

## New Empirical Evidence on the Drivers of Foreign Direct Investment in the European Union Countries

Liliana DONATH\* – Laura Raisa MILOȘ\* – Marius Cristian MILOȘ\*\*

---

### Abstract

*For a number of decades, the European Union has witnessed an intense global competition to attract foreign direct investment (FDI). This competition has led to significant inflows and outflows in the member states, with positive implications for economic growth, employment and productivity for the host and sending countries. The paper uses data from 2005 – 2017 to identify the main drivers of FDI in the EU separately for sending and receiving, Euro area and Non-Euro countries. Analysis focuses on finding the levers that promote the Union in its entirety as a major competitor for FDI. An empirical analysis is conducted for selected variables (economic development, taxation, unit labour costs, trade openness, interest rate differential, macroeconomic stability, infrastructure and competitiveness) using the two-step System Generalised Method of Moments (GMM). The results are robust and consistent with the supporting literature.*

**Keywords:** FDI, EU, determinants, panel data, GMM

**JEL Classification:** F21, C14, C23

---

### Introduction

There is a long literature looking into the causes and consequences of Foreign Direct Investment (FDI). These studies explain the incentives that drive investors to move their portfolio from one country to another. Authors endeavour to reveal these economic, financial, institutional and other incentives. Research on FDI also examines the economic and financial consequences of those moves for both recipient and sending countries.

---

\* Liliana DONATH – Laura Raisa MILOȘ, West University of Timisoara, Faculty of Economics and Business Administration, Finance Department; Pestalozzi 16, 300115, Timisoara, Romania, e-mail: liliana.donath@e-uvt.ro; laura.milos@e-uvt.ro

\*\* Marius Cristian MILOȘ, East European Center for Research in Economics and Business (ECREB), West University of Timisoara, Faculty of Economics and Business Administration, Finance Department, Pestalozzi 16, 300115, Timisoara, Romania, e-mail: marius.milos@e-uvt.ro

The era of globalisation opened a wide range of investment possibilities. Countries and regions compete to attract as many investments as possible since the positive impact of investment on the host countries' economies is well documented in the literature.

These recipient countries can be categorized as „less attractive“, „attractive“ and „very attractive“ for FDI, based on their statistical GDP/capita. For a long time, researchers have focused on fiscal policy as the leading determinant of FDI. But multinational companies, interested in capitalizing on foreign business opportunities, also take into consideration a much broader range of elements in order to find arrangements that will obtain for themselves the highest possible return and shareholder wealth.

According to UNCTAD (UNCTAD, 2019), Europe was able to draw 6,356 FDI projects in 2018, 56% of which were oriented towards Europe's developed countries, Central and Eastern Europe (CEE) securing the second place most. Despite this staggering amount, FDI decreased compared to 2017 due to factors including internal economic slowdown, local protectionism, and emerging economies' growth. The slowdown demands a reconsideration of the determinants that might confer the EU a competitive advantage. A full-fledged re-launch of FDI should rely on the economic pillars that enhance productivity and sustainable economic growth, i.e. the digital economy, green technologies, automotive and financial services.

The hypothesis of the paper is that a set of FDI inflow determinants can be identified at the level of the EU and then improved by its member states so that the Union in its entirety becomes a major global player and competitor in attracting foreign investments. To demonstrate the hypothesis, the paper considers the EU as a region (28 member states).

Then, the analysis continues separately for the net capital senders (NCS), the net capital receivers (NCR), the Euro area and Non-Euro Area subgroups, contributing to an in-depth understanding of the subject and providing valuable insights to policymakers.

The study adds value to existing empirical studies and the FDI literature by using pooled OLS (POLS) to estimate the importance of FDI determinants including GDP growth rate, tax burden, economic openness, labour unit cost, inflation, interest spread, inflation, and the Global Competitive Index. The two-step GMM method refines the results such that they are more effective and robust than other studies.

The paper is organised as follows: 1. Literature review, 2. Methodology and data, 3. Empirical analysis. The remainder of the paper is dedicated to conclusions and policy lessons.

## 1. Literature Review

The literature on the causes and determinants of FDI and its impact on the economic performance of host countries mentions four main theories concerning FDI flows: the theory of market imperfections, the theory on monopolistic advantage, the theory of production internalisation, and the eclectic theory (Negritoiu, 1996). All these theories try to find quantitative and qualitative explanations for foreign investment flows, stressing the complexity of the phenomenon.

Among these, the eclectic theory is widely accepted (Dunning, 1981). The eclectic theory states that a multinational company, seeking to maximise its market value, invests in a foreign market if the Ownership, Location, Internalisation (OLI) conditions are met. When the company benefits from comparative advantage by investing overseas, then it will prefer to open branches rather than to export. An important distinction should be made here between horizontal and vertical investments, i.e. opening branches abroad or establishing a new company in the host country. Each of these imply the existence of specific economic and legal conditions. It is arguable, though, which of the determinants is more important under a given set of circumstances: either the tax burden takes precedence or other determinants do, including economic and political stability, public spending on infrastructure at large, trade openness, availability of funding, growth rate and geographic proximity.

Traditionally, studies consider corporate profit taxation as a representative determinant of FDI. Bénassy-Quéré, Fontagné and Lahrèche-Révil (2005) as well as Jakubiak and Markiewicz (2007) stress the distinction between statutory and actual tax rates following the line of thinking opened by Mendoza, Razin and Tesar (1994). Ginevičius and Tvaronavičienė (2003) empirically test whether different approaches to taxation systems could be considered as a possible main driver of FDI in the Baltic countries. Brzica (1999) mentions the general level of taxation as a factor that could contribute to the overall attractiveness of a country and so influences inward FDI.

Nevertheless, the impact of taxation on FDI inflows is not straightforward. Investor' behaviour differs when targeting developed or developing countries. Hunady and Orviska (2014) argue that when corporate tax burden is not sufficiently demonstrated to have a major impact on FDI, other determinants become dominant such as: economic openness and unit labour costs.

Krugman (1991) uses the centre – peripheral model to explain the role of business concentration (agglomeration), i.e. self-consolidated economies that are driven by business concentration. Here, the main advantage of the host country is the large dimension of the businesses that allow the reduction of transportation

costs. However, in this model consumers' induced demand and the allotted individual consumption budget are not discussed.

Kirkpatrick, Parker and Zhang (2006) question the importance of regulations in FDI decisions, concluding that economies, where regulatory institutions are weak or captive, are not attractive to foreign investors. Ngangue (2016), in line with other studies, stresses infrastructure (at large) as an important driver of FDI inflows mainly in developing countries. In developing countries, the level and effectiveness of public spending on infrastructure becomes important, at least in the early stages of foreign capital investments.

A significant part of the literature (e.g. Iamsiraroj and Doucouliagos, 2015) focuses on economic growth as a determinant of FDI flows. Though opinions differ, it can be argued that the GDP growth rate (as a proxy for economic stability) has a considerable influence on FDI, mainly when countries are analysed individually rather than pooled. This conclusion is supported by the fact that during and in the aftermath of crises when growth is sluggish, the inflows of FDI are much lower in developing countries (Jimborean and Kelber, 2014).

Inflation is often considered to be a determinant of FDI flows, mainly when companies are willing to escape inflation taxing, in the country of origin. These companies use FDI as a mitigation tool (Sayek, 2009). But this mechanism for increasing FDI also relies on other factors, such as funding sources, investment reasons, and the possibilities of hedging.

Competitiveness is also listed among the significant determinants of FDI in CEE countries (Popovici and Calin, 2015) but with heterogeneous results for other groups of countries (Anastassopoulos, 2007).

Within the EU specifically, FDI has contributed significantly to the market integration process, narrowing the productivity gap and supporting the development of catching up economies (Wojciechowski, 2017). Such an evolution enhances EU economic convergence and guides the entire region towards being economically stable and business-friendly. It also supports the evidence that during 1983 and 2013, EU membership increased FDI inflows by 28% (Bruno et al., 2018) as a result of credibility.

A major problem in analysing FDI is gathering data, which often poses difficulties since the topic covers many countries, economic sectors, business policies, and cultures (Bhardwaj, Dietz and Beamish, 2017). Data sources and coding, based on national nomenclatures and definitions often differ (Gouel, Guimbarde and Laborde, 2012). Therefore, internationally collected sources may be preferable. FDI is most commonly measured either as net FDI inflows or as a proportion (%) of GDP.

Although differences underlying the motivations to promote foreign direct investment inflows are noticeable, all the EU member states have endeavoured to implement the right measures for attracting foreign direct investment (European Commission, 2017). The most common comparative and competitive advantages are a relatively stable macroeconomic environment, the ability to bounce back after major crises or convulsions, a positive dynamic of the financial markets and bank intermediation and relatively developed infrastructure and communication systems. Despite a common concern that globalization leads to the loss of local identity, the EU is a good example of the concept of glocalization, i.e. acting in a globalised manner, but preserving local characteristics (Robertson, 2012).

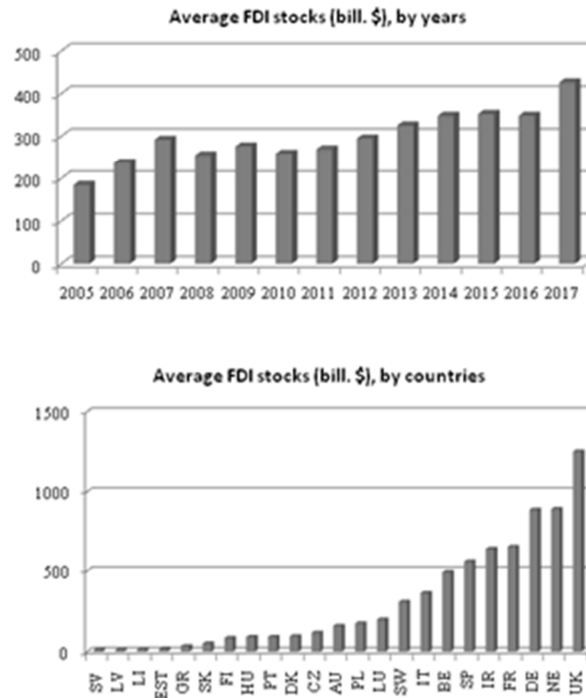
## 2. Methodology and Data

The literature suggests a number of econometric methods to estimate the correlation between FDI flows and other variables. For quite a long time, the gravitational equation has been considered a critical tool for investigating the determinants of FDI, including the identification of stimulus for the location of foreign companies. Though firstly developed for trade-related analyses, the gravity model has progressively been extended to FDI analysis (Campos and Kinoshita, 2003; Brenton, Di Mauro and Lücke, 1999; Mutti and Grubert, 2004; Carstensen and Toubal, 2004).

For the purpose of the study, the POLS method is used as the first step. This approach pools individual data, ignoring heterogeneity. Then an F test is run to check individual heterogeneity, and the fixed effects (FE) and random effects (RE) methods for controlling for individual heterogeneity are compared. The Generalised Method of Moments (GMM) is preferred for estimation because it is applicable in semi-parametric models where the parameter of interest is finite-dimensional. In these settings, the full shape of the data's distribution function may not be known and, therefore, maximum likelihood estimation is not applicable (Zsohar, 2012). Semi – and non-parametric methods are more appropriate because they are robust to variations in the underlying data generating process and provide consistent estimates without imposing additional assumptions. In accounting for endogeneity, the GMM is compared with the results of the instrumental variable approach (IV) with random effects.

The paper investigates the main driving determinants of FDI in 28 EU member states by using panel data from 2005 – 2017. Total direct investments at the end of the year are used as a measure of FDI. Average FDI stocks values by year and country are shown in Figure 1. The UK recorded the highest stock of FDI, followed by The Netherlands, Germany and France. The average level for the entire EU was on an upward trend during this time frame.

Figure 1  
Average FDI in the European Union Countries, by Year and by Country



Source: Authors' calculations based on OECD Database.

As the main explanatory determinants, the following are considered:

- *Economic development* is measured by the annual percentage growth rate of GDP based on constant 2010 U.S. dollars (*gGDP*);
- *Tax burden* refers to direct taxes, in terms of the top marginal tax rates on individual and corporate incomes, and overall taxes, including all forms of direct and indirect taxation at all levels of government, as a percentage of GDP (*tb*);
- *Trade openness* is measured as exports plus imports relative to the country's GDP (*openess*);
- *Unit labour costs* defined as the average cost of labour per unit of output produced, are measured in percentage changes (*ulc*);
- *Interest rate spread* is the difference of 10-year government bond yields relative to German bonds (*spread\_GB*);
- *Inflation* is the annual percentage change of the consumer price index (*infl*);
- Fixed telephone subscriptions per 100 people, as a proxy for infrastructures (*telephone*);
- *Global Competitiveness Index rank (GCI)* from the World Economic Forum.

The sources of data used in the analysis are OECD, World Bank and World Economic Forum's Annual Global Competitiveness Reports. The main descriptive statistics for the explanatory variables are presented in Table 1. The average GDP growth rate for the given sample is about 1.95%, with a minimum value of -14.8% in Lithuania (2009), and a maximum of 25.6% in Ireland (2015). The average tax burden is about 65.8%. The most open economy is Germany for which the sum of exports and imports represents on average 67% of the country's GDP. Meanwhile, the least opened economy is Cyprus, where the sum of exports and imports is only about 0,82% of GDP. The average unit labour cost change is about 2.2%, with a minimum value of -16.6% in Ireland (2015) and a maximum value of 27% in Latvia (2007). The average spread with respect to Germany's bonds is 1.6%, with a minimum value of -0.94% in Luxembourg (2005) and a maximum value of 21% in Greece (2012). Average inflation is 2.12% with a minimum value of -4.48% in Ireland (2009) and a maximum value of 15.4% in Latvia (2008). The average number of fixed telephone subscriptions per 100 people is about 40. Finally, the most competitive countries in the sample are the UK, Sweden, Finland and Denmark, whilst the least competitive country is Greece.

Table 1

**Descriptive Statistics of the Explanatory Variables**

Variable	Obs.	Mean	Std. Dev.	Min	Max
<i>gGDP</i>	364	1.95	3.84	-14.81	25.56
<i>tb</i>	308	65.88	14.90	32.70	94.00
<i>openess</i>	336	14.20	14.68	0.82	67.36
<i>ulc</i>	360	2.20	4.18	-16.58	26.98
<i>spread_GB</i>	355	1.62	2.21	-0.94	21.00
<i>infl</i>	336	2.13	2.25	-4.48	15.43
<i>telephone</i>	336	39.15	12.98	8.31	67.09
<i>GCI</i>	364	36.55	22.53	2.00	96.00

Source: Authors' calculations based on OECD database, World Bank database and World Economic Forum's The Global Competitiveness Report.

**3. Empirical Analysis**

The general functional form of the empirical approach is given by equation 1, where the dependent variable FDI is logged. The lag term of the dependent variable is also included as a regressor, as it is reasonable to expect FDI stock to follow an autoregressive process.

$$\log(FDI_{it}) = c_i + \beta_1 \log(FDI_{it-1}) + \beta_2 gGDP_{it} + \beta_3 tb_{it} + \beta_4 openess_{it} + \beta_5 ulc_{it} + \beta_6 spread_{GB_{it}} + \beta_7 infl_{it} + \beta_8 telephone_{it} + \beta_9 GCI_{it} + \varepsilon_{it} \quad (1)$$

The starting point of the empirical analysis is a pooled OLS (POLS) approach where the individual heterogeneity is ignored and the data on different individuals are simply pooled. This is also called the population-averaged model with the assumption that any latent heterogeneity has been averaged out (Greene, 2012). The main drawbacks of POLS approach are that its assumptions are unlikely to be met and that omitting the individual heterogeneity makes the least squares estimator inconsistent. To test the existence of individual heterogeneity, an F-test is used to check whether all the individual effects equal to 0. The alternative hypothesis of the test is that at least one of the individual effects is significantly different from 0. The null hypothesis of no individual effect is rejected. So it can be argued that there is likely to be individual heterogeneity in the models so POLS is biased (Table 2).

Table 2

**F test of Individual Heterogeneity**

F test that all $u_i=0$ :
$F(22, 155) = 3.52$
Prob.> F = 0

Source: Authors' estimations.

To model individual heterogeneity, fixed and random effects approaches are used. The fixed effects approach assumes that individual heterogeneity is captured by the differences in the constant term and the unobserved individual heterogeneity is not correlated with the included control variables. In contrast, the random effects approach assumes that the individual effects are strictly uncorrelated with the regressors, and that the individual-specific constant terms are randomly distributed across cross-sectional units according to a random distribution (Greene, 2012). To choose the best model, the Hausman specification test is run, where the null hypothesis is that the difference in coefficients between the two models is not systematic. Table 3 shows that the null hypothesis is rejected. It can be concluded that there is a significant difference between the two estimators. Consequently, the consistent estimator, fixed effects is chosen.

In the models, the GDP growth rate is included as a control, which itself is endogenous and is seriously affected by the changes in the FDI stock. The Hausman and Wu test is used to check for the presence of endogeneity. The null hypothesis of the test is that there is no significant difference between the consistent estimator (IV or GMM) and efficient estimator (POLS or RE). The test results are given in Table 4. The null hypothesis was rejected and the conclusion is that there is a significant difference between the two estimators. Therefore, the consistent estimator IV/GMM estimator is to be used.



Table 3

**Hausman Specification Test for Choosing between FE and RE**

	---- Coefficients ----			
	(b)	(B)	(b - B)	$\sqrt{\text{diag}(V_b - V_B)}$
	<i>FE</i>	<i>RE</i>	<i>Difference</i>	<i>S.E.</i>
<i>fdilag</i>	0.5651	0.9643	-0.3992	0.0583
<i>gGDP</i>	0.0016	0.0122	-0.0105	.
<i>tb</i>	0.0004	-0.0003	0.0007	0.0038
<i>openess</i>	0.0000	0.0000	0.0000	0.0001
<i>ulc</i>	0.0001	0.0009	-0.0008	.
<i>spread_GB</i>	-0.0055	0.0014	-0.0069	0.0010
<i>infl</i>	-0.0069	-0.0001	-0.0068	.
<i>telephone</i>	0.0010	0.0003	0.0007	0.0034
<i>GCI</i>	-0.0038	-0.0017	-0.0021	0.0022

*b* = consistent under Ho and Ha; obtained from xtreg  
*B* = inconsistent under Ha, efficient under Ho; obtained from xtreg  
 Test: Ho: difference in coefficients not systematic  
 $\chi^2(9) = (b - B)' \left[ (V_b - V_B)^{-1} \right] (b - B) = 63.07$   
 Prob. >  $\chi^2 = 0.0000$

Source: Author's estimations.

Table 4

**Hausman Wu Test for Endogeneity**

	---- Coefficients ----			
	(b)	(B)	(b - B)	$\sqrt{\text{diag}(V_b - V_B)}$
	<i>GMM System</i>	<i>POLS</i>	<i>Difference</i>	<i>S.E.</i>
<i>fdilag</i>	0.8796	0.9643	-0.0846	0.0156
<i>gGDP</i>	0.0097	0.0122	-0.0025	.
<i>tb</i>	0.0042	0.0009	0.0033	.
<i>openess</i>	0.00006	0.00001	0.00005	0.00001
<i>ulc</i>	-0.0027	-0.0003	-0.0024	0.0012
<i>spread_GB</i>	0.0048	0.0014	0.0034	.
<i>infl</i>	-0.0092	-0.0001	-0.0091	.
<i>telephone</i>	0.0008	0.0003	0.0005	0.0010
<i>GCI</i>	-0.0030	-0.0017	-0.0014	0.0008

*b* = consistent under Ho and Ha; obtained from xtddpsys  
*B* = inconsistent under Ha, efficient under Ho; obtained from regress  
 Test: Ho: difference in coefficients not systematic  
 $\chi^2(9) = (b - B)' \left[ (V_b - V_B)^{-1} \right] (b - B) = 34.96$   
 Prob. >  $\chi^2 = 0.0000$

Source: Authors' estimations.

To check for possible endogeneity issues, the GMM method, specifically the Arellano-Bover/Blundell GMM is applied in the dynamic panel data model with iid errors and fixed effects. Arellano-Bover/Blundell GMM fits a linear dynamic panel-data model.

This model is an extension of the Arellano-Bond estimator that accommodates large autoregressive parameters and a large ratio of the variance of the panel-level effect to the variance of idiosyncratic error. These analyses, based on net capital account (BoP – current USD) are implemented for the whole examined sample, as well as for different sub-samples: NCR (the subgroup of net capital receivers), NCS (the subgroup of net capital senders), EA (the subgroup of Euro area countries), and Non-EA (the subgroup of non-Euro area countries).

The validity of the models is examined using the Arellano-Bond test for zero autocorrelation in first-differenced errors and by the Sargan test of over-identifying restrictions (Table 5). Arellano-Bond test results indicate that the null hypothesis is rejected only for lag order 1, indicating the existence of autocorrelation of order 1. Thus, in the SGMM model, only 1 lag of the dependent variable is included.

Table 5

**Arellano-Bond Test for Zero Autocorrelation in First-differenced Errors**

Order	Z	Prob > z
1	-3.5552	0.0004
2	0.87468	0.3817
H0: no autocorrelation		

Source: Authors' estimations.

Based on the Sargan test results, the null is not rejected at the 95% level, implying that the overidentifying restrictions are valid. Hence, the moment conditions are not valid. Nevertheless, this is a marginal case, the null can be rejected at the 90% significance level (Table 6).

Table 6

**Sargan Test of Over-identifying Restrictions**

H0: over identifying restrictions are valid	
chi2(151)	175.6447
Prob > chi2	0.083

Source: Authors' estimations.

According to the results summarized in Table 7, the following aspects are relevant:

- There are very high adaptive expectations of FDI and the changes in FDI flows are consistently explained by the previous lag; the impact of lagged FDI is about 88% in the full sample model, but is differentiated for sub-groups: it is relatively higher for NCR countries (93%) compared to 87.1% in the NCS

subgroup. Similarly, the impact is relatively higher for EA countries (91.5%) compared with 72.8% for Non-EA countries;

- The GDP growth rate is a significant factor for explaining the changes in FDI only in the full sample model, as well as for NCS and EA subgroup countries, meaning that economic growth impacts only on the FDI of NCS and EA countries. According to the results, a 1 percentage point increase in GDP growth rate increases the FDI stock by approximately 0.69% in the NCS subgroup and by 1.23% in the EA subgroup, holding all the other effects fixed;

- Unit labour cost is a significant factor for explaining the changes in FDI in the NCS subgroup. Theoretically, controlling for other determinants, the impact of *ulc* should be negative, indicating that FDI flows to countries where the average cost of labour per unit of output is relatively low. However, Figure 1 shows that, in the given sample, the highest FDI flows are absorbed by the UK, The Netherlands, France and Germany, where the *ulc* is relatively higher. These countries may have other features that overcome their high level of *ulc*;

- The impact of the tax burden on the changes of FDI has a marginal significance in the full sample model. Comparatively, the impact is significant in NCS and Non-EA countries. The trend of the impact is consistent with the theory and indicates that the FDI decreases by 0.48% in response to the increase of tax burden (% of GDP) by 1 unit, holding all the other effects fixed. However, the positive coefficient for the Non-EA sample is not consistent with the literature;

- Trade openness is a significant factor for explaining the changes in FDI stock in the full sample model, as well as in NCS and Non-EA country subgroups. When the sum of exports and imports exceeds the GDP of the country by one unit (million USD), the FDI stock increases by about 0.6%, holding all the other effects fixed. The impact is almost the same for the NCS subgroup, but higher for Non-EA countries.

- Interest spread, inflation and infrastructure are not significant factors for explaining the changes in FDI stock in these countries;

- Finally, the more competitive the country is, the higher the FDI stock. If the countries' rank in GCI increases by 1, then the FDI stock will increase by about 0.3%, holding all the other effects fixed. The GCI index is also significant in the models for EA and Non-EA subgroups; the impacts are correspondingly 0.5% and 0.6%.

Further on, the model is re-estimated with year fixed effects added. The results along with the initial model are presented below (Table 8). In the new specification, the significance of Trade openness and GCI are lost, but inflation becomes significant.

**Table 7**  
**Estimation Summary for Country Sub-groups**

	Full sample	NCR	NCS	EA	Non-EA
Lag of FDI	0.87964*** (0.02)	0.93038*** (0.06)	0.87106*** (0.03)	0.91477*** (0.03)	0.72838*** (0.05)
GDP growth	0.00969*** (0.00)	0.01327 (0.01)	0.00691** (0.00)	0.01232*** (0.00)	-0.00480 (0.01)
Tax burden	-0.00266 (0.00)	-0.01038 (0.01)	-0.00483** (0.00)	-0.00056 (0.00)	0.00430* (0.00)
Trade openness	0.00006*** (0.00)	0.00002 (0.00)	0.00006*** (0.00)	-0.00001 (0.00)	0.00017*** (0.00)
Unit labour cost	0.00425 (0.00)	-0.00762 (0.02)	0.00697** (0.00)	-0.00003 (0.01)	-0.00467 (0.01)
Interest spread	0.00479 (0.01)	-0.05568 (0.09)	0.00168 (0.01)	0.00466 (0.01)	-0.00395 (0.02)
Inflation	-0.00916 (0.01)	-0.03968 (0.02)	-0.00926 (0.01)	-0.00630 (0.01)	-0.00027 (0.01)
Infrastructures	0.00084 (0.00)	-0.00504 (0.01)	-0.00147 (0.00)	0.00392 (0.00)	0.00416 (0.00)
GCI	-0.00305** (0.00)	-0.00528 (0.01)	-0.00189 (0.00)	-0.00468*** (0.00)	-0.00646** (0.00)
_cons	1.59321*** (0.36)	0.77600 (0.79)	1.87634*** (0.39)	1.08253** (0.44)	2.79231*** (0.54)
N	143	38	105	97	46

*Note:* Standard errors are in parenthesis; \* p<0.1 \*\* p<0.05 \*\*\* p<0.01; the dependent variable is log(FDI) NCR is the subgroup of net capital receivers, NCS is the subgroup of net capital sender (based on Net capital account (BoP, current US\$)), EA is the subgroup of Euro area countries, Non-EA is the subgroup of non-Euro area countries.

*Source:* Authors' estimations.

**Table 8**  
**Estimation Summary with SGMM Model**

	FDI	FDI
Lag of FDI	0.87964*** (0.02)	0.99739*** (0.02)
GDP growth	0.00969*** (0.00)	0.00974** (0.00)
Tax burden	-0.00266 (0.00)	0.00076 (0.00)
Trade openness	0.00006*** (0.00)	-0.00001 (0.00)
Unit labor cost	0.00425 (0.00)	-0.00269 (0.00)
Interest spread	0.00479 (0.01)	-0.00061 (0.01)
Inflation	-0.00916 (0.01)	0.01868*** (0.01)
Infrastructures	0.00084 (0.00)	0.00173 (0.00)
GCI	-0.00305** (0.00)	-0.00031 (0.00)
Year effect	No	Yes
_cons	1.59321*** (0.36)	0.10156 (0.30)
N	143	143

*Note:* Standard errors are in parenthesis; \* p<0.1 \*\* p<0.05 \*\*\* p<0.01; Dependent variable is log(FDI).

*Source:* Authors' estimations.

---

## Conclusions and Policy Lessons

In a globalised world, countries and regions strive to attract FDI, knowing its potential to boost their economy and support sustainable growth.

This paper works to identify the main determinants that should be considered in order to intensify FDI flows towards the EU member states. To demonstrate the hypothesis, the data is first pooled. Afterwards, individual heterogeneity is tested. To account for fixed effects, autocorrelation, and endogeneity, the GMM method is used since it has proved to be more efficient compared to other approaches. Since the EU includes countries with different dimensions, population, levels of development, growth potential, economic, financial and welfare policies, different historical, cultural and political backgrounds, it is expected that the attractiveness for FDI is different. Therefore, the analysis is conducted for the full sample (28 countries) and separately for the different subgroups (Net capital receivers, Net capital senders, Euro area and Non-Euro area member states). The EA economies are regarded as the most stable and best fulfil the criteria expected by investors, while the Non-Euro area states lag behind, being rather hard hit by recent crises. Within the EU, the EA member states are mainly senders of FDI towards the Non-Euro states, which accentuates their economic differences. From this perspective, the Non-Euro Area states have a residual stance, and investors deciding where to locate companies or place portfolios do so according to their economic interest. Since the allocation of resources depends on the yield of investments, the analysis of FDI determinants becomes crucial for the Non-Euro area states and these results may serve as policy opportunities.

According to the results of the study, the dynamics of FDI is more intense in NCR and Non-EA states. These countries should pay particular attention to the real convergence indicators that signal investors the robustness and stability of the domestic economy (Donath and Mura, 2019) and prevent speculative capital entries. NCS and EA countries have a surplus of capital supported by productivity and GDP growth, with the latter found here to be an important determinant in the FDI flow analysis in these countries.

Unit labour costs are presented in the literature as a possible comparative advantage in attracting FDI, but the results show that despite high labour costs, there are countries (e.g. the UK, Norway, Germany, France) that are more attractive to investors compared to countries where the labour costs are low. Non-EA countries and NCR should concentrate their policies on other factors, i.e. quality of the labour force, innovation, productivity, low corruption, transparency, the rule of the law, economic stability, efficient markets, health and primary education, efficiency enhancers (higher education and training) technological readiness (business sophistication) and other GCI that may confer competitive

advantage. Healthy growth is also a signal to potential investors that the structure of the economy is balanced and the financial market sufficiently developed to provide funding at low risks (Bijsterbosch and Kolasa, 2009).

The openness of trade (imports and exports/GDP) has a positive impact on FDI. Exporting opportunities, trade agreements, and well-established markets show the ability of a country to meet the expectations of their counterparts. Nonetheless, the structure of exports and imports should not be overlooked, since they affect on the balance of payments with financial consequences. Exporting goods with high added value creates the perspective of surplus that can successfully be invested in the global market thus creating additional revenue that eventually lowers sovereign debt adds to the financial stability of the country.

Inflation and interest rates are largely related to nominal convergence and are influenced by EU monetary policy and the division between EA and Non-EA countries which raises issues related to foreign exchange policies, monetary expansion policies as well as the demand and structure of loans. From the perspective of this study, inflation, the interest spread and infrastructure are not significant determinants of FDI.

Last but not least, the tax burden is one of the most debated determinants of FDI. Obviously, investors are sensitive to taxation, but there isn't a large consensus on the degree to which it influences FDI. Here, yet again, the problem lies with the negotiating authorities and the allowances that are made to foreign investors. For a considerable time, taxation was promoted as the most important determinant of FDI, mainly for developing countries that, as a result participated in a race to the bottom tax rates, without irrefutable evidence that it has triggered a more intense inflow of FDI to these countries. On one hand, tax competition is a lever for a more effective public money management, but low taxes can diminish the collection of public revenues, unless compensated by a larger tax base supported by the FDI inflows. Further on, investors sometimes consider the statutory tax rates and/or the actual tax rates, when relocating to either developed or developing countries. The results of the study confirm that investors are more sensitive to the tax burden in NCS and Non-EA countries.

The study considers only a limited number of variables that influence FDI absorption, leading to partial results and suggesting that the research should be extended also to other non-economic (qualitative) determinants, like for example corruption (a recent paper developed by Bojnec and Fertő (2017) empirically investigates the effect of globalization and corruption on the outward FDI in the OECD countries). Moreover, an in-depth analysis regarding the impact of real convergence in the EU and FDI inflows would add valuable insight into the research.

## References

- ANASTASSOPOULOS, G. (2007): Countries International Competitiveness and FDI. An Empirical Analysis of Selected EU Member Countries and Regions. *Journal of Economics and Business*, 10, No. 1, pp. 35 – 52.
- BÉNASSY-QUÉRÉ, A. – FONTAGNÉ, L. – LAHRÈCHE-RÉVIL, A. (2005): How Does FDI React to Corporate Taxation? *International Tax and Public Finance*, 12, No. 5, pp. 583 – 603.
- BHARDWAJ, A. – DIETZ, J. – BEAMISH, P. W. (2007): Host Country Cultural Influences on Foreign Direct Investment. *Management International Review*, 47, No. 1, pp. 29 – 50.
- BIJSTERBOSCH, M. – KOLASA, M. (2009): FDI and Productivity Convergence in Central and Eastern Europe. [ECB Working Paper Series, No. 992.] Frankfurt am Main: European Central Bank. Available at: <<https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp992.pdf?00de9072ca8e9ad61c8c532687e01164>>.
- BOJNEC, S. – FERTÓ, I. (2017): Effects of Globalization and Corruption on the Outward FDI in OECD Countries. *Ekonomický časopis/Journal of Economics*, 65, No. 3, pp. 201 – 219.
- BRENTON, P. – DI MAURO, F. – LÜCKE, M. (1999): Economic Integration and FDI: An Empirical Analysis of Foreign Investment in the EU and in Central and Eastern Europe. *Empirica*, 26, No. 2, pp. 95 – 121.
- BRUNO, R. – CAMPOS, N. – ESTRIN S. – TIAN, M. (2016): The FDI Premium from EU Membership. [CEP Discussion Paper 1453.] London: London School of Economics and Political Science. Available at: <<http://cep.lse.ac.uk/pubs/download/dp1453.pdf>>.
- BRZICA, D. (1999): Foreign Direct Investment in the Slovak Republic (2): A Focus on Institutions and Policies in the period 1993 – 1996. *Ekonomický časopis/Journal of Economics*, 47, No. 2, pp. 235 – 268.
- CAMPOS, N. F. – KINOSHITA, Y. (2003): Why Does FDI Go Where it Goes? New Evidence from the Transition Economies. [IMF Working Paper WP/03/228.] Washington, DC: IMF. Available at: <<https://www.imf.org/en/Publications/WP/Issues/2016/12/30/Why-Does-Fdi-Go-Where-it-Goes-New-Evidence-From-the-Transition-Economies-16954>>.
- CARSTENSEN, K. – TOUBAL, F. (2004): Foreign Direct Investment in Central and Eastern European Countries: A Dynamic Panel Analysis. *Journal of Comparative Economics*, 32, No. 1, pp. 3 – 22.
- DONATH, L. – MURA, O. (2019): The Looming Central and Eastern European Real Convergence Club. Do Implicit Tax Rates Play a Part? *DANUBE: Law and Economics Review*, 10, No. 1, pp. 67 – 89.
- DUNNING, J. H. (1981). *International Production and the Multinational Enterprise*. London: Allen & Unwin.
- EUROPEAN COMMISSION (2017): Investment in the EU Member States. An Analysis for Drivers and Barriers. [Institutional Paper 062.] Brussels: EC. Available at: <[https://ec.europa.eu/info/sites/info/files/ip062\\_en.pdf](https://ec.europa.eu/info/sites/info/files/ip062_en.pdf)>.
- GINEVIČIUS, R. – TVARONAVIČIENĖ, M. (2003): What Drives Foreign Direct Investments into Baltic Countries? The Case of Lithuania, Latvia and Estonia. *Ekonomický Časopis/Journal of Economics*, 51, No. 8, pp. 963 – 981.
- GOUEL, C. – GUIMBARD, H. – LABORDE, D. (2012): A Foreign Direct Investment Database for Global CGE Models. [CEPII, WP 201.] Paris: CEPII. Available at: <[http://cepii.fr/PDF\\_PUB/wp/2012/wp2012-08.pdf](http://cepii.fr/PDF_PUB/wp/2012/wp2012-08.pdf)>.
- GREENE, W. H. (2012): *Econometric Analysis*. 7th Edition. London: Pearson.
- HUNADY, J. – ORVISKA, M. (2014): Determinants of Foreign Direct Investments in EU Countries. Do Corporate Taxes Really Matter? *Procedia Economics and Finance*, Elsevier, 12, December, pp. 243 – 250.
- IAMSIRAROJ, S. – DOUCOULIAGOS, H. (2015): Does Growth Attract FDI? [Economics Discussion Paper.] Kiel: Kiel Institute for the World Economy. Available at: <<http://www.economics-ejournal.org/economics/journalarticles/2015-19>>.

- JAKUBIAK, M. – MARKIEWICZ, M. (2007): Capital Mobility and Tax Competition between Old and New EU Member States. Warsaw: CASE. Available at: <[https://www.cerge-ei.cz/pdf/gdn/rrc/RRCVI\\_63\\_paper\\_01.pdf](https://www.cerge-ei.cz/pdf/gdn/rrc/RRCVI_63_paper_01.pdf)>
- JIMBOREAN, R. – KELBER, A. (2014): Foreign Investment Drivers and Growth in Central and Eastern European Countries in the Aftermath of 2007 Global Financial Crisis. Paris: Banque de France, Direction générale des études et des relations Internationales. Available at: <<https://ssrn.com/abstract=2456672>>.
- KIRKPATRICK, C. – PARKER, D. – ZHANG, Y. F. (2006): Foreign Direct Investment in Infrastructure in Developing Countries: Does Regulation Make a Difference? *Transnational Corporations*, 15, No. 1, pp. 143 – 171.
- KRUGMAN, P. (1991): Increasing Returns and Economics Geography. *Journal of Political Economy*, 99, No. 3, pp. 487 – 499.
- MENDOZA, E. G. – RAZIN, A. – TESAR, L. (1994): Effective Tax Rates in Macroeconomics: Cross-country Estimates of Tax Rates on Factor Incomes and Consumption. *Journal of Monetary Economics*, 34, No. 3, pp. 297 – 323.
- MUTTI, J. – GRUBERT, H. (2004): Empirical Asymmetries in Foreign Direct Investment and Taxation. *Journal of International Economics*, 62, No. 2, pp. 337 – 358.
- NEGRITOIU, M. (1996): Salt înainte, dezvoltarea și investițiile străine directe. Bucurest: Editura Expert București.
- NGANGUE, N. (2016): Infrastructure Factors of Foreign Direct Investment Attraction in Developing Countries. *International Journal of Economics, Commerce and Management*, 4, No. 12, pp. 98 – 112.
- POPOVICI, O. C. – CALIN, A. C. (2015): The Effects of Enhancing Competitiveness on FDI Inflows in CEE Countries. *European Journal of Interdisciplinary Studies*, 7, No. 1, pp. 53 – 65.
- ROBERTSON, R. (2012): Globalisation or Glocalisation? *The Journal of International Communication*, 18, No. 2, pp. 191 – 208.
- SAYEK, S. (2009): Foreign Direct Investment and Inflation. *Southern Economic Journal*, 76, No. 2, pp. 419 – 443.
- UNCTAD (2019): How can Europe Raise its Game. EY Attractiveness Survey Europe. Geneva: UNCTAD. Available at: <[https://www.ey.com/en\\_gl/attractiveness/19/how-can-europe-raise-its-game-ey-european-attractiveness-survey-2019](https://www.ey.com/en_gl/attractiveness/19/how-can-europe-raise-its-game-ey-european-attractiveness-survey-2019)>.
- WOJCIECHOWSKI, L. (2017): Productivity Gap: A Chance or an Obstacle in Absorbing Benefits from FDI in a Host Country. *Entrepreneurial and Business Economics Review*, 5, No. 4, pp. 153 – 170.
- ZSOHAR, P. (2012): Short Introduction to the Generalized Method of Moments. *Hungarian Statistical Review*, 16, special number, pp. 150 – 170.