.

In addition, the regression showed positive relation between home country taxation and FDI financed by retained earnings. In his research, Slemrod (1990) had a lot of difficulties when he created investment models and analyzed effect on FDI from foreign

tax credit and exemption countries, which can be explained by measurement difficulties of EMTR and data problems. Moreover, data problems could be responsible for appearance of statistically significant coefficients of home country tax, which in some cases tend to disappear. However, the empirical analysis suggests significant effect of host country taxation on FDI decisions (Slemrod, 1990).

Gropp and Kostial (2000) applied panel data analysis on 19 OECD countries covering period from 1988 until 1997. The authors examined the relationship between corporate tax and FDI as well as between corporate tax revenues and FDI. They also applied the simulation of tax harmonization to show how tax changes might affect FDI flows and corporate income tax revenues of the EU countries. The results of these estimations reveal a significantly negative impact of corporate tax increases on FDI inflows. Specifically, the results indicate that FDI inflows tend to decrease by 0.3 percentage points of GDP if STR increases by 10%. Increase in STR has opposite effect on FDI outflows which tend to increase by 0.2 percentage points with the 10 % increase in STR. The study concludes that the corporate taxation influences both FDI inflows and outflows (Gropp & Kostial, 2000).

Devereux and Freeman (1995) based their analysis on panel bilateral FDI flows between seven OECD's countries and estimated the effect of EMTR on FDI inflows in the period from 1984 to 1989. The authors find that taxation does affect location of outward FDI flows. However, they find no evidence that the taxation affects the choice between investing abroad and investing home. Tax credit in the form of tax incentives given to foreign shareholders is also found to significantly impact inward FDI. In their empirical analysis, Bellak and Leibrecht (2005) used EATR to investigate its impact on bilateral flows between eight CEE countries and seven investor countries. Using panel gravity model, the authors examined relationship between taxation and FDI flows focusing on the period from 1995 until 2003. Estimation results revealed negative impact of corporate taxation, distance and unit labor costs on FDI inflows. Positive and significant effect is found for market size and privatization that seem important determinants of FDI in transition economies.

Bellak and Leibrecht (2005) first explain how STR is not relevant indicator of taxation, and that the elasticity of estimated tax rate might be error biased in examining their impact on FDI because other tax related effects on corporate income are not taken into account. In view of this, the authors used EATR as a measure of corporate tax in their estimations. FDI inflows are expected to be more sensitive to changes in ESTR compared to STR. The importance of bilateral EATR is being emphasized throughout the work of Bellak and Leibrecht (2005). Accordingly, they analyze the effect of the difference in the effective corporate tax applied in home versus host country as a determinant of FDI location decisions. Although gravity variables explain the behavior of FDI there is an exception of home country size determinant which may vary in its

coefficient and significance. Its coefficient can be low and insignificant especially when the FDI source country is small in its size. Importantly, the obtained coefficient of bilateral EATR is highly significant and always negative. The analysis suggests an increase in FDI flows by 4.4% following decrease in ETR by 1 percentage point (Bellak & Leibrecht, 2005). In view of the postulated hypothesis on inappropriateness of STR and the possible biases associated with STR measurement, Bellak and Leibrecht (2005) replaced EATR with STR, and estimated the same model as additional sensitivity analysis. As expected, the results obtained suggest lower tax elasticity of STR (i.e. around -2.4 compared to -4.4 obtained for the EATR variable) and thus STR not found to be significant at the conventional 5% level of significance. The results of this study clearly implied the effectiveness and positive impact of government decisions related to tax cuts in transition countries. Corporate tax is found to have higher impact on FDI than the effects estimated in earlier studies in transition economies. Concluding remarks of this study emphasized the importance of taxation compared to other determinants of FDI in CEE countries. In addition, the authors conclude that the difference in the interpretation of taxation impact on FDI can come as a result of differences in measuring taxation in the literature i.e. using STR instead of ETR (Bellak & Leibrecht, 2005).

In one of their studies Benassy, Fontagne and Lahreche-Revil (2000) examined the effect of nominal and effective tax rates on FDI flows in number of OECD countries. The results of their econometric analysis suggest significant impact of both nominal and effective tax rate on inward FDI in selected countries. The results are robust to controlling for the effects of tax exemptions or tax credits. Moreover, the results of their simulation analysis revealed that tax competition among EU member states is potentially beneficial to inward FDI, while generalisation of tax exemption schemes may also lead to increases in inward FDI flows in EU countries. Another study of Benassy, Fontagne and Lahreche-Revil (2005) examined bilateral FDI flows and corporate tax rates between 11 OECD countries in the period between 1984 and 2000 using panel regression. The regression reveals that high levels of corporate tax rates exert to have negative impact on FDI inflows even when gravity factors are being controlled. There is notable impact of corporate tax differentials on FDI besides already known market potential influence. This is in the line with previous research which also indicates a positive effect of the size of the parent country on FDI outflows indicating potential of big countries to place their investment abroad. The same study shows an expected negative sign of distance variable without being significant given its p-value (Benassy, Fontagne, & Lahreche-Revil, 2003).

Thus, it is evident disproportional impact of tax differentials on FDI whereas lower tax rates tend to fail in attraction of foreign investors, while higher corporate tax rates deter FDI to host countries. Positive tax differentials have heterogeneous impact in countries oriented on exporting capital due to double taxation agreements. Consequently large tax

differentials are associated with higher outward FDI. On the other side narrow tax differentials tend to have, though not substantial, but still discouraging effect on FDI inflows. Their previous study reveals the same results indicating a decrease in FDI inflows by 4.22% if the host STR increases by 1 percentage point. Accordingly to this study, tax differentials play significant role in FDI location decisions. Some countries may face alterations in market potentials whereas tax differentials can compensate disadvantage in market potential through lower STR (Benassy et al., 2003).

In order to improve our understanding on the taxation effect, Wolf (2007) expanded the earlier analysis. Wolff (2007) investigates the impact of taxes and market size on FDI. The regression without time and country controls shows that host corporate tax reduces FDI inflows, especially investments in equity. On the other hand, high home country taxes increase the probability of FDI inflow because they reduce set-up costs born in the home country. However, after including time and country controls, regression results show insignificant coefficient for home and host tax rates and their influence on equity FDI. Thus, the regression with controlled time and country effects reveals that main drivers of equity FDI are population size and GDP per capita. Moreover, host country GDP appear to be significant for an investment decision. In addition, empirical findings for the sample of enlarged EU countries show that even after controlling for country dummies, statutory tax rate appear to be significant for the allocation of profits in the EU.

For detecting reinvested earnings, corporate taxation of a home country has significantly positive effect. However this is not the case for total and equity FDI flows as study reveals insignificance of taxation in the context of EU countries in the period 1994 and 2003. Wolff (2007) explains that insignificance of host and home statutory corporate taxation coefficients may be related to the so called identification problems, whereas tax incentives cannot be differentiated from unobserved time and country variables even after the time and country effects are being controlled for. Another explanation for insignificance of coefficients is that taxation is satisfied by corresponding service providing public goods that can upgrade location advantages. However, the measurement of government expenditures shows that public spending tends to discourage FDI (Wolff, 2007).

Djankov, Ganser, Mcliesh, Ramalho and Shleifer (2010) conducted cross-section analysis in 85 countries in 2004 and analyzed the impact of ETR imposed on mid-size domestic companies on FDI and entrepreneurship. The study reveals negative effect of the ETR on FDI. According to estimates, aggregate investment will drop by 2 percentage points if ETR increases by 10%. Economic growth is negatively affected by corporate tax rates while the size of the shadow economy is positively correlated with economic growth. In their 12 specifications, Djankov et al. (2010) included three corporate tax rates as independent variables along with investment and entrepreneurship

as dependent variables, and using openness to trade, inflation, economic development, administration quality and security of property rights as additional FDI determinants and control variables. The results obtained for the ETR and STR variables are similar to initial results. The results reveal large and statistically significant effect of both STR and ETR on FDI. More specifically, 10 percentage points increase in 1st year ETR would affect reduction in FDI by 2.3 percentage points. Along with the effect on FDI, ETR influence the business density such that an increase in ETR by 10 percentage point is associated with the reduction in business density by 1.9 companies per 100 people. This increase in the ETR by 10 percentage points is also found to affect the entry rate of business i.e. reducing the entry rate by 1.4 percentage points (Djankov et al., 2010).

De Mooij and Ederveen (2003) reviewed 25 empirical studies which examine corporate taxation effects on FDI. Considering that the mean of tax elasticity in literature surveys is -3.3 and that certain variations between studies exist, De Mooij and Ederveen (2003) try to explain those variations between studies using meta-analysis. Besides analyzing variations of tax elasticity between studies, meta-regressions make heterogeneity across studies transparent and provide better comparison of studies. Meta regression provides better understanding of literature available while regression analysis provides better understanding of essential data. Authors find variations on tax elasticity among studies which can appear due to differences in choice of tax data and FDI data as well. Underlying studies reveals that smaller elasticity appears in the studies where data on mergers and acquisitions were used rather than aggregate FDI data. In addition, studies with data on plant expansions and new plants are found to reveal higher elasticity than studies with data on FDI (De Mooij & Ederveen, 2003).

A higher elasticity, as previously mentioned, results from estimates using ETR and ATR compared to those using STR. Moreover, marginal and average tax codes of tax rates influence elasticity to be higher comparing to tax rates based on macro and micro data. Importantly, De Mooij and Ederveen (2003) find no evidence of investment's impact coming from countries with tax credit and tax exemption systems on the size of elasticity. Findings by De Mooij and Ederveen (2003) show that findings with linear specifications tend to have larger elasticity than findings with log specifications. Also, higher elasticity is suggested for studies using cross section data. The value of tax elasticity in regressions is also suggested to depend on the integration or the absence of the home country tax rate in estimated models (De Mooij & Ederveen, 2003)

Hansson and Olofsdotter (2010) empirically estimated effects of corporate taxation and agglomeration process on bilateral FDI stock and flows within the old and new EU member states. The study covers 27 EU member states in the period between 1995 and 2006. Similar to analysis of Razin and Sadka (2006) authors follow the model of two-fold decisions based on questions whether to invest and how much to invest. Thus one

of the findings shows big discrepancy of factors determining FDI between the new and the old EU members (Razin & Sadka, 2006).

Hansson and Olofsdotter (2010) find that FDI flows of new member countries are affected by tax differentials. They find that the obtained coefficients of tax differential variables suggest that a 4% reduction in FDI flows is associated by 1 percentage point increase in tax differentials. Moreover, the decision of how much to invest is more sensitive to tax differentials than the decision where to invest. The study also reveals that EMTR has higher effect on FDI compared to STR (Hansson & Olofsdotter, 2010).

Razin and Sadka (2006) developed special mechanism using Nash equilibrium to bring evidence about corporate taxation effect on bilateral FDI. Authors state that every country pair is determined by set of factors which influence the appearance of aggregate FDI and its volume. Similar to competition between EU 15 and EU 10 (new member states in 2004), Razin and Sadka (2006) developed tax-competition model consisted of two countries. Model configuration delivers Nash equilibrium for FDI outflows in the poor host country having low corporate tax rates along with low public goods provision and for FDI outflows in the rich home country having high corporate tax rate with high public goods provision level (Razin & Sadka, 2006).

The results of this study demonstrate that tax differentials play a key role in determining the direction and scale of FDI flows (Razin & Sadka, 2006). Specifically, the study reveals that corporate tax rates in both home and host countries are important determinant of FDI flows (Razin & Sadka, 2006).

Using static panel data analysis, Sato (2012) empirically tested the effect of corporate tax rate on FDI across 30 OECD countries focusing on the period between 1985 and 2007. Author used effective STR rate as proxy for corporate in his analysis. In order to investigate its assumption that the amount of FDI investment from previous years impacts the amount of investment in the current year, Sato (2012) applied dynamic panel analysis. In the dynamic econometric framework Sato (2012) used EATR and EMTR as proxies for corporate income tax for 19 OECD countries covering the period between 1985 and 2005. As assumed, the estimation results have shown significant and positive affect of FDI lagged variable along the expected negative effect of corporate tax on FDI in case of both measures i.e. EATR and EMTR used as proxies (Sato, 2012).

More specifically, static panel analysis indicates that FDI increases by about 2.4% following the corporate tax rate decrease by one percentage point. The obtained coefficient on the corporate tax rate is estimated at -0.019 (Sato, 2012). The coefficient of corporate tax rate excerpts a negative sign in all estimations implying a negative effect of corporate taxation on FDI as a priori expected. The estimated dynamic model, suggest the importance of controlling for lagged values of the dependent variable, namely the FDI. The sign of the explanatory variable which presents FDI size from

previous year appears to be positive and significant, indicating positive effect of lagged FDI values on the size of FDI in the current year (Sato, 2012).

The results of the dynamic model relying on the GMM estimation technique, confirm the results obtained in previous analysis. The obtained coefficient with respect to corporate taxation is significant, and has a negative sign indicating that a decrease in corporate tax rate by one percentage point in the host country is associated with an increase in FDI by about 2.4 percent, on average. Estimated results by Sato (2012) are consistent with the results obtained by Benassy et al. (2005) whose result indicates a rise in FDI by 4.2%. The difference in the obtained coefficients in these studies appears to be associated with the different types of corporate tax rates used in the analysis. Sato (2012) concludes that for more accurate results, further researches should rely on EATR and EMTR proxies of corporate tax rate rather than on effective STR.

Vartia (2008) based her empirical approach on investment theory which indicates that corporate taxes affect the cost of capital and affects investment by increasing the user cost of capital. So, the empirical analysis focuses on the industry level data on FDI and the sample includes the OECD countries. The results of this study reveal that a decrease in corporate tax by one percentage point results in a decrease in the cost of capital by about 2.6%, which results in the increase in investments from 1% to 2.6% in the long run. Thus, the obtained coefficient on the corporate tax rate reflects the impact of reduction in corporate tax rate when corporate tax rate is measured in levels. The impact of this variable on cost of capital i.e. investment-to-capital ratio is thus estimated to be larger in countries with high corporate tax rates. The obtained coefficients are in the range between 1.4% and 3.8%. Moreover, depreciation allowances are also found to significantly affect cost of capital which in turn tends to cause increases in overall investments. Specifically, an increase in the net present value of depreciation allowances by 5% is estimated to reduce cost of capital by about 2.5%, leading to increases in investment-to-capital ratio from an estimated 0.9% to about 2.5% in the long run. The impact of depreciation allowances on investments is conditional on the level of corporate tax rate since the deduction in depreciation allowances from tax liability is determined by the corporate tax rate. Moreover, Vartia's (2008) empirical testing indicates that in high corporate tax rate countries, an increase in depreciation allowances has higher impact on investments due to the assumed higher reduction in cost of capital the long-run. The results show that in countries with high corporate tax rates, a 5% decrease in the rate of depreciation allowances is associated with a 0.2 to 0.6 percentage point greater positive effect on investment compared to countries with an average tax rate level (Vartia, 2008).

Hunady and Orviska (2014) estimated the effects of both the effective tax rate (ETR) and statutory corporate tax (STR) on FDI using panel data on 26 EU countries. The study covered the period between 2004 and 2011. As expected, the authors find

negative coefficients on STR and ETR but the obtained coefficients are highly insignificant. This indicates that there is no significant impact of corporate taxation on FDI in the context of EU countries. The coefficients remain insignificant, even when STR and ETR are included separately in the model. Eventually, labor costs and openness of the economy are found to be the most important determinants of FDI. The ability of large multinational companies to shift taxes across different countries they operate in, within the EU context, can be a valid justification for the insignificant effect of corporate taxation on FDI obtained for the sample of EU countries (Hunady & Orviska, 2014).

3 TAX INCENTIVES AND FDI: LITERATURE REVIEW

3.1 Definition and objectives of tax incentives

Easson and Zolt (2002) define tax incentives as exemptions or exclusions that allow certain tax privileges like preferential tax rates or postponement of tax liability and we meet them in the form of tax holidays, reduced import tariffs, deductions related to investments expansions and customs duties. Sometimes, it can be uneasy to make a difference between provisions that provide a special tax treatment and those provisions that are part of a tax structure. For example, a 10% corporate tax rate for manufacturing might be considered as a tax incentive, or it can be regarded as an attractive characteristic of a tax structure.

Easson and Zolt (2002) believe that tax incentives nowadays may have a bigger influence on investment than before which can be explained by several factors. The first factor is related to the greater spectre that tax incentives cover, i.e., tax holiday period has increased, and tax relief for enterprise zones is broadened to include income and trade taxes. Such changes in the structure of tax incentives reduce the tax burden for investment projects. According to Easson and Zolt (2002), the second factor comes from the greater capital mobility and trade liberalization which reflects the removal or reduction in non-tax barriers to trade and investments, and greater ability to exploit and use resources worldwide. Overall, globalisation of the world markets has resulted in greater importance of 'taxes' when considering investment decisions. Progress in the organizational structure, distribution methods, transport and the production itself changed the way businesses operate and invest (Easoon & Zolt, 2002).

The increase in service and non-asset activities and their mobility have affected the mobility of companies' business. Thus, it is not uncommon for certain parts of the final product to be produced in different countries, thus encouraging greater competition between countries. Some countries have even moved the whole production to other countries, and the motives for this are different. In this way, the company can supply

more markets from one location. Increasing competition within customs unions and free trade zones has positively affected economic growth. Competition among the countries of the common market is prompted by the desire that one of them becomes a host country for companies that supply common market (Easson & Zolt, 2002).

Tax reliefs can lead to increased competitiveness but cannot compensate for or fix disadvantages of tax system imposed by high taxes or legal imperfections. It is also wrong to use incentives to reduce the tax liabilities of individual investors who recorded losses in their first years of operation. Tax incentives cannot solve the problem of political and economic instability in the country which are the main factors driving investments (Easson & Zolt, 2002).

3.2 Role of tax incentives

In addition to attracting foreign direct investments by imposing low or favorable corporate tax rates, the transition countries have the goal of creating favorable business environment and long term benefits for private investors. Apart from corporate tax rates many countries employ different types of tax incentives with an aim of providing incentives for continued capital investments and business growth. The most common tax incentives in transition economies include tax holidays, different forms of incentives related to re-investments of capital and/or region specific investments i.e. regional investment incentives.

The reviewed empirical evidence does not provide a clear picture on the benefits of tax cuts. In some presumably less developed or industrialising countries positive and significant effect of tax cuts on FDI has been recorded, while number of studies have documented small or insignificant effect of corporate taxation on investments, along with the significant costs for the state. The role of tax reliefs in most developed nations is to provide incentives structure to boost additional investment and to facilitate innovative and exporting activities using the common tax incentives such as credits, accelerated depreciation and favorable tax treatment for R & D expenditure (Easson & Zolt, 2002).

Clark (2000, p. 1143) classified tax incentives in three categories:

- 1) Incentives that reduce the tax rate on the profits generated by the investment
- 2) Incentives that reduce the after-tax cost to business of purchasing new capital (i.e. through tax credits)
- 3) Incentives that reduce the after-tax cost of raising funds to finance the purchase of new capital

Tax incentives related to corporate tax are:

- 1) Tax holiday
- 2) Tax credit
- 3) Investment allowances and credit
- 4) Accelerated depreciation
- 5) Reductions in withholding tax

3.3 Types of taxes incentives

3.3.1 Tax holiday

The tax holiday is the simplest type of tax incentives which is mostly prevalent in developing countries, targeting newly established companies. Tax holiday relieves taxpayers from payment in the first years of business, usually five, by providing some additional tax privileges. Certain tax reliefs such as depreciation or interest are often denied during the tax holiday or for an indefinite time. This incentive is attractive for countries where the tax system is in creation because of the small compliance burden, but still imposing a burden on personal income tax or tax return. The disadvantage of this incentive is its misuse, where already established corporations are opening new companies to qualify for this incentive as well as for the purpose of avoiding taxes and deducting liabilities (Easson & Zolt, 2002).

The tax holiday can be directed to a specific sector or industry, but it can also lead to problems if the company is included in sectors other than targeted. There are provisions that allow the access to incentives for such companies if the company is involved with 75% of its fixed assets in the targeted industry by allowing profit only from the targeted industry (Easson & Zolt, 2002).

The tax holiday can be focused on the region and positively impact the development and progress of the region just as it can be focused only on foreign investors. When this incentive encompasses domestic investments, or when it is broad-based, it encourages the development of local companies and domestic production. Tax holiday brings technologies and knowledge transfer, especially in the telecommunications sector. This type of tax relief is not intended for companies that have short-term projects or companies that realize their earnings in a relatively short operating period or are engaged in trade, services and short-term projects. Provisions related to loss carryover may be required with or without tax holiday (Easson & Zolt, 2002).

3.3.2 Special Investment Allowances and Investment Tax Credits

In addition to depreciation, some governments through investment allowances and credits provide investors with the opportunity to write off the amount that is greater than the investment (Easson and Zolt, 2002). Clark (2000) defines investment allowances as special deductions that reduce the taxable income but are related to the tax base and thus

depend on the amount of the tax rate on the tax base. In contrast, investment tax credits are deductions on the amount of taxes to be paid so that they depend on the tax rate. Clark (2000) classifies investment allowances as those with accelerated depreciation and those with increased (enhanced) deductions.

Accelerated depreciation allows quick depreciation, i.e. firms write-off capital costs and increase the present value of claims, since the accelerated depreciation pushes the claims closer to the time of the investment, given the fact that claims yield higher values if the costs are written off at the time they were created. An enhanced deduction allows companies to write off capital costs that exceed the market price when they are acquired. Clark (2000) also divided investment tax credit into incremental and flat. Flat investment credit represents a fixed deduction from investment costs within one year, while incremental represents a fiscal percentage of average investment costs, the costs with the basis of more than one year (moving average base). These incentives are mostly suitable for short-term fixed assets, whereas a large deduction can be achieved with little revenue costs, as incentives are referred to new investments, or to the costs of purchasing capital.

Easson and Zolt (2002) point out that benefits of this incentive in relation to tax holidays are reflected in the fact that revenue costs are related to investment costs, its maximum costs are easy to calculate and costs are not open-ended. Investment allowances and investment credit are attractive to all types of capital investments and can be focused on a specific industry or sector, machinery and technology. Since they are more suitable for capital investment than they are not able to create more jobs as a tax holiday.

3.3.3 Tax Credit Accounts

The tax credit accounts represent a combination of investment tax credit and tax holiday. The difference is that the amount of the deduction is fixed and does not depend on the amount of the investment, i.e. it is limited to revenue income and is not limited to capital investments. The advantage is that the expenses for the government are unknown and there is no distinctive advantage for achieving fast profits through investments (Easson & Zolt, 2002).

3.3.4 Accelerated Depreciation

As already mentioned, accelerated depreciation represents amortization which enables quick write-off of capital investment costs than in normal conditions. Some countries do not provide this type of incentive, and as a replacement, they have the incentive to deduct the cost of acquisition in a timely manner than in normal amortization terms (Easson & Zolt, 2002).

The cost in terms of tax revenues is much lower than when it comes to other types of incentives because they take into account only the time of paying the tax, but not the amount. The incentive for accelerated depreciation is disincentive for companies that cannot make a profit in the first years of business due to time framework. In contrast, companies that plan to expand the business or increase investment, find this incentive extremely beneficial (Easson & Zolt, 2002).

3.3.5 Reinvestment Incentives

For countries that have favorable conditions for depreciation, this kind of incentive is not necessary. One way to encourage reinvestment is to refund the parent company in the amount of tax paid by its local company proportionate to the reinvested amount (Easson & Zolt, 2002)

Another way is to reduce the tax liability for the reinvested amount gained from taxable profit. Benefits are not clear because fostering an investment that may have appeared in any time and which depends on the company's business plans, is just an additional reward for the investor (Easson & Zolt, 2002).

3.3.6 Reducing withholding taxes

This kind of incentive is provided by the governments at zero or reduced rates on taxes, and most often in the case when they want to promote the transfer of technology and interest rates on loans obtained under favorable installments. Dividends earned during the tax holiday are also deductible. However, there is the evidence that this type of incentive deters FDI as it affects the reduction of the reinvestment profits incentive (Easson & Zolt, 2002).

3.4 Advantages of tax incentives

Easson and Zolt (2002) discuss advantages of tax incentives that may attract investments and provide substantial benefits which could not have been reachable without tax policies. An adequate design and proper implementation will make tax incentive a useful tool in attracting specific projects and new investors. Governments can provide alternative incentives to investors other than incentives in the form of grants or cash subsidies. However, it is much easier for governments to provide tax incentives than making improvements in the legal and tax system. Also, due to political reasons, governments tend to offer tax incentives rather than grants regardless these two being economically similar. Additionally, governments find easier providing tax incentives to investors than providing funds (Easson & Zolt, 2002).

When it comes to the benefits of tax incentives, we can expect different types of benefits that are very difficult to evaluate. Therefore, we can mostly speak about the general types of benefits that result from investments stimulated by tax reliefs. Benefits

that are a product of tax reliefs can be identified with economic growth or better conditions in developing countries, such as increased employment, the transfer of knowledge and technology and capital growth (Easson & Zolt, 2002).

These listed benefits are in line with traditional FDI benefits. Furthermore, foreign investments can lead to a spillover effect. More specifically, setting up a large production facility will affect the increase in investment and employment, as well as the increase in suppliers and distributors. These investments are additionally reflected in economic growth resulting from increased tax revenues paid by investors, employees, including direct and indirect taxes, as well as employers' distributors, suppliers and others. Also, economic growth stimulates increased spending which results in increased demand for goods and services (Easson & Zolt, 2002).

3.5 Disadvantages of tax incentives

Holland and Vann (1998) discuss negative effects of investment tax incentives. Developing and transition countries remain to impose tax incentives even though they cannot prevail over fundamental investment obstacles. Tax incentives create revenue cost for governments that are foregone for investments that would occur anyways. As it is believed that FDI would not appear in transition countries without tax incentives, revenue costs would not be created (Holland & Vann, 1998).

On the contrary, there are other short-term projects which can operate without tax incentives, and that can generate high profit. Revenue costs tend to increase because tax incentives are often a subject of tax avoidance. Tax avoidance appears as a result of the design of tax incentives and problems that tax administrators have with auditing. In transition countries, tax incentives are used for tax avoidance and to protect domestic income from taxation by generating more revenue than FDI would generate with tax incentives (Holland & Vann, 1998).

The complexity of tax system caused by tax incentives imposes a cost on taxpayers, increase the uncertainty of tax results which in the end deters investment. Many industrial countries have to use tax incentives not for their effectiveness but due to a political difficulty to remove them. Other reasons why countries remain to use tax incentives are that governments are being hard to fix real problems that deter investment and also being hard to find other methods for attracting FDI. Tax incentives are easily enacted and controlled by governments. Thus, some countries may find themselves under the pressure of multinational companies which are unwilling to invest without tax incentives (Holland & Vann, 1998).

3.5.1 Different types of costs associated with tax incentives

In respect to disadvantages related to tax incentives, four types of tax incentives are differentiated:

- 1) revenue cost
- 2) resource cost
- 3) enforcement and compliance costs
- 4) costs associated with the corruption and lack of transparency

3.5.1.1 Revenue costs

There are two sources of expenses derived from tax incentives, which are: foregone income from investments that would occur without tax incentives; and, second, lost revenue from activities of those investors who require privileges improperly or companies that transfer their income from related taxable companies to those companies qualifying for favorable tax treatment. It is challenging for the proposers of tax policies to evaluate on the basis of projects, whether projects have been implemented for tax benefits or not. Similarly, at the level of the overall economy, it is difficult to assess which levels of investment would be realized with or without benefits (Easson & Zolt, 2002).

Easson and Zolt (2002) believe that offering tax incentives to companies whose decision does not depend on tax incentives represents just a transfer from investor to a government without any gain. Ideally, tax benefits should be offered to investors who at the margin are willing to invest elsewhere but for the tax incentives. There are no real losses from tax revenue for the companies whose projects would not have been undertaken without tax incentives. On the contrary, it is possible to make a profit from those projects, when a company becomes subject to taxation and after the tax incentive expiration, when revenues can be earned from employees, distributors, etc.

The real losses, on the other hand, are caused by the abuse of companies whose tax reliefs do not represent an easing for the investment project but only an investment transfer from the host country. An abuse of tax benefits for non-payment of taxes and obtaining tax reliefs on unqualified activities lead to an erosion of tax revenues. Tax avoidance cases are related to companies that enter investment projects with foreign companies if incentives are targeted to foreign investors or by opening a new franchise or a related company if the tax relief is targeted to new companies. Another type of abuse of tax incentives and increase of losses from incentives is the reduction of the tax base from non-qualified activities. Some companies that meet the requirements for tax relief are also involved in additional non-qualifying activities that are very hard to monitor and determine because of companies' separated operations where companies shift income from taxable company to related company that qualifies for tax incentives (Easson & Zolt, 2002).

3.5.1.2 Resource allocation costs

Tax incentives can generate investments in sectors or countries where they do not appear otherwise. Also, tax incentives can lead to allocation of resources generating too

much investment in some activities, and at the same time driving to too little investment in activities that are not subject to incentives. As it is difficult to assess the impact of incentives in developed countries because of the size of the market, it is also difficult to evaluate the effect in developing countries where it is not clear whether incentives to correct market imperfections will succeed to increase the competitiveness of these markets (Easson & Zolt, 2002).

3.5.1.3 Enforcement and compliance costs

Enforcing, implementing and monitoring tax incentives create costs for the authorities as the process of compliance also creates costs to taxpayers. Costs of monitoring are high, so it is easier for tax authorities to track regular taxpayers than taxpayers that use tax incentives. The expenses that create tax incentives depend on the spectrum of the contributions they generate and the incentive structure itself. Tax incentives users are also subject to administrative costs that depend on the type of incentive as well as on the process of monitoring and reporting (Easson & Zolt, 2002).

3.5.1.4 Opportunities for corruption

The possibility of corruption is high in countries where there is discretion regarding the allocation of tax incentives and when there is no clear instruction for qualification. Likewise, corruption is reflected in favor of certain investors or projects that are kept in secret by the authorities (Easson & Zolt, 2002).

3.5.2 Economic effect of tax incentives

The common thing about all tax incentives is that they have the ability to reduce the tax of the host country that home country would have to pay. Given the structure and purpose, tax incentives have different effects (Easson & Zolt, 2002).

Reduced corporate tax rates, tax holidays, investment credits, tax credits, accelerated depreciation of capital assets, deduction of credits for reinvested profits are incentives that make investments profitable. Tax holidays tend to reduce income tax liability. The advantage of these tax incentives is that they do not cause loss of profit even when it comes to unprofitable investment in the host country. Also, they do not generate financial expenditures like grants, but their expenditure can often overcome their benefit (Easson & Zolt, 2002).

3.5.2.1 Up-front Incentives

There is a difference between downstream and upstream incentives, whereas up-stream incentives reduce investment costs while down-stream incentives increase the return on investment. Upstream incentives include investment and reinvestment credits and accelerated depreciation (Easson & Zolt, 2002).

3.5.2.2 Incentives that may affect home country tax liability

Tax incentives for foreign direct investment are sometimes criticized because its benefits or spared tax cannot be attributed to the investor, but to the home country of the investor. For those states that use a credit method to secure the relief from double taxation, a possible reduction in the amount of tax paid by an investor in the country of origin may reduce the amount of credit that may be claimed in the home country and thereby increase the amount of the home country tax payable . The complaint is probably overestimated because it is rare that tax deduction will have the effect of increasing the tax liability of taxed countries (Easson & Zolt, 2002).

Several important capital exporting countries use the exemption method to mitigate double taxation, especially for income earned from active business. In other countries where an investor operates in a host country through an affiliate rather than a branch, the tax on the home country is usually postponed (if applicable) until the time the income is repatriated to the parent company in the form of dividends, interest or a license. Even then, an exemption is sometimes provided for dividends received from foreign affiliates, or the relevant tax contract may contain a “tax spare” provision that protects the benefit of tax deductions from domestic parties derived from incentive legislation (Easson & Zolt, 2002).

However, the potential tax liability for the home country can be a factor to be taken into account when creating the incentive policy. The reduction in the corporate tax paid by the local branch typically will only increase the responsibility of the home country (if at all) when profits are repatriated to the parent company. In contrast, the reduced deduction tax, in particular on interest payments and fees, will most likely increase the country's income tax (Easson & Zolt, 2002).

3.6 The impact of tax incentives on FDI

Besides their positive effects on employment and infrastructure, tax incentives might also have a negative effect on the economy by creating distortions within the tax and economic systems of domestic economies. Countries introduce tax incentives in order to compensate for structural weakness associated with developing and transition economies including scarce capital, knowledge and technology. With an aim to create favorable conditions for investors, developing countries introduce tax incentives and potentially harm their taxation system by introducing preferential tax regime for foreign investors. Considering the limited government capacities, most developing countries need a proper guidance from developed countries for the improvement of the economic situation and implementation of appropriate tax policies (Bazo, 2008).

Bazo (2008) explains the negative effects that tax incentives may create. To attract FDI, developing countries introduce tax incentives that distort tax system, erode tax base and

create tax heavens. Developed countries created tax sparing provisions in the form of tax treaties to provide economic assistance to developing countries. These treaties often result in tax sacrifices in the form of non-double taxation provisions that are favouring developed countries, as developing countries exempt tax revenues that are usually taxed in developed countries (Bazo, 2008).

Tax incentives for capital investments such as investment allowances, accelerated depreciation are seemingly the most popular types of tax incentives that are found to positively affect FDI, even though low corporate tax rates may attract more FDI. Countries that attract substantial investment rely on lower corporate tax rates rather than on tax holidays (Mintz, 2006). In order to attract FDI but prevent shifting profit of multinationals from high to low tax regimes, countries lowered their tax rates or imposed low or no withholding taxes on income payments to non-residents. According to Mintz's (2006) research, only a few developing countries with substantial FDI inflows use tax holiday as tax incentive. The rest of countries, also with a huge level of FDI, rely on tax credits, low corporate tax rates and accelerated depreciation rather than on tax holidays. Developing countries that attract FDI with natural sources like oil (Chile, Kazakhstan, Bahrain, Bolivia and Azerbaijan) impose high corporate tax rates still avoiding tax holidays and special financing regimes. Another finding of Mintz's (2006) research is that only one-third of developing countries use tax holidays. Countries with high FDI are more concentrated on accelerated depreciation and tax credits even though tax holiday is widely being popular among developing countries.

Mintz (2006) created a model to analyze the effect of tax reform incorporating tax rate cuts rather than tax incentives like accelerated depreciation, investment allowances, and tax credits. The results of the estimated model suggest that shifting income through debt finance by multinational companies tend to reduce the usage of a tax credit and cut down corporate tax rates. Another outcome is that countries with a small number of multinational companies are less likely to reduce corporate tax rates (Mintz, 2006).

In line with the neoclassical model of business fixed investment, permanent tax incentives have a tremendous impact on the long-term investment. As research indicates, tax incentives are a very important element of net return on investment (Hasset & Hubbard, 2002). According to Hasset and Hubbard (2002), who based their research on permanent tax incentives, temporary tax incentives such as tax holidays can have a larger short-run impact on investment than permanent tax incentives. However temporary tax incentives have their good sides like lowering user cost and giving an incentive in acquiring capital goods in the short-run, they also have bad sides like increasing uncertainty in the context of companies' capital budgeting that may affect long-term investment decisions.

Hasset and Hubbard (2002) believed that tax incentives could be designed to eliminate capital allocation distortions as taxes increase user cost of capital. On the other side, they state that tax credits which are used for equipment investment create inter-asset distortions. Another argument against tax incentives that Hasset and Hubbard (2002) presented is that companies' investment decisions are affected by MTR and ATR as companies' internal funds for investment are subject to these taxes. Moreover, a small economic impact of tax incentives having high revenue costs is evident in situations when increased demand for investment along with decreased tax is compensated by an increase in the price of investment goods (Hasset & Hubbard, 2002).

In his work, Boadway (1992) discussed effects of tax incentives on the investment decisions in developing countries. Boadway (1992) addresses the importance of several factors that should be taken into consideration in designing tax incentives in developing countries like inflation factor and tax evasion. He also emphasizes the transfer of technology factor which has very important role in an investment.

Important factors of tax incentives' effect on investment decision, Boadway (1992) explained as follows:

- 1) The effect on marginal effective tax rate. The structure of tax incentives can have generous write-offs and induce a negative EMTR which discourages investment. In this case, tax credits tend to be more efficient than tax holidays.
- 2) The effect on Loss Companies. Tax incentives which are the most generous regards loss offsetting or refunding provisions will most likely negatively affect companies that are in risky positions or the loss positions. This is because the biggest consumers of tax incentives are small companies in loss positions.
- 3) The effect on Cash Flow. Companies that are in financially dependent positions and use financial aid are mostly affected by incentives, especially by incentives that can improve their cash flows where refunding principles within tax structure play a key role. The combination of refunding principles with cash flow costing principles might make companies better off than tax rate reductions.
- 4) The effect on foreign companies. Host countries should be careful when design tax incentives especially incentives related to refunding of tax credits, accelerated depreciation and carry forward of investment allowances. The effect of these incentives will be limited if they tend to reduce the tax liability of foreign companies unless if the tax of the host country is high enough to exceed tax liabilities of the home country. Incentives that reduce the tax liability of investing company enhance them to transfer revenues to their home countries.
- 5) Inter-asset effect. Various tax incentives affect the allocation of capital and different investment decisions. Some tax incentives may affect equipment and distort inventory which encourages investment selectivity.

Klemm and Van Parys (2012) applied panel analysis focusing on tax incentives in developing countries which was the first empirical research on this topic. They found that countries do not compete on all aspects of tax system because. Having found the effect of the tax holiday on FDI, authors stated that countries compete on tax instruments that appear to affect FDI (Klemm & Van Parys, 2012).

According to Klemm and Van Parys (2012), the effect of tax incentives is limited because it is measurable only on FDI. As findings show, tax holidays affect only a part of FDI like transfer of ownership since there is no evidence on its effect on economic growth or total investment (as it does not affect greenfield investment).

Blomström and Kokko (2002) suggest solutions for attracting FDI with tax incentives. A lot of countries try to attract FDI for creating employment, improving the development of technology and for creating economic growth. Tax incentives are one of tax policy tools that play a significant role in attracting FDI, so its design and structure present demanding task for host economies. Currently, tax incentives are inefficient, according to Blomström and Kokko (2002), as revenues tend to shift from host to home economies. One of the suggested solutions for designing more effective tax incentives is creating the multilateral policy coordination similar to policies that GATT or WTO possess. However, OECD's initiative for creating set of rules for tax incentives failed, and demonstrated the difficulty in its realization (Blomström and Kokko, 2002).

Blomström and Kokko (2002) argued that usage of tax incentives for attracting foreign capital is not an efficient way for increasing national welfare. The greatest motive of FDI, in theory, is the spillover of technology and skills into host economies. However, it is not an automatic outcome because more investment in local companies is needed for the spillover effect. To create spillover benefits, local companies need more motivation to absorb foreign technology and skills which is achievable by local support in learning and local investment. Authors also state that incentives should be focused on the most potential creators of spillover benefits such as investment in research and development, education as well coordination between local and foreign companies. Thus, incentives should represent country's industrial policies and be equally available to local and foreign investors. By investing in local human capital and technology, which improves economic growth, countries become more attractive to foreign investors that use spillover effect to benefit from MNEs' presence (Blomström & Kokko, 2002).

Louis, Allen, Morisset, and Pirnia (2001) state that stable political climate and positive economic prospects are the main factors for attracting investors on a long-term basis. Under positive economic prospects authors consider investments in infrastructure, technology, and human capital, while political stability is based on a law enforcement and rationalization of government procedures. These factors are preconditions for FDI as investors are often unaware of tax incentives which country has at its disposal.

However, recent studies have shown that taxes make a difference among countries, as preconditions for FDI do not differ much among countries, especially in the EU and the U.S. The impact of taxes on FDI depends on country's tax instruments or on motives of multinational companies to invest abroad. Tax incentives are attractive to mobile companies which are present in more than one country, so companies can benefit from tax regimes across countries. Thus, tax holiday and corporate tax rates may affect ETR, but still are not found to affect FDI (Louis et al., 2001). Furthermore, authors believe that tax rates have the nonlinear impact on investment decisions which make countries with excessive tax rates unattractive to FDI. On contrary, countries with reasonable tax rates may have no or very little impact on multinationals' investment decision (Louis et al., 2001).

Louis et al. (2001) also examined the impact of a tax holiday on attracting FDI. Pro arguments for tax holidays come from comparison with policies of neighboring countries, whereas tax holidays' effectiveness is linked with the effect on the location of projects. This is to the great extent the case with the countries that are a part of a trade union or single market. There is no clear evidence of tax holidays' effect on total investment, only the location of the project. The EU has limited the use of tax incentives that are calculated as grant equivalent, whose value accounts for a specific percentage of total investment. Similar to member countries, countries that are not members of the single market are also better off without tax incentives, because of little likelihood of tax incentives' positive impact on investment and high costs they carry. Authors claim that tax holidays do not eliminate distortions this incentive creates along with problems it creates to local companies and supply chain. Therefore, tax holiday creates the benefit only to profitable companies. The ease with which tax holidays can be enacted imposes more difficulties to governments than policies able to influence investment. Tax holidays should not be imposed to offset bureaucracy difficulties of ownership restrictions imposed on foreign investors, including high tax rates, because tax rates will be imposed when tax holiday period ends (Louis et al., 2001).

4 EMPIRICAL ANALYSIS

4.1 Model and methodology

The empirical analysis is based on a panel gravity model. We use the Ordinary Least Squares (OLS) econometric framework to analyze the determinants of FDI in transition countries. The study encompasses eight transition SEE host countries j : Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Montenegro, Romania and Serbia and eight major trade partners denoted as home countries i : Austria, Germany, Italy, Netherlands, France, Slovenia, Switzerland and Turkey. The data covers bilateral FDI flows between host and home countries in the period between 2000 and 2015. The data on bilateral FDI flows prior to 2000 are not available for the SEE sample of countries.

We developed a baseline specification:

$$\begin{aligned} \ln FDI_{ijt} = & \beta_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} + \beta_3 DIST_{ijt} + \beta_4 C_TAX_{jt} + \beta_5 INFL_{jt} + \beta_6 \\ & TradeO_{jt} + \beta_7 \ln WAGE_{jt} + \beta_8 \ln GDP_{pcjt} + Country + Time + \varepsilon_i \end{aligned} \quad (1)$$

where the dependent variable FDI_{ijt} indicates bilateral FDI flows between the selected host and home countries expressed as logarithm of FDI stock in period t ; $\ln GDP_{it}$ indicates logarithm of gross domestic product of a home country i in period t ; $\ln GDP_{jt}$ indicates a logarithm of gross domestic product of a host country j in period t ; $DIST_{ijt}$ indicates the distance between home and host countries; C_TAX_{jt} indicates corporate tax of a host country j in period t ; $INFL_{jt}$ indicates inflation rate of a host country j in a period t ; $TradeO_{jt}$ indicates openness to trade of a host country and it is expressed as share of total trade to GDP; $\ln WAGE_{jt}$ indicates a relative unit cost labor cost of a host country and is expressed as an average nominal wage in the manufacturing sector; $\ln GDP_{pcjt}$ indicates gross domestic product per capita of a host country in period t ; Country variable captures the specific effects of each individual bilateral FDI transaction between host and home countries, while $Time$ captures time specific effects and ε_i indicates the error term. Following the gravity model assumptions we presuppose that FDI stock is positively related to GDP of host and home countries as the size of the economy and , and negatively related to the distance between host and home countries. Importantly, we postulate a negative relationship between corporate tax rate and FDI.

We have also developed another baseline specification in which we replaced C_TAX_{jt} variable with C_TaxD_{ijt} which indicates the difference of tax rates between home country i and host country j in a period t :

$$\begin{aligned} \ln FDI_{ijt} = & \beta_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} + \beta_3 DIST_{ijt} + \beta_4 C_TaxD_{ijt} + \beta_5 INFL_{jt} + \beta_6 \\ & TradeO_{jt} + \beta_7 \ln WAGE_{jt} + \beta_8 \ln GDP_{pcjt} + Country + Time + \varepsilon_i \end{aligned} \quad (2)$$

Importantly the third model specification presents an extended model in which we incorporated additional control variables that relate to institutional quality. Following the literature we added institutional variables in an attempt to examine their impact on FDI flows, as well as to consider whether the impact of corporate taxation on FDI is sensitive to the inclusion of institutional variables. We have added three institutional variables:

$$\begin{aligned} \ln FDI_{ijt} = & \beta_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} + \beta_3 DIST_{ijt} + \beta_4 C_TaxD_{ijt} + \beta_5 INFL_{jt} + \beta_6 \\ & TradeO_{jt} + \beta_7 \ln WAGE_{jt} + \beta_8 INST_{jt} + Country + Time + \varepsilon_i \end{aligned} \quad (3)$$

where $INST_{jt}$ captures a range of institutional quality indicators developed by the World Bank (i.e. World Bank good governance indicators) considered important for well-functioning of national economies including: GOV_EFF_{jt} variable that indicates government effectiveness of a host country j in period t , $CORRUPT_{jt}$ indicates the level of corruption in a host country j in period t and $RoLaw_{jt}$ indicates the rule of law in a

host country j in period t . As noted earlier, the purpose of this empirical analysis is to test whether the tax burden plays an important role in explaining the differences in FDI bilateral flows in the context of less developed SEE transition countries. In view of this and in line with the empirical literature reviewed earlier we further expand the analysis and include tax incentives variables in the fourth model to be estimated empirically. Considering the literature reviewed and while exploring the most commonly used tax incentives across SEE countries, we analyze the impact of tax holiday, tax credit and accelerated depreciation on FDI. For this purpose, we integrated three tax incentives variables, that are dummy variables denoted as $TaxHoliday_{jt}$, $TaxCredit_{jt}$ and $AccDepreciation_{jt}$. The dummy is set to equal 1 in case a host country has tax holiday, tax credit and accelerated depreciation policy options available to foreign enterprises in a given period t , 0 otherwise. The estimation is based on the following equation:

$$\begin{aligned} \ln FDI_{ijt} = & \beta_0 + \beta_1 \ln GDP_{it} + \beta_2 \ln GDP_{jt} + \beta_3 DIST_{ijt} + \beta_4 C_TAX_{jt} + \beta_5 INFL_{jt} + \beta_6 \\ & TRADEO_{jt} + \beta_7 \ln WAGE_{jt} + \beta_8 TaxHoliday_{jt} + \beta_9 TaxCredit_{jt} + \beta_{10} AccDepreciation_{jt} + \\ & Country + Time + \varepsilon_i \end{aligned} \quad (4)$$

In sections to follow we briefly elaborate on panel data models, discuss the data and the principal variables of interest. Panel data set consists of data that are observed in different time periods on the same units. Fixed and random effect models are used to analyze panel data depending on individual or time effect that characterise them, as we explain in what follows. Fixed effect model can be estimated by using the least squares dummy variable model (LSDV) (Gujarati, 2009).

According to Greene (2008), OLS is based on crucial assumptions:

- 1) linearity
- 2) exogeneity
- 3) homoskedasticity
- 4) nonautocorrelation
- 5) not-stochastic independent variable
- 6) no multicollinearity

4.1.1 Fixed versus Random Effects

Fixed and random effects models are examined with panel data. The role of dummy variables, that are integrated in fixed effect models is to control for the specific, time-invariant characteristics of a cross-section unit that is observed (hereinafter: individuals) that differentiate fixed effect model from random effect model. Fixed effect model takes into account the differences between individuals in intercepts with an assumption that constant variance and the same slope exist across entity or group. Error term can be correlated with regressors, because individual effect is time invariant and part of the intercept, which is not the case in the random effect model (Gujarati, 2009).

Predictor variables might be affected by individual effect that entity has. Also, fixed effect model investigates the relation between predictor or outcome variables. Fixed effects model assumes that there is correlation between entity's error term and predictor variable as the relation between individual may bias the outcome. Fixed effect model enables to see the effect of predictor variable on outcome variable by removing time-invariant characteristics that individuals possess. Time-invariant characteristics should not be correlated with other characteristics that individuals have. Also error terms as well as the constant between entities should not be correlated because each entity is different. If the correlation of error terms is found, then fixed model is not appropriate model because of the inferences. This is an indication for usage of random effects and application of the Hausman test (Gujarati, 2009).

According to Kreuter and Kohler (2009), time-invariant characteristics are unique to each individual and therefore perfectly collinear with entity dummies. Disadvantage of fixed-effects model is that it cannot examine the time-invariant causes of the dependent variable.

Random effect model or error component model assumes that there is no correlation between an individual and error term. It is assumed that differences across entities are random and uncorrelated with the independent variables or predictor variable. Unlike fixed effect model, time-invariant variables can be part of the random effects model. In this model, individual specific errors make the difference between individuals rather than intercept. Regressors have the same intercept and slope among individuals or time (Green, 2008).

In order to test whether the panel data contain fixed or random effects, there are test for each model that should be applied. F-test is used to test fixed effects while Breusch-Pagan Lagrange Multiplier (LM) test examines random effects. F-test also tests how fixed model can improve the goodness-of-fit by making a comparison between OLS and FE model. The same role has a LM test by comparing random effects model with OLS. Hausman test is used to test for the similarities between the estimators of these two models and help in the selection of the proper model (Gujarati. 2009).

4.1.2 Pooled OLS

There are several problems that may occur with panel data like autocorrelation within units, spatial autocorrelation, contemporaneous correlation of errors across units, heteroscedasticity and structural issues. Expected effects of all of these counted problems are biased standard errors and inefficient constant β . In order to detect heteroscedasticity, we apply Breusch-pagan test or White's test. When applying Breusch-Pagan test we set null hypothesis that there is homoscedasticity in the error terms and if the parameter $\text{Prob}>\chi^2$ is less or equal to 0.05 then we reject the null hypothesis of no heteroscedasticity (Gujarati, 2009). The null hypothesis of no

autocorrelation has also been rejected at 5% level of significance (see test statistics in Appendixes).

In view of this, Prais -Winsten regression or panel corrected standard error is applied to estimate cross-sectional time series parameters taking into account the problems of heteroscedasticity and serial correlation that have been suggested for our panel data set (Beck & Katz, 1996; Wilson & Butler, 2007).

The advantage of panel corrected standard error (PCSE) method of estimation is in its simplicity as corrects standard errors (Beck & Katz, 1996; Rabe-Hesketh, Skrondal & Pickles, 2004). A disadvantage of panel corrected standard error approach is that ignores unobserved heterogeneity having pooled estimates of OLS coefficients. Ignoring heterogeneity may affect the appearance of omitted variable bias (Beck & Katz, 1996; Rabe-Hesketh, Skrondal, & Pickles, 2004).

4.2 Data and variables

4.2.1 The dependent variable

For this research, we use the log of FDI stock between host and home countries denoted in EUR. The advantage of FDI stock variable is that its value cannot be negative and avoids time anomalies, unlike FDI flows which null or negative values may affect the functional form of gravity equation. Thus, yearly FDI flows between transition countries vary with huge fluctuations resulting from process of privatisation that may not capture the effect of individual explanatory variables. The Vienna Institute for International Economic studies is source of data for bilateral FDI stock (WIIW).

4.2.2 Explanatory variables

As a proxy for the market size, we have included GDP host denoted as GDP_i and GDP home denoted as GDP_j . Other control variables include distance denoted as $DIST$, wage denoted as $WAGE_j$, and inflation rate denoted as $INFL_j$, trade openness as $TradeO_j$. All these variables are found to be significant in number of other studies related to foreign direct investment (Bevan & Estrin, 2004).

The proxy variable GDP home is used to reflect on the economic power of the investor. Two outcomes can be expected considering home country market size. The first result is that source country can decide to place production on a single plant to utilize economies of scale and export. On the contrary, economies of scale can encourage source countries to set production abroad, closer to the markets by investing and establishing multinational companies (Bevan & Estrin, 2004). A vast majority of empirical studies find a positive relationship between home GDP and FDI in transition economies (Resmini, 2000). The host GDP variable in our model serves as a proxy for market size, which is expected to have a positive effect on FDI. Market size is location specific

advantage for host country as the broader market appeals the placement of new products and affects investors' decision. That also depends on the dynamics of the market and its overall size (Resmini, 2000).

In our study, distance is a proxy for geographical distance between capital cities of a home and host countries. We used CEPII database as a source. Distance is a time-invariant variable which is constant in its value. It is usually used to reflect trade costs (Carstensen & Toubal, 2004). Moreover, a distance can be used as a proxy for cultural differences, language, transportation and operating costs (Brenton, Di Mauro, & Lücke, 1999). According to Hansson and Olofsdotter (2010), distance has a negative effect on FDI. They also emphasize its ambiguity because, besides geographical distance, it is also used to reflect trade costs. Another prospect for using distance is that it may reflect the cost of acquiring information or the obstacles in managing distant affiliates (Hansson & Olofsdotter, 2010).

Previous empirical studies show that labor cost has neither statistically significant nor significantly adverse effect on FDI. Labor costs play a crucial role in labor-intensive industries as a lower labor cost tends to attract more investment. Studies suggest a twofold effect of labor costs. Carstensen and Toubal (2004), found a significantly negative effect of labor costs on FDI inflows which is in line with findings of Bevan and Estrin (2004) and Resmini (2000). On the contrary, Benassy et al. (2005) found statistically insignificant, but positive effect of labor costs on FDI. In our analysis, we assume that labor costs will have a negative sign. Also, our proxy for labor cost is average gross monthly wages in the logarithm form. We use UNECE as a source for labor cost data.

In most empirical studies, inflation is used to reflect on macroeconomic stability of a host economy. It also reflects on a prudence of fiscal policy in general. Investors will be attracted by low inflation rate that implies stable macroeconomic conditions for low-risk investment. Unexpectedly, in his empirical study, Sato (2012) found a positive impact of inflation on FDI value, whereas he justifies it with the rise in prices as the economy expands vigorously. He also reflects that positive sign can explain positive future economic prospects of the host country that followed an increase in FDI inflows. However, high inflation rate can destabilize the economy and deter future investments. Our expectation in this analysis is that low inflation rate will cause FDI to increase. The source of this data is IMF database.

The emphasis of this empirical investigation is put on the estimation of the effect of corporate income tax rate on FDI. We include two variables namely corporate tax rate denoted as C_Tax , and the difference between home and host corporate tax rates denoted as C_TaxD as principal variables of interest in this study corporate income tax presents the statutory income tax. The STR is usually used to proxy nominal tax burden on business. Its impact on FDI in the findings from Demekas et al. (2005) appears to be

significantly negative while tax incentives seem to have a statistically insignificant effect on FDI. Sato (2012) and Bellak and Leibrecht (2005) investigated the impact of tax rate difference (between home and host countries) on FDI and presuppose its effect to be significant and positive indicating the greater the difference the higher the FDI inflows. The tax difference between corporate tax rates refers to the variation of corporate tax rates between home and the host country. Sato (2012) indicates that the larger the value of tax difference the lesser the investment inflows. Investigating bilateral inflows, Bellak and Leibrecht (2009) also find an adverse effect of tax difference on FDI. We expect an adverse effect of corporate tax rate on FDI, and a positive effect of the tax difference variable on FDI. We use OECD tax database as a source of corporate tax rate data.

4.2.3 Institutional variables

Being aware of importance of political stability and institutional quality we use three institutional variables to approximate the effect of institutions on FDI inflows. Data on corruption, rule of law and government effectiveness are sourced by the World Bank dataset. The variables are expressed as estimates with values between -2.5 and 2.5. World Bank Indicators are measured as standard normal units, ranging from approximately -2.5 to 2.5, and in that form indicators are incorporated in our regression analysis. Given that institutional indicators have defined minimum and maximum values, obtained coefficients do not reflect marginal effects. Therefore, only the sign and significance of these variables' coefficients is of interest in the analysis and should be interpreted. A proximity to greater value indicates a strong institutional quality, and therefore the positive and significant coefficients are expected.

Government effectiveness reflects the quality of public service provision, the competence of civil servants, the quality of bureaucracy and the credibility of government's commitment to policies (Kaufmann, Kraay, & Zoido-Lobaton, 1999). This variable explains the ability of government to create and convey policies (Wernick, Haar, & Singh, 2009).

It is expected that lower influence of public authorities enhances an increase in the investment. Rule of law takes into account the effectiveness of judicial system, the enforcement of law and the incidence of crime. Control of corruption considers different corruption indicators. According to Wernick et al. (2009), control of corruption presents the level of exposure of public goods to citizens. Reduced uncertainty in business activities and low presence of corruptive activities tend to encourage FDI inflows. These two variables encompass mutual respect of government and citizens towards institutions which consequently handle their conflicts and interactions (Kaufmann et al., 1999).

Given the complexity and the compound of institutional variables, Wernick et al. (2009) also underline the difficulty in explaining institutional effect on FDI. Hence, in their finding, authors confirm that greater quality of institutional indicators attracts the greater amount of foreign direct investment.

Table 3: Descriptive statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
log FDI	894	5.396645	2.095897	-4.60517	9.686512
Log GDP home	1024	27.18089	1.339638	23.73596	28.98383
Log GDP host	1024	23.62447	1.213349	20.70742	26.06168
Log GDP pc	1023	8.408904	0.6199295	6.76865	9.673688
Distance (km)	1024	1042.864	411.7282	117.3451	1875.018
C_Tax	1024	16.15625	6.560866	9	35
INFL (% change)	1024	5.632422	11.37443	-2.167	111.959
TradeO	1016	88.80569	18.58774	24.17033	134.5345
LogWage	832	6.187655	0.656363	4.241327	7.336937
CORRUPT (-2.5 weak to 2.5 strong gov. performance)	944	-0.2860335	0.2592477	-1.122741	0.2485663
RoLaw (-2.5 weak to 2.5 strong gov. performance)	944	-0.2779278	0.3173644	-1.343226	0.310605
Gov_Eff (-2.5 weak to +2.5 strong gov. performance)	928	-0.1234345	0.3845025	-0.9707849	0.7056769

We observe from descriptive statistics that our sample has large number of observations with missing data for various countries. The data show discrepancy between FDI inflows and very low level of FDI inflows in the region as well as discrepancy in the tax rate, whereas host countries have significantly lower tax rates in comparison to home countries. Descriptive statistics also demonstrate that some countries like Serbia have suffered hyperinflation while the others have suffered periods of deflation which indicates unstable economy conditions across the region that can be detrimental to attracting FDI. Notwithstanding this, very low deviation in wages might indicate that low labor costs are not determining factor in SEE economies. With the respect to all other variables we observe meaningful across and within groups variations in the data.

4.2.4 Tax incentives variables

Considering the nature of tax incentives' variables, we create dummy variables indicating that value of 1 denotes the presence of the particular incentive in the particular country, while the value of 0 denotes the absence of the particular tax incentive. We include tax holiday, tax credit and accelerated depreciation given the wide usage of these tax incentives in the selected transition countries from our sample. There is reasonable variability in the data for these variables as the imposition of tax

incentives has changed remarkably in the selected over the past decade. Data for tax incentives are retrieved from Ernst and Young reports covering the period between 2000 and 2015.

According to Holland and Vann (1998), tax holiday is more related to newly established companies than to existing companies. Companies that satisfy conditions for benefits of tax holiday are exempt from taxed income for a subsequent period. Tax credit is based on the reduction of the tax amount of payable tax (Holland & Vann, 1998). The effect of tax credit can enhance the level of employment (Boadway & Shah, 1992). Accelerated depreciation is used for fast write-offs, because it accelerates the write-off of capital depreciation and provides incentives to invest (Boadway & Shah, 1992). Accelerated depreciation is the most beneficial during the times of inflation, while tax credit is independent of the inflation effect (Boadway & Shah, 1992).

According to Klemm and Van Parys (2012), there is no clear evidence of the impact of the tax holiday on the investment and growth. Boadway and Shah (1992) state that tax incentives may have impact on FDI although they affect reduction of tax credit through dividends and tax.

5 RESULTS AND DISCUSSION

Results of empirical analysis of each model specification are presented in the table 4 below. The OLS regression output is presented in Appendixes (1). The results of Hausman test statistics which indicate that the fixed effect model should be the preferred model are presented in the Appendixes. The individual country and time-specific effects are not reported here due to space limitations.

Table 4: Results of Prais-Winsten regressions

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
GDP home	0.390*** (0.0515)	0.357*** (0.0531)	0.358*** (0.0537)	0.343*** (0.0442)	0.343*** (0.0433)	0.343*** (0.0424)
GDP host	2.781 (1.799)	3.352 (1.812)	-1.933* (0.782)	-0.681 (0.635)	-0.514 (0.537)	-0.645 (0.473)
Distance	-0.00123*** (0.000260)	-0.00121*** (0.000257)	-0.00121*** (0.000258)	-0.000964*** (0.000203)	-0.000958*** (0.000199)	-0.000961*** (0.000196)
Corporate tax	-0.0258*** (0.00241)					
Inflation	-0.0188*** (0.00521)	-0.0175** (0.00540)	-0.0183*** (0.00511)	-0.0243*** (0.00547)	-0.0238*** (0.00566)	-0.0181*** (0.00520)
Trade Openness	0.00711	0.00727	0.00704	0.0122**	0.0102*	0.0121***

(Table continues)

Results of Prais-Winsten regressions

(continued)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	(0.00573)	(0.00580)	(0.00547)	(0.00468)	(0.00403)	(0.00355)
Wage	2.543*** (0.626)	2.592*** (0.638)	2.472*** (0.571)	0.988* (0.478)	0.743 (0.422)	1.063** (0.338)
GDP per capita	-4.773* (1.997)	-5.247** (2.026)				
Tax difference		0.0165*** (0.00467)	0.0173*** (0.00453)	0.0111* (0.00481)	0.0111* (0.00461)	0.0105* (0.00445)
Gov. Effectiveness				0.252 (0.220)		
Control of Corruption					0.752** (0.262)	
Rule of Law						0.856** (0.267)
_cons	-47.96 (27.93)	-57.53* (28.04)	23.62 (14.77)	4.439 (12.29)	2.463 (10.40)	3.389 (9.208)
<i>N</i>	718	718	718	685	685	685
<i>R</i> ²	0.344	0.345	0.342	0.446	0.447	0.449

Note*: Standard errors in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5: Correlation matrix between dependent and explanatory variables

	FDI	GDP home	GDP host	Distance	Tax Diff.	Infl	Trade Op.	Wage	GDP per capita
FDI	1.0000								
GDP home	0.0298	1.0000							
GDP host	0.6307	0.0482	1.0000						
Distance	0.1217	0.3182	0.1509	1.0000					
Tax Difference	-0.0088	0.2376	-0.1378	0.1368	1.0000				
Inflation	-0.0535	-0.0775	-0.0144	0.0083	-0.0138	1.0000			
Trade Openness	-0.0238	0.0928	-0.1837	0.0462	0.0933	-0.4012	1.0000		
Wage	0.1567	0.1016	0.1511	-0.2621	-0.1079	-0.3034	0.1676	1.0000	
GDP per capita	0.3995	0.1058	0.5055	-0.1503	-0.1438	-0.2516	0.1460	0.8540	1.0000

Due to problems of multicollinearity between institutional variables, institutional variables were incorporated singly in the models estimated (Table 6). The correlation between wage and GDP per capita is somewhat high. However the variance inflation factor (VIF) statistics is greater than 0.2, which indicates that we do not have a problem of multicollinearity. Thus, when excluding the *GDPpc* variable from the estimated models (i.e. Models 3 to 6), the obtained results remain stable. As indicated above, the preferred model is the fixed effects model and as includes dummy variables for each

pair of countries to control for specific individual that is bivariate country effect. Results of fixed diagnostic tests indicate the problem of heteroscedasticity and autocorrelation. We tackle this issue by applying the panel corrected standard error method of estimation, as explained earlier. Considering the small number of degrees of freedom of the estimated models, we consider the conventional 1% and 5% levels of significance.

Table 6: Correlation matrix between institutional variables

	Government Effectiveness	Rule of Law	Control of Corruption
Government Effectiveness	1.0000		
Rule of Law	0.7481	1.0000	
Control of Corruption	0.6950	0.8134	1.0000

From baseline specifications Models 1 and Model 2 (Table 4), we find that home and host market size proxied by GDP variable have significant and positive influence on FDI inflows albeit significant at 10% level, and that all gravity model variables have the expected sign and significance. The distance variable is negative and significant at 1%, suggesting that the lesser the distance the higher are the FDI inflows. The closer the countries the lower transaction and distribution costs that attract more FDI in transition countries. Furthermore, as a priori expected, the difference in labor costs between home and host country does not seem to play a great role in attracting FDI in transition countries. On the contrary, the results of these estimations reveal positive and statistically significant coefficient of labor cost at 1% level of significance suggesting that higher labor costs are associated with higher FDI inflows, probably depicting higher productivity levels. The results shows that inflation rate is statistically significant at 1% with negative sign suggesting that the lower the inflation rate the greater are FDI inflows, which is in line with previous findings. Essentially the corporate income tax rate, turns out to be statistically significant at 1% indicating that lower corporate tax rate positively affect FDI, as a priori expected. According to the obtained results, a 1% increase in the corporate tax rate would reduce FDI by about 2.5%. In the Model 2, we estimated the impact of tax difference on FDI which rise by 1% appears to be associated with an increase in FDI inflows by about 1.6%.

Unexpectedly, trade openness appears insignificant in models estimated, with the exception of estimations using institutional variables. This variable, according to previous studies, plays very important role in attracting FDI and presents one of the main determinants of FDI. Regarding institutional variables, it seems that specific institutional characteristics of host economies do affect increase in FDI flows significantly, with the notable exception of the government effectiveness variable in the

Model 4 (Table 4). It seems that quality of policy implementation, public services or independence from political pressures has no effect on FDI inflows. On the other side, the control of corruption and the rule of law seem important in explaining the variations in cross-country FDI inflows in transition context.

These results could demonstrate that quality of institutions play significant role in multinationals' decision to invest given the similarity of economic and industrial features across the region. Thereby, the quality of institutions and policy improvements can possibly counteract low productivity in SEE countries.

When considering the impact of tax incentive variables on FDI we estimated separate regressions by adding tax incentive variables to the baseline specifications. The results are reported in Table 8. Before computing the individual effect of tax incentives on FDI, first we applied correlation matrix to tax holiday, tax credit and accelerated depreciation due to possible multicollinearity issues. Based on the correlation coefficients obtained, a strong relationship exists between the tax credit and the accelerated depreciation which indicates that these two variables should not be estimated in a single equation (Table 7).

Table 7: Correlation matrix between tax incentives

	Tax Holiday	Tax Credit	Acc. Depreciation
Tax Holiday	1.0000		
Tax Credit	0.1606	1.0000	
Acc. Depreciation	0.2196	0.6888	1.0000

The Model (Table 8) incorporates tax difference (calculated with STR) variable, all other control variables from the baseline specification and the two tax incentive variables, namely the tax holiday and tax credit dummy variables. The results of Model 1 (Table 8.) indicate that countries which impose tax holiday as tax incentive have higher FDI inflows by about 26% on average compared to countries and or period in which countries did not credit tax holidays to foreign investors. This result seem important and suggest that FDI policy does seem to explain the differences in FDI inflows across SEE countries, given the similarities in their economic structures as a priori expected. Hence, tax credit has also positive impact with the coefficient somewhat similar to that obtained for the tax holiday variable (i.e. 22% higher FDI inflows in countries with tax credit incentive structures). Considering the p-values, tax credit is significant at 1% while the tax holiday is significant at 5%. In the Model 2 (Table 8) we examined the impact of accelerated depreciation, which appears to be insignificant with p-value 0.454. The sign of the coefficient is even negative, though insignificant.

Table 8: Prais-Winsten regression results on the effect of tax incentives on FDI

	Model 1	Model 2
GDP home	0.362*** (0.0549)	0.358*** (0.0535)
GDP host	-1.677* (0.659)	-1.984* (0.814)
Distance	-0.00121*** (0.000257)	-0.00121*** (0.000258)
Tax Difference	0.0153** (0.00532)	0.0178*** (0.00458)
Inflation	-0.0177*** (0.00390)	-0.0180*** (0.00512)
Trade Openness	0.00788 (0.00454)	0.00702 (0.00554)
Wage	2.237*** (0.405)	2.537*** (0.596)
Tax Credit	0.220* (0.0949)	
Tax Holiday	0.269*** (0.0575)	
Acc. Depreciation		-0.120 (0.160)
_cons	18.97 (12.91)	24.42 (15.32)
<i>N</i>	718	718
<i>R</i> ²	0.350	0.343

Note. * Standard errors in parentheses * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

CONCLUSION

This study attempts to investigate the impacts of corporate tax rate and tax incentives in attracting FDI across South-East European countries. In the view of this, the study reviews relevant literature referring to FDI determinants in the context of developed and developing countries. Theory states that in transition economies, FDI stimulate

economic growth through technological spillover effect. Moreover, FDI enhances economic development through technological development and increased employment. For that reason, governments apply fiscal policies in order to attract foreign capital from investors.

Correspondingly, one of the taxation instruments that governments use is the corporate income tax rate. It is assumed that corporate taxation affects location decisions of MNEs. Therefore, governments reduce corporate tax rate in order to increase FDI inflows by multinationals. Furthermore, based on the regression results of the model, hypothesis is consistent with the theory. Tax policy is often considered important determinant of FDI particularly among developing countries and found to be an important determinant of FDI in transition economies. It is important that governments provide favorable investment environment through taxation policies that will encourage foreign direct investment. Nowadays, developed European countries follow the trend of lowering tax rates because of tax competition while developing countries compete over tax incentives in order to attract FDI having their corporate tax rate low. In addition to this, SEE countries maintain the lowest corporate tax rates in Europe.

Our results show that the corporate income tax rate turns out to be statistically significant indicating that lower corporate tax rate positively affects FDI. According to the obtained results, a 1% increase in the corporate tax rate would reduce FDI by about 2.5%. We estimated the impact of tax difference on FDI which rise by 1% appears to be associated with an increase in FDI inflows by about 1.6%.

SEE countries have undertaken many structural reforms like privatization and liberalization and introduced fiscal and non-fiscal incentives in order to promote FDI. Among the incentives provided, tax holiday and tax credit are the most popular. Following the provided reforms and tax incentives, FDI in particular has shown a substantial increase. The results of our empirical research indicate that countries which impose tax holiday as tax incentive have higher FDI inflows by about 26% on average compared to countries and or period in which countries did not credit tax holidays to foreign investors. This result is an important finding that FDI policies affect FDI differences across SEE countries.

The empirical evidence from the reviewed literature identifies market size, inflation, labor costs and trade openness as main macroeconomic and non-institutional factors for investment decisions. From non-tax factors, home and host market size proxied by GDP variable have significant and positive influence on FDI inflows. The results also suggest that inflation rate is statistically significant at 1% with negative sign suggesting that the lower the inflation rate the greater are FDI inflows, which is in line with previous findings. The results of these estimations reveal positive and statistically significant coefficient of labor cost suggesting that higher labor costs are associated with higher

FDI inflows, probably depicting higher productivity levels. Trade openness did not appear to be significant in our estimation model although previous studies find it as important FDI determinant.

Apart from macroeconomic factors, institutional factors may have influence MNEs' decision to invest. It is expected that lower influence of public authorities enhances an increase in the investment. The comparison of the findings from various studies indicates that political stability and institutional quality play a significant role in attracting FDI besides high corporate tax rates. The most influential institutional indicators are government effectiveness, rule of law and the control of corruption. Government effectiveness, defined by the way of functioning of bureaucracy, and the level of corruption are viewed as important factors for foreign investors, but not always significant. Our estimation reveals that the control of corruption and the rule of law, with the exception of government effectiveness, seem important in explaining the variations in cross-country FDI inflows in transition countries.

Along with institutional determinants, privatization plays significant role in defining the location of FDI as it impacts the size and the structure of private sector. Additionally, EU members tend to attract more FDI mainly due to the quality of their institutional indicators. Moreover, some authors find that institutional quality speeds up the process of joining the EU. Thus, it is clear that announcement of joining the EU itself leads to a greater share of FDI inflows. Rojec and Penev (2011) advice that best policy for attracting FDI is to join EU, given the importance and the quality of institutional factors found in their study. Given the quality of EU institutions it is evident that EU membership improves the institutional quality and enhances favorable economic and political environment that foreign investors consider reliable for investment decisions.

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APPENDIXES

Appendix 1: Fixed effect using Least Square dummy Variable (LDSV)

Source	SS	df	MS	Number of obs		718
				F(29, 688)		21.85
Model	1625.619	29	56.0558322	Prob > F		0
Residual	1765.049	688	2.56547759	R-squared		0.4794
				Adj R-squared		0.4575
Total	3390.668	717	4.72896473	Root MSE		1.6017
LogFDI	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
LogGDPhome	0.357719	.0538122	6.65	0.000	0.2520631	0.4633747
LogGDPhost	-4.32417	1.356658	-3.19	0.002	-6.987856	-1.660485
Distance	-0.00125	.0001814	-6.90	0.000	-0.0016091	-0.0008966
C_Tax	-0.02475	.0188383	-1.31	0.189	-0.0617405	0.0122342
INFL	-0.03077	.0132756	-2.32	0.021	-0.0568354	-0.0047042
TradeO	0.012632	.0073482	1.72	0.086	-0.0017956	0.0270596
LogWage	3.439328	.9964587	3.45	0.001	1.482863	5.395793
Srb	5.046005	1.43315	3.52	0.000	2.232132	7.859878
Cro	4.619896	1.398956	3.30	0.001	1.873161	7.366631
Mkd	-2.20638	.7167568	-3.08	0.002	-3.613668	-0.7990814
Alb	0.734337	.6857071	1.07	0.285	-0.6119929	2.080666
Mng	-7.92676	2.007584	-3.95	0.000	-11.86848	-3.985029
Blg	7.948025	2.046711	3.88	0.000	3.929476	11.96657
Rom	13.94582	3.273023	4.26	0	7.519512	20.37214
_Iyear_2001	-0.36069	.4758966	-0.76	0.449	-1.295076	0.5736923
_Iyear_2002	-0.21279	.4975295	-0.43	0.669	-1.189653	0.7640641
_Iyear_2003	0.256552	.5353845	0.48	0.632	-0.7946321	1.307735
_Iyear_2004	0.588224	.6420767	0.92	0.36	-0.6724405	1.848889
_Iyear_2005	1.074789	.7309322	1.47	0.142	-0.3603367	2.509914
_Iyear_2006	1.458355	.8226241	1.77	0.077	-0.1567997	3.07351
_Iyear_2007	1.923574	1.010894	1.90	0.057	-0.061234	3.908381
_Iyear_2008	2.09364	1.150679	1.82	0.069	-0.1656226	4.352903
_Iyear_2009	1.953108	1.004161	1.95	0.052	-0.0184795	3.924696
_Iyear_2010	1.966577	1.010499	1.95	0.052	-0.017454	3.950609
_Iyear_2011	2.027347	1.103606	1.84	0.067	-0.139492	4.194186
_Iyear_2012	1.987333	1.04897	1.89	0.059	-0.0722328	4.046898
_Iyear_2013	2.097723	1.081531	1.94	0.053	-0.0257748	4.22122
_Iyear_2014	1.734242	1.092825	1.59	0.113	-0.4114312	3.879915
_Iyear_2015	1.292097	1.124485	1.15	0.251	-0.9157367	3.49993
_cons	73.00435	27.08907	2.69	0.007	19.81719	126.1915

Appendix 2: OLS Regression

Source	SS	df	MS	Number of obs		718	
				F(30, 687)		21.19	
Model	1629.65407	30	54.3218024	Prob > F		0	
Residual	1761.01364	687	2.56333863	R-squared		0.4806	
				Adj R-squared		0.4579	
Total	3390.66771	717	4.72896473	Root MSE		1.601	
LogFDI	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]	
LogGDPhome	0.3551696	0.0538281	6.6	0.000	0.2494823	0.460857	
LogGDPhost	2.195256	5.370334	0.41	0.683	-8.34898	12.73949	
Distance	-0.0012496	0.0001814	-6.89	0.000	-0.0016057	-0.0008935	
C_Tax	-0.0175686	0.0196819	-0.89	0.372	-0.0562124	0.0210753	
INFL	-0.0279898	0.0134538	-2.08	0.038	-0.0544053	-0.0015742	
TradeO	0.01082	0.0074858	1.45	0.149	-0.0038777	0.0255178	
LogWage	3.764002	1.029111	3.66	0.000	1.743422	5.784583	
LogGDPpc	-6.282164	5.007187	-1.25	0.21	-16.11339	3.549062	
Srb	0.864707	3.627543	0.24	0.812	-6.257694	7.987108	
Cro	3.253934	1.772229	1.84	0.067	-0.2257004	6.733569	
Mkd	2.012855	3.438401	0.59	0.558	-4.738181	8.763891	
Alb	2.74458	1.742711	1.57	0.116	-0.6770985	6.166259	
Mng	3.853822	9.601731	0.4	0.688	-14.99844	22.70608	
Blg	3.808088	3.882492	0.98	0.327	-3.814886	11.43106	
Rom	2.874569	9.411291	0.31	0.76	-15.60378	21.35292	
Year							
2001	-0.3451212	0.47586	-0.73	0.469	-1.279436	0.5891933	
2002	-0.235019	0.4976375	-0.47	0.637	-1.212092	0.7420539	
2003	0.1331022	0.5441315	0.24	0.807	-0.9352582	1.201463	
2004	0.3730607	0.6643264	0.56	0.575	-0.9312931	1.677414	
2005	0.8181918	0.7587127	1.08	0.281	-0.6714822	2.307866	
2006	1.154107	0.8572938	1.35	0.179	-0.5291234	2.837337	
2007	1.516381	1.061315	1.43	0.154	-0.5674291	3.600191	
2008	1.669839	1.198774	1.39	0.164	-0.6838622	4.02354	
2009	1.558896	1.051772	1.48	0.139	-0.5061769	3.623969	
2010	1.61655	1.047898	1.54	0.123	-0.4409179	3.674018	
2011	1.687272	1.135958	1.49	0.138	-0.5430948	3.917639	
2012	1.697276	1.073717	1.58	0.114	-0.4108845	3.805437	
2013	1.794386	1.107785	1.62	0.106	-0.3806655	3.969437	
2014	1.502327	1.107899	1.36	0.176	-0.6729478	3.677601	
2015	1.134384	1.131023	1.00	0.316	-1.086293	3.35506	
_cons	-29.50534	86.07518	-0.34	0.732	-198.5073	139.4967	

Appendix 3: Fixed Effects Model

R-sq: within = 0.6447				Obs per group: min = 4		
between = 0.3836				avg = 11.2		
overall = 0.4758				max = 15		
corr(u_i, X) = 0 (assumed)				Wald chi2(30) = 1125.91		
				Prob > chi2 = 0.0000		
log FDI	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
logGDPhome	0.43605	0.1214818	3.59	0.000	0.197953	0.674153
LogGDPhost	-1.2834	2.687894	-0.48	0.633	-6.55161	3.984739
Distance	-0.0013	0.0004297	-3.04	0.002	-0.00215	-0.00046
C_Tax	-0.0239	0.0098539	-2.43	0.015	-0.04325	-0.00462
INFL	-0.0254	0.0066925	-3.80	0.000	-0.03856	-0.01233
TradeO	0.01244	0.0037556	3.31	0.001	0.005078	0.019799
LogWage	3.7069	0.5158248	7.19	0.000	2.695902	4.717898
logGDPpc	-2.676	2.509945	-1.07	0.286	-7.59542	2.243386
Srb	2.88897	1.896735	1.52	0.128	-0.82856	6.606502
Cro	3.59471	1.045579	3.44	0.001	1.545416	5.644011
Mkd	-0.1723	1.812431	-0.10	0.924	-3.72462	3.379981
Alb	1.78879	1.040356	1.72	0.086	-0.25028	3.827845
Mng	-2.5363	4.839972	-0.52	0.600	-12.0225	6.949885
Blg	5.94193	2.018507	2.94	0.003	1.985726	9.898128
Rom	8.65371	4.742606	1.82	0.068	-0.64163	17.94905
Year						
2001	-0.3341	0.2359444	-1.42	0.157	-0.79655	0.128334
2002	-0.0974	0.2470003	-0.39	0.693	-0.58152	0.386708
2003	0.35474	0.2716773	1.31	0.192	-0.17774	0.887214
2004	0.58656	0.3330142	1.76	0.078	-0.06613	1.23926
2005	1.07983	0.3802473	2.84	0.005	0.334557	1.825099
2006	1.39204	0.4296893	3.24	0.001	0.549863	2.234214
2007	1.73245	0.5327261	3.25	0.001	0.688328	2.776576
2008	1.79103	0.6018244	2.98	0.003	0.61148	2.970588
2009	1.72242	0.5285604	3.26	0.001	0.686463	2.758381
2010	1.7341	0.5265296	3.29	0.001	0.702124	2.766082
2011	1.73787	0.5712232	3.04	0.002	0.618292	2.857446
2012	1.7219	0.5395722	3.19	0.001	0.664355	2.779439
2013	1.83883	0.5570624	3.30	0.001	0.74701	2.930654
2014	1.52225	0.5572803	2.73	0.006	0.43	2.614499
2015	1.14561	0.5661447	2.02	0.043	0.035984	2.25523
_cons	20.2105	43.17345	0.47	0.640	-64.4079	104.8289
sigma_u	1.06869					
sigma_e	0.7635					
Rho	0.66207	(fraction	of variance due	To	u_i)	

Appendix 4: Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance
 Variables: fitted values of logFDI

chi2(1) =	0.68
Prob > chi2=	0.409

Appendix 5: Hausman Specification

	(b)	(B)	(b-B)	sqrt(diag(V_b-V_B))
	Fixed	Random	Difference	S.E.
log GDPhome	0.3585086	0.4691805	-0.1106719	
logGDPhost	5.320694	1.583854	3.73684	4.057726
Distance	-0.0012512	-0.0007848	-0.0004664	
C_Tax	-0.0158979	-0.0219276	0.0060297	0.0148696
INFL	-0.0067594	-0.0102195	-0.0032143	0.0068803
TradeO	0.012266	0.0154803	-0.0032143	0.005446
logWage	3.984645	2.819348	1.165297	0.8235235
logGDPpc	-7.77572	-2.904739	-4.870981	4.084367

b = consistent under H_0 and H_a ; obtained from regress
B = inconsistent under H_a , efficient under H_0 ; obtained from xtreg

Test: H_0 : difference in coefficients not systematic

$$\begin{aligned} \text{chi2}(7) &= (b-B)'[(V_b-V_B)^{-1}](b-B) \\ &= 6.36 \\ \text{Prob}>\text{chi2} &= 0.4986 \\ &(\text{V}_b-\text{V}_B \text{ is not positive definite}) \end{aligned}$$

Appendix 6: Prais-Winsten regression, (PCSE) Model 1

Group variable: id		Number of obs	=	718			
Time variable: year		Number of groups	=	64			
Panels: correlated (unbalanced)		Obs per group: min	=	4			
Autocorrelation: common AR(1)		avg	=	11.21875			
Sigma computed by casewise selection		max	=	15			
Estimated covariances	=	2080		R-squared	=	0.3443	
Estimated autocorrelations	=	1		Wald chi2(16)	=	240.38	
Estimated coefficients	=	31		Prob > chi2	=	0.0000	
Panel Corrected							
logFDI	Coef.	Std.Err	Z	P> z	[95% Conf. Interval]		
logGDPhome	0.3904633	0.0515044	7.58	0.000	0.2895166	0.49141	
logGDPhost	2.781362	1.799486	1.55	0.122	-0.7455655	6.308289	
Distance	-0.001225	0.0002602	-4.71	0.000	-0.001735	-0.0007151	
C_Tax	-0.0257871	0.0024075	-10.71	0.000	-0.0305057	-0.0210685	
INFL	-0.018818	0.0052147	-3.61	0.000	-0.0290386	-0.0085975	
TradeO	0.0071055	0.005726	1.24	0.215	-0.0041173	0.0183283	
logWage	2.542608	0.6262788	4.06	0.000	1.315124	3.770092	
logGDPpc	-4.772892	1.996809	-2.39	0.017	-8.686566	-0.8592175	
Srb	-0.7116532	1.254775	-0.57	0.571	-3.170966	1.74766	
Cro	1.640881	0.6192336	2.65	0.008	0.427205	2.854556	
Mkd	2.188564	1.180689	1.85	0.064	-0.1255432	4.502671	
Alb	2.027706	0.8099293	2.5	0.012	0.4402735	3.615138	
Mng	4.320479	3.270445	1.32	0.186	-2.089475	10.73043	
Blg	1.870066	1.312572	1.42	0.154	-0.7025284	4.442661	
Rom	0.3141419	3.085884	0.1	0.919	-5.734079	6.362363	
Year	2001	-0.1244686	0.1464842	-0.85	0.395	-0.4115725	0.1626352
	2002	0.0610368	0.189543	0.32	0.747	-0.3104606	0.4325342
	2003	0.2890463	0.2497975	1.16	0.247	-0.2005478	0.7786404
	2004	0.4153221	0.2951194	1.41	0.159	-0.1631013	0.9937456
	2005	0.753697	0.3662303	2.06	0.04	0.0358988	1.471495
	2006	0.996563	0.4164224	2.39	0.017	0.1803901	1.812736
	2007	1.2034	0.481241	2.5	0.012	0.2601851	2.146615
	2008	1.051016	0.5245984	2.0	0.045	0.022822	2.07921
	2009	1.090452	0.4239036	2.57	0.01	0.2596162	1.921288
	2010	1.147556	0.4388425	2.61	0.009	0.2874401	2.007671
	2011	1.196512	0.4886191	2.45	0.014	0.2388366	2.154188
	2012	1.237497	0.4743773	2.61	0.009	0.307734	2.167259
	2013	1.279588	0.4922594	2.6	0.009	0.3147774	2.244399
	2014	1.188981	0.513733	2.31	0.021	0.1820829	2.195879
	2015	1.216603	0.4527623	2.69	0.007	0.3292051	2.104001
_cons		-47.96124	27.92746	-1.72	0.086	-102.698	6.775573
Rho		0.8012874					

Appendix 7: Prais-Winsten regression, (PCSE) Model 2

Group variable: id	Number of obs	=	718				
Time variable: year	Number of groups	=	64				
Panels: correlated (unbalanced)	Obs per group: min	=	4				
Autocorrelation: common AR(1)	avg	=	11.21875				
Sigma computed by casewise selection	max	=	15				
Estimated covariances	=	2080	R-squared = 0.3448				
Estimated autocorrelations	=	1	Wald chi2(17) = 2.34e+08				
Estimated coefficients	=	31	Prob > chi2 = 0.0000				
Panel Corrected							
logFDI	Coef.	Std.Err	Z	P> z	[95% Conf. Interval]		
logGDPhome	0.357064	0.053113	6.72	0.000	0.252966	0.461163	
logGDPhost	3.352125	1.812269	1.85	0.064	-0.19986	6.904106	
Distance	-0.00121	0.000257	-4.69	0.000	-0.00171	-0.0007	
C_TaxD	0.016476	0.004672	3.53	0.000	0.007319	0.025633	
INFL	-0.0175	0.0054	-3.24	0.001	-0.02809	-0.00692	
TradeO	0.007274	0.005798	1.25	0.21	-0.00409	0.018638	
logWage	2.59168	0.638129	4.06	0.000	1.34097	3.84239	
logGDPpc	-5.24684	2.025986	-2.59	0.01	-9.2177	-1.27598	
Srb	-1.01957	1.264895	-0.81	0.42	-3.49872	1.459578	
Cro	1.40804	0.615198	2.29	0.022	0.202275	2.613805	
Mkd	2.621332	1.186869	2.21	0.027	0.295112	4.947551	
Alb	2.255438	0.802108	2.81	0.005	0.683335	3.827541	
Mng	5.353075	3.326515	1.61	0.108	-1.16677	11.87293	
Blg	1.522501	1.304415	1.17	0.243	-1.03411	4.079108	
Rom	-0.68745	3.098336	-0.22	0.824	-6.76007	5.38518	
Year	2001	-0.05155	0.135779	-0.38	0.704	-0.31767	0.214569
	2002	0.138969	0.184691	0.75	0.452	-0.22302	0.500955
	2003	0.342653	0.245302	1.4	0.162	-0.13813	0.823437
	2004	0.447333	0.288812	1.55	0.121	-0.11873	1.013395
	2005	0.818666	0.360036	2.27	0.023	0.113009	1.524323
	2006	1.078655	0.419107	2.57	0.01	0.257221	1.900089
	2007	1.270988	0.485361	2.62	0.009	0.319698	2.222279
	2008	1.181316	0.530493	2.23	0.026	0.141569	2.221063
	2009	1.239686	0.428262	2.89	0.004	0.400308	2.079064
	2010	1.302249	0.443303	2.94	0.003	0.433391	2.171107
	2011	1.344869	0.493422	2.73	0.006	0.377779	2.311959
	2012	1.398016	0.47838	2.92	0.003	0.460409	2.335623
	2013	1.440537	0.495696	2.91	0.004	0.46899	2.412083
	2014	1.351057	0.517372	2.61	0.009	0.337027	2.365087
	2015	1.392984	0.455312	3.06	0.002	0.50059	2.285378
_cons		-57.5341	28.03904	-2.05	0.04	-112.49	-2.57857
Rho		0.797789					

Appendix 8:Prais-Winsten regression, (PCSE) Model Excluding GDPpc

Group variable: id		Number of obs	=	718			
Time variable: year		Number of groups	=	64			
Panels: correlated (unbalanced)		Obs per group: min	=	4			
Autocorrelation: common AR(1)		avg	=	11.21875			
Sigma computed by casewise selection		max	=	15			
Estimated covariances	=	2080		R-squared	=	0.3419	
Estimated autocorrelations	=	1		Wald chi2(17)	=	1824.03	
Estimated coefficients	=	30		Prob > chi2	=	0.0000	
Panel Corrected							
logFDI	Coef.	Std.Err	Z	P> z	[95% Conf. Interval]		
logGDPhome	0.358291	0.053732	6.67	0.000	0.252979	0.463603	
logGDPhost	-1.93292	0.781769	-2.47	0.013	-3.46516	-0.40068	
Distance	-0.00121	0.000258	-4.67	0.000	-0.00171	-0.0007	
C_TaxD	0.01734	0.004528	3.83	0.000	0.008464	0.026215	
INFL	-0.01826	0.005109	-3.57	0.000	-0.02828	-0.00825	
TradeO	0.007038	0.005472	1.29	0.198	-0.00369	0.017763	
logWage	2.471841	0.571089	4.33	0.000	1.352528	3.591154	
Srb	2.369167	0.914247	2.59	0.01	0.577276	4.161058	
Cro	2.211074	0.639908	3.46	0.001	0.956877	3.46527	
Mkd	-0.73639	0.354612	-2.08	0.038	-1.43142	-0.04136	
Alb	0.769395	0.373722	2.06	0.04	0.036914	1.501876	
Mng	-4.21339	1.303002	-3.23	0.001	-6.76723	-1.65956	
Blg	4.963832	1.281896	3.87	0.000	2.451363	7.476301	
Rom	8.256136	1.931214	4.28	0.000	4.471027	12.04125	
Year							
	2001	-0.05213	0.140154	-0.37	0.71	-0.32682	0.22257
	2002	0.139472	0.19009	0.73	0.463	-0.2331	0.512041
	2003	0.370696	0.25004	1.48	0.138	-0.11937	0.860765
	2004	0.499228	0.297912	1.68	0.094	-0.08467	1.083124
	2005	0.879978	0.370953	2.37	0.018	0.152923	1.607033
	2006	1.149033	0.428573	2.68	0.007	0.309045	1.989021
	2007	1.358535	0.497358	2.73	0.006	0.383732	2.333338
	2008	1.270438	0.543166	2.34	0.019	0.205853	2.335023
	2009	1.299735	0.445121	2.92	0.004	0.427314	2.172156
	2010	1.345882	0.456794	2.95	0.003	0.450582	2.241183
	2011	1.370227	0.500431	2.74	0.006	0.389402	2.351053
	2012	1.404109	0.482501	2.91	0.004	0.458424	2.349794
	2013	1.443209	0.498931	2.89	0.004	0.465323	2.421095
	2014	1.328667	0.516269	2.57	0.01	0.316799	2.340534
	2015	1.318081	0.45669	2.89	0.004	0.422985	2.213178
_cons		23.62003	14.77305	1.6	0.11	-5.33463	52.57468
Rho		0.802712					

Appendix 9: Prais-Winsten regression, (PCSE) Model 4

Group variable: id	Number of obs	=	685			
Time variable: year	Number of groups	=	64			
Panels: correlated (unbalanced)	Obs per group: min	=	4			
Autocorrelation: common AR(1)	avg	=	10.70313			
Sigma computed by casewise selection	max	=	14			
Estimated covariances = 2080	R-squared	=	0.4459			
Estimated autocorrelations = 1	Wald chi2(17)	=	1098.27			
Estimated coefficients = 30	Prob > chi2	=	0.0000			
Panel Corrected						
logFDI	Coef.	Std.Err	Z	P> z	[95% Conf. Interval]	
logGDPhome	.3433608	0.044239	7.76	0.000	0.256655	0.430068
logGDPhost	-0.68147	0.634812	-1.07	0.283	-1.92568	0.562736
Distance	-0.00096	0.000203	-4.76	0.000	-0.00136	-0.00057
C_TaxD	0.011097	0.004806	2.31	0.021	0.001677	0.020517
INFL	-0.02431	0.005469	-4.45	0.000	-0.03503	-0.01359
TradeO	0.012181	0.004682	2.6	0.009	0.003005	0.021358
LogWage	0.988233	0.478359	2.07	0.039	0.050668	1.925799
GOV_EFF	0.251879	0.220338	1.14	0.253	-0.17998	0.683734
Srb	0.994052	0.696329	1.43	0.153	-0.37073	2.358832
Cro	1.298541	0.590028	2.2	0.028	0.142107	2.454975
Mkd	-0.47676	0.318203	-1.5	0.134	-1.10042	0.146911
Alb	-0.17494	0.207248	-0.84	0.399	-0.58114	0.231262
Mng	-2.48536	1.136621	-2.19	0.029	-4.7131	-0.25763
Blg	2.39264	1.013355	2.36	0.018	0.4065	4.378779
Rom	4.906582	1.50995	3.25	0.001	1.947134	7.86603
Year						
2002	-0.49524	0.220569	-2.25	0.025	-0.92754	-0.06293
2003	-0.22998	0.253203	-0.91	0.364	-0.72625	0.266283
2004	-0.14786	0.274218	-0.54	0.59	-0.68532	0.389596
2005	0.265896	0.33331	0.8	0.425	-0.38738	0.919171
2006	0.500883	0.376565	1.33	0.183	-0.23717	1.238937
2007	0.810622	0.427159	1.9	0.058	-0.02659	1.647839
2008	0.74613	0.466166	1.6	0.109	-0.16754	1.659797
2009	0.921486	0.388993	2.37	0.018	0.159074	1.683899
2010	0.913306	0.399312	2.29	0.022	0.130669	1.695943
2011	0.899473	0.43543	2.07	0.039	0.046046	1.752899
2012	0.920328	0.424087	2.17	0.03	0.089134	1.751523
2013	0.927259	0.434	2.14	0.033	0.076635	1.777884
2014	0.816107	0.444372	1.84	0.066	-0.05485	1.687059
2015	0.874627	0.404565	2.16	0.031	0.081694	1.667559
_cons	4.438547	12.29373	0.36	0.718	-19.6567	28.53381
Rho	0.821408					

Appendix 10: Prais-Winsten regression, (PCSE) Model 5

Group variable: id			Number of obs	=	685		
Time variable: year			Number of groups	=	64		
Panels: correlated (unbalanced)			Obs per group: min	=	4		
Autocorrelation: common AR(1)			avg	=	10.70313		
Sigma computed by casewise selection			max	=	14		
Estimated covariances	=	2080	R-squared	=	0.4472		
Estimated autocorrelations	=	1	Wald chi2(17)	=	6832.98		
Estimated coefficients	=	30	Prob > chi2	=	0.0000		
Panel Corrected							
logFDI	Coef.	Std.Err	Z	P> z	[95% Conf. Interval]		
logGDPHome	0.342525	0.0433	7.91	0.000	0.257659	0.427391	
logGDPHost	-0.51429	0.536824	-0.96	0.338	-1.56645	0.537866	
Distance	-0.00096	0.000199	-4.8	0.000	-0.00135	-0.00057	
C_TaxD	0.011077	0.004609	2.4	0.016	0.002044	0.02011	
INFL	-0.02385	0.005663	-4.21	0.000	-0.03494	-0.01275	
TradeO	0.010177	0.004031	2.52	0.012	0.002275	0.018078	
logWage	0.743152	0.422238	1.76	0.078	-0.08442	1.570722	
CORRUPT	0.752092	0.262004	2.87	0.004	0.238573	1.26561	
Srb	0.916478	0.651407	1.41	0.159	-0.36026	2.193212	
Cro	1.184792	0.50271	2.36	0.018	0.1995	2.170084	
Mkd	-0.3249	0.248176	-1.31	0.19	-0.81132	0.161512	
Alb	-0.02979	0.251765	-0.12	0.906	-0.52324	0.463664	
Mng	-2.06653	0.891554	-2.32	0.02	-3.81395	-0.31912	
Blg	2.285336	0.901346	2.54	0.011	0.51873	4.051942	
Rom	4.430313	1.315714	3.37	0.001	1.85156	7.009066	
Year							
2002	-0.49867	0.197763	-2.52	0.012	-0.88628	-0.11106	
2003	-0.32029	0.213789	-1.5	0.134	-0.73931	0.098726	
2004	-0.20741	0.240483	-0.86	0.388	-0.67875	0.263929	
2005	0.154202	0.287281	0.54	0.591	-0.40886	0.717262	
2006	0.429981	0.318536	1.35	0.177	-0.19434	1.054299	
2007	0.745087	0.363492	2.05	0.04	0.032657	1.457518	
2008	0.685235	0.394514	1.74	0.082	-0.088	1.458468	
2009	0.852632	0.324589	2.63	0.009	0.216449	1.488815	
2010	0.83236	0.336649	2.47	0.013	0.17254	1.49218	
2011	0.843166	0.367501	2.29	0.022	0.122878	1.563454	
2012	0.880977	0.356186	2.47	0.013	0.182866	1.579088	
2013	0.888225	0.365355	2.43	0.015	0.172142	1.604307	
2014	0.773242	0.377692	2.05	0.041	0.03298	1.513504	
2015	0.892418	0.331486	2.69	0.007	0.242718	1.542118	
_cons	2.462908	10.39781	0.24	0.813	-17.9164	22.84224	
Rho	0.828091						

Appendix 11: Prais-Winsten regression, (PCSE) Model 6

Group variable: id	Number of obs	=	685			
Time variable: year	Number of groups	=	64			
Panels: correlated (unbalanced)	Obs per group: min	=	4			
Autocorrelation: common AR(1)	avg	=	10.70313			
Sigma computed by casewise selection	max	=	14			
Estimated covariances	=	2080	R-squared	=	0.4489	
Estimated autocorrelations	=	1	Wald chi2(17)	=	6150.66	
Estimated coefficients	=	30	Prob > chi2	=	0.0000	
Panel Corrected						
logFDI	Coef.	Std.Err	Z	P> z	[95% Conf. Interval]	
LogGDPHome	0.343003	0.042445	8.08	0.000	0.259813	0.426193
LogGDPHost	-0.64514	0.473222	-1.36	0.173	-1.57264	0.282356
Distance	-0.00096	0.000196	-4.9	0.000	-0.00134	-0.00058
C_TaxD	0.010481	0.004453	2.35	0.019	0.001753	0.01921
INFL	-0.01809	0.0052	-3.48	0.001	-0.02828	-0.0079
TradeO	0.012142	0.003548	3.42	0.001	0.005187	0.019096
LogWage	1.062908	0.338106	3.14	0.002	0.400233	1.725583
RoLaw	0.855811	0.266611	3.21	0.001	0.333264	1.378358
Srb	1.197182	0.551556	2.17	0.03	0.116153	2.278211
Cro	1.042936	0.509046	2.05	0.04	0.045224	2.040649
Mkd	-0.36216	0.223453	-1.62	0.105	-0.80012	0.075799
Alb	0.16769	0.1631	1.03	0.304	-0.15198	0.48736
Mng	-2.54704	0.80559	-3.16	0.002	-4.12596	-0.96811
Blg	2.375353	0.791753	3	0.003	0.823547	3.92716
Rom	4.570426	1.194577	3.83	0.000	2.229098	6.911754
Year						
2002	-0.29161	0.241458	-1.21	0.227	-0.76486	0.181634
2003	-0.10583	0.252282	-0.42	0.675	-0.60029	0.388633
2004	-0.13519	0.274592	-0.49	0.622	-0.67338	0.403001
2005	0.277319	0.312341	0.89	0.375	-0.33486	0.889497
2006	0.5117	0.338747	1.51	0.131	-0.15223	1.17563
2007	0.70995	0.380349	1.87	0.062	-0.03552	1.455419
2008	0.613973	0.411999	1.49	0.136	-0.19353	1.421476
2009	0.751865	0.352757	2.13	0.033	0.060475	1.443255
2010	0.727534	0.364116	2.00	0.046	0.01388	1.441189
2011	0.714147	0.392932	1.82	0.069	-0.05599	1.484278
2012	0.733961	0.384391	1.91	0.056	-0.01943	1.487354
2013	0.734966	0.393025	1.87	0.061	-0.03535	1.50528
2014	0.607187	0.402386	1.51	0.131	-0.18147	1.395849
2015	0.746351	0.357699	2.09	0.037	0.045274	1.447428
_cons	3.38891	9.208185	0.37	0.713	-14.6588	21.43662
Rho	0.820118					

Appendix 12: Prais-Winsten regression, (PCSE) Model 7

Group variable: id	Number of obs	=	718				
Time variable: year	Number of groups	=	64				
Panels: correlated (unbalanced)	Obs per group: min	=	4				
Autocorrelation: common AR(1)	avg	=	11.21875				
Sigma computed by casewise selection	max	=	15				
Estimated covariances = 2080	R-squared	=	0.3495				
Estimated autocorrelations = 1	Wald chi2(16)	=	4141.05				
Estimated coefficients = 32	Prob > chi2	=	0.0000				
Panel Corrected							
logFDI	Coef.	Std.Err	Z	P> z	[95% Conf. Interval]		
LogGDPhome	0.392113	0.050082	7.83	0.000	0.293954	0.490273	
LogGDPhost	-1.78129	0.668547	-2.66	0.008	-3.09162	-0.47096	
Distance	-0.00122	0.000256	-4.78	0.000	-0.00173	-0.00072	
C_Tax	-0.02353	0.004934	-4.77	0.000	-0.0332	-0.01386	
INFL	-0.01888	0.003997	-4.72	0.000	-0.02671	-0.01105	
TradeO	0.007737	0.004538	1.71	0.088	-0.00116	0.016631	
LogWage	2.223181	0.401653	5.54	0.000	1.435956	3.010406	
TaxCredit	0.20123	0.099223	2.03	0.043	0.006757	0.395702	
TaxHoliday	0.258453	0.060573	4.27	0.000	0.139733	0.377173	
Srb	2.085816	0.699899	2.98	0.003	0.714039	3.457593	
Cro	2.174247	0.636301	3.42	0.001	0.927119	3.421375	
Mkd	-0.90629	0.34001	-2.67	0.008	-1.57269	-0.23988	
Alb	0.607103	0.26858	2.26	0.024	0.080696	1.133509	
Mng	-4.27353	1.161394	-3.68	0.000	-6.54982	-1.99724	
Blg	4.563302	1.029215	4.43	0.000	2.546078	6.580526	
Rom	7.859216	1.621017	4.85	0.000	4.682082	11.03635	
Year	2001	-0.11603	0.180194	-0.64	0.52	-0.46921	0.237141
	2002	0.083218	0.237001	0.35	0.725	-0.3813	0.547731
	2003	0.325319	0.291409	1.12	0.264	-0.24583	0.89647
	2004	0.460487	0.352977	1.3	0.192	-0.23134	1.15231
	2005	0.581404	0.41584	1.4	0.162	-0.23363	1.396435
	2006	0.828799	0.455493	1.82	0.069	-0.06395	1.721549
	2007	1.046238	0.544317	1.92	0.055	-0.0206	2.113079
	2008	0.983696	0.599597	1.64	0.101	-0.19149	2.158884
	2009	1.032762	0.515511	2.0	0.045	0.02238	2.043144
	2010	1.039186	0.526436	1.97	0.048	0.007392	2.070981
	2011	1.064086	0.569935	1.87	0.062	-0.05297	2.181138
	2012	1.095795	0.546338	2.01	0.045	0.024992	2.166598
	2013	1.164697	0.554452	2.1	0.036	0.077992	2.251402
	2014	1.027729	0.565473	1.82	0.069	-0.08058	2.136035
	2015	1.019728	0.512335	1.99	0.047	0.015571	2.023886
_cons		21.32498	13.13184	1.62	0.104	-4.41295	47.06291
Rho		0.795748					

Appendix 13: Prais-Winsten regression, (PCSE) Model 8

Group variable: id	Number of obs	=	718				
Time variable: year	Number of groups	=	64				
Panels: correlated (unbalanced)	Obs per group: min	=	4				
Autocorrelation: common AR(1)	avg	=	11.21875				
Sigma computed by casewise selection	max	=	15				
Estimated covariances	=	2080	R-squared = 0.3427				
Estimated autocorrelations	=	1	Wald chi2(16) = 652.57				
Estimated coefficients	=	31	Prob > chi2 = 0.0000				
Panel Corrected							
logFDI	Coef.	Std.Err	Z	P> z	[95% Conf. Interval]		
LogGDPhome	0.39379	0.052207	7.54	0.000	0.291467	0.496114	
LogGDPhost	-2.10838	0.818643	-2.58	0.01	-3.71289	-0.50387	
Distance	-0.00123	0.000261	-4.7	0.000	-0.00174	-0.00072	
C_Tax	-0.02866	0.002449	-11.71	0.000	-0.03346	-0.02386	
INFL	-0.0194	0.004989	-3.89	0.000	-0.02918	-0.00962	
TradeO	0.00684	0.005534	1.24	0.216	-0.00401	0.017688	
LogWage	2.516704	0.590931	4.26	0.000	1.3585	3.674907	
AccDepreciation	-0.16125	0.159073	-1.01	0.311	-0.47303	0.150526	
Srb	2.45455	0.951771	2.58	0.01	0.589114	4.319986	
Cro	2.427608	0.66652	3.64	0.000	1.121253	3.733964	
Mkd	-0.91455	0.3843	-2.38	0.017	-1.66777	-0.16134	
Alb	0.685512	0.394684	1.74	0.082	-0.08805	1.459078	
Mng	-4.52262	1.31736	-3.43	0.001	-7.1046	-1.94064	
Blg	5.125923	1.338315	3.83	0.000	2.502873	7.748972	
Rom	8.659473	2.027049	4.27	0.000	4.68653	12.63241	
Year	2001	-0.13066	0.150918	-0.87	0.387	-0.42646	0.165133
	2002	0.049613	0.197645	0.25	0.802	-0.33776	0.43699
	2003	0.302288	0.257336	1.17	0.24	-0.20208	0.806657
	2004	0.450815	0.306568	1.47	0.141	-0.15005	1.051678
	2005	0.932752	0.450036	2.07	0.038	0.050697	1.814807
	2006	1.181119	0.498589	2.37	0.018	0.203902	2.158336
	2007	1.39967	0.566061	2.47	0.013	0.290211	2.50913
	2008	1.262449	0.611504	2.06	0.039	0.063924	2.460974
	2009	1.268607	0.514203	2.47	0.014	0.260788	2.276425
	2010	1.311802	0.520802	2.52	0.012	0.291049	2.332555
	2011	1.345415	0.560685	2.4	0.016	0.246492	2.444338
	2012	1.367815	0.540565	2.53	0.011	0.308328	2.427303
	2013	1.408236	0.557541	2.53	0.012	0.315475	2.500997
	2014	1.293507	0.573302	2.26	0.024	0.169856	2.417158
	2015	1.266708	0.507889	2.49	0.013	0.271264	2.262152
_cons		27.27607	15.39836	1.77	0.077	-2.90416	57.45629
Rho		0.804008					