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The Heterogeneous Nature of FDI in Central and Eastern Europe. Impact of the Entry Mode on the Host Country's Economic Growth

Marcin HUMANICKI – SGH Warsaw School of Economics and Narodowy Bank Polski, Warsaw, Poland (mh31434@doktorant.sgh.waw.pl) *corresponding author*

Krzysztof OLSZEWSKI - SGH Warsaw School of Economics and Narodowy Bank Polski, Warsaw, Poland

Abstract

Foreign direct investment (FDI) is considered to have a positive impact on economic growth in the host country. However, there is no consensus in the empirical literature on the growth effects of FDI. One reason may be that many studies are based on aggregated data on capital flows and do not take into account the different modes of entry of a foreign investor. The paper analyses the growth effects of FDI in Central and Eastern European (CEE) countries by distinguishing three entry modes of a foreign investor (greenfield, reinvestment, mergers and acquisitions). Firstly, it provides a literature review on the links between economic growth and FDI. Secondly, it describes the method used to construct data on greenfield FDI and reinvestments. Finally, it shows that in case of the CEE countries there is only an indirect growth effect of FDI (through the accumulation of capital), while for the non-CEE countries a direct positive effect of FDI can be found.

1. Introduction

During the transition period from a centrally-planned to a market-based economy the new EU member states from Central and Eastern Europe (Bulgaria, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic, Slovenia), hereafter called CEE-10, have embarked on financial integration with the world economy. Therefore, these countries saw a massive inflow of foreign capital mainly in a form of direct investment (FDI)[1]. FDI inflows did not have a homogeneous nature as they included both *greenfield* (investment from scratch) related to the acquisition of new fixed assets and *mergers and acquisitions* (*M&As*)

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[1] According to the balance of payments statistics, FDI consists of equity- and debt-type flows. Equity component includes the net sales of stocks/shares and reinvested earnings, while debt component usually takes the form of loans between parent firms and foreign affiliates (intercompany lending).

related to the acquisition of existing assets. Over the years another type of inward FDI has emerged that is *reinvestment* as foreign-owned companies operating in CEE-10 started to make profits and expand their activity.

From a theoretical point of view FDI is the most desirable form of foreign capital for the recipient country. Firstly, it is widely known that FDI adds to existing physical capital stock and contributes to the transfer of knowledge and technology (De Mello, 1999). Therefore, FDI is believed to boost overall productivity, enhance competitiveness and create new jobs. According to the standard growth models (exogenous and endogenous) capital accumulation and technology improvement are the main factors driving economic growth in the medium and long run (e.g., Aghion and Howitt 1992; Romer 1990; Solow 1956). Secondly, FDI is assumed to be more stable and less subject to sudden stops than other forms of financial flows such as portfolio and banking-type flows (Levchenko and Mauro 2007, Tong and Wei 2009). This may explain why policymakers in the host countries compete fiercely to attract more inward FDI by offering special incentives (e.g. tax breaks) to transnational corporations.

Many studies have tried to examine empirically the macroeconomic consequences of the inflow of foreign direct investment on the recipient country's GDP growth. Unfortunately, the results are mixed and for the time being the expected positive impact of FDI could not be found in the data. This controversy is due, *inter alia*, to lack of sufficient data in terms of both time and country sections. One possible solution would be use of panel data models. This approach enables to control for country-specific effects and include dynamic, lagged dependent variables, which can be helpful in terms of control for omitted variables and endogeneity bias.

The inconclusive results of the growth-FDI nexus may be also related to the fact that most studies usually rely on aggregate data on capital flows and do not consider different modes of entry of foreign investor. If the transaction leads to an establishment of new assets (e.g. plant, shared service centre, etc.) coming under control of foreign firm, it is called *greenfield* investment. If the transaction involves extending the existing facilities (e.g. plant, shared service centre, etc.) in the host country, for example launching a new production line, then it is called *reinvestment*. Finally, when the transaction represents only a transfer of existing assets from local to foreign enterprise, it is called *merger and acquisition* (M&A). There are no reasons to believe that these three forms of FDI have the same effects on growth and investment in terms of sign and magnitude. Therefore, the question about the potential impact of these three modes of entry on the host country's economic grow is of paramount importance as the share of M&A transactions in FDI flows worldwide has increased over the last two decades.

The paper analyzes the growth effects of FDI in ten CEE countries that are members of the European Union and most of them also belongs to the OECD (CEE-10) region over the period 1995-2018. We compare the results for CEE-10 with those obtained for other OECD countries which consist mostly of developed economies such as France, Germany, Israel, Switzerland, United Kingdom, United States, etc. First, we want to extend the existing empirical literature by addressing the concerns raised in many studies about the link between FDI inflows and economic growth of the host country. To this aim we follow the approach undertaken by Harms and Méon (2011) suggesting that disaggregated FDI data (*greenfield*, *reinvestment, M&As)* can

provide additional information about the potential impact of capital inflows on the host economy. Second, in this paper we construct own data on both greenfield FDI and reinvestment based on two sources covering capital flows statistics compiled both under assets/liability and directional principle approaches. Thirdly, we run the same regressions on the remaining OECD countries, which are non-CEE countries. This way we obtain richer results, because we can directly compare the effect of the very same economic variables in two connected, but different country groups. On the one hand the countries, as OECD members are to some extent similar in nature, however, the remaining OECD countries are usually more developed and have a long experience with FDI inflow. This allows us to make richer policy recommendations than those that would result from an analysis that solely focuses on CEE countries. We explicitly do not study all OECD countries at once, because the analysis points out significant differences in the two groups. This is, subject to further investigation, a critique of previous studies which put random countries in one sample when analyzing the effect of FDI.

The paper is organized as follows. Section 2 discusses the empirical literature on macroeconomic consequences of FDI and different entry modes of a foreign investor on the host country economic growth. Section 3 describes the data, including the method used to construct greenfield and reinvestment FDI statistics, and the estimation methodology. Section 4 presents the estimation results. Section 5 reports the robustness check. Section 6 concludes the paper.

2. Literature Overview

Foreign direct investment should in theory increase productivity in the host country primarily through the transfer of technology and managerial knowledge. What is more, FDI increases the stock of physical capital in the host country's economy and through this channel should also exert positive effect on growth.

Many studies have tried to examine the growth effect of FDI in both developed and developing countries (see, e.g., de Melo, 1997, Borensztein et al., 1998, Alfaro et al., 2004, 2010, Carkovic & Levine, 2005, Bloningen and Wang, 2005, Aizenman et al., 2011). To date there is no consensus on whether FDI has a positive influence on the host country's economy. For example, Borensztein et al. (1998) find that the impact of FDI on the host country's growth is significant only when the recipient economy possesses high levels of human capital. Alfaro et al. (2004) finds that FDI alone plays an ambiguous role in contributing to economic growth and underlines the importance of financial development in analyzing the growth effect. In turn, Blomstrom, Lipsey and Zejan (1996) conclude that FDI has a stronger positive impact on growth in high-income economies. What is more, Doucouliagos et al. (2010) show in their meta-study that only 43% of the regressions report a significantly positive coefficient, while 17% are significantly negative and 40% insignificant. Further meta-studies on this topic were conducted by Iamsiraroj and Ulubaşoğlu (2015) and Iamsiraroj (2016).

One reason why these studies do not give conclusive results is the problem of bi-directional causality (endogeneity): high growth could attract FDI and also the inflow of FDI might increase the stock of existing investment and lead to a technological and managerial spillover effects. Some studies also point out that FDI

inflows are substitutes for domestic investment, thus the net effect is close to zero or even negative (Aitken & Harrison, 1999). It is argued that foreign firms are more efficient and crowd out domestic companies because the former have better production technology and lower marginal costs. In some countries, which have an underdeveloped political and educational system, FDI is directed into "islands" and a brain drain from the joint economy is observed. This is surely not the case in CEE countries, where one also observes a strong turnover of knowledge and workers among factories and firms. The inconclusive results of the growth-effects of FDI is also related to lack of sufficient data in terms of both time and country sections. One possible solution suggested in the empirical literature is the use of panel data models that link both dimensions (Buckley, Clegg, Wang and Cross, 2002; Li & Liu, 2005; Yang, 2007). This approach enables to control for country-specific effects and include dynamic by adding lagged dependent variables. The latter element can be helpful in terms of control for endogeneity bias.

The inconclusive results of the growth-effects of FDI may be also related to the fact that the majority of studies usually rely on aggregate data on capital flows and do not take into account different entry modes of foreign firms into the host country. In this project we will separate FDI into three major components: *greenfield*, *reinvestment* and cross-border *mergers and acquisitions* (*M&As*). *Greenfield* FDI involves building new facilities (manufacturing, services, etc.) under the control of non-resident. *Reinvestment* means extending the facilities (manufacturing, services, etc.) existing in the host country by, for example, launching a new production line. Cross-border *merger and acquisitions* (*M&As*) takes place when foreign investor acquires the existing facilities in the host country. There are no reasons to believe that these three forms of FDI have the same effects on growth and investment in terms of the sign and the magnitude. It is rather believed that both *greenfield* and *reinvestment* should have more stronger positive impact on growth than *M&As*, because it affects both via increased physical capital and enhanced total factor productivity. The question about the potential impact of these three entry modes on the host country's economic grow is of paramount importance, as the share of *M&A* transactions in FDI flows worldwide has increased over the last two decades.

To our best knowledge there are only few empirical studies in the literature that analyse the growth effects of FDI taking into account different entry modes of a foreign investor (e.g. Calderon et al., 2004; Wang and Wong, 2009; Harms and Méon, 2011) and none of them can resolve the problem of ambiguous net impact. For example, Harms and Méon (2011) show that greenfield FDI exerts a significantly positive effect on economic growth in developing host countries, while *M&As* have no visible impact. Contrary to Harms and Méon, the study of Wang and Wong (2009) includes developed host countries and finds that *M&As* can be beneficial for host countries with sufficiently high stock of human capital. On the other hand, Calderón et al. (2004) suggest that the recipient country's economic growth attracts both types of FDI, but it seems to be no statistically significant reverse effect from either *greenfield* FDI or *M&As* to growth. All three studies are based on available data on total inward FDI, *reinvestment* and cross-border *M&A* and on calculated data on *greenfield* as a residual. While data on *greenfield* FDI did not exist until recently, the limitations of treating *greenfield* as a residual are well known (UNCTAD, 2000).

Therefore, the reliability of estimation results is open to question at least with respect to this type of FDI.

3. Empirical Analysis

3.1 Data

This section describes the data used in the empirical analysis, in particular the measures of FDI, economic growth and several control variables. The data were obtained from various sources. The statistics on total inward FDI, its components (equity, reinvested earnings, debt) and foreign investors' entry modes (*greenfield*, *reinvestment*, *mergers and acquisitions*) are based on data from the United Nations Conference on Trade and Development (UNCTAD) publication *World Development Report* as well as from the IMF's and OECD's databases. All FDI-related variables are expressed as a percentage of GDP, which is a common practice in the literature on FDI-growth nexus. Moreover, total inward FDI data for Hungary and Poland exclude transactions motivated by tax optimization to capture real investment. Data on both macroeconomic variables (e.g. GDP, initial GDP per capita, inflation, government consumption, corporate tax, etc.) and control variables that represents the absorptive capacity of the host economy (e.g. trade openness, human capital, financial sector development) are taken from the World Bank's *World Development Indicators* and the IMF's databases. Economic growth is measured as the rate of real GDP growth in constant US dollars. Domestic investment is the gross fixed capital formation to GDP ratio. Inflation is defined as the percentage change in the CPI index and is used as a proxy for macroeconomic stability. The government consumption is the ratio of general government expenditures to nominal GDP in current US dollars. Trade openness is measured as the sum of exports and imports of goods and services divided by nominal GDP in current US dollars. Human capital is proxied by the World Bank's broad indicator of human development called Human Development Index (HDI)[2]. We also use the measure of financial sector development constructed by the IMF called *The Index of Financial Development*[3], which characterizes the financial markets and financial institutions in terms of depth, access, and efficiency. The corporate tax is the CIT, thus the corporate tax rate. Business freedom is an overall indicator of the efficiency of government regulation of business, calculated by the Heritage Foundation on WDI data. We provide the summary of descriptive statistics for selected variables in in the Appendix.

The aim of this study is to draw conclusions for the ten EU member states from the CEE region on the growth effects of FDI, but we run all regressions also for a benchmark group of the developed OECD countries. Our sample includes thirty OECD countries for which we managed to collect complete data and the remaining CEE 10 countries which are not OECD members. We broke down the sample of OECD countries into two groups (CEE and non-CEE) to examine the linkages

[2] It measures the average achievements in a country in three basic dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living. The HDI is the geometric mean of normalized indices measuring achievements in each dimension.
[3] IMF (2016), *Introducing a New Broad-based Index of Financial Development*, Working Paper No. 16/5.

between GDP growth, domestic investment and FDI. The time span of the analysis covers the years 1995-2018, but due to numerous breaks in the original data and the need to transform some variables in levels into growth rates, the effective estimation sample is limited to the years 1996-2017. It should be underlined that both OECD's and UNCTAD's statistics on inward FDI measure the value of annual inflow of FDI to a given country (in millions of current U.S. dollars) and are presented on the basis of the directional principle (according to the 4th edition of the OECD's *Benchmark definition of FDI*). This approach is recommended by international organizations while studying, *inter alia*, the nature and motivations of foreign direct investment[4]. UNCTAD's data on *M&As* are based on information provided by Thomson Reuters[5] and measure the annual net cross-border *mergers and acquisitions* sales expressed in millions of current U.S. dollars. UNCTAD's data on *greenfield* FDI are based on information from the fDi Markets database of the fDi Intelligence, a specialist division of The Financial Times Ltd. The data refer to new investment projects and significant expansions of existing projects that have either been announced or opened by a company. It means that these statistics may include transactions that are not necessarily considered as pure *greenfield* FDI. What is more, available time series are relatively short (only from 2003).

Due to the aforementioned drawbacks of *greenfield* FDI statistics we decide to construct own data. We follow to some extent the approach recommended by Calderón, Loayza and Serven (2004), who calculated greenfield investment by subtracting cross-border *mergers and acquisitions* from total inward FDI. In our approach we want to extract an information on *greenfield* investment by merging two sources of FDI statistics. The first source is the IMF's Balance of Payments database which allows to decompose FDI into three components: *equity*, *reinvested earnings* and *other capital*. The second source enables to present different modes of entry of FDI investor such as *greenfield*, *reinvestment*, *mergers and acquisitions*. The former source presents data compiled according to the asset/liability approach and under this presentation the FDI statistics are classified either as an asset or a liability for the country compiling the statistics. The asset/liability approach does not show the direction of influence as the directional principle does. We are aware that these two approaches are not fully comparable, but we tend to think that these statistics could be treated as complements rather than substitutes to present a whole picture of FDI activity. According to our method, *greenfield* FDI can be estimated by subtracting *M&A* from equity FDI. Moreover, *reinvestment* can be financed either through retained profits of direct investment enterprise or loans taken out from other company within the capital group (known as intercompany loans). As a result, in the paper *reinvestment* is calculated as the sum of two components: *reinvested earnings* and *other capital* from Balance of Payments statistics. We are aware about the trade-off between accuracy and length of the data.

[4] OECD (2014), *Implementing the latest international standards for compiling foreign direct investment statistics: asset/liability versus directional presentation* (https://www.oecd.org/daf/inv/FDI-statistics-asset-liability-vs-directional-presentation.pdf)

[5] Thomson Reuters's database covers information for more than 273,000 transactions from 1979 on for the United States and from 1985 on for non-U.S. firms.

Figure 1 depicts annual FDI inflows to CEE-10 countries broken down by entry modes of a foreign investor: *greenfield*, *reinvestment* and *M&As*. Several conclusions can be drawn on the basis on visual inspection of the data. Firstly, these economies differ in terms of the magnitude of capital inflows, so one may say that CEE-10 does not form a homogenous region. Secondly, in terms of distribution over time it is visible that *greenfield* investment constituted and still constitutes the main component of FDI inflows. What is more, the share of *mergers and acquisitions* was the biggest in late 1990s and decreased in the next years, while the share of *reinvestment* was very low at the beginning and increased, which is rather a natural characteristic of investment cycle.

3.2 Methodology

Very often in empirical cross-section studies on economic growth it is difficult to generalize the results because of the limited number of countries included. One possible solution would be to use the within-country variation to multiply the number of observations. Panel data analysis allows a researcher to use information concerning both cross-section variability and changes observed throughout the time. Moreover, it permits not only to include unobservable individual country effects in the estimation of the other parameters of the model, but also to get the estimates of these effects themselves (Islam, 1995).

In this study we consider a panel including data for thirty OECD countries for the period 1995-2017. As a starting point we use annual data expressed either in growth rates or in percentage to nominal GDP and next we move on to the average values for 3-year periods. This is the most employed approach in the empirical literature as the annual data may give misleading answers about the longer-term growth process. Taking into account that our panel of countries is rather short we decide to employ standard estimation techniques for panel data based on the *fixed effects* (FE) estimator.

4. Estimation Results: Annual Data

In this section we discuss the results for the effects of FDI on economic growth in OECD countries (broken down into two subgroups: CEE and non-CEE) after controlling for commonly-used determinants of growth (such as inflation, government consumption, corporate taxes and business freedom) and absorption capacity variables (such as trade openness, human capital and financial development). Equation 1 shows the standard neoclassical growth model in a panel setting and examines the *direct* effects of inward FDI on economic growth in both CEE-10 and non-CEE.

$$GDP_{it} = \alpha_0 + \alpha_1 GDPPC_{it} + \alpha_2 DI_{it} + \alpha_3 FDI_{it} + \alpha_4 X_{it} + \varepsilon_{it} \quad (1)$$

where *i* is the subscript of the recipient OECD countries and *t* is the subscript of time (annual data or 3-year average). *GDP* represents the growth rate of real gross domestic product, *GDPPC* is the initial GDP per capita in OECD (in case of 3-year averages it denotes the level at the beginning of each subperiod), *DI* is domestic investment (as a percentage of nominal GDP), *FDI* is foreign direct investment (as a percentage of nominal GDP) and *X* stands for the control variables such as

government consumption, inflation rate, corporate tax, and business freedom. α_0 describes the country-specific intercept, $\alpha_1 - \alpha_4$ are the coefficients to be estimated and ε_{it} is the error term. Equation (2) extends equation (1) by allowing the interaction between FDI and aforementioned control variables which represents the absorption capacity of the host country. It examines the total (both *direct* and *indirect also called spillover*) effects of FDI on economic growth in both CEE-10 and non-CEE.

$$GDP_{it} = \alpha_0 + \alpha_1 GDPPC_{it} + \alpha_2 DI_{it} + \alpha_3 FDI_{it} + \alpha_4 X_{it} + \alpha_5 (FDI_{it} \times Z_{it}) + \alpha_6 Z_{it} + \varepsilon_{it} \quad (2)$$

here Z represents absorptive capacity of the host country proxied by a degree of financial development, human development index (and alternatively a tertiary education) and trade openness. We also include the corporate tax rate and the Heritage foundation economic freedom index. The results presented in this section are based on annual data using fixed effects estimators. We are aware that dealing with annual data may give misleading results about the linkages between economic growth and inflow of FDI, but we treat this stage, like most other researchers, as a starting point. In the next section we show the findings obtained on the averaged data for 3-year subperiods. To our knowledge there is no consensus in the empirical literature on the growth regressions about the optimal length of these subperiods, but usually 5-year averages are employed in order to model the medium-term trend and not to capture the business cycle. However, we decide to calculate 3-year non-overlapping averages due to a limited number of years included in the panel. We decided to expand the panel of analyzed countries and include all OECD countries, but we analyse the samples of CEE countries and the non-CEE countries separately. This approach allows us to check whether FDI has a different effect on the CEE countries than on the non-CEE countries. Some countries show for single periods extreme values of GDP, inflation and of the different FDI variables. Such observations are treated as outliers and may have a negative impact on the quality of the regression, which aims to find long-run relationships. We restricted the data set by excluding observations that take values greater or less than 1.5 times the interquartile range from the first or last quartile (Figure A2 and Figure A3 in the Appendix).

Table A4 (see in the Appendix) reports the growth effects of total FDI on annual data. Regressions 1 and 3 show that only the current domestic investment rate has a significant and positive impact on economic growth for both CEE and non-CEE countries. Lagged FDI does not seem to have any statistically significant effect on current GDP growth in either of the country samples. Moreover, the more a non-CEE country is open to trade, the faster it develops, which is consistent with economic theory. In specifications 2 and 4 we include the lagged GDP growth to study the inertia in GDP growth. The main conclusions do not change much, but now the effect of domestic investment becomes irrelevant. In any case we find that both the HDI and the corporate tax rate have a negative effect on growth in CEE countries. The latter is quite logical, because the higher taxes are levied on companies' profits, the less attractive the host country is to a foreign investor. However, the negative relationship between human development and growth seems to be odd. But the CEE

countries have seen a significant improvement in the level of HDI during the economic transition, which goes hand in hand with the overall development of the economy. According to growth theory a country with a lower level of development should grow faster than another country that starts from a higher level of development. The CEE countries initially had a rather weak HDI index, and as they prepared for the EU accession and later improved their social conditions, they became richer and consequently their growth rate fell.

Table A5 (see in the Appendix) shows the growth effects of FDI disaggregated by entry modes of foreign investors in the two country samples during 1996-2017. Now, only in case of non-CEE countries the current domestic investment rate has a positive and statistically significant impact on GDP growth. Surprisingly, it turns out that none of the FDI entry modes has a significant effect on economic growth. Based on these findings one can draw the preliminary conclusion that distinguishing FDI into different entry modes does not allow to explain the growth effects of capital flows in both CEE and non-CEE countries. Moreover, when we add the lagged GDP growth in case of the CEE countries the lagged M&A begins to have a negative effect on growth, as expected. As in the case of total FDI, we find for the CEE countries a negative impact of HDI and corporate tax rate on economic growth, while in the case of non-CEE countries trade openness has a growth effect.

Our results do not give us much insight into the growth effect of FDI. Reading the results literally, FDI has no meaningful impact on growth, while in case of the CEE countries M&A investments even decrease growth. This would be in line with a part of the literature, which finds none or inconclusive effects of FDI on growth. If this is true, why do CEE countries put so much effort into attracting FDI? Does that make any sense at all? To answer this question, we go further and look at 3-year periods.

5. Estimation Results: 3-Year Averages

Investment takes time to materialize and the expected positive spillovers of FDI need time to evolve. The known theoretical forces are the capital stock creation and the creation of linkages with other sectors of the economy, which needs time. We use 3-year non-overlapping averages, because this accounts for the above-mentioned effects and allows us to remove the cyclicality present in the yearly observations. This way we focus on the medium-term relationship between the host country's growth and the inflow of FDI. Moreover, thanks to the approach based on the averaged data, we avoid the analysis of some seemingly boom-bust episodes, as usually after a surge in inward FDI there is a moderation, after which the inflow normalizes again. Some empirical studies use for this purpose 5-year averages, but this would reduce our rather short time series.

Table 1 reports the growth effects of total FDI based on 3-year averages. We find that FDI is positively correlated with economic growth in most specifications only for the non-CEE countries, while it has no direct effect on the CEE countries. The government consumption reduces GDP growth in the non-CEE countries. Trade openness enhances economic growth only for non-CEE countries. The level of financial development has no statistically significant effect on GDP growth. The corporate tax has a negative effect in case of the CEE countries, while the economic

freedom index seems to have no impact at all. In regressions 2-5 and 7-10, we add the initial level of GDP per capita for each 3-year subperiods to test for the convergence hypothesis. According to this theory a country with a lower initial GDP per capita should grow faster than the one with a higher level. Indeed, we find a significant and negative effect of this variable for both country groups. Interestingly, the inclusion of the convergence variable does not alter the results of most other variables. Only the negative effect of the HDI level on non-CEE countries becomes insignificant. It seems that the HDI indicator has a similar meaning as the initial GDP, showing the level of development at which a given country enters the 3-year period. In the remaining regressions we examine whether the interactions between FDI and different measures of absorption capacity (trade openness, human capital, financial development) have an impact on growth. However, the interactions do not add anything to the regression for the CEE countries. Only in case of the non-CEE countries the interaction between FDI and trade openness is positive and significant and the interaction between financial development and FDI is negative and significant. The latter result is difficult to explain, but the most likely explanation is the fact that we do not cover pure cross sections, but panels. In case of a pure cross section regression we would expect that the more financially developed a country is, the more FDI it can absorb in comparison to its peers. However, in case of our panel analysis we also capture the evolution of the economic variables over time. The higher is the GDP per capita, the slower is usually the economic growth. When the interaction between FDI and financial development is considered, the parameter of FDI increases from around 0.2 to 1.7, which means that FDI is important. Even though the interaction term is negative, the joint effect is positive. This means that countries with a lower degree of financial development gain more than their more developed peers. Most likely, the growth generated by local firms is very high in countries that have a developed financial system.

In the next step we decompose FDI by entry modes of a foreign investor. Table 2 reports the results. For the CEE countries we find that greenfield FDI have no impact on GDP dynamics, while reinvestment and *M&As* appear to be correlated with economic growth, the former positively and the latter negatively. On the contrary, in the case of the non-CEE countries the results are even the opposite. New investment and reinvestment seem to increase GDP dynamics, while *M&As* have no growth effects. Government consumption is negatively correlated with the economic activity in case of non-CEE countries, while trade openness has a significant and positive impact. Human capital and financial development do not influence economic growth in any of the analyzed groups. As expected, including the initial level of GDP per capita leads to very similar results as for the aggregate FDI variable. Furthermore, the corporate tax rate seems to reduce economic growth in CEE countries and has no impact in other OECD member states. We also tested the interactions between entry modes of FDI and absorption capacity variables (trade openness, human capital, financial development). We find now quite interesting results. For the CEE countries some interaction terms become significant, and we need to analyse them together with the direct effect of the FDI entry modes. Regression 3 includes the interaction with HDI. In this specification we find a positive and significant effect of reinvestment, while the interaction term is significant and negative.

Given that HDI is 0.81 on average, we get a minimal joint positive effect[6]. A similar effect can be observed in regression 4, in which the interaction with openness is analysed. Openness in CEE countries is 1.19 on average, and the effect of reinvestment and the interaction term (which is negative) is jointly positive. In regression 5 we interact FDI modes with financial development and observe that M&A have strong, negative effect, which cannot be offset by the interaction term[7]. When we move to the non-CEE countries, regression 8 accounts for the interaction of HDI with the FDI entry modes, and the results are qualitatively like those for the CEE countries. In case we interact FDI with openness, we obtain a negative effect of M&A, which cannot be offset by the positive interaction with openness. Finally, the interaction with financial development shows that greenfield and reinvestments have a significant positive effect, which is largely offset by the interaction term.

Table 1 Estimated Impact of Total FDI on GDP Growth: 3-Year Averages

Dependent variable: GDP growth	*(1) CEE*	*(2) CEE*	*(3) CEE*	*(4) CEE*	*(5) CEE*	*(6) Non-CEE*	*(7) Non-CEE*
Initial GDP per capita level		-0.09*	-0.09*	-0.09*	-0.09*		-0.07**
Domestic investment	0.38***	0.39**	0.40***	0.39**	0.39**	0.28***	0.39***
FDI	-0.04	-0.06	1.09	0.06	-0.23	0.16**	0.19**
Government consumption	0.11	0.08	0.04	0.07	0.07	-0.03**	-0.01**
Inflation	-0.22**	-0.12	-0.13	-0.12	-0.10	0.15	0.12
Openness	0.03	0.02	0.02	0.02	0.02	0.03***	0.03***
Financial development	-0.03	0.01	0.00	0.01	-0.00	-0.03	-0.01
HDI	-0.70*	-0.16	-0.15	-0.17	-0.14	-0.38**	-0.07
Corporate tax	-0.26***	-0.23***	-0.23**	-0.24**	-0.22**	-0.02	0.00
Economic freedom	0.15	0.18	0.18	0.18	0.16	-0.02	0.01
FDI x HDI			-1.50				
FDI x Openness				-0.09			
FDI x Financial development					0.47		
Observations	53	53	53	53	53	117	117
Country effect	YES	YES	YES	YES	YES	YES	YES
Time effect	YES	YES	YES	YES	YES	YES	YES
R2 (within)	0.823	0.840	0.842	0.840	0.841	0.599	0.622

Notes: Domestic investment and FDI are expressed as a percentage to GDP. Inflation represents the growth rate of the headline CPI. Openness to trade is defined as the ratio of the sum of exports and imports of goods and services to GDP. Human capital is proxied by a Human Development Index. Government consumption is the ratio of general government spending to GDP. Financial development is proxied by the IMF's indicator. The corporate tax is the CIT, thus the corporate tax rate. Business freedom is an overall indicator of the efficiency of government regulation of business, calculated by the Heritage Foundation on WDI data. All regressions were estimated with Driscoll and Kraay standard errors robust to the cross-sectional dependence (*** p<0.01, ** p<0.05, * p<0.1).

[6] We explain here, in line with Alfaro et al. (2004), how to calculate the net effect of FDI, which accounts for the direct effect and the interaction of FDI with the absorption variable. The net effect of FDI is α*Reinvestment + β*Reinvestment*HDI = 6.63*Reinvestment-7.89*Reinvestment*0.81 = 0.239*Reinvestment, thus it is positive.

[7] The net effect of FDI is this time negative, because it is calculated as -3.09* M&A + 6.8*M&A*0.36 = -0.642*M&A.

Table 2 Estimated Impact of Disaggregated FDI by Entry Modes on GDP Growth: 3-Year Averages

Dependent variable: GDP growth	*(1) CEE*	*(2) CEE*	*(3) CEE*	*(4) CEE*	*(5) CEE*	*(6) Non-CEE*	*(7) Non-CEE*	*(8) Non-CEE*	*(9) Non-CEE*	*(10) Non-CEE*
Initial GDP per capita level		-0.11	-0.11*	-0.11*	-0.12*		-0.07**	-0.06**	-0.07**	-0.08**
Domestic investment	0.35**	0.35**	0.44**	0.39**	0.41***	0.21***	0.33***	0.29***	0.27***	0.30***
Greenfield FDI	-0.17	-0.20**	-2.08	-1.59	-0.92	0.24***	0.28***	-3.43*	-0.18	1.33**
Reinvestment	0.21	0.23	6.63***	1.54***	0.51	0.07	0.09	5.71***	0.39	1.83***
M&A	-0.28	-0.54*	-15.45*	-2.52	-3.09**	0.20	0.20*	-4.42	-0.76**	0.08
Government consumption	0.03	-0.03	-0.00	-0.02	-0.05	-0.03***	-0.01**	-0.00	-0.01	-0.03**
Inflation	-0.30**	-0.15	-0.19	-0.26	-0.17	0.20*	0.17	-0.01	0.15	0.16
Openness	0.03	0.01	0.01	0.02	0.01	0.03***	0.03***	0.03***	0.03***	0.03***
Financial development	-0.00	0.05	0.06	-0.08	0.02	-0.03	-0.00	0.01	0.04	0.03
HDI	-0.60	-0.02	-0.09	0.28	-0.15	-0.43**	-0.11	-0.10	-0.20	-0.08
Corporate tax	-0.21**	-0.16***	-0.16***	-0.06	-0.18**	-0.01	0.02	0.02	0.03	0.02
Economic freedom	0.10	0.13	0.06	0.20	0.00	0.03	0.05	0.00	0.05	0.04
Green FDI x HDI			2.17					3.99*		
Reinvestment x HDI			-7.89***					-6.39***		
M&A x HDI			18.26					5.09		
Green FDI x Openness				1.02					0.14	
Reinvestment x Openness				-0.99***					-0.21	
M&A x Openness				1.53					0.84**	
Green FDI x Fin. development					1.87					-1.47*
Reinvestment x Fin. development					-0.57					-2.44***
M&A x Fin. development					6.80**					-0.02
Observations	53	53	53	53	53	117	117	117	117	117
Country effect	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Time effect	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
R2 (within)	0.833	0.856	0.879	0.877	0.870	0.622	0.646	0.707	0.694	0.688

Notes: Domestic investment and FDI are expressed as a percentage of GDP. Inflation represents the annual growth rate of the headline CPI. Openness to trade is defined as the ratio of the sum of exports and imports of goods and services to GDP. Human capital is proxied by a Human Development Index. Government consumption is the ratio of general government spending to GDP. Financial development is proxied by the IMF's indicator. The corporate tax is the CIT, thus the corporate tax rate. Business freedom is an overall indicator of the efficiency of government regulation of business, calculated by the Heritage Foundation on WDI data. All regressions were estimated with Driscoll and Kraay standard errors robust to the cross-sectional dependence (*** p<0.01, ** p<0.05, * p<0.1).

5.1 The Indirect Effect of FDI

So far, we did not find a strong direct effect of FDI on growth in CEE countries, which is in line with the empirical literature. We therefore investigate whether FDI enhances domestic investment, which in turn should have a positive effect on GDP growth. Regressions 1 and 3 in Table 3 which use aggregate FDI do not show any meaning of FDI for domestic investment, both in CEE and non-CEE countries. Investment is hindered by government consumption, which in line with theory seems to crowd out private investment. The financial development has a positive effect on domestic investment in CEE countries, while in case of the non-CEE countries domestic investment is enhanced by economic freedom. Interestingly, in case of non-CEE countries inflation seems to have a positive effect on investment, which should be analysed further, but is beyond the scope of this paper.

The estimation results become more informative, when we split FDI into its components (see regressions 2 and 4 in Table 3). For the CEE countries we see that reinvestment has a positive effect on domestic investment, which is enhanced by financial development, but hindered by government consumption. In case of the non-CEE countries greenfield investments enhance domestic investment, but reinvestments decrease it. The remaining explanatory variables have the same impact on domestic investment as in the case of the aggregate FDI. We can so far conclude that the effect of FDI or its components on growth in CEE countries is either not existent or found only in an indirect way.

Table 3 Estimated Impact of Total and Disaggregated FDI on Domestic Investment

Dependent variable: Domestic investment/GDP	*(1) CEE*	*(2) CEE*	*(3) Non-CEE*	*(4) Non-CEE*
FDI	0.17		0.12	
Greenfield FDI		0.07		0.34**
Reinvestment		0.38*		-0.18***
M&A		-0.30		0.02
Government consumption	-0.26***	-0.32***	-0.08**	-0.08**
Inflation	0.33	0.31	1.04*	0.96**
Openness	-0.05	-0.06	-0.03**	-0.03
Financial development	0.24*	0.26**	-0.09	-0.06
HDI	0.14	0.09	0.20	0.05
Corporate tax	0.05	0.10	-0.05	0.01
Economic freedom	0.10	0.06	0.35**	0.39***
Observations	53	53	117	117
Country effect	YES	YES	YES	YES
Time effect	YES	YES	YES	YES
R2 (within)	0.746	0.756	0.414	0.526

Notes: Domestic investment and FDI variables are expressed as a percentage of GDP. Inflation represents the annual growth rate of the headline CPI. Openness to trade is defined as the ratio of the sum of exports and imports of goods and services to GDP. Human capital is proxied by a Human Development Index. Government consumption is the ratio of general government spending to GDP. Financial development is proxied by the IMF's indicator. The corporate tax is the CIT, thus the corporate tax rate. Business freedom is an overall indicator of the efficiency of government regulation of business, calculated by the Heritage Foundation on WDI data. All regressions were estimated with Driscoll and Kraay standard errors robust to the cross-sectional dependence (*** p<0.01, ** p<0.05, * p<0.1).

5.2 Alternative Measure of Human Capital

In this section we substitute the HDI by the employed with tertiary education. The first measure (HDI) covers long and healthy life, access to knowledge and a decent standard of living, while the second measure is just the share of workers with a higher education. It is possible that the more working people have a higher education, the more efficient the foreign financial flows can be used. We restricted the sample such that we have the same observations when the HDI index and tertiary education is included in the regression. Unfortunately, this new variable does not change our previous results (see Table 4). Most likely the share of working people with tertiary education increased along the economic transition, which means that we capture the already described convergence process, which we capture also with the GDP per capita level.

Table 4 Robustness Check: FDI and Alternative Measures of Human Capital

Dependent variable: GDP growth	*CEE HDI*	*CEE HDI*	*CEE Education*	*CEE Education*	*Non-CEE HDI*	*Non-CEE HDI*	*Non-CEE Education*	*Non-CEE Education*
Initial GDP per capita level	-0.09*	-0.09*	-0.10**	-0.09*	-0.07**	-0.07**	-0.09**	-0.10**
FDI	-0.06	1.09	-0.05	-0.18	0.19**	-0.24	0.20**	0.10
Domestic investment	0.39**	0.40***	0.39**	0.38**	0.39***	0.38***	0.42***	0.41***
Government consumption	0.08	0.04	0.08	0.08	-0.01**	-0.01***	-0.01	-0.01
Inflation	-0.12	-0.13	-0.13	-0.12	0.12	0.15	0.16**	0.22**
Openness	0.02	0.02	0.02	0.02	0.03***	0.03***	0.03***	0.03***
Financial development	0.01	0.00	0.01	0.00	-0.01	-0.00	-0.07*	-0.07
Corporate tax	-0.23***	-0.23**	-0.23***	-0.23***	0.00	0.00	0.02	0.02
Economic freedom	0.18	0.18	0.17	0.16	0.01	0.01	-0.05	-0.04
Human capital	-0.16	-0.15	0.01	-0.01	-0.07	-0.10	-0.03	-0.05
FDI x Human capital		-1.50		0.56		0.47		0.25
Observations	53	53	53	53	117	117	97	97
Country effect	YES	YES	YES	YES	YES	YES	YES	YES
Time effect	YES	YES	YES	YES	YES	YES	YES	YES
R2 (within)	0.840	0.842	0.840	0.841	0.622	0.623	0.671	0.673

Notes: Domestic investment and FDI are expressed as a percentage of GDP. Inflation represents the growth rate of the headline CPI. Openness to trade is defined as the ratio of the sum of exports and imports of goods and services to GDP. Human capital is proxied by a Human Development Index. Government consumption is the ratio of general government spending to GDP. Financial development is proxied by the IMF's indicator. The corporate tax is the CIT, thus the corporate tax rate. Business freedom is an overall indicator of the efficiency of government regulation of business, calculated by the Heritage Foundation on WDI data. Tertiary education is the share of employed workers with a higher education. All regressions were estimated with Driscoll and Kraay standard errors robust to the cross-sectional dependence (*** p<0.01, ** p<0.05, * p<0.1).

When we analyse the entry modes of FDI (Table 5), we do not find significant differences in case the HDI is substituted by tertiary education, both for CEE and non-CEE countries. In regression 4 we interact tertiary education with the FDI entry modes, which gives significantly different results. Tertiary education has again a negative and significant effect in the case of CEE countries, as it reflects their level of development. Greenfield investment is now negative and significant, the effects of reinvestments and M&A are still significant, but their magnitude is much lower. The

interaction terms are all significant, those with greenfield and M&A FDI are positive, while that with reinvestment has a negative effect. In case of the non-CEE countries the substitution of HDI with tertiary education has nearly no effect on the remaining parameters. However, when we include the interaction terms, the positive effect of reinvested earnings diminishes, while the interaction with greenfield investment is insignificant and that with reinvestments and M&A remains significant but its strength decreases considerably.

Table 5 Robustness Check: FDI by Entry Modes and Alternative Measures of Human Capital

Dependent variable: GDP growth	*CEE*	*CEE*	*CEE*	*CEE*	*Non-CEE*	*Non-CEE*	*Non-CEE*	*Non-CEE*
	HDI	*HDI*	*Education*	*Education*	*HDI*	*HDI*	*Education*	*Education*
Initial GDP per capita level	-0.11	-0.11*	-0.11	-0.08	-0.11*	-0.08	-0.11**	-0.09***
Greenfield FDI	-0.20**	-2.08	-0.21**	-0.68***	0.30***	-4.48*	0.30***	-0.50
Reinvestment	0.23	6.63***	0.22	1.53**	0.10	5.48***	0.09	0.61**
M&A	-0.54*	-15.45*	-0.55	-3.56***	0.18	-5.91	0.20	-0.96
Domestic investment	0.35**	0.44**	0.35**	0.26**	0.37**	0.30**	0.35***	0.33***
Government consumption	-0.03	-0.00	-0.03	-0.04	-0.01*	-0.00	-0.01	-0.00
Inflation	-0.15	-0.19	-0.14	0.04	0.19	-0.01	0.21*	-0.05
Openness	0.01	0.01	0.01	-0.03	0.03**	0.03***	0.03***	0.02**
Financial development	0.05	0.06	0.05	0.06	-0.05	-0.05	-0.05	-0.05*
Corporate tax	-0.16***	-0.16***	-0.16***	0.04	0.05	0.05	0.05	0.03
Economic freedom	0.13	0.06	0.13	0.08	0.02	-0.04	0.01	0.01
Human capital	-0.02	-0.09	0.01	-0.26*	0.14	0.10	-0.06	-0.00
Green FDI x Human capital		2.17		1.98**		5.12*		1.62
Reinvestment x Human capital		-7.89***		-4.65**		-6.14***		-1.54**
M&A x Human capital		18.26		11.84***		6.64		3.02*
Observations	53	53	53	53	97	97	97	97
Country effect	YES	YES	YES	YES	YES	YES	YES	YES
Time effect	YES	YES	YES	YES	YES	YES	YES	YES
R2 (within)	0.856	0.879	0.856	0.892	0.696	0.762	0.699	0.748

Notes: Domestic investment and FDI variables are expressed as a percentage to GDP. Inflation represents the growth rate of the headline CPI. Openness to trade is defined as the ratio of the sum of exports and imports of goods and services to GDP. Human capital is proxied by a Human Development Index. Government consumption is the ratio of general government spending to GDP. Financial development is proxied by the IMF's indicator. The corporate tax is the CIT, thus the corporate tax rate. Business freedom is an overall indicator of the efficiency of government regulation of business, calculated by the Heritage Foundation on WDI data. Tertiary education is the share of employed workers with a higher education. All regressions were estimated with Driscoll and Kraay standard errors robust to the cross-sectional dependence (*** p<0.01, ** p<0.05, * p<0.1).

5.3 Comparison of RAW and Estimated GREENFIELD DATA

We check whether the application of the calculated instead of the raw data on greenfield investment changes the estimation results (Table 8). To analyse comparable data, we restrict the estimated greenfield investment sample to be exactly as long as the shorter raw data. In case of the CEE countries we do not find a

significant change of the regression results, only the initial GDP becomes irrelevant when the raw data are used. In the case of non-CEE countries, the change is more pronounced, as the estimated greenfield investment data has a significant impact on GDP growth while the raw greenfield investment is insignificant. Moreover, the CIT rate has as expected a negative effect on GDP growth.

The use of the calculated data instead of the raw data seems to be appropriate due to two reasons. Firstly, we calculated the greenfield data to obtain longer time series, because the original series are rather short. Secondly, we focused on the economic meaning of the entry modes of a foreign investor when we calculated the time series.

6. Concluding Remarks

Policymakers in various developing countries are willing to attract foreign capital as they treat it as a blessing for the economy and we investigate whether the types of entry mode of FDI are important for economic growth. *Greenfield* FDI and *reinvestment* are preferred over *M&As* as the former two should boost economic growth of the host country by capital accumulation and transfer of technology. The effect of M&A can be ambiguous or can be even negative in case the foreign investor takes over a domestic firm and shuts it down to reduce the local competition. Such cases were observed in CEE countries, for example sugar factories and cement plants in Poland were taken over and closed. This paper aims to examine empirically whether there exists a positive relationship between FDI, gross fixed capital formation and GDP growth in the CEE countries. Our approach is to decompose FDI into three entry modes of a foreign investor and to use them as explanatory variables for economic growth in the host country.

We find a direct positive effect of aggregate FDI in the case of non-CEE countries, but no such effect in case of CEE countries. The decomposition of FDI into three entry modes helps, to some extent, to explain its positive impact on economic growth in the host country. Reinvestment has a positive effect on domestic investment in CEE countries, but hardly any direct effect on growth. Our findings are in line with the fact that the CEE countries started with a very low level of capital stock and the two FDI entry modes help to accumulate the capital stock, and in a second round to enhance growth. In the case of the control group, that is the non-CEE countries, both greenfield FDI and reinvestment increase economic growth, while M&As hamper it.

Finally, we would like to point out that we calculated the greenfield FDI based on publicly available statistics on balance of payments and direct investment, which has two advantages. Our approach accounts for the economic meaning of the different FDI entry modes. Moreover, the officially collected raw data are much shorter, which restricts the sample.

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APPENDIX

Figure A1 GDP growth and FDI Inflows to CEE-10: Breakdown by Country and by Entry Mode (% of GDP), Based on 3-Year Averages

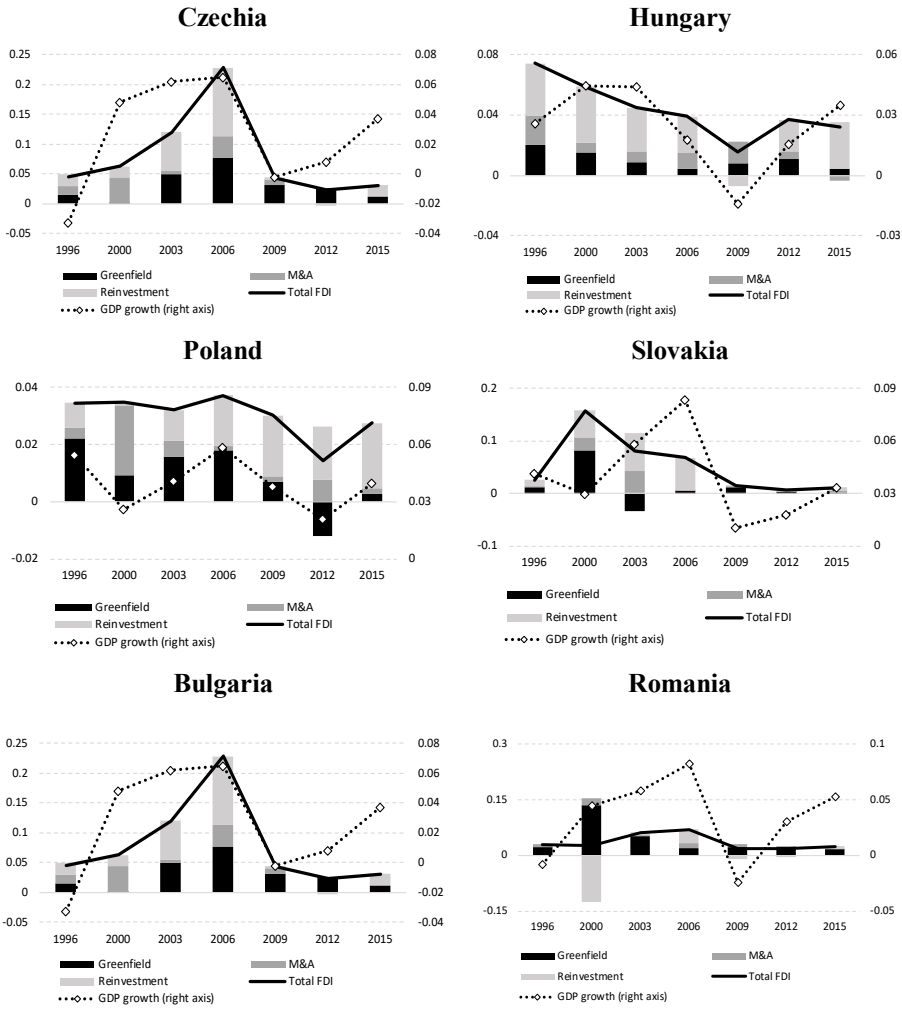
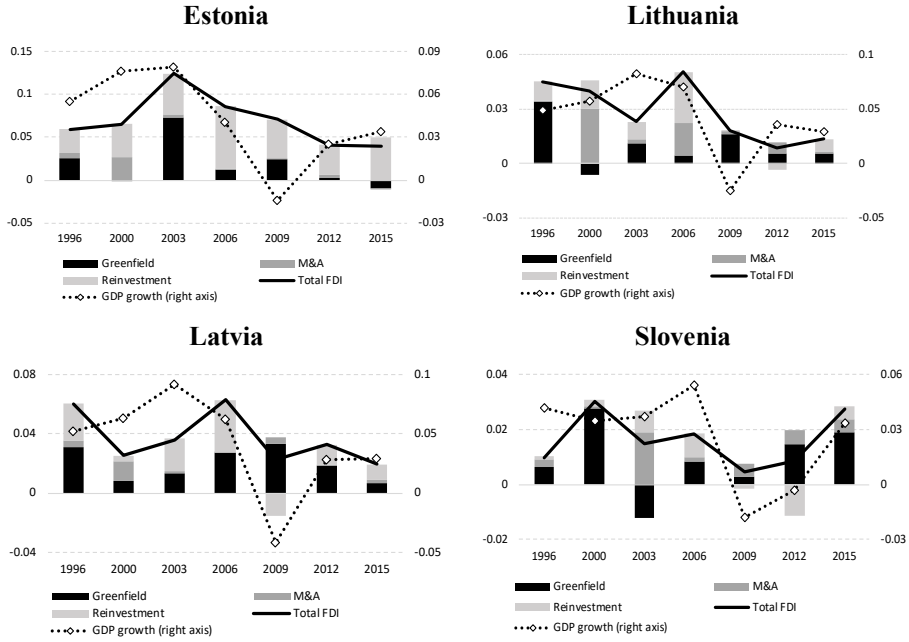


Figure A1 GDP growth and FDI Inflows to CEE-10: Breakdown by Country and by Entry Mode (% of GDP), Based on 3-Year Averages, continued



Source: own calculations based on IMF, OECD and UNCTAD's data

Figure A2 Real GDP Growth in OECD during 1996-2017

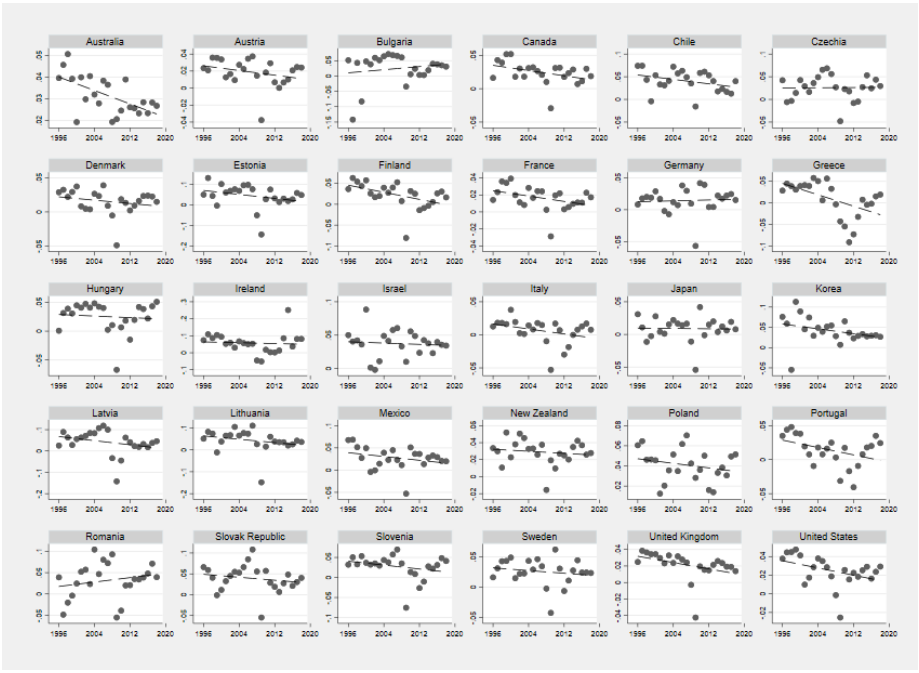


Figure A3 FDI/GDP Ratio in OECD during 1996-2017

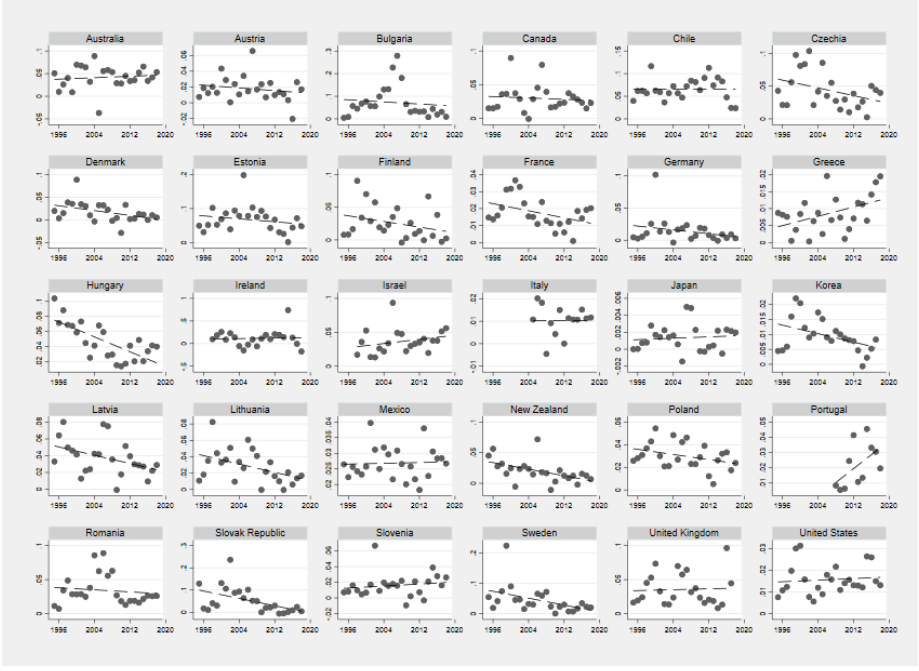


Table A1 Selected Summary Statistics Based on 3-Year Averages: CEE vs Non-CEE

	Mean		*St. Dev*		*Min*		*Max*	
	CEE	***Non-CEE***	***CEE***	***Non-CEE***	***CEE***	***Non-CEE***	***CEE***	***Non-CEE***
GDP growth	0.03	0.02	0.03	0.02	-0.04	-0.06	0.09	0.12
Domestic investment	0.25	0.23	0.05	0.04	0.18	0.12	0.43	0.36
FDI	0.04	0.03	0.04	0.04	0.00	-0.02	0.23	0.29
Green FDI	0.02	0.00	0.02	0.02	-0.03	-0.05	0.13	0.19
Reinvestment	0.02	0.01	0.03	0.03	-0.13	-0.03	0.12	0.18
M&A	0.01	0.01	0.01	0.01	0.00	0.00	0.04	0.06
CPI inflation	0.05	0.02	0.07	0.02	0.00	-0.01	0.48	0.22
Government consumption	0.19	0.21	0.03	0.08	0.13	0.12	0.27	0.85
Openness	1.19	0.71	0.33	0.34	0.51	0.20	1.88	2.21
HDI	0.81	0.87	0.05	0.05	0.70	0.69	0.89	0.94
Tertiary education	0.25	0.30	0.09	0.13	0.09	0.10	0.45	0.65
Financial development	0.36	0.69	0.09	0.14	0.13	0.31	0.55	0.93
Corporate tax rate	0.21	0.28	0.06	0.07	0.10	0.13	0.40	0.44
Economic freedom	0.65	0.71	0.07	0.07	0.47	0.54	0.78	0.83

Table A2 Correlation Matrix Based on 3-Year Averages: CEE

	(1)	***(2)***	***(3)***	***(4)***	***(5)***	***(6)***	***(7)***	***(8)***	***(9)***	***(10)***	***(11)***
GDP growth	1.00										
FDI	0.35*	1.00									
Domestic investment	0.15	0.38*	1.00								
CPI inflation	-0.02	0.14	0.05	1.00							
Government consumption	-0.01	-0.01	-0.02	-0.22	1.00						
Openness	-0.14	-0.08	-0.07	-0.45*	0.24*	1.00					
HDI	-0.19	-0.14	0.03	-0.38*	0.23	0.30*	1.00				
Financial development	-0.18	-0.36*	-0.16	-0.62*	0.01	0.61*	0.54*	1.00			
Tertiary education	-0.09	-0.09	-0.28*	-0.42*	0.01	0.49*	0.07	0.38*	1.00		
CIT	0.13	0.04	0.49*	0.36*	0.27*	-0.35*	-0.02	-0.23	-0.53*	1.00	
Economic freedom	0.05	-0.03	0.01	-0.55*	0.11	0.59*	0.15	0.60*	0.57*	-0.21	1.00

*Notes: *** p<0.01, ** p<0.05, * p<0.1*

Table A3 Correlation Matrix Based on 3-Year Averages: Non-CEE

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
GDP growth	1.00										
FDI/GDP (lagged)	0.52*	1.00									
Domestic investment	0.44*	0.02	1.00								
CPI inflation	0.25*	0.01	0.13	1.00							
Government consumption	-0.09	-0.09	-0.22*	0.56*	1.00						
Openness	0.26*	0.52*	0.10	-0.08	-0.02	1.00					
HDI	-0.17*	-0.07	0.09	-0.40*	-0.27*	-0.05	1.00				
Financial development	-0.16	-0.01	-0.04	-0.57*	-0.22*	0.18*	0.71*	1.00			
Tertiary education	-0.02	0.04	-0.01	-0.43*	0.05	0.07	0.57*	0.72*	1.00		
CIT	-0.07	-0.34*	-0.07	0.12	0.11	-0.58*	-0.08	-0.23*	-0.26*	1.00	
Economic freedom	0.20*	0.22*	0.18*	-0.11	-0.27*	0.15	0.35*	0.48*	0.46*	-0.39*	1.00

*Notes: *** p<0.01, ** p<0.05, * p<0.1*

Table A4 Estimated Impact of Total FDI on GDP Growth: Annual Data

Dependent variable: GDP growth	***(1)*** ***CEE***	***(2)*** ***CEE***	***(3)*** ***Non-CEE***	***(4)*** ***Non-CEE***
GDP growth (lagged)		0.26***		0.17**
Domestic investment	0.16**	0.09	0.14**	0.09
FDI (lagged)	-0.02	-0.03	0.01	-0.02
Government consumption	-0.04	-0.06	-0.01	-0.02
Inflation	0.00	-0.02	0.05	0.01
Openness	0.01	0.01	0.02*	0.02
Financial development	-0.00	-0.00	0.00	0.00
HDI	-0.60**	-0.60**	-0.35	-0.31
Corporate tax	-0.19**	-0.13*	-0.02	-0.02
Economic freedom	0.05	0.01	-0.00	-0.02
Observations	140	140	313	313
Country effect	YES	YES	YES	YES
Time effect	YES	YES	YES	YES
R2 (within)	0.623	0.665	0.428	0.448

Notes: Domestic investment is expressed as a percentage to GDP. FDI is expressed as a percentage to GDP and is lagged by one year to deal with endogeneity issue between GDP and of foreign capital. Inflation represents the annual growth rate of the headline CPI. Openness to trade is defined as the ratio of the sum of exports and imports of goods and services to GDP. Human capital is proxied by a Human Development Index. Government consumption is the ratio of general government spending to GDP. Financial development is proxied by the IMF's indicator. The corporate tax is the CIT, thus the corporate tax rate. Business freedom is an overall indicator of the efficiency of government regulation of business, calculated by the Heritage Foundation on WDI data. All regressions were estimated with Driscoll and Kraay standard errors robust to the cross-sectional dependence (*** p<0.01, ** p<0.05, * p<0.1).

Table A5 Estimated Impact of Disaggregated FDI by Entry Modes on GDP Growth: Annual Data

Dependent variable: GDP growth	*(1)* *CEE*	*(2)* *CEE*	*(3)* *Non-CEE*	*(4)* *Non-CEE*
GDP growth (lagged)		0.22***		0.17**
Domestic investment	0.12	0.06	0.13**	0.08
Greenfield FDI (lagged)	-0.14	-0.11	0.02	-0.01
Reinvestment (lagged)	0.13	0.05	0.00	-0.03
M&A (lagged)	-0.34	-0.31*	-0.00	-0.05
Government consumption	-0.12	-0.13	-0.01	-0.02
Inflation	0.10	0.07	0.06	0.02
Openness	-0.00	-0.00	0.02*	0.02
Financial development	0.04	0.03	0.00	0.00
HDI	-0.69***	-0.72**	-0.36	-0.32
Corporate tax	-0.14*	-0.11	-0.01	-0.01
Economic freedom	-0.04	-0.06	0.00	-0.01
Observations	134	134	313	313
Country effect	YES	YES	YES	YES
Time effect	YES	YES	YES	YES
R2 (within)	0.649	0.682	0.429	0.449

Notes: Domestic investment is expressed as a percentage to GDP. FDI is expressed as a percentage to GDP and is lagged by one year to deal with endogeneity issue between GDP growth and foreign capital. Inflation represents the annual growth rate of the headline CPI. Openness to trade is defined as the ratio of the sum of exports and imports of goods and services to GDP. Human capital is proxied by a Human Development Index. Government consumption is the ratio of general government spending to GDP. Financial development is proxied by the IMF's indicator. The corporate tax is the CIT, thus the corporate tax rate. Business freedom is an overall indicator of the efficiency of government regulation of business, calculated by the Heritage Foundation on WDI data. All regressions were estimated with Driscoll and Kraay standard errors robust to the cross-sectional dependence (*** p<0.01, ** p<0.05, * p<0.1).

Table A6 Robustness Check: Raw vs Estimated Greenfield FDI

Dependent variable: GDP growth	*Raw CEE*	*Estimated CEE*	*Raw Non-CEE*	*Estimated Non-CEE*
Initial GDP per capita	-0.11*	-0.11	-0.09**	-0.07**
Greenfield FDI	0.05	-0.05	-0.06	0.23***
Reinvestment	0.31***	0.27**	0.00	-0.05
M&A	-0.46	-0.46	0.38**	0.54*
Domestic investment	0.43***	0.42***	0.39***	0.45***
Government consumption	-0.03	-0.03	-0.00	-0.01
Inflation	-0.26	-0.27	-0.21**	-0.37***
Openness	-0.01	-0.01	0.03***	0.04***
Financial development	0.02	0.02	0.02	0.01
Human capital	0.42	0.52	0.49*	0.39*
Corporate tax	-0.09	-0.09	-0.05	-0.08*
Economic freedom	-0.00	-0.01	0.01	-0.08
Observations	45	45	99	99
Country effect	YES	YES	YES	YES
Time effect	YES	YES	YES	YES
R2 (within)	0.879	0.879	0.672	0.628

Notes: Domestic investment and FDI variables are expressed as a percentage to GDP. Inflation represents the growth rate of the headline CPI. Openness to trade is defined as the ratio of the sum of exports and imports of goods and services to GDP. Human capital is proxied by a Human Development Index. Government consumption is the ratio of general government spending to GDP. Financial development is proxied by the IMF's indicator. The corporate tax is the CIT, thus the corporate tax rate. Business freedom is an overall indicator of the efficiency of government regulation of business, calculated by the Heritage Foundation on WDI data. Tertiary education is the share of employed workers with a higher education. All regressions were estimated with Driscoll and Kraay standard errors robust to the cross-sectional dependence (*** p<0.01, ** p<0.05, * p<0.1).