

**Center for  
Economic Theories and Policies**  
Sofia University St. Kliment Ohridski  
Faculty of Economics and Business Administration

ISSN: 2367-7082



**Foreign Direct Investment Attraction in Central,  
Eastern and South-Eastern Europe:  
The Importance of Public Policy**

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**BEP 07-2019  
Publication: November 2019**

# Foreign Direct Investment Attraction in Central, Eastern and South-Eastern Europe: the Importance of Public Policy

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## Abstract

The paper enhances the discussion about the determinants of foreign direct investment (FDI) in Central, Eastern and South-Eastern European countries and the ability of public policy to influence their FDI attractiveness. Based on data for 15 countries in 2013 and 2017, we build a composite index, which allows us to rank countries in terms of their overall FDI attractiveness, as well as its most important dimensions, such as institutional framework, infrastructure endowment, labour force quality and cost competitiveness. In addition to allowing comparison between economies across these dimensions, the results reveal areas in which some countries need improvement so that they can attract more FDI.

**Keywords:** foreign direct investment, FDI, public policy, economic comparison, composite index

**JEL classification:** F21, H11, O57, C43

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## 1. INTRODUCTION

Since the outset of the economic transformations in Central, Eastern and South-Eastern Europe (CESEE), foreign direct investment (FDI) has been regarded as a source of significant benefits to the host countries such as financing capital formation, enterprise restructuring, transfer of technology, knowledge and skills, job creation, productivity spillovers, enhanced competition and improved export performance (Holland *et al.*, 2000; Botrić and Škuflić, 2006; Kalotay, 2010; Fetai and Morina, 2018). These expectations induced many of the transition economies in the CESEE region to adopt investor-friendly policies, with the hope to attract FDI and boost their economic development.

The accumulated inward FDI stock in the CESEE region is substantial (US\$ 838 billion in 2017 according to UNCTAD data) and reflects high level of foreign capital penetration. However, countries' progress in attracting FDI has been rather uneven, since more than half of the inward FDI stock in the region in 2017 is concentrated in just three countries (Poland, the Czech Republic and Hungary). This raises the question about the determinants of FDI in the CESEE countries and the ability of public policy to shape their FDI attractiveness.

Although there is growing literature on FDI in transition economies, there has been relatively little research on FDI in the SEE countries (Estrin and Uvalic, 2014). Hence, the paper complements the literature on FDI determinants in transition economies by exploring FDI attractiveness in a group of 4 SEE countries (Albania, Montenegro, Serbia, and Bosnia and Herzegovina) and 11 EU-member countries from CEE (Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia). Together they represent a unique context for analysis of the determinants of FDI due to two reasons. First, as post-socialist economies, they share similar historical background, which provides high level of comparability for the analysis. Second, FDI was absent under the system of central planning in these countries but afterwards played an important role in their transition to market-based economies. While most studies on FDI determinants use regression analyses, the present paper constructs a composite FDI index, which allows comparing countries in terms of their overall FDI attractiveness, as well as its key dimensions— institutional framework, infrastructure endowment, labour force quality and cost competitiveness. They all have been previously outlined as important aspects of a country's investment climate and are also under the influence of public policy. The index is calculated for two years (2013 and 2017) to allow comparison.

The rest of the paper is structured as follows: Section 2 reviews the literature on the location determinants of FDI. Section 3 outlines briefly the main trends in inward FDI in CESEE countries. Section 4 describes the data and methodology used. Section 5 presents the results from the analysis and the last section draws conclusions.

## **2. LITERATURE REVIEW**

Instead of offering a single unifying theory, the literature on FDI presents a variety of theoretical models attempting to explain FDI and the location decisions of MNEs (Faeth, 2009). Since the review of all theories regarding the determinants of FDI is beyond the scope of this paper, for the purpose of the research the focus is put on the location advantages of host countries as part of the OLI framework, developed by Dunning (1980, 1988). Due to its complex nature, the OLI paradigm is the most widely used framework for empirical analysis of FDI determinants. The eclectic theory of Dunning combines ownership (O), location (L) and internalization (I) advantages as determinants of FDI, which were previously discussed in separate theories. Ownership advantages refer to the competitive advantages of the MNE over domestic firms and include superior technology, management and organizational skills, patents, reputation etc. Location advantages refer to the country-specific advantages that the MNE gains when investing abroad and include access to markets and resources, lower labour costs, favourable tax system, lower risk, government policy, which is conducive for FDI etc. Internalization advantages relate to the benefits that the MNE may obtain if it engages in foreign production itself rather than licensing the right to do so. Such benefits include cutting transaction costs, minimizing technology imitation and sustaining the MNE's reputation through effective management and quality control. Among these three conditions for FDI to occur, location advantages are the only ones, which host country governments can impact directly. Since the aim is to emphasize the role of public policy for FDI attraction, the literature review focuses on the studies of those location determinants in CESEE, which could be potentially influenced by government actions.

The empirical research on FDI attractiveness in CESEE economies has put forward several important host country location advantages – institutional framework, infrastructure endowment, labour force quality and cost competitiveness. While initially the studies of location advantages focused mostly on more conventional „natural assets“, like raw materials or cheap labour, in recent years „created assets“, such as institutions, infrastructure and knowledge-based assets, have become increasingly important for MNEs (Narula and Dunning, 2000).

## 2.1. Institutional framework

It is widely accepted that MNEs regard institutions as a crucial aspect of the locational advantages of host countries. For North (1990, p.3), institutions are „the humanly devised constraints that structure human interaction“, including formal institutions (law and regulation) and informal ones (convention). The legal and regulatory environment, as well as the informal institutions in the economy impact corporate strategies (Oliver, 1997; Peng, 2000) and thus they have a profound influence on businesses' operation and performance (Dacin *et al.*, 2002; North, 1990). Hence, a sound “investor friendly” institutional environment is often perceived as a necessary condition for FDI attraction, whereas poor institutional quality increases the costs of investment and thus discourages FDI.

Empirical studies on the location determinants of FDI in CEE countries strongly establish the importance of institutional quality. Altomonte (2000) uses panel data techniques to study the FDI determinants in 10 CEE countries during the period 1989-1996. The results show that the design of an efficient, transparent and enforceable legal and institutional framework in CEE countries is a crucial determinant of FDI. Bevan, Estrin and Meyer (2004) conduct regression analysis on data for 12 CEE countries in the period 1994-1998 and find that FDI is positively related to the quality of formal institutions. Using an econometric model based on cross-section data, Mateev (2009) explores traditional and transition-specific determinates of FDI in Central and South-Eastern Europe. He finds a negative relationship between corruption (one of the aspects of institutional stability) and FDI inflows. Fabry and Zeghni (2010) explore the relationship between inward FDI and the institutional arrangement in 7 countries in the South East of Europe. To establish the institutional profile of the countries, the authors use the global governance index, developed by the World Bank. They split governance into six measurable dimensions - voice and accountability, political stability and absence of violence/terrorism, government effectiveness, regulatory quality, rule of law, and control of corruption. Based on them, they construct an index of global governance, which is used to rank countries in terms of quality of institutions. The results reveal two institutional profiles: the first one includes Bulgaria, Romania and Croatia, where the institutional arrangement attracts FDI, whereas the second one, comprising the other SEE countries, is characterized by weaker institutions and needs improvement. The need to improve institutional quality in SEE countries is also emphasized in Bellak *et al.* (2010a). In a study of FDI determinants in 6 CEE countries, Tintin (2013) shows the positive and significant impact of institutions (measured by economic freedom, state fragility, political rights, and civil liberties indices) on FDI inflows. Dauti (2015) examines FDI determinants in

5 SEE and 10 CEE countries and concludes that institutional factors like control of corruption, regulatory quality, political risk and corruption perception index, significantly determine inward FDI stock.

## **2.2. Infrastructure endowment**

It is well established in the literature that the availability of developed infrastructure is necessary for the operations of MNEs because it lowers the costs of distribution, transportation and production, thereby affecting comparative and absolute advantage of the host country (Mateev and Tsekov, 2014). Infrastructure comprises transport, energy and Information and Communications Technology (ICT) infrastructure. As noted by Bellak *et al.* (2010a), the public sector is responsible for the provision of a substantial part of a country's infrastructure. Even when private agents supply the infrastructure, at least the decision making and the financing is largely within the public sector. Therefore, a significant part of the infrastructure endowment is under the influence of public policy.

In a study of the FDI determinants in 7 SEE countries, Botrić and Škuflić (2006) find that ICT infrastructure, defined as the number of telephone lines per 100 inhabitants or the number of Internet connections, has a positive influence on FDI stock. In a panel econometric analysis on 8 CEECs for the period 1995–2004, Bellak *et al.* (2009) find that telecommunication and transport infrastructure are of special significance to FDI. Bellak *et al.* (2010b) examine 4 CEE countries over a time span of ten years and find that a higher ICT-infrastructure endowment leads to an increase in FDI. In another study, Bellak *et al.* (2010a) explore the scope for public policy to attract FDI in 9 SEE countries and conclude that in order to attract FDI in high value added activities, these countries need to improve their infrastructure endowment. In a research on the spatial interrelationships in FDI in 8 CEE countries, Leibrecht and Riedl (2014) use as a control variable a proxy for a country's endowment with production-related material infrastructure, comprising telecommunication, electricity and transport production facilities. They find that a one-point change in the infrastructure index results in an increase in FDI flows by about 55%. In a more recent study on 10 CEE countries, Stack *et al.* (2017) also confirm that the development of a modern and efficient physical infrastructure is an essential policy instrument towards achieving potential FDI.

### **2.3. Labour force quality**

According to the literature there is a strong positive relationship between FDI and the level of educational attainment in the host economy. Better educated and skilled labour force yields higher returns, thereby attracting more MNEs.

In a study of FDI determinants in 7 Eastern European countries in the period 1993-1999, Carstensen and Toubal (2004) find that the education of the labour force in the host country, as measured by the fraction of skilled labour to total labour, has a strong positive impact on FDI inflows. Dauti (2015) explores the determinants of FDI in 5 SEE and 10 CEE countries and finds positive and significant effect of schooling, measured by tertiary school enrolment, on FDI stock. The result suggests efficiency seeking considerations of MNEs, which are likely to locate their investments in countries with well-educated labour force. Brahim and Dupuch (2016) compare FDI determinants in EU-15 and CEE countries over the period 1993-2010. Among other control variables, they use as a proxy for skilled labour the share of the active population with upper secondary or tertiary education attainment. The econometric analysis reveals a positive and significant impact of the education variable on FDI inflows. This highlights the importance of highly educated labour force in the FDI motivations of MNEs in addition to relatively lower unit labour costs. The importance of skilled labour for CEE countries is confirmed by Stack *et al.* (2017), who conclude that in the longer term, attracting top quality FDI requires policies that develop specialized human capital activities as a complement to an already well-educated and skilled workforce. Using a panel ARDL model, Su *et al.* (2018) find a significant long-run relationship between FDI and the labour force with advanced education in Poland, the Czech Republic and Slovakia.

### **2.4. Cost competitiveness**

The cost competitiveness of a country, in terms of lower corporate taxes and labour costs, is considered important by MNEs, especially those that have efficiency-seeking motives. The impact of corporate tax rates on FDI is rather straightforward and well established in the literature. Since the increase in tax rates applied to corporate profits lowers FDI returns, it is expected to discourage inward FDI. In a study of 8 CEE countries, Bellak *et al.* (2008) find that the reduction of corporate tax rates has a positive impact on FDI flows. Bellak *et al.* (2010b) also reveal that lower average effective tax on corporate profits is associated with higher FDI. Similar result can be found in Leibrecht and Riedl (2014). The panel data analysis of Mateev and Tsekov (2014) also confirms the importance of corporate taxes as a location determinant of FDI in CEE countries. In a study of the interaction effects

between taxes and infrastructure in 8 CEE countries, Bellak *et al.* (2009) show that in the short run low corporate income taxes can compensate to some extent MNEs for a lack of sufficiently developed infrastructure endowment. However, in the medium to the long run these countries should improve their infrastructure endowment in order to make FDI sustainable. In another study Bellak *et al.* (2010a) conclude that most SEE countries are already competitive in terms of taxation, which makes this policy instrument largely exhausted as a means to attract FDI and requires improvement in other areas such as institutional environment and infrastructure.

As taxes, labour costs partly reflect the extent to which the location decisions of MNEs are driven by efficiency considerations. Rising labour costs imply higher production costs and thus lower FDI. It has to be noted that although labour costs are usually determined by negotiations between employers and employees, the proxies used in the literature to measure labour costs most often include also non-wage labour costs (Bellak *et al.*, 2010b). This makes labour costs, along with the above-described location factors, a variable, which can be potentially influenced by public policy.

In a study of FDI determinants in 10 CEE countries during the period 1989-1996, Altomonte (2000) finds that FDI depends on the relative comparative advantage of CEE in terms of labour costs. Bevan and Estrin (2004) use a panel dataset for 11 CEE countries in the period 1994-2000 and find that unit labour costs are negatively associated with FDI, showing that foreign investors are cost sensitive. In another study on 12 CEE countries in the period 1994-1998, Bevan *et al.* (2004) conclude that FDI is significantly higher between countries where the relative unit labour cost advantages of relocation are greater. Carstensen and Toubal (2004) find that lower relative unit labour costs increase FDI inflows to CEE countries. Bellak *et al.* (2008) examine data on 8 CEE countries for the period 1995–2003 and find that higher unit labour costs as well as higher total labour costs affect FDI negatively. Mateev (2009) also finds a negative relationship between labour costs and FDI inflows to the countries in Central and Southeastern Europe. Günther and Kristalova (2016) examine FDI determinants in 14 CEE countries in the period 1994-2013 and show that countries which are more successful in attracting FDI have low labour costs. In a more recent study Stack *et al.* (2017) find that maintaining relatively low wage and taxation rates is crucial to attracting more FDI.

In addition to the econometric research, there are some studies, which examine FDI determinants by building composite measures of FDI attractiveness of CESEE countries. For example, Popovici and Călin (2012) compute a public policy index, which ranks 10 CEE



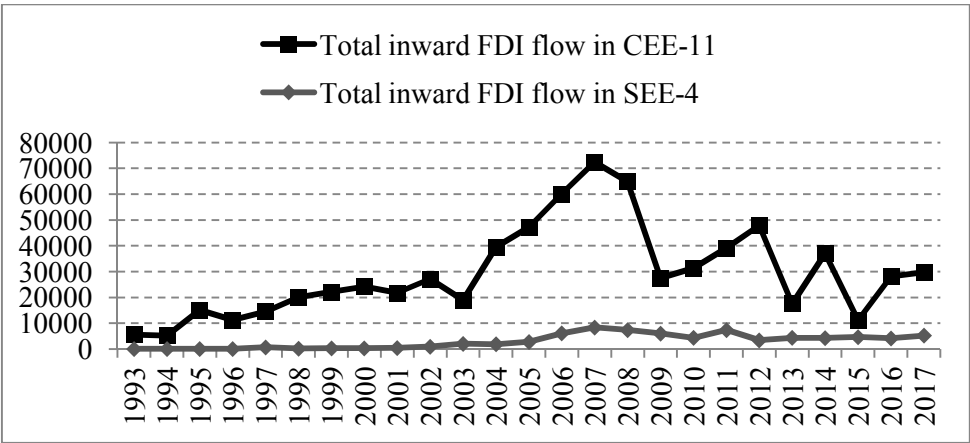
countries in terms of their FDI attractiveness designed by policy makers. The index comprises four sub-indices: infrastructure endowment, institutions' quality, labour market conditions and level of taxation. A similar approach is undertaken in a report, prepared for the European Commission by Copenhagen Economics (2016). It uses data on some of the main policy drivers for FDI and scores 44 non-EU and EU members in terms of their FDI attractiveness. The report selects 18 key indicators, which are used to calculate four sub-indices: political, regulatory and legal environment, infrastructure and market access, knowledge and innovation capacity, and cost competitiveness. However, as the study of Popovici and Călin (2012), the report doesn't include the non-EU member states from SEE. Groh and Wich (2012) also build a composite measure of FDI attractiveness, but they use a sample of 127 countries, i.e. they do not focus exclusively on CESEE countries. Moreover, they include a wider range of socioeconomic determinants of FDI and not just those that are under the influence of public policy.

Based on the literature review, it can be concluded that while most studies undertake regression analysis to explore FDI determinants in the CESEE region and focus predominantly on CEE countries, fewer studies use composite indices to rank countries in terms of their FDI attractiveness. Moreover, these studies do not focus exclusively on the countries from CESEE, as the present paper aims to do.

### **3. FDI PATTERNS IN CESEE COUNTRIES**

The collapse of socialism and the start of liberalization in transition economies offered ample opportunities to foreign investors. FDI inflow to CEE countries accelerated in the second half of the 1990s, reaching US\$ 24,2 billion in 2000. In the first decade of market transition Hungary, Poland and the Czech Republic were the leaders in FDI inflow attraction due to their good reform performance. In terms of FDI inflow per capita in this period Estonia was third (after Hungary and the Czech Republic) and followed by Slovakia. This was due to the early adopted liberal course in the economic policy of Estonia. In 2003 there was a drop in FDI inflow in CEE, which was largely due to the end of the privatization in the Czech Republic and Slovakia. Between 2003 and the onset of the global economic crisis in 2007-2008, FDI inflow in CEE experienced a steep increase, reaching US\$ 72,3 billion. During this period Bulgaria and Romania emerged as significant destinations for FDI. The global economic crisis led to a reduction in FDI inflow, which affected severely all CEE countries and FDI inflow to the region still hasn't reached its pre-crisis level.

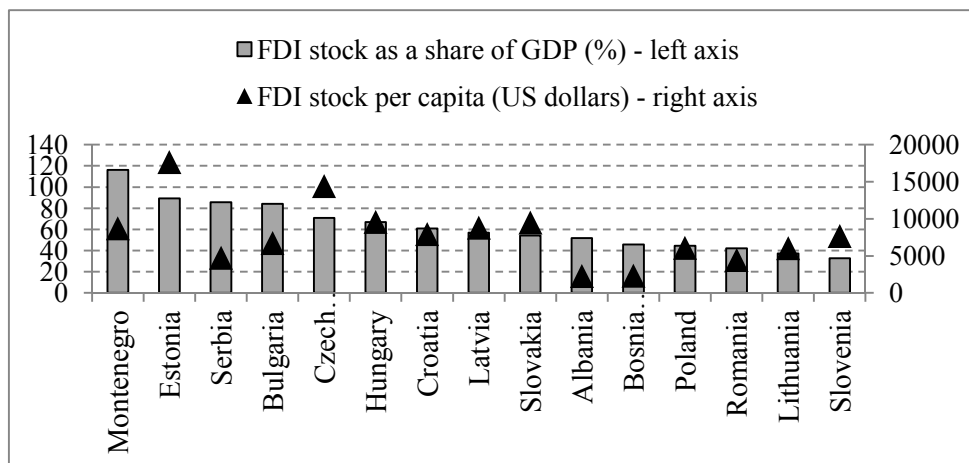
Compared to CEE, foreign investors arrived later to most Western Balkan countries in South-Eastern Europe, including Albania, Bosnia and Herzegovina, Montenegro and Serbia (referred to as SEE-4). As seen in Figure 1, the inward FDI flow to SEE-4 until 2002 was negligible and amounted to an annual average of just US\$ 363 million. This could be attributed to a combination of factors – political and economic instability, military conflicts, ethnic struggle, delay in transition, as well as the smaller size and the greater distance of these economies from Western Europe. There has been a significant increase in FDI inflow to SEE-4 after 2003 and in 2007, before the outbreak of the global economic crisis, it reached US\$ 8.4 billion. This reflects the efforts of these countries to attract foreign investors’ interest.



Source: author’s calculation based on data from UNCTAD

**Figure 1 - Total inward FDI flow in CESEE countries (millions of US dollars)**

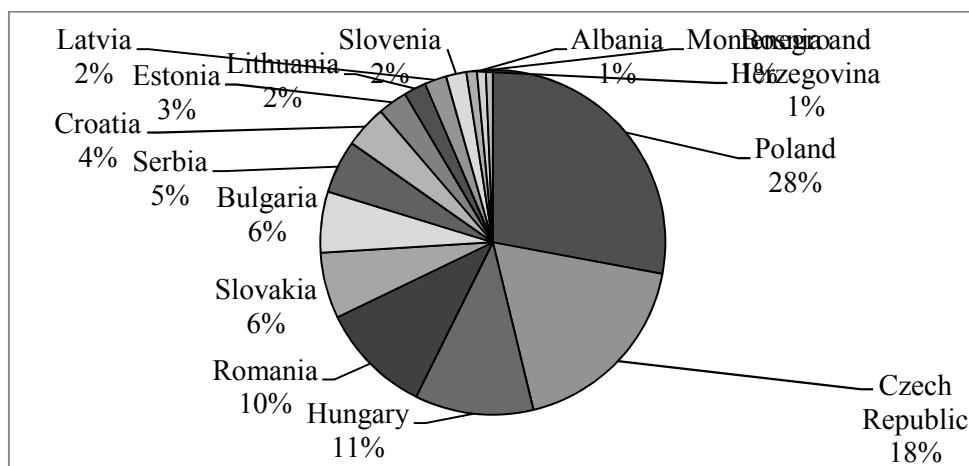
The accumulated inward FDI stock as a share of GDP is substantial in many of the CESEE countries, which reflects significant foreign capital penetration. As Figure 2 shows, in 2017 it is the highest in Montenegro (116 %), Estonia (89 %), Serbia (86 %) and Bulgaria (84 %). For the Balkan countries the high value of this indicator also reflects the smaller size of their economies. In terms of inward FDI stock per capita, Estonia ranks first, followed by the Czech Republic, whereas Bosnia and Herzegovina and Albania occupy the last two places.



Source: UNCTAD

**Figure 2 - Inward FDI stock as a share of GDP and inward FDI stock per capita in CESEE countries, 2017**

A specific feature of inward FDI stock in the CESEE region is its very uneven distribution between the host countries. As seen in Figure 3, in 2017 Poland, the Czech Republic, Hungary and Romania had the highest shares and together accounted for 68 % of total inward FDI stock in the CESEE region. On the contrary, the shares of Bosnia and Herzegovina, Albania and Montenegro were around 1 % each.



Source: author's calculation based on data from UNCTAD

**Figure 3 - Distribution of inward FDI stock in the CESEE region, 2017**

Inward FDI has played an important role in supplementing domestic savings in the transition economies and thus has significantly contributed to the capital formation in the CESEE region. Over the period 2008-2016 the average share of FDI inflows in gross fixed

capital formation has been the highest in Montenegro (70 %), Albania (30 %) and Serbia (30 %). In contrast, the average share of FDI inflows in gross fixed capital formation in CEE-11 was 12 % over the same period. The more important role of FDI in the Balkan countries, compared to CEE could be attributed to their low domestic savings and investment rates. Among the new EU members, FDI contribution to gross fixed capital formation was particularly high in Bulgaria and Estonia (21 % and 20 % respectively).

Based on the briefly described FDI patterns in the CESEE region, it could be concluded that there is substantial variation in the host economies' FDI attractiveness. Given the key role of FDI for economic development, it is important to examine those CESEE host countries' characteristics, which serve as location determinants of FDI and are in the same under the potential influence of public policy.

#### **4. DATA AND METHODOLOGY**

To analyse the FDI attractiveness of CESEE economies, the study composes FDI attractiveness index, using data on 15 countries: 11 EU members (Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia) and 4 candidate and potential candidate countries (Albania, Montenegro, Serbia, and Bosnia and Herzegovina). To allow for comparison over time, the composite index is calculated for two years – 2013 and 2017.

Composite indicators are used to summarize a number of underlying indicators. Since they measure multi-dimensional concepts, composite indicators are easier to interpret than trying to find a trend in many separate indicators. They are used to rank countries in terms of performance and assess their progress on complex issues over time. Therefore, composite indicators are increasingly recognised as a useful tool in policy analysis (Nardo *et al.*, 2005).

The FDI attractiveness index in this study is constructed around four sub-indices. They reflect aspects of host countries' investment climate, which have been outlined in the literature as important location advantages and are in the same time under the influence of public policy. The four sub-indices are institutional framework, infrastructure endowment, labour force quality and cost competitiveness. To proxy institutional framework, four commonly used variables are selected – investment freedom, business freedom, property rights and corruption perception index. Infrastructure endowment is measured by three indices from the Global Competitiveness Report – transport infrastructure, electricity and telephony infrastructure and ICT use. To account for labour force quality, the following variables are used: tertiary education enrolment rate, quality of the education system, quality of scientific

research institutions and university-industry collaboration in R&D. Finally, the cost competitiveness sub-index is composed by taking into account corporate income tax, labour tax and contributions, and gross average monthly wages. Variables' description and data sources are given in Table 1. Some of the variables, used to calculate the four sub-indices represent raw data, while others are ready-made indices. The selection of variables is based on data availability for the chosen country sample and time span, as well as on their ability to measure the analysed location determinants of FDI.

**Table 1 - List of variables, sub-indices and data sources**

<b>Variable</b>	<b>Description</b>	<b>Source</b>
<b>Sub-index 1. Institutional framework</b>		
Investment freedom	Index ranging from 0 (no investment freedom) to 100 (total investment freedom). It evaluates a variety of restrictions typically imposed on investment, including: national treatment of foreign investment, foreign investment code, restrictions on land ownership, sectoral investment restrictions, expropriation of investments without fair compensation, foreign exchange controls and capital controls.	Heritage Foundation, Index of Economic Freedom
Business freedom	Index ranging from 0 (no business freedom) to 100 (total business freedom). It is a quantitative measure of the ability to start, operate, and close a business that represents the overall burden of regulation as well as the efficiency of government in the regulatory process.	Heritage Foundation, Index of Economic Freedom
Property rights	Index ranging from 0 (lowest property rights protection) to 100 (highest property rights protection). It is an assessment of the ability of individuals to accumulate private property, secured by clear laws that are fully enforced by the state.	Heritage Foundation, Index of Economic Freedom
Corruption Perceptions Index	Index ranging from 0 (highly corrupt) to 100 (very clean). It ranks countries and territories by their perceived levels of public sector corruption according to experts and businesspeople.	Transparency International
<b>Sub-index 2. Infrastructure endowment</b>		
Transport Infrastructure	Index measuring the quality of overall infrastructure, roads, railroad infrastructure, port infrastructure, air transport infrastructure and available airline seat km/week, millions. It ranges from 1 (extremely poor) to 7 (extremely good).	The Global Competitiveness Report, World Economic Forum
Electricity and telephony infrastructure	Index measuring the quality of electricity supply, the number of fixed-telephone lines per 100 population and the number of mobile telephone subscriptions per 100 population. It ranges from 1 (extremely unreliable) to 7 (extremely reliable).	The Global Competitiveness Report, World Economic Forum
ICT use	Index comprising the following: Internet users (%), fixed broadband Internet subscriptions per 100 population, international Internet bandwidth (kb/s) per user, mobile broadband subscriptions per 100 population. It ranges from 1 (lowest) to 7 (highest).	The Global Competitiveness Report, World Economic Forum

<b>Sub-index 3. Labour force quality</b>		
Tertiary education enrolment rate	The ratio of total tertiary enrolment, regardless of age, to the population of the age group that officially corresponds to the tertiary education level.	The Global Competitiveness Report, World Economic Forum
Quality of the education system	Index measuring how well the education system meets the needs of a competitive economy. It ranges from 1 (not well at all) to 7 (extremely well).	The Global Competitiveness Report, World Economic Forum
Quality of scientific research institutions	Index assessing the quality of scientific research institutions. It ranges from 1 (extremely poor) to 7 (extremely good).	The Global Competitiveness Report, World Economic Forum
University-industry collaboration in R&D	Index measuring the extent to which businesses and universities collaborate on R&D. It ranges from 1 (do not collaborate at all) to 7 (collaborate extensively).	The Global Competitiveness Report, World Economic Forum
<b>Sub-index 4. Cost competitiveness</b>		
Corporate income tax	Direct tax that applies to profits generated from conducting a business.	Eurostat for EU members, Doing Business reports for non-EU members
Labour tax and contributions	The amount of taxes and mandatory contributions on labour paid by the business, measured as percent of commercial profits.	World Development Indicators
Gross average monthly wages	Total wages and salaries in cash and in kind, before any tax deduction and before social security contributions (expressed in US dollars).	United Nations Economic Commission for Europe

Since the variables used to construct the FDI attractiveness index are scaled differently, it is necessary to normalise all data points to a common scale before aggregating them. Rescaling is one of the most commonly used methods for data normalisation because of its desirable characteristics when the data are aggregated (Ebert and Welsch, 2004). In particular, rescaling can widen the range of variables lying within small intervals and facilitate interpretation. Each variable is normalised by subtracting the minimum value of the variable for all countries from the observed value of the variable for an individual country, divided by the difference between maximum and minimum value of this variable for all countries. Thus rescaling transforms variables into an identical range (0; 1). The closer the value is to 1, the better the country performance in terms of this variable.

Another necessary step in composing the FDI attractiveness index is consistency analysis. One of the most common estimates of the internal consistency in a set of sub-indicators is Cronbach's alpha (Nardo *et al.*, 2005). It measures how well sub-indicators describe a unidimensional construct. Cronbach's alpha is zero if no correlation exists and the

sub-indicators are independent. If the underlying items are perfectly correlated, it is equal to one. Therefore, a high Cronbach's alpha is an indication that the underlying items assess the desired indicator well. According to Hair *et al.* (2010) values of 0.60 to 0.70 are considered the lower limit of acceptability. As seen in Table 2, Cronbach's alphas for all sub-indices are above the acceptable threshold, which suggests that the chosen variables for each sub-index describe that index well.

**Table 2 - Consistency analysis**

Sub-index	Cronbach's alpha	
	2013	2017
Institutional framework	0,77	0,86
Infrastructure endowment	0,81	0,89
Labour force quality	0,75	0,82
Cost competitiveness	0,71	0,66

In the next step, data are aggregated to calculate the four sub-indices and the composite FDI index. As noted by Nardo *et al.* (2005), most composite indicators rely on equal weighting, i.e. all variables are given the same weight. Hence, the four sub-indices are calculated by taking the averages of the respective variables, using equal weights. Then, the composite FDI attractiveness index is calculated as a weighted average of the four sub-indices, again using equal weights.

In a final step, to test the explanatory power of the FDI attractiveness index, we calculate the correlation between this index and inward FDI stock per capita. A positive and significant correlation between them would suggest good quality of the FDI index, since higher FDI attractiveness of a host country is expected to be associated with larger FDI stock per capita.

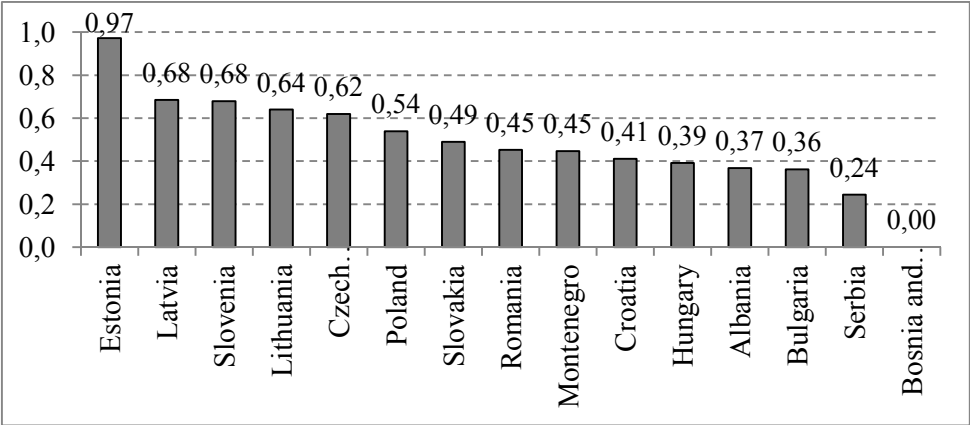
## **5. RESULTS**

Based on the approach described above, the four sub-indices of the FDI attractiveness index are calculated. The results from countries' performance on each sub-index are described separately. After that, countries' ranking in terms of the FDI attractiveness index is presented.

### **5.1. Institutional framework**

According to the results Estonia is the best performing country in terms of institutional framework in both 2013 and 2017. This is due to its highest levels of investment freedom and property rights protection, as well as its low corruption level. Moreover, as seen in Figure 4,

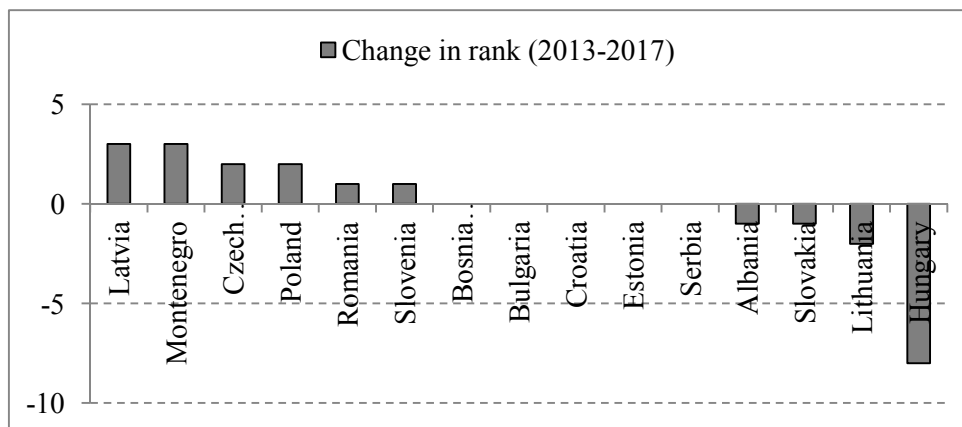
the score of Estonia on the institutional framework sub-index is significantly higher (0,97 in 2017) than the scores of the next countries in the ranking (Latvia – 0,68; Slovenia – 0,68 and Lithuania – 0,64). The country with the least favourable institutional framework in both 2013 and 2017 is Bosnia and Herzegovina. This is due to acute problems such as weak property rights protection, widespread corruption and burdensome entrepreneurial environment. Another SEE country – Serbia, has the second lowest score (0,24) on this indicator, which reflects the need for deep institutional reforms to tackle bureaucracy, reduce corruption and improve property rights protection.



**Figure 4 – Sub-index „Institutional framework“, 2017**

The two countries, which have moved up the most in terms of institutional environment (both with 3 places) between 2013 and 2017, are Latvia and Montenegro (Figure 5). In the case of Latvia, this was due to improvements in business freedom, property rights protection and corruption perception. Montenegro increased its position in the ranking due to a more favourable regulatory environment for doing business and making investments. On the contrary, the country that has moved down the most in the ranking is Hungary (from 3<sup>rd</sup> place in 2013 to 11<sup>th</sup> place in 2017). This was due to worsening of the country’s own performance in areas such as business freedom, property rights protection and corruption, as well as relative to other countries.

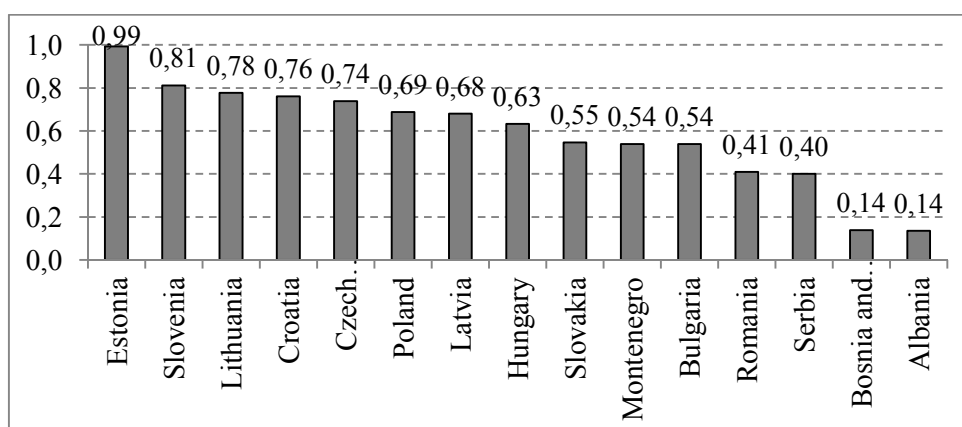




**Figure 5 - Changes in the institutional framework, 2013 to 2017**

## 5.2. Infrastructure endowment

As seen in Figure 6, the country with the highest score on overall infrastructure endowment in 2017 is Estonia (0,99). It ranks first in terms of ICT and transport infrastructure and second (after Slovenia) with regard to electricity and telephony infrastructure. The next country in the ranking is Slovenia (0,81), closely followed by Lithuania (0,78), Croatia (0,76) and the Czech Republic (0,74). The countries with the lowest scores on infrastructure endowment both in 2013 and 2017 are Bosnia and Herzegovina and Albania. Moreover, there is a significant gap in terms of the quality of infrastructure between these two countries and the average for the CESEE region. The deficiencies in infrastructure are indeed considered to be among the key problematic factors for business in both economies according to recent IMF country reports.



**Figure 6 – Sub-index „Infrastructure endowment“, 2017**

With regard to the changes in countries' relative performance on infrastructure endowment over time, Poland has moved up the most in the ranking - from 9<sup>th</sup> place in 2013 to 6<sup>th</sup> place in 2017 (Figure 7). On the contrary, Bulgaria has fallen the most in the ranking (from 8<sup>th</sup> to 11<sup>th</sup> place). However, this was due only to worsening of Bulgaria's performance relative to other countries and not to deterioration of the quality of infrastructure of the country itself.

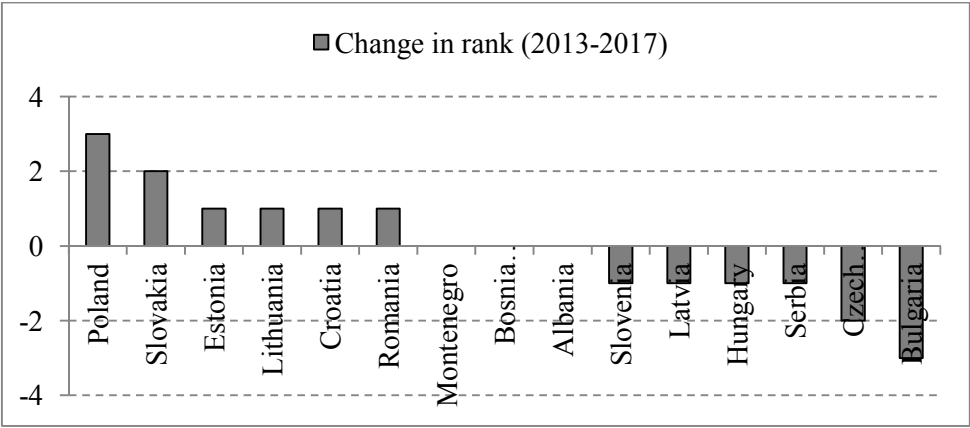


Figure 7 -Changes in the infrastructure endowment, 2013 to 2017

**5.3. Labour force quality**

As with the previous two indicators, Estonia is the best performing country in terms of labour force quality in 2017, with a score of 0,87 (Figure 8). It ranks first in quality of the education system and quality of scientific research institutions, second in university-industry collaboration in R&D (after Lithuania) and third in tertiary education enrolment (after Slovenia and Bulgaria). In the ranking of labour force quality, Estonia is followed by Slovenia (0,84), the Czech Republic (0,71) and Lithuania (0,70).

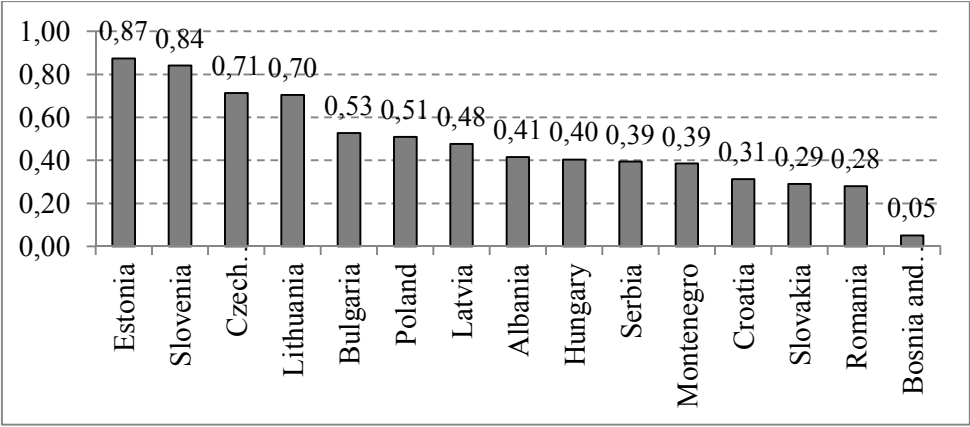
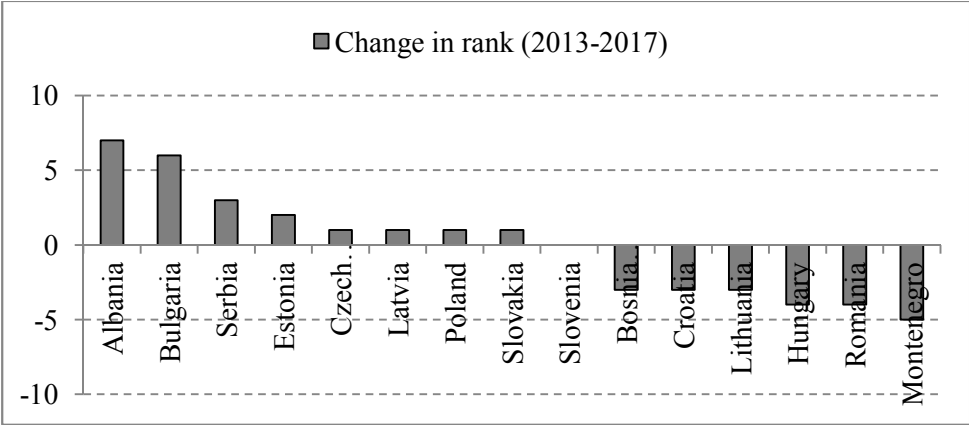


Figure 8 – Sub-index „Labour force quality“

The worst performing country in terms of labour force quality in 2017 is Bosnia and Herzegovina, with a score of just 0,05. Moreover, as shown in Figure 9, the country experienced a fall in its position in the ranking with 3 places between 2013 and 2017. The country, which moved down the most in the ranking (with 5 places), is Montenegro. This is due to worsening of the country’s performance itself, as well as relative to other countries in terms of quality of the education system and the scientific research institutions, as well as the collaboration in R&D between universities and industry.

The country which has risen the most in terms of labour force quality is Albania (from 15<sup>th</sup> place in 2013 to 8<sup>th</sup> place in 2017). This is a result of improvements in tertiary education enrolment, the quality of the education system and especially the university-industry collaboration in R&D. The country with the second highest increase in the ranking is Bulgaria, which has moved up 6 places due to a significant rise in tertiary education enrolment, strengthening of the collaboration in R&D between universities and industry, as well as improvement in the quality of scientific research institutions. However, it is worth noting that while the relative quality of the education system in Bulgaria hasn’t changed, the performance of the country itself has slightly worsened. Improving the quality of education and mitigating the substantial skill mismatches are indeed some of the biggest challenges for Bulgaria’s public policy.

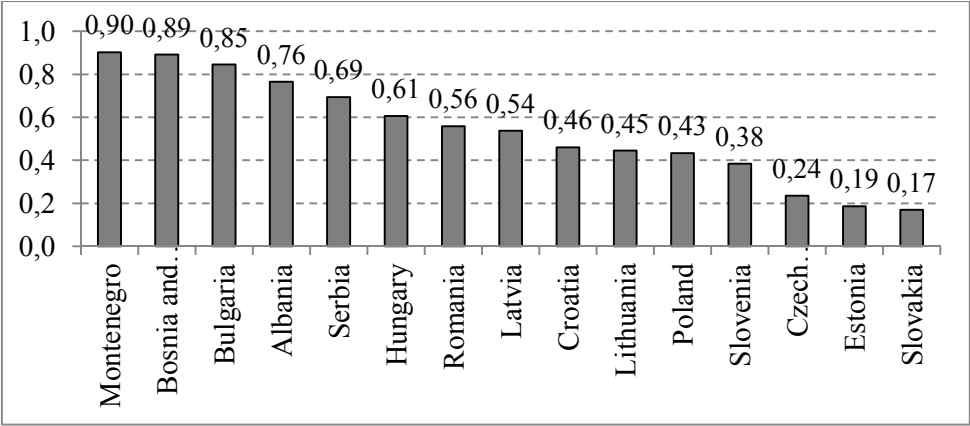


**Figure 9 - Changes in the labour force quality, 2013 to 2017**

**5.4. Cost competitiveness**

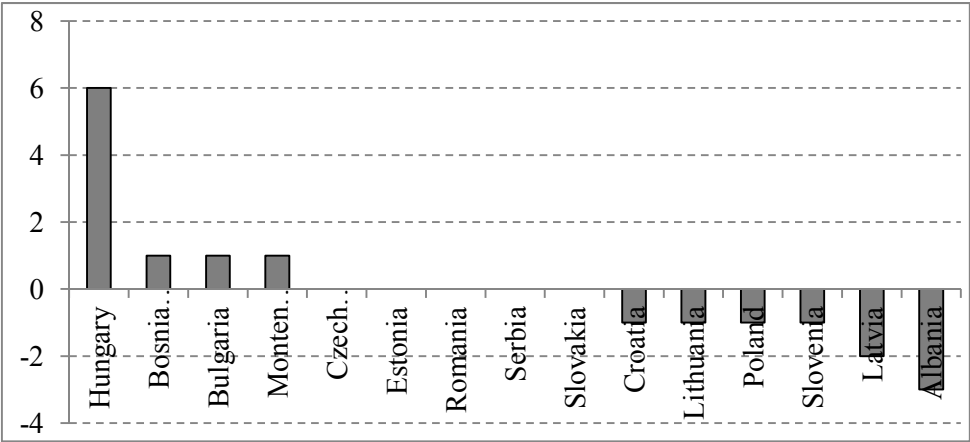
With regard to cost competitiveness SEE countries perform better than CEE and the Baltics. This is due to the combination of relatively lower corporate taxes and labour tax and contributions, as well as greater wage competitiveness of the SEE economies. As shown in Figure 10, Montenegro receives the highest score in 2017 (0,90), closely followed by Bosnia

and Herzegovina (0,89) and Bulgaria (0,85). The worst performer in terms of cost competitiveness is Slovakia (0,17), followed by Estonia (0,19) and the Czech Republic (0,24). This can be explained by the relatively higher levels of corporate taxes, labour tax and contributions, and wages in these countries.



**Figure 10 – Sub-index „Cost competitiveness“, 2017**

The country with the highest improvement in its position in the ranking of cost competitiveness is Hungary, which moved up 6 places from 2013 to 2017 (Figure 11). This is largely due to the reduction of the corporate tax rate from 19 % to 9 % in 2017, which makes Hungary the country with the lowest corporate tax rate in the CESEE region (along with Montenegro, where corporate tax rate is also 9 %). The country that has fallen the most in terms of cost competitiveness is Albania. It moved from the 1<sup>st</sup> place in 2013 to the 4<sup>th</sup> place in 2017, which is due to an increase in the corporate tax rate from 10 % to 15 % in 2014.



**Figure 11 - Changes in cost competitiveness, 2013 to 2017**

### 5.5. Composite FDI attractiveness index

The results from the calculation of the FDI attractiveness index show that Estonia is the most attractive country in the CESEE region with a score of 0,76 in 2017 (Figure 12). As shown in the previous paragraphs, Estonia's top performance is due to its highest scores in areas such as institutional framework, infrastructure endowment and labour force quality. Next in the ranking are Slovenia and Lithuania, with scores of 0,68 and 0,64 respectively.

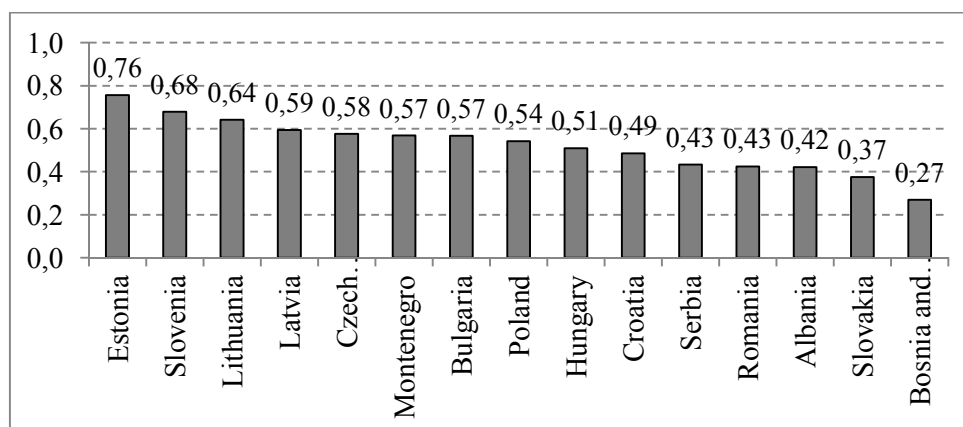
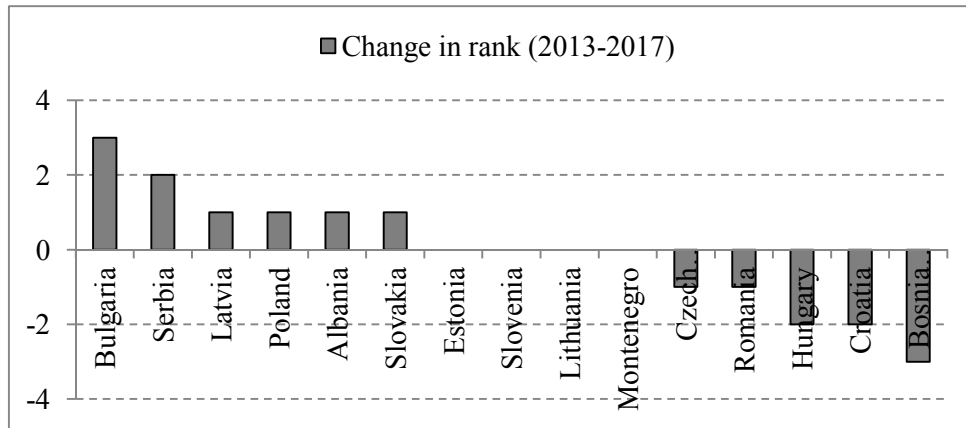


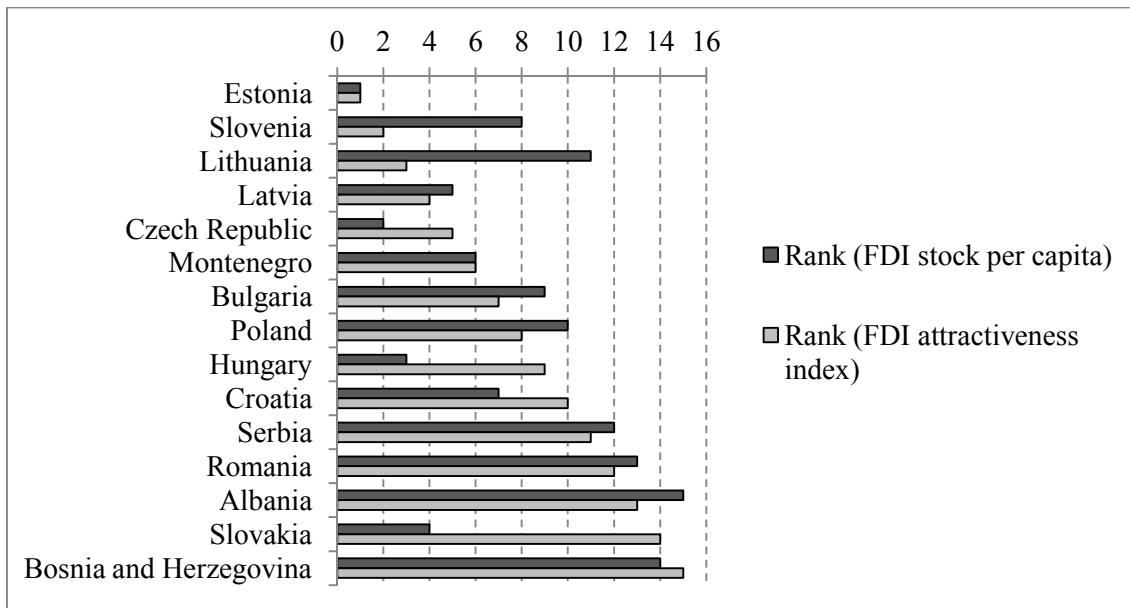
Figure 12 – Composite FDI attractiveness index, 2017

The country with the lowest FDI attractiveness index (0,27 in 2017) is Bosnia and Herzegovina. Its weak performance in the ranking is explained by the pronounced deficiencies in terms of quality of institutions, infrastructure and labour force, which outweigh the country's high cost competitiveness. Moreover, as seen in Figure 13, Bosnia and Herzegovina has moved down the most in ranking between – from 12<sup>th</sup> place in 2013 to 15<sup>th</sup> place in 2017. This is due to the deterioration of the country's performance in all areas except cost competitiveness. The country with the highest improvement in its position in the ranking of FDI attractiveness is Bulgaria, which has moved up 3 places from 2013 to 2017. This is due to a significant increase in the sub-index measuring labour force quality, as well as to a slight improvement in the country's relative cost competitiveness. In the same time Bulgaria experienced worsening of its relative position in terms of infrastructure endowment, as well as lack of progress in its relative institutional quality.



**Figure 13 - Changes in FDI attractiveness of CESEE countries, 2013 to 2017**

To examine the explanatory power of the FDI index, a comparison is made between the rankings of countries in terms of the FDI index and inward FDI stock per capita in 2017. As Figure 14 shows, Estonia is the leader in terms of both the FDI attractiveness index and inward FDI stock per capita. The two rankings correspond also for Montenegro. For other nine countries there are differences of up to 3 places.



**Figure 14 - Rankings according to FDI attractiveness index and inward FDI stock per capita**

However, there are four countries with more pronounced mismatches between the two rankings, namely – Slovenia, Lithuania, Hungary and Slovakia. This suggests that there could be other important determinants of FDI, not captured in the index, such as location,

macroeconomic fundamentals, political stability or the provision of financial incentives to foreign investors. This could be the case for Slovakia and Hungary, which are geographically closer to Western Europe, have GDP per capita above the CESEE average and have treated FDI (especially Hungary) as a key element in their market transition. This could explain their higher position in the ranking according to the accumulated FDI stock per capita. On the contrary, Slovenia's policy towards FDI has been relatively passive, even aversive, during the first decade of market transition, which could be reflected in the lower level of foreign capital penetration despite the country's high level of investment attractiveness.

To further test the explanatory properties of the FDI attractiveness index, the correlation between this index and the log value of inward FDI stock per capita is calculated.

**Table 3 - Correlation between FDI attractiveness index and FDI stock per capita**

<b>Index</b>	<b>Correlation coefficient</b>	<b>p-value</b>
FDI attractiveness index (2013)	0,55	0,03
FDI attractiveness index (2017)	0,69	0,00

As seen in Table 3, the correlation coefficients for both 2013 and 2017 are positive and significant. This suggests that greater FDI attractiveness, measured in terms of the composite FDI index, is associated with larger FDI stock per capita in the host country. Hence, it can be argued that public policy, which shapes the quality of institutions, infrastructure, labour force skills and cost competitiveness of a host country, plays an important role in FDI attraction.

## **6. CONCLUSION**

The paper explored FDI attractiveness of 15 CESEE countries by constructing a composite FDI index for 2013 and 2017. It allows the comparison of countries' performance on four key dimensions – institutional framework, infrastructure endowment, labour force quality and cost competitiveness. The latter have been outlined in previous studies as crucial aspects of a host country's investment climate and are also under the influence of public policy.

Based on the results from the calculation of the FDI attractiveness index, the following conclusions can be drawn. First, Estonia is the best performing country in terms of quality of institutions, infrastructure and labour force, which makes the country the most attractive FDI destination according to the composite FDI index in both 2013 and 2017. Moreover, the

comparison with the ranking in terms of the accumulated FDI revealed that Estonia has indeed attracted the largest FDI stock per capita. Second, Bosnia and Herzegovina is the worst performing country in all aspects of FDI attractiveness except for cost competitiveness, which makes the country occupy the last position according to the composite FDI index in 2017. Overall, SEE countries have higher scores on cost competitiveness than CEE economies, but this cannot compensate the deficiencies in important areas such as institutional framework (in Bosnia and Herzegovina and Serbia), infrastructure (in Albania and Bosnia and Herzegovina) and labour force quality (Bosnia and Herzegovina). Because of the latter, the SEE countries (with the exception of Montenegro) have lower scores on the FDI attractiveness index than most CEE countries and have also received smaller amounts of FDI stock per capita.

The results from the analysis lead to some important policy implications. Since public policy can strongly shape FDI attractiveness of a host country, there is a need and room for improvement of the institutional framework, the infrastructure and the labour force quality in many countries in the CESEE region - most SEE countries, as well as some of the new EU members such as Bulgaria and Romania. This would create favourable conditions not only for FDI attraction, but also for economic growth.

The analysis has faced several limitations with regard to data availability. First, due to lack of data for all variables for North Macedonia, it was not included among the SEE countries. Second, financial incentives provided to foreign investors, as well as activities of investment promotion agencies can strongly impact FDI attractiveness, but due to lack of data, they are not captured by the FDI index. Third, some of the variables used to calculate the FDI index are ready-made indices (for example those from the Global Competitiveness report), which have been computed based on survey data. Although there might be possible bias in this type of data, due to lack of other appropriate measures, the analysis has used such indices to account for some of the dimensions of the FDI index. Given the importance of FDI for the development of CESEE economies, future research might utilize data with better quality and country coverage and explore the determinants of FDI in this region.



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