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FDI DETERMINANTS IN THE EURASIAN ECONOMIC UNION COUNTRIES AND EURASIAN ECONOMIC INTEGRATION EFFECT ON FDI INFLOWS¹

The paper examines the potential determinants of foreign direct investment inflows into the region of Eurasian Economic Union, as well as incentives for investment into other neighboring countries. In the first model, the authors test a hypothesis on country specific foreign direct investment determinants for the Eurasian Economic Union region. The results of fixed effects estimation show that gross domestic product, infrastructure development and secondary education enrollment have a positive statistically significant effect on the foreign direct investment inflows into the region. Conversely, the impact of Customs Union on foreign direct investment appeared to be negative. Furthermore, in the second model of the natural experiment, the authors empirically test the hypothesis on Customs Union's effect on foreign direct investment while controlling for both country and time effects. The model includes evaluating the impact of the policy change on foreign investment inflows. The natural experiment outcome also points to the negative effect of Eurasian economic integration on foreign direct investment inflows. Although the countries of Eurasian Economic Union have relatively business friendly regulations, such procedures as enforcing contracts, resolving insolvencies and dealing with construction permits are time-consuming. For attracting foreign investment, it is advisable to facilitate such procedures and make the process of setting up a new business less onerous. The research can be used as an outline for further examining of Eurasian economic integration and apart from that, the study results can be applied for practical purposes of policy elaboration aimed at stimulating foreign direct investment into the Eurasian Economic Union.

Keywords: foreign direct investment, determinants, Eurasian economic integration, Customs Union, natural experiment model, panel estimation, fixed effects, investment climate, market size, infrastructure development

1. Introduction

Foreign direct investment (FDI) can significantly affect the economic growth of developing countries through technology, knowledge and skills transfer. FDI can be classified into horizontal, that takes a form of a new subsidiary in the host country and vertical, which is the production of intermediary goods in the host country. The common FDI determinants include market size, economic and political stability, favorable invest-

ment climate, natural resources, labor abundance, infrastructure development and other factors.

The Asian region is the largest FDI host recipient in the global economy, where FDI inflows amounted to USD 541 billion in 2015. One of its major reasons is an intensive investment liberalization of the developing Asian countries. For instance, in 2015, 85 percent of investment policy measures were noted as favorable for foreign firms².

²UNCTAD, 2016. World Investment Report. Investor Nationality: Policy Challenges. United Nations New York and Geneva. Retrieved from: http://unctad.org/en/PublicationsLibrary/wir2016_en.pdf (date of access: 01.02.2017).

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The majority of developing countries realized potential benefits of FDI early on and as one would expect today competition for attracting investment suggests official commitments, like bilateral investment treaties (BITs), free trade agreements (FTAs) with investment provisions, reforms in domestic investment policies, which would enhance FDI inflows. Free trade agreements might lead to trade creation and trade diversion effects, apart from that FTAs might affect the FDI directed to the region. This paper seeks to analyze the potential FDI determinants of Eurasian Economic Union (EAEU) countries and identify if there is any effect of Eurasian economic integration on FDI inflows of the region.

The structure of the paper is the following. Section 2 provides the literature and theoretical aspects. Section 3 includes a descriptive overview of the EAEU countries' FDI inflows and investment climate characteristics. Section 4 presents the main methodology and results of 2 empirical models: potential FDI determinants and Eurasian economic integration; the natural experiment model of Eurasian economic integration effect on FDI inflows. Section 5 concludes with a discussion, the implication of results and comments on further research.

2. Literature Review: FDI Determinants and Regional Integration Effects on FDI

Numerous studies devoted to FDI and its role in the economy find positive spillover effects associated with FDI, such as technology and skills transfer, resulting in greater economic growth. For example, Borensztein et al. found that through technology transfer FDI exerts a positive statistically significant impact on GDP growth of a developing host country, given that it has a minimum level of human capital [1]. In general, Blomstrom and Kokko highlight that "foreign multinational companies (MNCs) may:

- contribute to efficiency by breaking supply bottlenecks (but that the effect may become less important as the technology of the host country advances);
- introduce new know-how by demonstrating new technologies and training workers who later take employment in local firms;
- either break down monopolies and stimulate competition and efficiency or create a more monopolistic industry structure, depending on the strength and responses of the local firms;
- transfer techniques for inventory and quality control and standardization to their local suppliers and distribution channels;

– force local firms to increase their managerial efforts, or to adopt some of the marketing techniques used by MNCs, either on the local market or internationally" [2, p. 10].

Moreover, Blomstrom and Kokko point that in order to achieve the technology spillover, it is essential to encourage the local companies' willingness to acquire new technologies from the MNCs and invest in new technologies. They indicate that incentives should target both multinational and local firms, and stimulate research and development, training and linkages between MNCs and local firms. Furthermore, the countries are recommended to improve their infrastructure development, as well as business climate, and promote the human capital education [2, p. 19–21].

In contrast, there are possible negative FDI outcomes, likewise, Glass and Saggi found that in the case of oligopolistic industries FDI effect on wages in a host country might be positive, whereas, FDI effect in a parent country will tend to be negative, leading to the decline of wages [3]. De Mello examined the effect of FDI on the growth of total factor productivity and found that FDI leads to a long-run growth through knowledge transfer and new technologies; however, FDI's growth elevating effect is strongly connected with complementarity (or substitution) effects between FDI and domestic capital [4].

The investment decision-making process for FDI is interconnected with trade theory, which has been more heavily researched, both theoretically and empirically. Nevertheless, there is a growing literature on FDI. High trade costs may induce the export-platform FDI when the multinational enterprise will gain more by locating in a host country via an affiliate company and selling goods to firms in other countries. Helpman provides a general literature overview on foreign trade and investment, further focusing on multinational corporations. Helpman highlights that the most productive companies tend to settle in a foreign market through an affiliate, medium level productive companies will export goods and services to other countries, while the least productive ones will be competitive only in their home countries. Helpman indicates that low production costs through reduced labor cost is the primary incentive for vertical FDI [5]. In his other research, Helpman underscores that a firm, which decides on FDI over exporting will face higher fixed costs, on the other hand, it will also have less variable unit costs due to no trade expenditures [6].

Grossman et al. examined the potential equilibrium integration choices for firms. In the case of fixed costs for assembling in a country other

than home and no transport costs, only firms with intermediate productivity and most productive firms get involved in FDI. The former tend to pursue the partial FDI scheme by producing intermediates in the host country, importing back intermediate products to home country for assembling and afterwards exporting to other countries; the latter companies tend to set production of intermediate goods and assembling in the host country, further followed by exporting final goods to home market and to other countries. On the contrary, the least productive companies do not get involved in FDI; they produce and assemble in the home country, and export their final goods to other countries. Furthermore, as the fixed costs associated with the location of intermediate production in other country increase, the companies tend to produce and assemble intermediate goods at home country [7].

Similarly, Greenaway and Kneller discuss firm heterogeneity and exporting and investing decisions of companies. The conclusions are that firms with high productivity are able to export, while less productive ones operate only in the domestic market. Although, establishing a subsidiary abroad assumes the reduction of variable costs such as transportation, the fixed costs will rise due to the firm's operation in the host market. Companies will incur sunk costs in both cases: in exports due to marketing, advertising and distribution, while in FDI due to arranging required facilities for a new plant [8].

Multinational companies' decisions to invest depend on myriad factors and are subject to change from one country to another. Dunning's OLI framework encompasses such advantages as ownership, location and internalization as main incentives for MNC's decision to invest abroad. Faeth summarizes it as follows: "... empirical studies testing the OLI framework have found FDI to be determined by a combination of ownership advantages, market size and characteristics, factor costs, transport costs, protection and other factors including regime type, infrastructure, property rights and industrial disputes." [9, p. 174]. In addition, Dunning argues that investment can be differentiated as initial and sequential ones. The initial investment involves resource-seeking and market-seeking motives, comprising natural resources, labor resources and market. The sequential investment includes efficiency-seeking and strategic-asset-seeking motives, which involve production rationalization and targeting the advanced regional strategy for a company [10].

Moudatsou and Kyrkilis draw attention on the analysis of FDI and economic growth in the European Union (EU) and Association of South Eastern Asian Nations (ASEAN) encompassing 1970–2003 period. They found that a positive impact of host country's economic growth on FDI attraction is referred to both developing and developed countries [11].

The latest study of FDI determinants of Central and Eastern European countries by Jimborean and Kelber shows that euro area's financial and macroeconomic conditions, as well as global risk environment and global macroeconomic conditions, have a significant impact on FDI inflows of these countries. Additionally, they highlight infrastructure development, market size, tertiary school enrollment rate, previous FDI flows, corporate tax system, country's accession to the European Union, structural reforms, risk premium, country's competitiveness and trade openness as crucial host country FDI determinants [12].

Similarly, Bevan and Estrin conducted research on foreign direct investment flows from European Union countries to selected transition economies; the results are consistent with market-seeking and efficiency-seeking patterns of FDI, as the GDP size, reduced labor costs and proximity of countries are found to be significant factors. Another notable aspect of the research was the impact of the future inclusion of the country into EU membership on FDI inflows: countries with the prospect of inclusion into the EU tended to attract more foreign inflows, which further accelerated their economic growth. They claimed that FDI inflows might be negatively affected when the likelihood of country's accession in the EU membership is uncertain and takes longer time [13].

A large strand of literature examines FDI inflows and investment incentives of developed countries, however, fewer studies include developing countries, which might be due to the limited number of available data. For Central and Eastern European and Baltic countries, Campos and Kinoshita found that the main FDI determinants are fewer trade barriers, quality of institutions and reduction of transaction costs. In the case of The Commonwealth of Independent States (CIS), natural resources endowment and better infrastructure are found to be significant FDI incentives, hence, the resource – seeking motive for FDI is prevailing in these countries. Apart from that, the weak law enforcement, trade restrictions and bureaucracy issues had a negative impact on mentioned transition countries' FDI inflows [14].

In other study, Campos and Kinoshita examined the impact of structural reforms including

financial reforms, privatization and trade liberalization on FDI inflows to Latin American and Eastern European countries. They found that financial liberalization and privatization have a statistically significant impact on FDI. Moreover, financial liberalization affects incoming FDI even in the case when the financial sector of the country is not highly developed [15].

In their research, Mariev et. al used the Poisson Pseudo Maximum Likelihood method for the estimation of FDI determinants into the Russian economy. They found that main FDI incentives into the Russian Federation are the host region's GDP per capita, the investing country's market size, trade openness of region, distance from Moscow to investing country, unemployment rate of region, innovative capacity approximated as the number of people in R&D and FDI inflow in the preceding period [16].

Additionally to all mentioned factors, which stimulate higher FDI inflows, it is highly essential for a country to be competitive on the global market. Dunning highlights the contribution of government to country's competitiveness: "Governments have other critical roles to play, including the elimination of structural and institutional impediments to efficient resource usage; to active implementation of market facilitating measures; and the encouragement of an ethos of competitiveness among their constituents." Dunning notes that governments, which were able to achieve progress in implementing such reforms, became highly attractive for FDI inflows and were able to use investments rationally for the benefit of their economies [17, p. 14].

On balance, a free trade agreement can result in trade creation or trade diversion, therefore leading to trade of new goods between the FTA member countries, which previously was not possible due to high tariffs before FTA adoption; or to switching to inefficient member country from efficient non-members due to new established high external tariffs after FTA adoption. In the case of trade, it is clear that integration's impact can be identified by measuring if the trade creation effect is greater than the trade diversion effect, thus estimating the net effect of free trade agreement on trade. However, in the case of foreign direct investment, the FTA's net effect can hardly be calculated in such a precise way.

Wonnacott strongly supports the view that trade diversion due to free trade agreement adoption might lead to welfare improvement. The higher production of exporting member as a result of trade diversion from a non-member country will lead to costs reduction, due to which this

exporting member might turn into the lowest source country. Additionally, technical inefficiencies' decline and other members' costs reduction are likely to take place due to markets' increased size and higher competitiveness. Furthermore, the exporting member will become more attractive for foreign investment with entering the larger market of FTA; therefore, it will get more investment at less supply price, which in turn leads to reduced costs of this member country. This foreign investment might lead to technology spillover, which will cause a further decline in costs [18].

One way of better understanding the impact of regional trade agreement (RTA) on FDI is to examine the patterns of FDI flows taking into account the level of countries' economic development involved in the agreement. Blomstrom and Kokko analyzed the effect of regional integration on foreign direct investment and elaborated a conceptual framework, which classifies the regional integration into three types: North-North, North-South and South-South. The North-South pattern refers to the agreements in which FDI flows from developed countries to developing ones. The North-North pattern describes flows within the European Union, e.g., where developed countries invest in developed ones, whereas the South-South pattern refers to investments from developing to the developing economies. They claim that RTA's effect on FDI heavily depends on the locational advantage of a member, environmental reforms due to RTA's adoption and domestic firms' level of competitiveness in the region. The North-North integration considered inclusion of Canada in Canada-U.S. free trade agreement (CUSFTA), in which they found that CUSFTA had not considerably change Canada's FDI flows. They state that it is attributable to the fact that trade liberalization between two countries had taken place prior to the adoption of CUSFTA. The North-South integration represented by Mexico's inclusion to the North American Free Trade Agreement (NAFTA), led to substantial changes in institutional framework and environmental reforms in Mexico, which stimulated higher incoming flows of FDI to Mexico from non-member countries. Also in the South-South integration, which covered MERCOSUR (Southern Common Market members: Argentina, Brazil, Paraguay and Uruguay), the RTA has affected FDI inflows significantly; however, in this case, there occurred unequal distribution of FDI inflows. Argentina and Brazil obtained larger FDI mainly due to their locational advantage and reforms targeting macroeconomic stability [19].

Blonigen and Davies conducted a research on the bilateral tax treaties' (BTT) effect on FDI of

OECD countries and found that a new tax treaty formation resulted in FDI decline, which contradicts the traditional view of BIT's positive impact on investment. One of the reasons for which authors indicate that firms will have less opportunity to avoid taxes via transfer pricing, furthermore, there is a high likelihood of a new treaty to trigger the investment uncertainty in the short run until the new treaty will be fully in legal force [20].

According to Jaumotte, FDI diversion from non-member to RTA member countries might take place after RTA's adoption. She notes that the member countries with higher financial stability and better-educated human capital will attract more FDI inflows. The results point that there is a high positive effect of the market size of RTA on FDI [21]. Another comprehensive analysis of preferential trade agreements' effect on net FDI inflows by Medvedev comprised 1994–2000 period, when a number of “deep integration” agreements were adopted. The findings are consistent with previous studies; particularly Medvedev notes that expanding the size of a common market of a preferential trade agreement by 1 percent leads to a growth of net incoming FDI flows by approximately 0.05 percent. In contrast, 1 percent increase in distance between the member countries will cause a reduction in net FDI inflows by 0.18 percent [22].

Egger and Pfaffermayr distinguish *ex ante* and *ex post* provisions of bilateral investment treaties. *Ex ante* provisions reduce risk in the host country by insuring transparency, while *ex post* provisions give MNCs assurance that investments are protected from expropriation. Taking the knowledge-capital model as a keystone, they examined the effect of bilateral investment treaties adopted during 1982–1992 on FDI of OECD and non-OECD countries. They used fixed country-pair and time effects, and found that the skill difference interaction is significant evidence of knowledge-capital motivations for MNCs. As expected the signaling effect of signing a BIT is less significant than the effect of its actual adoption. The findings indicate that ratification of BITs accounts for approximately 30 percent of the overall positive impact and a minimum positive effect of 15 percent on outward real FDI stocks. Additionally, they note that BITs have similar effects on investment flows both in intra- and extra-OECD members [23].

In a similar vein, Neumayer and Spess analyzed the case of BITs on a sample of 119 developing countries and found empirical evidence that BITs have a positive impact on absolute FDI flows, leading to the growth of FDI by up to 93 percent. One of the main reasons that countries adopt BITs is

that while developing countries may be willing to provide unbiased treatment of foreign firms, after the investment was made and MNCs incurred sunk costs, an inconsistency problem occurs when the host government is no longer motivated to continue with previous agreements on public assertions. Then there may be an incentive to expropriate or benefit from MNC's funds. Thus, they note that a BIT adoption serves as a signal for investors that the host country will indeed be providing unbiased treatment of MNCs and protection of their investment. Moreover, they highlight that this spillover effect is most likely to spread beyond investing developed countries and affect other countries' investments too. The authors also indicate that developing host countries, which have adopted a free trade agreement with a developed country, are also most likely to receive the higher levels of investment flows as it is less cumbersome to export domestic production back to the parent or other countries. In addition, in some cases, FTAs may include advantageous investment policy provisions related to MNCs. They found some evidence that a high institutional stability of the host country and BITs are substitutes, as improvement in government policy leads to a smaller positive effect of BIT on investment flows [24].

Likewise, Busse et al. indicated that bilateral investment treaties not only stimulate FDI into developing countries, but also might serve as a substitute of local institutions [25]. Neumayer et al. highlighted that the contagiousness of signing bilateral investment treaties with stricter investor-to-state dispute settlement (ISDS) and pre-establishment national treatment (NT) provisions among the host developing countries is due to competition for FDI originated from one parent country. In contrast, the developing country, which previously has already signed treaties with weak investment provisions, will tend to sign a similar treaty with weak provisions with other developed country [26].

The Jang's study of OECD and non-OECD countries examines the impact of FTA on FDI patterns between developed-developed countries as well as developed-developing countries. Using a difference-in-difference model for controlling various factors other than FTA, which might influence bilateral FDI outflows of the sample countries, he found that OECD countries that signed FTA with each other receive 0.6 percent less FDI, whereas extra-OECD countries obtain 0.4 percent more FDI. In the first case, the suppressing impact of FTA on FDI will appear in the pre-signing period and worsens after the FTA adoption, whereas in the latter case the positive changes in

FDI occur four years after the signing the agreement. Moreover, the FTA's negative effect on FDI is reinforced when the distance between host and parent countries is large both in intra- and extra-OECD patterns, simply due to increased transportation costs, as vertical FDI implies transferring the intermediate goods to a parent or other countries. The skill difference is crucial for vertical FDI, as MNCs have an incentive to settle intermediate goods production in a host country because of the relative wages for unskilled labor decline with increasing skill difference between partner countries. Jang found that FTA positively affects FDI in OECD-developing countries group due to large skill differences. On the contrary, FTA led to a 1.2 percent decline in FDI in intra OECD flows, due to small skill difference between OECD countries [27].

Trade barriers' elimination and investment provisions' adoption might cause the rearrangement of foreign direct investment inflows into the countries, which became part of a regional integration. The United Nations Conference on Trade and Development (UNCTAD) highlights that direct mechanisms, which affect FDI include the following measures: investment liberalization, adopting protection provisions in regional agreements and introduction of broader pan-regional investment projects related to infrastructure, research and development. On the contrary, the inclusion of trade and market integration provisions and policy harmonization in regional agreements are referred to indirect mechanisms. The indicated mechanisms affect both intraregional FDI and FDI inflows from outside the region [28].

As a rule, a number of empirical studies on regional integration highlight the FDI inflows' increase due to the integration process. The following factors as openness to international trade, domestic policies' reforms aimed at improving the business climate and providing better transparency, as well as economic stability and infrastructure development are noted to be the triggers for foreign investment attraction into the region. The other major MNC's incentives for FDI are location advantage and proximity of a host country to the parent country; consequently, the larger and closer located countries in the region will tend to receive higher amounts of FDI. The adoption of investment provision in regional trade agreements will most likely have a direct influence on FDI attraction via the enforcement of investment provision in member countries, while in case of regional trade agreement without such a provision the effect on FDI will be indirect as a result of the elimination of trade barriers.

3. The EAEU Countries' FDI Inflows and Investment Climate Characteristics

In 2010, the Customs Union (CU) of the Eurasian Economic Community was established on the territory of the Republic of Belarus, the Republic of Kazakhstan and the Russian Federation with the adoption of the Unified Customs Code, under which common regulations on import duties, procedures of assessing the imported goods' value and introducing the country of origin became effective. The new regulations pertain to the taxes that are collected from mutual trade on the territory of the Customs Union. The second stage of integration in the region took place in 2012, when 17 international agreements on the Single Economic Space aimed at the free circulation of goods, services, capital and labor were introduced¹.

In January 2015, the new institution of Eurasian Economic Union was launched. At present, among the members of EAEU are the Republic of Belarus, the Republic of Kazakhstan, the Russian Federation, the Republic of Armenia and Kyrgyz Republic. According to the agreement on the import customs duties, common import duties are to be paid to the unified account of the CU country, which afterwards will be transferred to each countries budget following the proportion: Armenia — 1.11 percent; Belarus — 4.56 percent; Kazakhstan — 7.11 percent; Kyrgyzstan — 1.9 percent; Russian Federation — 85.32 percent².

Since the Customs Union adoption in 2010, the FDI inflows to Belarus from the EAEU countries have not changed considerably. Although, there was the highest peak in 2011, when FDI inflows from the Russian Federation increased from USD 934 mln. by three times and reached USD 2 819 mln., in the following year, FDI inflows shrank to the lowest level of USD 470 mln. and in the subsequent period despite a short-term increase, FDI inflows from Russia remained at a relatively low level. Since 2010, overall FDI inflows to Belarus has increased by 18 percent and achieved USD 1 652 mln. in 2015, conversely FDI inflows from the EAEU countries from USD 934 mln. dropped by 25 percent, to USD 699 mln. For Belarus, the largest investors are the Russian Federation, Cyprus,

¹ Commission Decision of October 18, 2011, №814. «On the entry into force of international treaties that form the Common Economic Space of Belarus, Kazakhstan and the Russian Federation». Retrieved from: <http://evrazes.com/docs/view/577> (date of access: 01.02.2017).

² Eurasian Economic Commission. (2015). Financial policy in Eurasian integration. 56. Retrieved from: <http://www.eurasian-commission.org> (date of access: 01.02.2017).

Table 1

Indexes of doing business (2016) for the EAEU countries

2016 indexes	Armenia	Belarus	Kazakhstan	Kyrgyzstan	The Russian Federation
Doing business rank	43	50	51	73	36
Starting a business rank	9	30	54	28	37
Dealing with construction permits (days)	84.0	115.0	151.0	142.0	244.1
Getting electricity (days)	138.0	112.0	91.0	125.0	160.5
Registering property (days)	7.0	3.0	4.5	3.5	15.0
Strength of minority investor protection index (0–10)	6.0	5.8	6.7	6.3	6.0
Enforcing contracts (days)	570.0	275.0	370.0	410.0	307.0
Resolving insolvency (years)	1.9	3.0	1.5	1.5	2.0

Source: Doing business data.

Turkey, Germany, Austria, Netherlands, Great Britain and Iran¹.

The major investors of Kazakhstan are from Netherlands, France, USA, China, Switzerland, Great Britain, the Russian Federation, Italy and Canada. Since 2010, the total amount of FDI to Kazakhstan almost doubled and reached its highest levels of USD 13 760 mln. in 2011–2012, in contrast in the subsequent years, FDI inflows gradually declined and achieved USD 6 585 mln. in 2015. Among the EAEU countries, the largest investor to Kazakhstan is the Russian Federation. During 2013–2015, the FDI inflows from Russia decreased by more than 1.5, resulting in USD 243 mln. in 2015. A huge amount of FDI from Germany, Netherlands, Ireland, Luxemburg, Cyprus, United Kingdom, Switzerland and Austria flowed to the Russian Federation before 2014. The overall FDI to Russian economy followed an increasing trend during 2010–2013 and in 2013 reached its peak of USD 69 219 mln., however, in the next year, it was followed by a sharp reduction of about 68 percent, leading to USD 22 031 mln. On the other hand, since the CU became effective in 2010, the FDI inflows from the EAEU countries augmented steadily from USD 68.3 mln. by approximately 86 percent and achieved USD 513 mln. in 2015. The largest investor of the Russian Federation from the EAEU countries, Kazakhstan, has considerably increased its FDI to Russia from USD 46 mln. to USD 433 mln. The largest investor among the EAEU countries to Kyrgyzstan is the Russian Federation, FDI inflows of which since CU adoption increased to Kyrgyzstan from USD 50 mln. by about 90 percent and amounted USD 490 mln. in 2015. The total FDI to Kyrgyzstan from USD 438 mln. aug-

mented by 38 percent, leading to USD 1 142 mln. in 2015².

During 2010–2015, the total FDI inflows to Armenia followed a decreasing trend, from USD 530 mln. it dropped by 66 percent and in 2015 achieved the lowest point of USD 178.5 mln. Even after the Customs Union adoption the EAEU countries have not become active investors in Armenia, only recently the Russian Federation started investing in Armenia. In the EAEU intraregional aspect, Russian Federation is one of the main FDI investors, during 2010–2015, the Russian Federation invested nearly USD 6 431 mln. in Belarus, and USD 3 264 mln. in Kazakhstan, in Armenia and Kyrgyzstan USD 725.8 mln. and USD 242.4 mln., respectively. In contrast, during the same period, Kazakhstan invested in the Russian Federation the total sum of USD 1 376 mln. and Belarus invested USD 537 mln.³

In order to get a general view of EAEU countries' investment climate, it is useful to look through doing business indexes. The strength of minority investor protection is approximately at relatively satisfactory level (6–6.7) in the EAEU region; therefore, all the EAEU members should further improve the investor protection laws' enforcement so that better regulations will guarantee the investor rights and secure their funds from expropriation. Belarus and Kazakhstan have relatively business friendly regulations, and it requires less time to register property and get electricity in these countries than in other EAEU members. Kazakhstan needs to improve reinforcing legal rights and accelerate proceeding time of the contract enforcement and construction permits, since compared to other EAEU countries, contract en-

¹ Retrieved from: <http://www.eurasiancommission.org> (date of access: 01.02.2017).

² Retrieved from: <http://www.eurasiancommission.org> (date of access: 01.02.2017).

³ Retrieved from: <http://www.eurasiancommission.org> (date of access: 01.02.2017).

forcement and dealing with construction permits in Kazakhstan is time-consuming — 370 and 151 days respectively¹.

Time to resolve insolvency is twice larger in Belarus, 3 years, than in Kazakhstan and Kyrgyzstan, where the resolution of insolvency takes 1.5 years. In Armenia and Kyrgyzstan, it takes 570 and 410 days respectively to enforce a contract, which must give investors concern (Table 1)².

4. Methodology

Model 1. Potential FDI determinants and Eurasian economic integration

For the estimation of FDI determinants and Eurasian economic integration effect on FDI inflows, the panel dataset includes the EAEU members (Kazakhstan, Belarus, the Russian Federation, Armenia, Kyrgyzstan) and other countries (Azerbaijan, Tajikistan, Moldova, Georgia, Ukraine). The annual data (1993–2015) of foreign direct investment and gross domestic product are in USD, constant 2016 prices collected from Euromonitor International Database.

The regression form will be as follows:

$$fdi_{it} = \alpha + \beta_1 gdp_{it} + \beta_2 openr_{it} + \beta_3 tele_{it} + \beta_4 educ_{it} + \beta_5 pop_{it} + \beta_6 cu_t + \beta_7 educ_{it} \cdot cu_t + \varepsilon_{it} \quad (1)$$

where i — country index (the panels) and t — time index; ε_{it} — error term.

fdi_{it} is a foreign direct investment of country i at period t . The market size of a host country is expressed as (gdp_{it}) gross domestic product of country i at time t . $openr_{it}$ is a trade openness index (% of GDP), which is the sum of exports and imports of goods and services measured as a share of the country's gross domestic product, collected from the World Bank data. The level of infrastructure development is approximated by the countries' fixed telephone subscriptions ($tele_{it}$). The level of education attainment is approximated by $educ_{it}$ — enrollment in secondary education of country i at period t , is from the World Bank Education statistics. pop_{it} — total population of country i at time t , also from World Bank. The Eurasian economic integration dummy is included as cu_t , takes value of 0 before the Customs Union creation and 1 after year 2010, denoting the establishment of Customs Union.

¹ Retrieved from: <http://www.doingbusiness.org/data> (date of access: 01.02.2017).

² Retrieved from: <http://www.doingbusiness.org/data> (date of access: 01.02.2017).

The hypothesis regarding the country specific determinants:

H1: Foreign direct investment is positively related to market size, infrastructure development and secondary education attainment.

Since most free trade agreements promote foreign direct investment into the region, we expect that the Customs Union of the Eurasian Economic Community will have a positive statistically significant impact on FDI inflows. Therefore:

H2: The Customs Union is positively related to FDI inflows.

Results

According to the correlation statistics, there is a high positive correlation between fdi and gdp (0.81), also between fdi and $tele$ (0.80). FDI and population have a low correlation (0.68). Trade openness index and $educ$ (secondary education enrollment) have a low correlation with fdi (−0.36) and (0.54) respectively. The high correlation between $tele$ and $educ$ (0.89) can be explained by the fact that the secondary education enrollment may proxy for the population size. The Augmented Dickey-Fuller and PP-Fisher test conducted individually on each variable indicated that there is a unit root at levels in all variables except for population (pop) (Table 2).

The results of equation 1, which was calculated by the least squares method with cross-section and period fixed effects, indicate that the GDP, secondary education enrollment and infrastructure development are statistically significant at 1 percent level and have a positive sign (Table 3, Equation 1). The interaction term ($d(educ) \cdot cu$) is not significant. The Eurasian economic integration dummy (cu) is statistically significant at 5 percent level and it negatively affects FDI.

Table 2

The results of unit root tests

Variable	ADF — Fisher Chi-square	PP — Fisher Chi-square
fdi	23.71 (0.25)	26.22 (0.15)
$d(fdi)$	89.65 (0.00)	307.16 (0.00)
gdp	4.35 (0.99)	2.35 (1.00)
$d(gdp)$	69.70 (0.00)	129.51 (0.00)
$openr$	18.85 (0.53)	19.28 (0.50)
$d(openr)$	157.67 (0.00)	173.0 (0.00)
$tele$	13.98 (0.83)	7.33 (0.99)
$d(tele)$	36.65 (0.01)	60.1 (0.00)
$educ$	42.81 (0.002)	1.87 (1.00)
$d(educ)$	44.85 (0.001)	74.81 (0.00)
pop	42.25 (0.00)	47.41 (0.00)

Source: Calculated by the authors in Eviews. The p -values are given in brackets.

The coefficient of the determinant, R-squared equals 0.49, hence the proportion of variance in FDI variable explained by independent variables is relatively satisfactory for the panel estimation. The Durbin-Watson statistic equals 2.2, which indicates no positive autocorrelation but may not rule out negative autocorrelation. Since the trade openness variable ($d(opentr)$) is not statistically significant, in equation 2 this variable is excluded. As expected, we get similar results as in equation 1 (Table 3, Equation 2). The equation 3 is calculated by excluding the insignificant interaction term ($d(educ) \cdot cu$), the obtained results are identical to previous equation output, except for the Eurasian economic integration dummy (cu), which became insignificant (Table 3, Equation 3).

**Model 2. The natural experiment model:
Eurasian economic integration effect on FDI**

J. Wooldridge used the “natural experiment” method for the estimation of a policy change effect in a country, by including the treatment and control groups [29]. For the estimation of Eurasian economic integration effect on FDI inflows, the panel dataset includes 5 members of Eurasian Economic Union (Kazakhstan, Belarus, the Russian Federation, Kyrgyzstan and Armenia) and 8 other countries (Azerbaijan, Mongolia, Tajikistan, Uzbekistan, Turkmenistan, Georgia, Moldova, Ukraine). The annual data (1993–2015) for foreign direct investment inflows in USD mln.

at constant 2016 prices and gross domestic product in USD mln. at constant 2016 prices, was collected from Euromonitor International Database.

The treatment group (T) underwent a change in government’s policy and a control group (C) was not affected by the policy change. The Eurasian Economic Union members refer to group T, and eight other countries refer to group C. The two dummy variables denote: $d1_i$ – takes value of 1 for a member of the Customs Union and otherwise 0; $d2_t$ – equals 1 for years after creation of the Customs Union, which are years after 2010 and otherwise 0. The regression will be as follows:

$$fdi_{it} = \alpha + \beta_1 gdp_{it} + \beta_2 d1_i + \beta_3 d2_t + \beta_4 d1_i \cdot d2_t + \varepsilon_{it} \quad (2)$$

where i – country index (the panels) and t – time index.

In this model, the following hypothesis will be tested:

H1: The Customs Union has a significant positive impact on FDI inflows.

The Customs Union (integration) effect on FDI will be reflected in the coefficient β_4 , which measures changes in FDI amounts due to Eurasian economic integration, by controlling both for fixed effects of estimated countries and for time effects after 2010.

Results

The unit root test conducted individually on fdi and gdp indicated that there is a unit root at

Table 3

Model 1. The regression analysis results on potential FDI determinants of the EAEU countries

Variable	Equation 1	Equation 2 (excluding trade openness)	Equation 3 (excluding trade openness and interaction term)
Constant (α)	-3.10 (3.17)	-3.29 (3.13)	-3.77 (2.71)
Gross domestic product ($d(gdp)$)	0.131*** (0.004)	0.130*** (0.004)	0.132*** (0.005)
Trade openness ($d(opentr)$)	-3634936.86 (11167044)		
Secondary education enrollment ($d(educ)$)	5447.18*** (1856.04)	5435.48*** (1828.01)	5338.29*** (1873.05)
Infrastructure development ($d(tele)$)	1928.20*** (621.46)	1930.94*** (615.36)	1843.98*** (599.86)
Population (pop)	118.93 (129.35)	128.29 (128.73)	148.36 (112.32)
Eurasian economic integration dummy (cu)	-1521608738.80** (6.98)	-1558058839.13** (7.09)	-300025094.10 (6.57)
Interaction term ($d(educ) \cdot cu$)	-56948.46 (41020.00)	-56815.86 (40752.11)	
Observations	175	177	177
R ²	0.49	0.49	0.47

Source: Calculated by the authors in Eviews. Standard errors are given in brackets. *** Significance at the 1 % level; ** Significance at the 5 % level; * Significance at the 10 % level.

Table 4

The results of unit root tests

Variable	ADF – Fisher Chi-square	PP – Fisher Chi-square
<i>fdi</i>	30.24 (0.25)	29.05 (0.30)
<i>d(fdi)</i>	120.0 (0.00)	340.3 (0.00)
<i>gdp</i>	4.37 (1.00)	2.35 (1.00)
<i>d(gdp)</i>	74.83 (0.00)	136.98 (0.00)

Source: Calculated by the authors in Eviews. The *p*-values are given in brackets.

levels. The Augmented Dickey-Fuller and PP-Fisher test on *fdi* at levels showed $p = 0.25 > 0.05$ and $p = 0.30 > 0.05$ respectively, hence there is a unit root. After taking the first difference, the unit root is eliminated. Similarly, after taking first difference of *gdp*, ADF $p = 0.0000 < 0.05$ and PP Fisher $p = 0.0000$, hence there is no unit root (Table 4).

According to the results of equation 1 of Model 2, the Eurasian economic integration, reflected by Customs Union interaction term ($d1 \cdot d2$), is statistically significant at 1 percent level, therefore, indicating that the Eurasian economic integration had significant negative effect on FDI inflows (Table 5, Equation 1).

The gross domestic product ($d(gdp)$) is statistically significant at 1 percent level, hence the market size is a major FDI determinant in the region. R-squared equals 0.53; the explanatory power of the estimated regression is relatively satisfactory for panel estimation. DW statistic = 1.8, which indicates no serial correlation. (*d1*) which is a dummy for Customs Union membership is statistically significant at 10 percent level and has a positive sign. The time effects dummy (*d2*) is in-

significant. In equation 2, we applied the White cross-section standard errors and obtained the identical estimation results as in equation 1, except for the Customs Union membership (*d1*), which is now statistically significant at 5 percent level (Table 5, Equation 2). As expected, when excluding the time effects dummy (*d2*), the results remained the same (Table 5, equation 3).

5. Discussion and Implications

This paper examines the foreign direct investment determinants of the Eurasian Economic Union members and several CIS countries and, further, provides the estimation of Eurasian economic integration effect on FDI inflows. Model 1 results point to the factors, which significantly affect investors' decisions, in particular: market size, infrastructure development and secondary education enrollment. A large market appeared to be the main FDI incentive for the EAEU region and other CIS countries; hence, the market-seeking FDI is prevailing in these countries. Apart from that, a better infrastructure is also important due to lower production costs. The high secondary education attainment in the country suggests a well-educated cheap labor force, which also favorably affects multinational companies' decision for FDI. According to these outcomes, the resource-seeking FDI is common for examined countries. In line with several empirical studies discussed in a literature review of this paper, we tested a hypothesis on a positive impact of Customs Union on FDI inflows. The results of model 1 show that the Customs Union of the Eurasian Economic Community negatively affected FDI inflows to the region.

Table 5

Model 2. The results of "natural experiment" model of Eurasian economic integration effect on FDI inflows

Variable	Equation 1	Equation 2 (with white cross-section standard errors)	Equation 3 (with white cross-section standard errors, excluding the time effects dummy)
Constant (α)	22.87 (79.40)	22.87 (57.73)	27.24 (54.96)
Gross domestic product ($d(gdp)$)	0.081*** (0.004)	0.081*** (0.012)	0.081*** (0.012)
Customs Union membership (<i>d1</i>)	251.99* (129.67)	251.99** (102.16)	246.72** (99.69)
Time effects (years after creation of Customs Union) (<i>d2</i>)	79.78 (276.05)	79.78 (112.29)	
The Customs Union effect ($d1 \cdot d2$)	-1578.48*** (444.80)	-1578.48*** (379.57)	-1497.59*** (374.97)
Observations	283	283	283
R ²	0.53	0.53	0.54

Source: Calculated by the authors in Eviews. Standard errors are given in brackets. *** Significance at the 1 % level; ** Significance at the 5 % level; * Significance at the 10 % level.

The aim of the natural experiment (model 2) was to identify if the Eurasian economic integration, reflected by the Customs Union interaction term, had a significant impact on FDI inflows while controlling for both country and time effects. We rejected the hypothesis on the positive impact of Customs Union on incoming FDI flows into the EAEU region, as according to estimation results, the overall effect of Customs Union ($d1 \cdot d2$) on FDI inflows into the EAEU countries appeared to be negative. Additionally, the estimation results refer to the fact that the EAEU members seem to attract more FDI than other CIS countries due to their long-lasting institutions, which was reflected by ($d1$) dummy. The overall development of long-lasting institutions in EAEU countries, which were established before the EAEU adoption, exerted a positive effect on FDI. The possible examples of such institutions are the protection of property rights and dispute settlement, which might play a crucial role in attracting FDI. Furthermore, the results indicate that the time effects dummy ($d2$) is not a significant factor in investors' decisions for FDI.

Most EAEU members have a satisfactory level of doing business rank and strength of minority investor protection. Nevertheless, there are other factors, which affect setting up a new business

such as enforcing contracts, dealing with construction permits, getting electricity and resolving insolvencies, which require a lot of time. In order to attract higher investment flows, it is necessary to reduce the quantity of time-consuming procedures and adopt domestic policies aimed at improving the country's business climate. Recall that the EAEU Treaty already includes the investment section, which guarantees the provision of unbiased treatment for investing member states, protection of member state firms' property from expropriation and ensures just settlement of disputes. Kheifetz highlighted that the other possible way to stimulate FDI inflows to the Eurasian Economic Union would be to establish a free investment zone in the EAEU and further encourage a free movement of capital among members [30].

For further research, it would be interesting to incorporate in the model such variables as the rule of law, level of transparency index, and the ease of doing business index. The new estimation will examine if these domestic policy variables are significant in attracting FDI to the EAEU countries. Additionally, the other possible research subject is to include the interest rate spread between countries, in order to identify if FDI inflows are responsive to them.

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