UDC: 330.322(4)
DOI: 10.5937/AnEkSub2248035Z
Original scientific article

Анали Економског факултета у Суботици – The Annals of the Faculty of Economics in Subotica
Vol. 58, No. 48, pp. 035-049
Received: 06/12/2021
Accepted: 14/04/2022

Determinants of foreign direct investment in Central and Eastern Europe: panel data analysis results

Детерминанте директних страних инвестиција у Централној и Источној Европи: резултати панел анализе

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Abstract: The diffusion of technology and the knowledge spillover that accompanies foreign direct investment have made all countries, especially those in transition, interested in this type of capital inflow. Accordingly, in this paper, we have applied econometric panel models to identify determinants of foreign direct investment in Central and Eastern European countries. Our results indicate that differences in foreign direct investment flow in the analysed countries can, to a large extent, be explained by traditional factors such as the availability of skilled labour force, labour costs, infrastructure quality, and market size. In addition, the quality of institutions, primarily democratic government, an independent judiciary, and the absence of corruption, also significantly influence foreign companies' decisions about where to invest in countries in the region.
Keywords: OLI paradigm, foreign direct investment, transition economies, locational determinants, quality of institutions
JEL classification: F21, F23, F12

Сажетак: Дифузија технологије и преливање знања које прате директне стране инвестиције учиниле су да све земље, а посебно оне у процесу транзиције, буду заинтересоване за овај вид прилива капитала. Сходно томе, у овом раду примјенили смо економетријске моделе панела како би идентификовали детерминанте директних страних инвестиција у земљама Централне и Источне Европе. Наши резултати указују да разлике у токовима директних страних инвестиција у анализираним земљама, у великој мјери, могу да се објасне традиционалним факторима као што су расположивост квалификоване радне снаге, трошкови рада, квалитет инфраструктуре и величина тржишта. Додатно, квалитет институција, прије свега демократска влада, независно правосуђе и судство и одсуство корупције, такође значајно утичу на одлуке страних компанија о томе гдје да инвестирају у земље региона.
Кључне речи: ОЛИ парадигма, директне стране инвестиције, транзицијске земље, локацијске детерминанте, квалитет институција
ЈЕЛ класификација: F21, F23, F12

Introduction

Foreign direct investments are real investments in factories, capital goods, land, and inventories, which, in addition to the investment element, also contain a management element, since the investor retains control over the use of invested capital. They occur mainly in the form of establishing a subsidiary or taking control of a company in another country, for example by purchasing a majority share (Salvatore, 2013, p. 368). It is

generally accepted that foreign direct investment occurs if three conditions are met simultaneously: a multinational company has ownership-specific advantages (O), there are internalization advantages (I) and there are locational advantages in the host country. Ownership benefits mainly occur in the form of property rights and intangible assets (production innovation, production management, organizational system, innovation capacity, accumulated marketing, and financial experience, ability to reduce transaction costs within or between firms, etc.), and the benefits that arise as a result of joint management and coordination of the cross-border process of creating added value (benefits from economies of scale and specialization, obtaining inputs on privileged terms, diversification and risk reduction, etc.). Instead of selling these ownership advantages to an independent foreign company, the multinational company decides to exploit them, that is, internalize them, if it brings greater profits. These gains or advantages are a reflection of greater organizational efficiency or ability to use monopoly power and include, for example, avoiding the costs of search and negotiation, avoiding moral hazard and negative selection, protecting the company's reputation, protecting the quality of semi-finished and finished products, using cross-subsidization practices, predatory prices and transfer prices as competitive strategies, etc. The location advantages of the host country result from a larger market, lower resource costs (labour, energy, materials and intermediate products), better infrastructure, investment incentives, etc. It is assumed that the spatial distribution of these advantages is uneven, which provides comparative advantages to the country that has them compared to other countries. Thus, the first two conditions for the emergence of foreign direct investment are related to the level of the company, while the third condition has a key impact on the choice of the country in which to invest. This approach to foreign direct investment is known as Dunning's eclectic paradigm or OLI paradigm, because, according to the author, it combines several complementary theories to explain the activities of companies engaged in the cross-border process of creating value added. (Dunning & Lundan, 2008, pp. 99-102).

By linking locational advantages with the motives of foreign direct investment, the determinants of foreign direct investment can be identified from the aspect of the host country. If the investment is motivated by expansion into new markets (market seekers) then potentially significant determinants are market size, per capita income, economic growth, access to regional and global markets, consumer preferences and market structure. Furthermore, multinational companies invest abroad in order to gain access to resources that are better or cheaper than those in the country of origin (resource/asset seekers). This primarily refers to raw materials, components and parts, land and construction costs, low-paid unskilled labour, quality skilled labour, technological and managerial skills (whether embodied in an individual, company, or cluster), physical infrastructure, entrepreneurial and educational capacity, etc. If multinational companies undertake foreign direct investment to increase efficiency (efficiency seekers) then the main locational determinants are the costs of the aforementioned assets and resources adjusted for labour productivity, the costs of other inputs (such as communication and transport costs to/from and within the host country and costs of other intermediate products), and membership in regional agreements suitable for achieving a more cost-effective and international division of labour and specialization. It should be noted that the inflow of foreign direct investment in a

country, in addition to the above factors, is conditioned by the liberalization of national policies consisting of removing barriers to entry and operate for foreign investors, non-discriminatory treatment of foreign companies, ensuring proper market functioning and opening for trade. Recently, these policies have been increasingly complemented by proactive measures aimed at facilitating the business of foreign investors in the host country (Dunning, 2003, pp. 282-285; UNCTAD, 1998, pp. 90-91).

Understanding the process of foreign direct investment is extremely important for European countries in transition since one of the problems they face is the lack of capital needed to modernize their industrial structures. This is all because foreign direct investment flows are less volatile than other capital flows and imply a long-term commitment to a business venture in a foreign country. Also, this type of investment leads to the creation of new and/or preservation of existing jobs and generates spillover effects, such as transfer of technology, knowledge, innovation, which are all necessary for the successful transformation of the economies of these countries. No less important is the contribution of foreign direct investment to the balance of payments, especially if they are focused on sectors that produce goods for export. In general, in the countries of Central and Eastern Europe, there has been a significant increase in the inflow of foreign direct investment with the removal of barriers to capital movements, as well as with the acceleration of the transition process. However, these countries are neither close to homogeneous in terms of their transition success and membership in the European Union, nor in terms of attracting investment. For this reason, this paper aims to examine the importance of certain traditional determinants of foreign direct investment inflows in fourteen transition countries of Central and Eastern Europe - Bulgaria, Bosnia and Herzegovina, Czech Republic, Croatia, Hungary, Northern Macedonia, Poland, Romania, Serbia, Slovenia, Slovakia, Estonia, Lithuania, and Latvia. For this purpose, static panel models will be used, which will allow us to analyze variations in foreign direct investment not only between countries but also over time. In addition, these models are generally appropriate for identification the determinants of foreign direct investment. The first part will present an overview of the results of previous empirical research that has dealt with this topic. After that, the applied econometric research method will be explained, as well as the data used, and their sources. The third part of the paper contains the results of the research with appropriate discussion.

1. Literature review

From the beginning of the transition process in the countries of Central and Eastern Europe, foreign direct investment was seen as the main driving force of the process of reconstruction and modernization of the economic structure, as well as integration into the world economy. Precisely because of the positive expectations about the impact of this type of investment on economic development and competitiveness, European countries in transition have adopted a number of policy measures aimed at attracting multinational companies. Despite this, their success in attracting foreign capital was rather uneven, with a clear dominance of Poland, the Czech Republic, and Hungary. This has interested many researchers to try to identify the factors that influenced the inflow of foreign direct investment in the region of Central and Eastern Europe.

One of the early papers on the determinants of foreign direct investment was published by Lansbury, Pain, and Smidkova in 1996. In this paper, they tried to use panel analysis to determine the factors that influenced the trajectory of investments from OECD countries in four Central European countries - the Czech Republic, Slovakia, Hungary, and Poland during 1991-1993. The variables they considered were private sector share of GDP creation (as an indicator of the level of privatization), trade openness, number of registered patents in the host country, country risk, relative labour costs, and energy consumption (as an indicator of infrastructure development). Based on the results of the analysis, the authors concluded that the timing and form of privatization programmes had the most significant impact on attracting investment during this period, but relative labour costs, ability to innovate, and earlier trade links were also significant. Considering privatization, Lansbury, Pain, and Smidkova (1996) state that after its completion, investment inflows are likely to depend on market growth rates and relative costs, as in other European countries (pp. 104-114).

Furthermore, Carstensen and Toubal applied dynamic panel models in a paper published in 2003 to examine the determinants of foreign direct investment in seven Central and Eastern European countries - the Czech Republic, Hungary, Poland, Slovakia, Slovenia, Bulgaria, and Romania. On that occasion, they divided the explanatory variables into two groups - traditional determinants which included market size, trade costs (customs), company costs, and relative factor endowment, and transition-specific determinants which included private sector participation, privatization method, and host country risk. The results of empirical research have shown that most of these factors are important in explaining the different attractiveness of individual Central and Eastern European countries for foreign investors, but that market size, low relative unit labour costs, skilled workforce and relative factor endowment are more important than transition determinants (pp. 3-22).

Bevan and Estrin also dealt with the factors that affect the flow of foreign direct investment from Western Europe to Central and Eastern Europe. Analysing the period from 1994 to 2000 using a random-effects model, these authors found that market size in both the country of origin and the host country has a positive impact on the inflow of foreign direct investment into European countries in transition, while the distance between countries and relative unit costs have a negative impact. In addition, the results showed that announcements of the European Union accession lead to an increase in investment in countries that were rated positively. Bevan and Estrin described this as worrying, as countries that are less successful in implementing the transition process are generally given longer deadlines to join the European Union, which in turn further discourages the inflow of foreign direct investment and increases their falling behind (pp. 775-787).

Bellak, Leibrecht, and Riedl (2007) paid special attention to labour costs when identifying the determinants of net foreign direct investment inflows into the Central and Eastern European region. For the purposes of the analysis, they used a gravity panel model and data for the period 1995-2003. The results are quite similar to the previous ones, in the sense that the size of the host country market and the distance between the countries have been singled out as the main factors influencing the investment decision. Considering

labour cost variables, higher unit and total labour costs have a negative impact, while higher labour productivity has a positive impact on attracting foreign direct investment. In this sense, the authors conclude that the countries of Central and Eastern Europe must improve labour productivity through investment in production infrastructure in the future in order to compensate for the projected growth of wage costs (pp. 17-37).

In his paper "Determinants of Foreign Direct Investment in Central and South-eastern Europe: New Empirical Tests", Miroslav Mateev (2009) came to slightly different results compared to previous. Analysing the period from 2001 to 2006 using a panel model, this author found that gravitational factors such as distance, population size and GDP, and transition factors such as country risk, labour costs, and levels of corruption largely determine the size of flows of direct foreign investment in countries in transition. However, he argues that there is no longer evidence of a significant role for the level of privatization and the timing of EU accession in explaining investment inflows (pp. 133-149).

In his 2013 study, Tintin linked traditional factors and institutional variables to find what determines foreign direct investment flows in transition countries. Based on the model of fixed effects for the period 1996-2009, the author concluded that there is a positive and statistically significant relationship between host country GDP size, trade openness, and membership in the European Union and the inflow of investment in six Central and Eastern European countries. The quality of institutions was measured using the Heritage Foundation Index, the Center for Systemic Peace Index, and the Freedom House Index, all of which were reduced to a scale of 0 to 100, with 0 being the worst, and 100 best results. The results confirmed that these institutional variables, in addition to the mentioned traditional variables, determine the inflow of foreign direct investment in the region, since each of them has a positive sign. (pp. 287-298). On the other hand, Günther and Kristalova (2016) got the opposite result. They also applied panel analysis, but a somewhat longer period of time was taken into account - from 1994 to 2013 as well as a larger number of countries (14). Their results suggest that low risk is not enough, and high risk is not necessarily a barrier to foreign direct investment. In addition, they confirm the crucial importance of location variables such as market growth rates and low labour costs, and trade openness to attract foreign investors (pp. 95-99).

Finally, we will mention the significant paper by Stack, Ravishankar, and Pentecost (2017) in which they took into account the difference between the horizontal and vertical types of integration of multinational companies. With the help of a panel analysis of foreign direct investment stocks from Western European countries in 10 new EU member states, they established the coexistence of vertical and horizontal foreign direct investment during the period 1996-2007. At the same time, horizontal investments dominate between countries with similar characteristics, especially between high-income countries (measured by the GDP of two countries), countries of similar size (measured by the square of GDP differential), similar relative factor availability (measured by the difference in skilled labour) and combinations of the last two. High trade costs are also significant in the case of horizontal foreign direct investment, as investors opt for local production of goods to avoid transport costs and trade barriers. On the other hand, since the motive for vertical investment is the different availability of skilled labour, high trade costs together with

similar relative availability of skilled labour (measured by interaction between trade costs in the host country and the square of the skilled labour differences) reduce vertical foreign direct investment, as well as high transport costs (measured by geographical distance between countries) and high costs of re-importation of goods into the country of origin (measured by trade costs in the country of origin). Finally, based on comparison of the pre- and post-European Union accession subsamples, the authors concluded that a shift towards a horizontal type of integration occurs over time, suggesting that market size and economies of scale become dominant motives for foreign direct investment instead of trade barriers (pp. 86-97).

Based on a review of previous research, it can be concluded that, in the early years of the transition process, factors such as the time and method of conducting the privatization process, private sector participation, and speed of accession to the European Union played an important role in attracting foreign direct investment. However, with the completion of the privatization process, these determinants lose their significance, and the focus shifts to the traditional locational advantages of the host country, primarily market size, total and unit labour costs, productivity level, skilled labour, and trade openness. Also, we can notice that in recent papers, institutional determinants are taken into account in the form of various indices that measure the quality, primarily of political institutions. The results generally confirm that transition countries that have made more progress in the democratization of political institutions have higher inflows of foreign direct investment.

Given that today, according to OECD estimates, about 70% of world trade takes place within global value chains (2020), it is not surprising that the number of papers dealing with foreign direct investment is constantly increasing. Nevertheless, from the papers related to the region of Central and Eastern Europe, it can be seen that they are generally focused on EU member states and countries that have progressed faster during the transition process. In addition, the flows of foreign direct investment from other European countries to Central and Eastern European countries are predominantly analysed, thus neglecting the significant volume of investment originating from other parts of the world, which can lead to distorted conclusions and incomplete recommendations for economic policy measures. In this paper, we will try to overcome these shortcomings by taking into account some peripheral European countries in transition, and overall foreign direct investment flows, as is the case in growth models.

2. Data and empirical specification

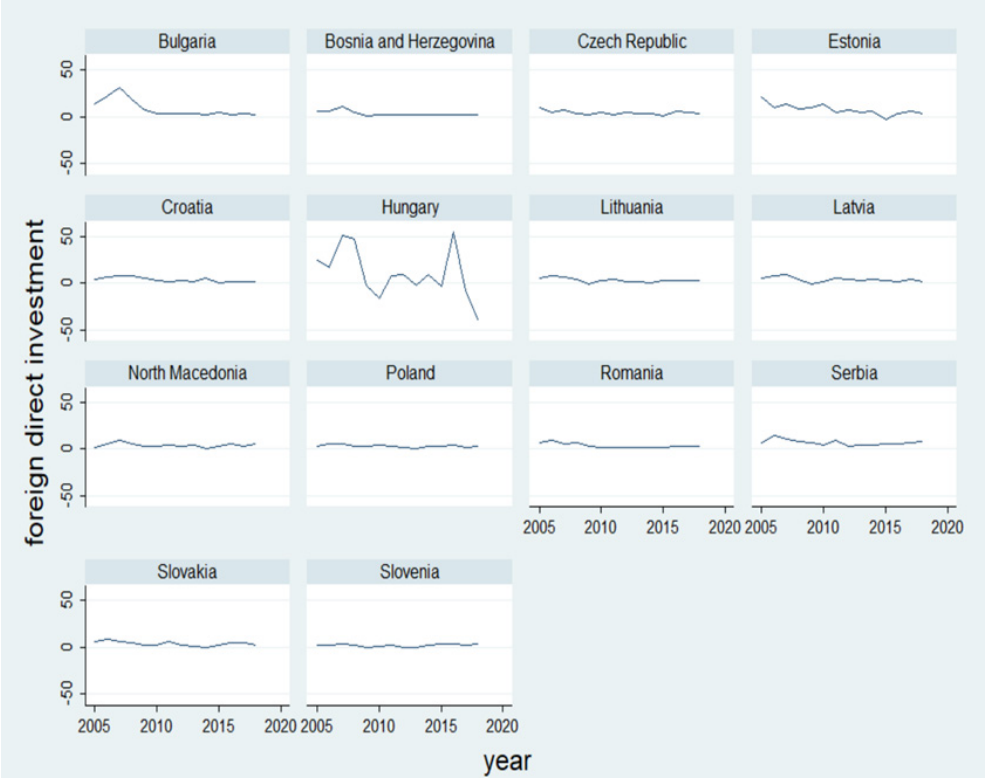
2.1. Data

For the purposes of the research, we used panel data for fourteen countries of Central and Eastern Europe during the period 2005-2018. When choosing the determinants that we will include in the analysis, we started primarily from the OLI theory of foreign direct investment, i.e. location advantages that are crucial for choosing the country in which to invest, but also from the results of previous research. In this sense, the determinants of foreign direct investment that will be analysed in this paper are market size, trade openness, availability of natural resources, quality of infrastructure, availability of skilled labour,

wages, and quality of institutions. In this way, we included three main motives of companies for investing abroad: expanding on new markets, access to resources, and increasing efficiency.

The dependent variable in the model is presented in the form of net inflows of foreign direct investment (new investment inflows less outflows) expressed as a share of GDP for each of the countries. These inflows are recorded in the balance of payments and represent the sum of equity capital, reinvested earnings, and other long-term and short-term capital flows. According to the recommendation of the International Monetary Fund, in order for foreign investments to be classified as direct, they need to include the purchase of at least 10% of voting shares. The movement of foreign direct investment inflows in the analysed countries is shown in Figure 1.

Figure 1: Net inflows of foreign direct investment as a share of GDP



Source: the author's research

The GDP variable approximates the size of the market, i.e. the demand for goods and services in the host country, as well as the achieved level of economic development. In addition, a higher level of GDP may indicate higher productivity and greater innovation capacity of a given country, which can also contribute to attracting foreign investors.

Therefore, we expect that this variable will have a positive impact on the inflow of foreign direct investment.

The openness of the economy is usually measured as the share of exports and imports in GDP. This indicator primarily indicates the level of integration of the host country into regional trade flows. In general, companies create through trade the basis for foreign direct investment and international production which later serve as substitutes or complements for trade. However, since the analysed countries are relatively open to trade, we expect a positive sign.

Companies often invest abroad to access cheap natural resources (resource seekers). Moreover, developing countries often complain about the exploitation of their natural resources at low prices by multinational companies. Therefore, we will include them in the model as an explanatory variable in the form of rent for the use of natural resources (as a share of GDP). Following the above logic, this variable should have a positive effect on attracting foreign investors.

The next determinant we have included in the model is the quality of infrastructure, which is an important prerequisite for successful business. The availability and quality of infrastructure are important for attracting foreign direct investment since multinational companies try to manage production activities that take place in different countries. However, it is difficult to find an adequate indicator of infrastructure quality. Early research used the number of fixed telephone subscribers per 1000 inhabitants (UN, 2002), and later for example the number of mobile phone users per 100 inhabitants. However, none of these indicators behaves well in the model, which is why we opted for the indicator number of fixed internet subscribers per 100 inhabitants. This indicator is gaining importance due to activities such as e-government and online commerce. For this reason, we expect a positive sign with this regressor.

The availability of skilled labour is very important for multinational companies investing abroad to increase efficiency. In addition, foreign direct investment is usually associated with the transfer of technology, the implementation of which requires a skilled workforce. Moreover, some research has shown that foreign direct investment contributes to economic growth only if the host country has enough human capital to absorb advanced technology (Borensztein, De Gregorio & Lee, 1998, p. 115). Therefore, we will include in the model the share of the labour force with tertiary education in the total labour force as an explanatory variable and we expect that it has a strong positive impact on the inflow of foreign direct investment.

Given that the countries of Central and Eastern Europe have relatively low labour costs, foreign companies can have a strong incentive to locate their production in this region in order to reduce costs. Unfortunately, unit labour cost data are not available for the entire region, which is why we will use average wage as a variable in the model.

Finally, the transition process implies not only the transformation of the economy but also the transformation of the political system. Therefore, we will expand our model by another variable, and that is the quality of political institutions. Acemoglu and Robinson

wrote in detail about the importance of political institutions for creating investment opportunities in the book "Why Nations Fail: The Origins of Power, Prosperity and Poverty" (2012). Through examples from history, they have shown how inclusive political institutions create constraints against the exercise and usurpation of power and further tend to create inclusive economic institutions and, ultimately, economic prosperity, the so-called virtuous circle. Of course, the opposite is true in the case of extractive political institutions that start vicious circles. Many authors such as Bevan and Estrin (2004), Busse and Hefeker (2007), and Tintin (2013) have confirmed empirically that institutions are a significant determinant of foreign direct investment inflows. In our model, we will include the quality of political institutions through the subjective indicator of Freedom House. In its annual report "Nation in Transit", this organization provides a numerical ranking of countries on a scale from 0 to 100 (0 indicates the worst and 100 the best result) based on their scores achieved in seven categories that together represent the institutional foundations of liberal democracy. These are the following categories: national democratic governance, local democratic governance, judicial framework and independence, electoral process, corruption, civil society, and independent media. We expect that the worse the country's political institutions, the less attractive it will be for foreign investors.

The sources of data for the selected variables are World Bank statistics (World Bank Indicators), United Nations statistics, International Labor Organization statistics, and Freedom House databases. The data used are annual and cover the period from 2005 to 2018. We log transform original values of the data, to ensure that the slope coefficients are not sensitive to different measuring scales, but also to normalize the residuals.

2.2. Panel data models

Panel data is a combination of cross-sectional data and time series, which allows tracking of the same observation units over time. The use of panel data achieves numerous benefits: 1) the number of observations in the sample increases; 2) heterogeneity between observation units is taken into account; 3) greater informativeness, greater variability, less collinearity among the variables, more degrees of freedom, and more efficient estimation of regression parameters are achieved; 4) effects that are not detectable in pure cross-section or pure time-series data can be identified and measured; 5) more complicated behavioural models can be constructed and tested (Baltagi, 2005, pp. 5-6).

In this paper, we used static linear panel models that have the following general form:

$$y_{it} = \beta_{1it} + \sum_{k=2}^{K} \beta_{kit} x_{kit} + u_{it}, \quad i = 1,2,\dots,N; t = 1,2,\dots,T \quad (1)$$

where *i* denotes the units of observation, and *t* time, so the value of the dependent variable y_{it} for the *i* unit of observation at time *t*, x_{kit} is the value of the *k* explanatory variable for the *i* unit of observation at time *t*, β_{1it} is an intercept term varying by both dimensions, β_{kit} regression parameters that vary across units and across time, u_{it} is an error term of the model with zero mean value and constant variance

We first estimated the pooled model which characterizes the constancy of all regression parameters in the model. This actually implies that the error term includes all variations across units and time, so $\beta_{kit} = \beta_k$ for all *i, t* and *k* = 2,…., K. The model contains K regression parameters that can be estimated with ordinary least squares method. If any of the assumptions about the model error term are violated then the model can be estimated with generalized least squares method.

We also estimated the model with individual and time effects (in both variants), which implies the heterogeneity of the intercept both over individuals and time with the constancy of regression parameters with regressors ($\beta_{kit} = \beta_k$ for each *i, t* and *k* = 2,…, K). In this case, in the fixed specification (two-way fixed effects model) heterogeneity is directly included in the model via intercept term, i.e.

$$y_{it} = \beta_{1it} + \sum_{k=2}^{K} \beta_k x_{kit} + u_{it} = (\beta_1 + \mu_i + \lambda_t) + \sum_{k=2}^{K} \beta_k x_{kit} + u_{it} \qquad (2)$$

Thus, here the intercept term represents the sum of constant β_1, unobservable individual effects, μ_i and unobservable time effects λ_t, where μ_i and λ_t are fixed parameters. On the other hand, in the stochastic specification, individual and time effects are not directly included in the model, since they are components of composite error term (random-effects model or two-way error component model):

$$y_{it} = \beta_1 + \sum_{k=2}^{K} \beta_k x_{kit} + v_{it} = \beta_1 + \sum_{k=2}^{K} \beta_k x_{kit} + (\mu_i + \lambda_t + u_{it}) \qquad (3)$$

In this model, the composite error term v_{it}, in addition to the part that varies by both dimensions u_{it}, also contains the part that varies only by individuals μ_i and the part that varies only over time λ_t. Since they represent components of error term, individual and time effects are stochastic in nature. (Jovičić & Dragutinović-Mitrović, 2011, pp. 218-219)

The presence of individual and time effects in the model was confirmed by the F test, while the specification tests, Hausman's and Mundlak's, showed that these effects are fixed parameters. It should be noted that the model of fixed effects is also in line with the nature of the data since observation units are states and they are not a random sample selected from a larger population. So, our final model has the following form:

$$\begin{aligned}\log(fdi)_{it} = {} & (\beta_1 + \mu_i + \lambda_t) + \beta_2 \log(gdp)_{it} + \beta_3 \log(tradeopennes)_{it} \\ & + \beta_4 \log(naturalresources)_{it} + \beta_5 \log(internetsubscribers)_{it} \\ & + \beta_6 \log(teritarylabourforce)_{it} + \beta_7 \log(wage)_{it} + \beta_8 \log(democracyindex)_{it} \\ & + u_{it}\end{aligned}$$

However, the paper will present the results of all estimated models, as a comparison of different estimates can give us information about the nature of the bias in case of omission of individual and time effects from the model, or if we ignore the violation of some error term assumptions.

3. Empirical results

Table 1 provides a comparative overview of the regression parameter estimates for the different panel models considered. We can notice that, either by applying the ordinary least squares methods or generalized least squares method on the pooled model, obtained estimates are biased and inconsistent, and not in accordance with economic theory. On the other hand, in the case of models with fixed individual and time effects with White's or Driscoll-Kraay's robust standard errors (due to the violation of the assumption of homoskedasticity of error term, and a small sample and therefore the limited power of tests for cross-sectional dependence), independent variables have the expected direction of influence. In addition, both Hausman's non-robust specification test and Mundlak's robust test confirmed that the covariance approach of the fixed effects model should be used.

Table 1: Determinants of foreign direct investment inflows in Central and Eastern Europe

Dependent variable: logfdi					
Independent variable	OLS	xtgls	FE	RE	xtscc
loggdp	-0.0487043	0.097367*	2.581499*	-0.0998561	2.581499*
logtrade	0.2369844	0.789108***	1.159524	-0.1698434	1.159524
lognatresource	0.3214665**	0.1913933*	0.0676918	0.2412488	0.0676918
loginternets	-0.2679079*	-0.2823313***	0.2970711**	0.1613371	0.2970711**
logteritarylf	-0.2584288	-0.0401435	2.677361***	-0.2290255	2.677361**
logwage	-0.5708601**	-0.6011905***	-1.608613**	-0.7861646*	-1.608613***
logdemocracyi	1.562283***	0.274403	4.658405***	1.65729	4.658405**
Time dummies	No	No	Yes	Yes	Yes
Number of observation	196	196	196	196	196
Number of groups	14	14	14	14	14
R-squared	0.1923		0.3950	0.3125	0.3950
Wald chi2		87.65			

*Note: ***, ** and * indicate significance of coefficients at 1, 5 and 10 per cent, respectively.*

Source: the author's calculations

Finally, based on the selected specification, we can draw conclusions about the importance of certain determinants of foreign direct investment. The results of our research indicate that the inflow of foreign direct investment in European countries in transition is significantly affected by the availability of skilled labour and labour costs. Obviously, a skilled workforce (from engineers, technicians to managers and accountants, etc.) is crucial for the implementation of innovative production technology, but also for the adoption of a new organizational culture. If we were to follow the industrial-organization approach to trade developed primarily by Markusen (2002), then the above would point to the predominant participation of vertical multinational companies. According to this approach,

companies can benefit from geographically separating production by stages, so that intermediate inputs would be produced in a country with skilled labour, and the final phase of production would take place in a country with an abundance of unskilled cheap labour. (Markusen, 2002, pp. 256-257). This approach has also received some empirical confirmation (e.g. Markusen & Maskus, 2001; Amiti & Wakelin, 2003) and may explain the statistical insignificance of trade openness in our model. Namely, there is a possibility that the relationship is reversed, that, in fact, vertical direct investments stimulate trade, as suggested by Markusen. This is supported by the fact that contemporary international trade is predominant for production in global value chains, which means that raw materials and intermediate products are exchanged between countries before they are incorporated into the final product. Therefore, direct investments will probably precede trade and not the other way around.

The third determinant that is highly statistically significant in our model is the quality of political institutions. It is obvious that factors such as democratic governance and the rule of law significantly influence the decisions of foreign companies where to invest in the countries of the region. Furthermore, our model also suggests that differences in infrastructure quality may explain why some countries attract more and some less direct investment. It should be emphasized that the low estimate of this regression parameter may be due to the difficulty of finding the right variable that would represent the quality of infrastructure. Namely, we used an indicator based on the number of internet subscribers, but infrastructure is a broad term and includes not only telecommunications but also transport infrastructure and additional utilities. Finally, at a 10% significance level in both, model with White's and model with Driscoll-Kraay's robust standard errors, the market size determinant is also significant, indicating that countries with larger markets are likely to record higher foreign direct investment inflows. It seems that the availability of natural resources in the analysed countries did not significantly affect the attraction of foreign direct investment in the period from 2005 to 2018. When it comes to time effects in the fixed effects model with White's standard errors, the significant years are 2005, 2006, 2007, and 2008. This could be related to the fact that capital flows, on the eve of the great global economic crisis of 2008-2009, reached their maximum. Namely, in 2007, foreign direct investments in the world reached 1979 billion dollars, and that is still the historical peak (UN, 2009, p. 3). However, in the model with Driscoll-Kraay's robust standard errors, a larger number of time variables is statistically significant. There are no significant changes in results when alternative specifications are applied.

Conclusion

Location determinants that affect the inflow of foreign direct investment in Central and Eastern European countries have been identified within this research. For this purpose, a model with fixed individual and time effects with robust standard errors was used. Foreign companies have been shown to invest in the region primarily in search of cheap resources and increased efficiency, as the availability of skilled labour and low labour costs have emerged as significant determinants. The quality of political institutions is also of great importance for the inflow of foreign direct investment. This confirms the widely held thesis

in the economic literature that where they function well, these institutions can encourage investment and growth. In addition, market size and the quality of infrastructure also appear to be factors that may influence investment in European countries in transition. Finally, trade openness as a traditional determinant of foreign direct investment is not significant in the case of countries in the region. This could be attributed to the fact that in the observed period all Central and Eastern European countries either became members or were preparing for membership in the European Union, which is why they eliminated most restrictions on the movement of goods, services, and capital, so direct investment ceased to be a substitute for trade. In addition, changes in the structure of international trade in the form of the predominant participation of global value chains, have led to the fact that direct investment actually stimulates trade and not vice versa.

The above points to the conclusion that economic policymakers in the region should work on improving the education system, diffusion of technology, and innovation and training of the workforce. This is especially significant, so that in the future wage growth could be offset by productivity growth and thus prevent discouragement of investment inflows. In addition, governments need to work on improving infrastructure, primarily in the areas of transport and communications, which would make it easier for the countries analysed to be included in global value chains and ultimately improve their trade balances. Last but not least is building inclusive political institutions, to prevent abuse of power, ensure the rule of law, and adopt policies and regulations that promote investment and private sector development. In other words, without democratic freedoms, free market institutions cannot be expected to function.

In theoretical terms, this paper builds on previous research on the determinants of foreign direct investment in European countries in transition. Namely, in previous research, the focus was on the countries of Central Europe, while the countries of Southeast Europe were mostly neglected. As the latter were less successful in the transition process, their exclusion could not provide a precise picture of the impact of certain factors on attracting foreign direct investment to the region.

At the end of this research, there is one serious limitation, and that is the insufficient length of time series in the model. If longer time series were available, additional variables could be included in the analysis, which would provide a broader picture of the determinants of foreign direct investment in the region of Central and Eastern Europe. However, most researchers in the field of economics face these and similar problems, especially in the countries of Southeast Europe.

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