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Article

Investments attractiveness: The case of the Visegrad Group countries

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Investment Attractiveness. The Case Of The Visegrad Group Countries¹

Abstract

In the article, we attempt to assess the investment attractiveness of the New EU Member States, using the Visegrad Group countries as examples. This study is structured as follows: First, it explores the existing literature on factors of investment attractiveness. Further we examine inward foreign direct investment flows in the Visegrad Group countries against the global performance in the area from 1990 to 2013. Next we discuss the investment attractiveness of New Member States of the European Union in selected international rankings, paying special attention to the positions occupied by the four analysed countries. The final part examines the correlation between selected variables characteristic of investment attractiveness and the inflow of foreign investment. The study is based on statistical methods (Spearman's rank correlation and Pearson correlation). At the end we present our conclusions.

Keywords: Visegrad Group, Investment Attractiveness, FDI

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1. Introduction

In modern economies capital is becoming getting more and more flexible and mobile, and foreign direct investment (FDI) is considered the safest and the most beneficial form of capital flow. Looking from the host country perspective, it generates multiple positive effects, including technology transfer and the creation of new jobs. Therefore, the policy pursued by the host State should develop a permanent mechanism for attracting foreign capital (Estrin, Milica 2013, Turan, Sotrios 2013).

The ‘new’ EU Member States have been attracting FDI for more than two decades. Integration with the European Union structures accelerated the dynamic development of the region and facilitated an increase in investment resources for economic and social projects, which additionally enhanced the attractiveness of FDI. We can observe this especially clearly in the countries of the Visegrad Group (V4 – the Czech Republic, Hungary, Poland, and Slovakia), which comprises an interesting collection of small open economies, all of which simultaneously embarked on systemic transformation. They offer investors a relatively good location and human resources at relatively low operational costs, and by investing in infrastructure have become attractive investment locations. Their overall security situation, related to the membership in international organizations and being a part of the European single market, is an additional asset. Investors can meet their specific expectations in the V4 countries and may benefit from all sorts of allowances and preferences and boost business development.

According to the OECD definition, *foreign direct investment* “reflects the objective of establishing a lasting interest by a resident enterprise in one economy (*direct investor*) in an enterprise (*direct investment enterprise*) that is resident in an economy other than that of the direct investor.” (OECD 2008, p. 48). FDI also covers subsequent capital flows between a parent company and the direct investment enterprise, such as reinvesting profits, net purchases of shares in the company and/or debt instruments by the direct investor, and internal borrowings from the direct investor. The usual threshold that allows a particular investment to be classified as FDI is ownership by the foreign investor of at least 10% of stock or shares of the direct investment enterprise.

Foreign direct investments are claimed to be key drivers of trade, financial stability, promotion of economic development, technological modernisation of the economy, increased well-being of societies, and international economic integration (OECD 2002). On top of that, they mobilise economic activity in less developed regions and improve economic efficiency (e.g., reduce unemployment as foreign investors create new jobs). These positive effects make countries compete for FDIs by offering favourable local conditions and investment

incentives. This is especially visible in developing countries, emerging economies, and countries in transition. The exacerbated competition for capital poses the question about the factors decisive for the selection of a particular investment location, in other words, about the determinants of the investment attractiveness of a given country.

It is clear that areas attractive to investors are those which help reduce investment outlays and operating expenses, which facilitate profit maximisation and limit the potential risk of failure. This means that some regions offer advantages (connected e.g., with the size of the market, developed infrastructure, human capital, etc.) and better conditions for investment than others. The combination of location-related benefits and the specific characteristics of a particular area can be referred to as the investment attractiveness of a country or region. It is assessed by entrepreneurs using various criteria. Knowing the stimulants followed by investors enables a country or region to create a friendly investment climate conducive to attracting FDI.

The literature on the investment climate identifies areas of policy intervention using two approaches. The literature tries to (IEG, World Bank 2013, pp. 2–3):

- consider managers' perceptions (e.g. Hallward-Driemeier, Aterido 2009, Carlin et al. 2010, Clarke, Dinh 2012). Under this approach, themes identified as investment climate topics include: macro stability, infrastructure, access to finance, tax rates and administration, informality, corruption, business regulation, labour regulations, trade regulations, crime, skills, and training;
- relate measures of investment climate constraints to firm performance. This type of studies, rather than relying on manager's perceptions, allows the data to determine the most important issues concerning investment climate for policy intervention (e.g. Fisman, Svensson 2007, Clarke et al. 2012, Dinh et al. 2012, Harrison et al. 2013). Authors most often identify investment climate topics such as infrastructure, corruption, access to finance, trade regulations, regulations and licensing, labour regulations, labour skills, property rights, corruption, crime, and taxes.

Taking the above into account, we may assume that the 'investment climate' covers the entirety of actions of the FDI host country which encourage potential investors to make an investment, or discourage them from doing so. Investment climate should not, however, be understood and used as a tool solely in the context of attracting new investors. It should also be associated with retaining them and cumulating positive experience during the entire period of running a business. Hence, actions aimed at the improving the investment climate need to be perceived in the long-term perspective rather than as a single event. According to Dunning (2005), it is vital for a country to take care to provide an appropriate and sound institutional environment and a developed

economic infrastructure, and to assure the quality of production resources and factors (e.g., education, transfer of knowledge). Only then will it be able to effectively face competition and attract investors into the country.

No doubt the legal and institutional premises are crucial to foreign investors. The most relevant are (Kłysik-Uryszek 2011, p. 20–21):

1. economic, political and social stability, security, and predictability of legal and administrative regulations;
2. tax policy, State aid, including investment incentives and allowances;
3. regulations concerning market entry, operations, and protection of competition;
4. the efficiency of state administration and institutions involved in the business climate.

Numerous theories have sought since the 1960s to explain the determinants of FDI inflow. Some of them were based on microeconomic factors, such as organizational aspects, cost reduction, and economies of scale. Others related to macroeconomics, e.g., availability and allocation of resources, barriers to entry, political stability, market size, etc.. However, the most comprehensive approach was proposed by Dunning. He divided the motives behind making investments into four groups: *market seeking*, *resource seeking*, *efficiency seeking*, *strategic asset seeking* (Dunning 2000). In later studies (Dunning 2003, 2004, 2006) he also stressed the importance of the political framework and business environment, i.e., institutions. We should also mention that the majority of determinants identified by Dunning usually refer to all countries or regions, although some of them, e.g., privatisation policy, are more relevant for developing countries or economies in transition.

At present, empirical studies differ in the focus of their analysis. Some of them concentrate on macroeconomic factors (e.g. GDP, inflation, price level) while others emphasize institutional (e.g. law enforcement) or location variables (e.g. human capital endowment, and the proximity of core outlet markets). Researchers dealing with the subject conclude that the most relevant determinants of FDI inflow into a host country usually refer to:

1. market size (e.g., Mottaleb 2007, Anyanwu 2012) and its growth rate (e.g., Mottaleb 2007, Busse, Hefeker 2007);
2. cost of labour (e.g., Carstensen, Toubal 2004, Janicki, Wunnava 2004, Bellak, Leibrecht and Riedl 2008) and labour quality (e.g., Nunnenkamp 2002, Carstensen, Toubal 2004);
3. taxes (e.g., Clausing, Dorobantu 2005, Bellak, Leibrecht 2007), special industrial parks (Guagliano, Riela 2005) and other investment incentives (Nene, Pasholli 2011, Owczarczuk 2013);
4. infrastructure (e.g., Zhang 2001, Botric, Skuflic 2006, Mengistu, Adams 2007);

5. openness to trade (e.g., Erdal, Tatoglu 2002, Bhavan, Xu and Zhong 2011, Anyanwu 2012);
6. political risk (e.g., Busse, Hafeker 2007, Krifa-Schneider, Matei 2010, Asongu, Kodila-Tedika 2015);
7. quality of the institutional system (e.g., Bénassy-Quéré, Coupet and Mayer 2007, Kostevc, Redek, and Susjan 2007, Du, Tao 2008, Ali, Fiess, MacDonald 2010, Bartels et al. 2014);
8. low corruption (e.g., Habib, Żurawicki 2002, Mateev 2009, Castro, Nunes 2013).

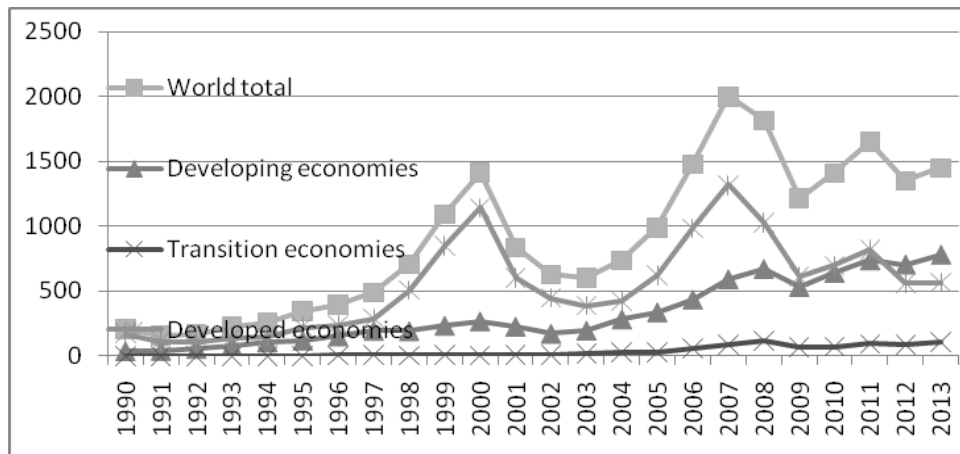
A substantial body of research devoted to FDI also investigates emerging and transition economies, both in Europe and across the world. They highlight the importance of governance as a factor conditioning the FDI process. Good governance means, *inter alia*, economic freedom, secure property rights, an honest and efficient public sector, and a minimum of “dead-weight” regulations and restrictions on trade (Globerman, Shapiro and Tang 2006). Bevan and Estrin (2004) demonstrated that the mere prospect of EU accession of the countries of Central and Eastern Europe (CEE) was an important determinant of FDI inflow. Similar conclusions were reached by Egger and Pfaffermayr (2002), who showed that the prospects for changes in an integration group, be it in qualitative terms (e.g., intensification of integration) or resulting from the accession of new countries, impacts FDI inflow. Besides, it is also worth recalling that emerging economies more and more often have become increasingly attractive also for investments into innovative activities (OECD 2011).

As demonstrated by the above considerations, a large number of factors are decisive for investment attractiveness. Their multitude and diversity usually causes researchers narrow the research framework to several selected factors. In our study we analyse several groups of determinants of the investment climate connected, *inter alia*, with the overall economic performance of the country, transport infrastructure, labour market situation, the size of the domestic market and business environment, household affluence, availability of State aid and investment incentives, IT advancement, and corruption. Some of them have turned out to be statistically significant for the inflow of foreign direct investments into the Visegrad Group countries and, more broadly, to the so-called ‘new’ Member States of the European Union. Detailed results of our analyses are presented in the final part of the study.

2. Structure of FDI inflow into the Visegrad Group Countries²

The dynamic increase in global FDI started in the mid-1980s. To date we have witnessed three breakdowns in its upward trend, connected with general slowdowns in global growth dynamics (Fig. 1).

Figure 1. Inward foreign direct investment flows from 1990 to 2013 (bn USD)



Source: World Investment Report, UNCTAD 2014.

In 1985 less than USD 60 bln were invested all over the world, while in 2000 the figure reached as much as USD 1.4 trln. At the beginning of the 21st century, global FDI was significantly reduced as a result of the global economic downturn, which was accompanied by a lower investment activity by multinational corporations, but this trend reversed in 2004. FDI flows from developed countries³ grew by roughly 40% on average from 2003 until the end of 2007, supported by high economic growth in key host economies and strong corporate performance (Sauvant, Maschek, McAllister 2009, p. 2). The year 2007 marked the record-

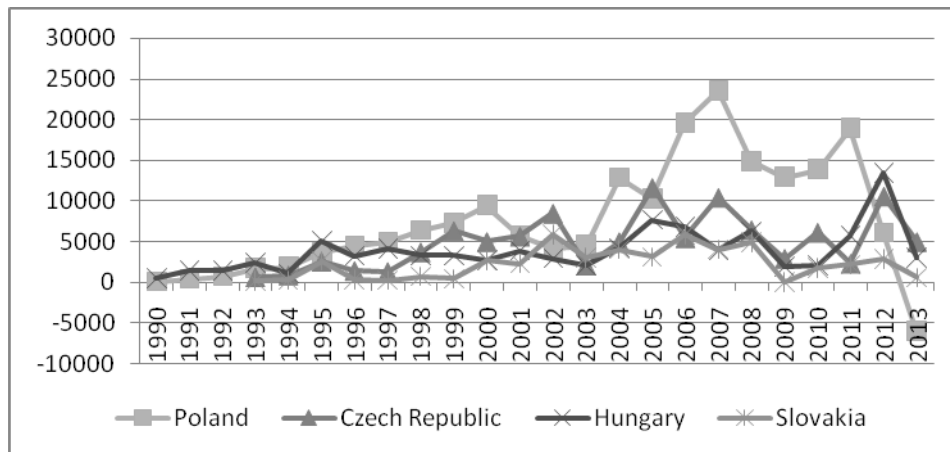
² Based on T. Dorożyński, A. Kuna-Marszałek, Investment Attractiveness of Visegrad Group Countries: Comparative Analysis [in:] A. Zhuplev, K. Liuheto (eds.), Geo-Regional Competitiveness in Central and Eastern Europe, the Baltic Countries, and Russia, IGI Global, 2014.

³ According to UNCTAD terminology, “developed economies” encompass the twenty-seven member states of the EU, plus Australia, Bermuda, Canada, Gibraltar, Iceland, Israel, Japan, New Zealand, Norway, Switzerland, and the United States. “Transition economies” encompass six countries of South-East Europe (Albania, Bosnia and Herzegovina, Croatia, and The FYR of Macedonia, Montenegro, and Serbia, and the twelve countries of the Commonwealth of Independent States: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, the Republic of Moldova, Russian Federation, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. All other countries are “developing economies”.

breaking year for FDI inflow, which reached USD 2 trln. The financial crisis, which began in 2008, visibly influenced international capital flows. FDI inflow dropped by 20% compared to the previous year, reaching even 33% declines in developed economies. In 2009 FDI was further reduced by 40%. The drop was caused mainly by the drastic decrease in mergers and acquisitions (by 2/3) and, to a lesser extent, by the reduced number of greenfield projects (Poulsen, Hufbauer 2011, p. 2). In 2012, for the first time ever the developing economies absorbed more FDI than the developed countries. Nine developing economies and two transition economies ranked among the 20 largest recipients of FDI in the world. The global ranking of the largest FDI investors shows that investors from developing and transition economies have become very active in recent years and are willingly seeking new investment locations in the world (World Investment Report 2013).

Since the beginning of the 1990s, when the Visegrad Group countries opened up their economies, investors have showed an increasing interest in locating FDI in their territories. The Czech Republic, Poland, Slovakia, and Hungary are economically much further advanced than the majority of the new EU Member States. They were the first to launch systemic transformations and one of their top priorities in modernizing their economies was to attract as many operators with foreign capital as possible, and obtain the highest possible volume of FDI.

Figure 2. Inward FDI flows to the Visegrad Group countries, annually 1990–2013 (mln USD)



Source: World Investment Report, UNCTAD 2014.

In the first years of transformation, Hungary received the most FDI, due to its more attractive legal framework compared to the other countries in the Group. Hungary was also the first to involve foreign investors to a great extent

in the privatization process (Sass, Kalotay 2012, p. 1). On top of that, labour was inexpensive in Hungary and the government was able to offer extremely attractive investment incentives. FDI inflow to other V4 countries, mainly to Poland, started when foreign operators were allowed to participate in privatization. Moreover, radical reforms and the size of the Polish market rapidly increased Poland's attractiveness. Since 1996 Poland has systematically attracted more foreign capital than the remaining three countries and, with the exception of two years, regularly received the largest share of FDI inflow.

In the period 1990–1999 the Czech Republic, Hungary, and Poland accounted for cumulated FDI inflows amounting to 79% of total FDI into Central and Eastern Europe. In the years 1995–2001 Poland was the single absolute largest recipient of inward FDI, with the Czech Republic being the next absolute largest recipient, in all of new EU Member States. However, Poland was far from being the most FDI-intensive host economy when nominal FDI flows are deflated by nominal GDP levels (Globerman, Shapiro, Tang 2004, p. 7).

Data on the dynamics of annual FDI inflow to the countries of the Visegrad Group confirm the increased interest of foreign investors after they joined the EU. This indicates that their competitive position improved as a result of EU accession. In Poland, the higher FDI volume was also the effect of lowering the fiscal burden of the corporate income tax, which encouraged investors to declare higher profits in their branches in Poland. While Poland was, as already mentioned, clearly the leader in the region, it should be noted that in 2002 and 2005 the Czech Republic attracted the most capital invested in the Visegrad Group.

Slovakia attracted the least FDI compared to other countries in the Group during the entire transformation period, with the exception of the years 1995, 2000 and 2002. The main reasons were political developments in Slovakia, legislative barriers to entry, and a weak business environment (Fifeková, Hardy 2010, p. 9).

In the second half of the first decade of the 21st century Poland was receiving the majority of investment capital in the Visegrad Group countries. The record-breaking year was 2007, when the inflow of foreign capital in Poland reached USD 23.5 bln. This was almost 80% higher than in 2004, and over 15% higher than in 2006. In 2008 FDI in Poland dropped by over 37% compared to the preceding year, reflecting the trends on the global market. Such a substantial decrease in investment in Poland could suggest a deep regression with respect to the investment attractiveness of the country. We need to stress, however, that this happened a year after Poland's FDI record-breaking result recorded in 2007, i.e. just before global economic crisis.

The negative impact of the crisis was overcome in Poland in 2011, but in 2012 FDI recorded a dramatic drop by over 82% compared to the previous year. This result was largely influenced by the scale of capital in transit, which in

2012 increased sevenfold globally. Disregarding capital in transit, Poland's FDI inflow in 2012 would reflect the negative impact of crisis, but it would not be such a steep decline.

Since 2008 the other Visegrad Group countries have also experienced serious consequences as a result of the global recession. In Hungary reinvestment was significantly reduced, and other capital flows were negative as a result of the increase in reverse borrowings within companies and debt repayment from Hungarian branches to parent companies. FDI flows to Hungary were especially hard hit by the crisis years of 2009 and 2010, both in absolute terms and relatively to the flows to other countries, such as Poland and the Czech Republic. The 2011–2012 dataset indicates an increase in FDI inflows, however according to Hungarian National Bank this was mainly due to a large capital in transit flow. A similar situation took place in the Czech Republic, where FDI increased four times in 2012 compared to 2011.

In analyzing the directions from which FDI flows into the Visegrad Group countries, initial stress should be put on the very strong economic and trade ties of the region with other EU member states, in particular with the Economic and Monetary Union member states, (i.e. those in the euro area, also known as the Eurozone). On average, about 70% of inward FDI in Poland, the Czech Republic, Slovakia, and Hungary comes from the euro area member states. The Baltic States are an exception in Central and Eastern Europe in this respect, as investments originating from the euro area represent not more than 35% of the total incoming FDI. Becoming dependent upon one area, even an economically advanced region, may also however have negative consequences. These may be particularly painful in times of economic crisis (Białek 2012).

To sum up, since the beginning of transformation until 2012, almost 44% of all FDI directed to the Visegrad Group countries was located in Poland, over 23% in the Czech Republic, over 21% in Hungary, and 11% in Slovakia. However, the value of FDI *per capita* has definitely been the highest in the Czech Republic throughout the entire period of 1990–2013.

3. Rankings

When analyzing the results of leading international rankings, we may conclude that over the last several years, including the times of crisis and economic downturn, the Visegrad Group countries have remained an attractive investment location.

According to The Global Competitiveness Report 2014–2015,⁴ Poland and Hungary are in transition from economies driven by increasing productivity to innovation-driven economies (Croatia, Latvia, and Lithuania have also been included in the same group). The Czech Republic and Slovakia are considered innovation-driven economies (this group also includes Cyprus, Estonia, Malta, Slovenia). The rest of the new Member States (Romania and Bulgaria) have been considered efficiency-driven economies (The Global Competitiveness Report 2014–2015, 2015, p. 11). Between 2004–2015 only Poland markedly improved its Global Competitiveness Index ranking, from 60th to 43rd (+17), while Czech Republic remained stable (+3). Slovakia (-32) and Hungary (-21) lost substantially. With respect to the remaining new Member States, Bulgaria (+5) improved its ranking the most, while Slovenia (-37) experienced the deepest drop. From among the Visegrad Group countries, the highest ranking positions in the competitiveness ranking⁵ in 2014–2015 are occupied by the Czech Republic and Poland, 37th and 43rd respectively, while Hungary and Slovakia rank 60th and 75st respectively (The Global Competitiveness Report 2014–2015, 2015, pp. 13–14). This means the economic transformation has brought about measurable results, as these countries have managed to achieve higher efficiency in many industries and improve the investment attractiveness of the region. At present, the areas where FDI is expected in these countries are creative industries, strategic services, and R&D (Owczarczuk 2013).

The high position of the Czech Republic should not come as a surprise, since as a result of good understanding of market mechanisms and specialisation in innovation, the country occupies top rankings in investment attractiveness. In 2013, almost 26% of research in the Czech Republic, more than 14% in Hungary, 13% in Poland and nearly 19% in Slovakia were financed from abroad (Eurostat 2015). An unquestionable asset of the Czech Republic is its highly skilled labour force and very well-developed infrastructure. Moreover, one of the crucial factors which attracts FDI is a broad offer of investment incentives offered by the state. In 2012 State aid was extended to technology centres and business support services. Similarly Poland offers a variety of incentives to FDI. Investors may avail themselves of multiannual assistance schemes, property tax exemptions, or choose to operate in special economic zones. Besides, Poland is the biggest beneficiary of Structural Funds among the new EU Member States.

⁴ The notion of competitiveness, as intended by the World Economic Forum, combines the twelve pillars of competitiveness with the three stages of economic development of a given country: factor-driven economy, efficiency-driven economy, and innovation-driven economy.

⁵ The GCI measures the level of competitiveness of an economy, defined as the set of institutions, policies, and factors that determine the level of productivity of an economy.

Studies by Ernst & Young show that Central and Eastern Europe (CEE) is still the most attractive investment spot globally (E&Y attractiveness survey, Europe 2015). Investors even ranked CEE ahead of Brazil, Russia and India. Countries of the Visegrad Group are popular among the countries of the CEE region, however, the attractiveness of Western Europe has increased very rapidly in recent years. Data shows that 50% of investors say Western Europe is the world's most attractive FDI destination (E&Y attractiveness survey, Europe 2015, p. 7), while CEE is the first choice for ca. 28%. The appeal of the CEE countries has diminished by 14 points since 2008. That is most probably caused by the crisis in Ukraine and mutual sanctions imposed between Russia and the EU, which have damaged business, trade and confidence in CEE. Nevertheless, we need to stress that there has been a significant difference in the perception of the attractiveness of individual countries in the region. Even though Poland and the Czech Republic were voted the most attractive CEE countries, their overall attractiveness scores declined by six and four percentage points respectively, and they lost to, e.g., Romania (up two points) (EY's attractiveness survey, Europe 2014, p. 5).

The Report stresses Poland's assets, e.g., its size, its rising weight in Europe's economy, and large public infrastructure projects. According to experts, other countries are battling to replicate the Polish model. That is true, *inter alia*, for the Czech Republic and Hungary, where FDI inflow decreased recently. Data indicates that now the challengers for big, labour-intensive projects are found in South-Eastern Europe, e.g. in Romania. Bulgaria is attracting more interest, though it needs better infrastructure and further reforms.

Poland is also the leader, according to UNCTAD, when it comes to investment attractiveness. Its major competitive advantages are a large and rapidly developing internal market, an educated and flexible workforce, a stable banking system, access to international local markets, and the availability of suppliers and partners. The World Investment Report for 2014 also stresses that Poland adopted the "Programme to support investments of high importance to the Polish economy for 2011–2020", with the aim of increasing innovation and the competitiveness of the economy by promoting FDI in high-tech sectors (World Investment Report 2014, p. 113). Most probably the above-mentioned factors gave Poland, as the only member of the Visegrad Group, a place in the group of the top 15 attractive FDI locations in recent years (World Investment Report 2010, 2011, 2012, 2013, 2014).

Poland is also the only country among the Visegrad Group members included in the basket of 25 countries covered by the FDI Confidence Index.⁶ It

⁶ The FDI Confidence Index is a regular survey of global executives conducted by A.T. Kearney. The Index provides a look at the present and future prospects for international investment flows.

occupied its highest ranking position – sixth - in 2010, while in 2013 and 2015 it ranked 19th and 23rd respectively. In 2014 Poland dropped out of the ranking altogether. Authors of the Report highlight Poland's strategic location, large population, and economic stability as the major determinants of FDI inflow into the country. Apart from that, Poland is also likely to benefit from the substantial planned improvements of its infrastructure. In the years to come Poland will be the biggest beneficiary of EU structural funds, which will additionally stimulate regional development (A.T. Kearney, FDI Confidence Index 2015, pp. 16–17).

Annual reports published by the International Institute for Management Development in Lausanne indicate that the Czech Republic has a higher Global Competitiveness Index⁷ than the other countries of the Visegrad Group (rank 29–35 over the period 2010–2014). Poland is chasing it in the ranking (rank 32–36 over the years 2010–2014), followed by Hungary and Slovakia. Out of the remaining new EU Member States Estonia and Lithuania also attained high rankings in the recent five years (2010–2014). The most often identified assets of the region were cost competitiveness and dynamism of the economy (Poland, the Czech Republic, Slovakia), skilled workforce and workforce productivity (all the Visegrad Group countries), reliable infrastructure (Hungary, the Czech Republic, Slovakia), computers per capita (Hungary, Slovakia) (IMD 2014).

To sum up, we should cite the conclusions from the report of the Economist Intelligence Unit examining the business potential of the new EU Member States. It states, *inter alia*, that the rising labour costs in China is set to bring investors' attention back to the CEE region, especially Poland. On top of that, the gap in growth dynamics between the countries of Asia and CEE is narrowing, which additionally favours the countries of this region. The Visegrad Group countries are actively supporting their manufacturing sectors with investment incentives and special economic zones. Besides, one of the key trends is the growing importance of SMEs, which will shape the business environment in the region. Poland is considered a country with development potential in the manufacturing sector, BPO/SSC services, and R&D. This potential is enhanced by the highest rate of absorption of EU resources (85%) among the new EU Member States (Economist Intelligence Unit 2015, p. 10).

⁷ One of the most important and most commonly used synthetic indices which measures the international competitive ability of countries.

4. Examining relationships between selected determinants of investment attractiveness and FDI inflow into the new EU Member States

As we have already mentioned in the first part of this article, investment attractiveness and the inflow of foreign direct investment to countries may result from various economic, social and territorial factors. In order to examine their relevance for the Visegrad Group countries, against the backdrop of the 13 new European Union Member States, we used Pearson correlation coefficients and Spearman's rank correlation coefficient.

In the analysis we used a series of variables which directly or indirectly determine the investment attractiveness of countries (and regions). They have been selected based on the review of the theoretical and empirical works more broadly discussed in the first part of this paper. These variables can be grouped in the following categories, which identify:

1. general economic performance of the country, e.g., GDP, GDP p.c.;
2. the labour market situation, e.g. unemployment rate, employment rate, labour productivity;
3. the development of transport infrastructure, e.g., total length of railway lines, total length of motorways;
4. the use of ICT, e.g., individuals using the internet for interacting with public authorities, computer use by individuals;
5. the size of the domestic market and business partners, expressed by the size of population, disposable income of households, and the number of enterprises;
6. the level of corruption (World Bank Aggregate Indicator: Control of Corruption);
7. the availability of EU resources under the budget for 2007/2013;
8. State aid, in particular tax allowances and support offered in special economic zones.

We used data from the years 2007-2013 for the Visegrad Group countries, i.e. for Poland, the Czech Republic, Hungary and Slovakia, as well as for the nine remaining new EU Member States, i.e. for the Baltic States (Lithuania, Latvia, and Estonia) and for Romania, Bulgaria, Malta, Cyprus, Slovenia, and Croatia. Hence, the number of observations was usually thirteen, In some categories of variables it was slightly smaller due to the lack of data, especially for Malta and Cyprus. The variables were contrasted with cumulated value of foreign direct investment inflow to the above listed States at the end of 2013. The study uses data from Eurostat, UNCTAD, the World Bank, and additional data from the statistical offices of the countries included in the study.

The first step of our analysis consisted of identification of the strength of relationship between ratio variables. For that purpose we used one of the most popular correlation coefficients – the Pearson correlation coefficient. Calculations were made using the SPSS software (version 14.0 PL). Results are presented in Table 1.

Table 1. Selected determinants of investment attractiveness and FDI inflow to new EU Member States – Pearson correlation coefficient

Independent variable	No. of observations	Pearson correlation coefficient	Significance (p-value)
Population	13	0.927	0.000
Number of all enterprises/ Number of SMEs	13	0.977	0.000
EU funds 2007–2013	11	0.980	0.000
Total length of motorways	11	0.618	0.043
Total length of railway lines	9	0.970	0.000
Non-crisis state aid	13	0.962	0.000
Tax exemptions	13	0.834	0.000

Source: Authors' estimates using the SPSS software, based on UNCTAD, EUROSTAT and World Bank data.

The results in Table 1 indicate a statistically significant, strong relationship ($p = 0.01$) between selected factors which determine the investment attractiveness of the Visegrad Group countries and other new EU Member States, and the inflow of FDI. The relationship is particularly strong for variables identifying the size of internal market, State aid, investment incentives and transport infrastructure. A slightly weaker, but still statistically significant relationship, $p=0.05$, was obtained for the variable representing total length of motorways. The remaining variables connected with overall economic performance, expressed in GDP and GDP per capita, variables describing the labour market, use of ICT or corruption turned out to be irrelevant for the inflow of FDI into the countries included in the study.

In the second stage of analysis we used Spearman's rank correlation coefficient, also referred to as the order correlation coefficient. It measures the strength and direction of associations between two characteristics by comparing the ranks (ranking orders) of two variables. This coefficient, unlike the Pearson correlation coefficient and linear regression, measures a wider class of relationships, showing monotonic, not necessarily linear, relationships between the variables. It is also much more resilient to the presence of outliers in the

sample (Sobczak 2000, pp. 249–251). Spearman's rank correlation coefficient has several versions. In our study we used the formula applied in the SPSS software (version 14.0 PL):

$$r_s = \frac{cov(R_X, R_Y)}{\delta_{R_X} \cdot \delta_{R_Y}}$$

where:

$cov(R_X, R_Y)$ – covariance of ranks for variables X, Y;

$\delta_{R_X} \cdot \delta_{R_Y}$ – standard deviation of ranks for variables X, Y.

The results are presented in Table 2.

Table 2. Selected determinants of investment attractiveness and FDI inflow into new EU Member States – Spearman's rank correlation coefficient

Independent variable	No. of observations	Spearman's rank correlation coefficient (r_s)	Significance (p-value)
Population	13	0.890	0.000
Number of all enterprises / Number of SMEs	13	0.907	0.000
EU funds 2007-2013	11	0.827	0.002
Total length of motorways	11	0.618	0.043
Total length of railway lines	9	0.900	0.001
Non-crisis state aid	13	0.588	0.035
Tax exemptions	13	0.665	0.013

Source: Authors' estimates using the SPSS software, based on UNCTAD, EUROSTAT and World Bank data.

Despite less restrictive assumptions, the results obtained in Spearman's test practically confirm those obtained when using the Pearson correlation coefficient. The relationship between FDI inflow into the Visegrad Group countries and to the remaining new EU Member States and the same determinants of investment attractiveness (size of the internal market, population of enterprises/business partners, availability of subsidies and incentives from EU resources, and the development of transport infrastructure) turned out to be significant at the level of significance 0.01. Although absolute values were replaced with order data, we did not arrive at any significant level of ranks for any of the remaining variables. However, it is worth noting that for the Spearman's test the p-value for some variables was below the p-value for the Pearson correlation coefficient. This means a lower significance of the relationship, according to Spearman, for variables describing State aid.

In conclusion we may say that some variables used in the study significantly impact the inflow of FDI into the group of countries included in the study. A relationship was detected first and foremost in the case of certain factors that shape investment attractiveness, such as transport infrastructure, size of the domestic market, number of enterprises – potential suppliers, customers, business partners and the availability of subsidies and other forms of the EU assistance. Slightly weaker relationships with FDI inflows were identified for one of variables decisive for the development of road infrastructure, and State aid in Spearman test. Other relationships were not identified, e.g., with respect to the potential and development of countries expressed using GDP and GDP per capita.

All variables connected with the labour market proved insignificant. That should provide the basis for further and deepened quantitative analyses, especially when the earlier works of the authors who focused mainly on investment attractiveness of regions in Poland demonstrated slightly different foreign investors' preferences. Accordingly, the key factor considered by foreign investors was production costs, including labour costs and resources, but almost equally important were the conditions of running the business, such as economic and social infrastructure. State attempts to impact the choice of investment locations by differentiating the intensity of State aid and other incentives offered in, e.g., special economic zones, were usually secondary for investment decisions made by companies with foreign capital in Polish regions (Dorożyński, Świerkocki, Urbaniak 2014, 2015). The study is consistent with results of earlier works which validated the hypothesis on the existence of a statistical relationship between spending EU resources and the inflow of foreign direct investment into voivodeships in Poland (Dorożyński 2015).

5. Conclusions

The aim of this paper was to evaluate the investment attractiveness of the new EU Member States, using the Visegrad Group members as examples. We focused on the main determinants of the inflow of foreign direct investment to Poland, the Czech Republic, Hungary, and Slovakia. The choice of these four countries was dictated by geographic proximity, political, economic, and cultural similarities, as well as their shared experiences of economic transformation. These countries are also connected by their cooperation within the structures of the European Union, NATO, OECD, and WTO.

The general assessment of FDI inflow to Poland, the Czech Republic, Hungary, and Slovakia is positive. All these countries introduced significant changes, which made them attractive investment destinations. This, however,

should not be taken for granted. One must not forget the competition of other countries and regions in the world. Advantages based only on cheap labour and low operational costs are not enough. This means that public administration should continuously strive to improve the investment attractiveness of regions by, e.g., investing in hard and soft infrastructure.

The available rankings of investment attractiveness present the Visegrad Group countries as attractive prospective investment locations for FDI. Moreover, they highlight the strengths of the region, which include, *inter alia*, skilled labour and a quite well-developed infrastructure. Multiple assistance schemes should not be forgotten. Our own studies in principle have confirmed these conclusions. They demonstrated that factors important for the inflow of foreign direct investment are: infrastructure, market size, availability of suppliers, subcontractors, business partners and State aid schemes, including resources from the European Union budget.

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Streszczenie

ATRAKCYJNOŚĆ INWESTYCYJNA. PRZYKŁAD PAŃSTW GRUPY WYSZEHRADZKIEJ

W artykule podjęto próbę oceny atrakcyjności inwestycyjnej państw Grupy Wyszehradzkiej. Praca składa się z czterech części. W pierwszej dokonano przeglądu literatury ze szczególnym naciskiem na badania empiryczne dotyczące atrakcyjności inwestycyjnej. Następnie przeanalizowano napływ zagranicznych inwestycji bezpośrednich do krajów Grupy Wyszehradzkiej na tle świata w latach 1990–2013. W kolejnej części omówiono atrakcyjność inwestycyjną nowych państw członkowskich UE w wybranych

rankingach międzynarodowych, ze szczególnym uwzględnieniem miejsca, jakie zajmują w nich Polska, Czechy, Węgry i Słowacja. W ostatniej części zbadano zależności pomiędzy wybranymi zmiennymi określającymi atrakcyjność inwestycyjną napływem BIZ. W badaniu wykorzystano metody statystyczne (współczynnik korelacji Pearsona oraz współczynnik korelacji rang Spearmana). Artykuł kończy podsumowanie.

Słowa kluczowe: Grupa Wyszehradzka, atrakcyjność inwestycyjna, BIZ