

## REGIONAL DIVERSIFICATION OF THE INFLOW OF FOREIGN DIRECT INVESTMENT IN POLAND – AN EMPIRICAL ANALYSIS

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**Abstract:** Currently, foreign direct investment (FDI) is considered the most important factor of regional development in the world, as it significantly influences the functioning of regional economic structures and the degree of their use, which is particularly noticeable in some countries, including Poland. In the global economy, most FDI is located in highly developed countries. However, for several years, there has been an increase in the inflow of FDI to developing countries, among them Poland, which has become one of the largest recipients of foreign capital from among the countries of Central and Eastern Europe. In the report *Investor's Guide – Poland – How to do business* (2017), it was emphasised that Poland's accession to the European Union opened the Polish market to foreign enterprises and created favourable conditions for investing in Poland. Therefore, the aim of this article is to present the regional distribution of foreign direct investment in Poland, with a particular view to presenting differences in the volume of foreign direct investment inflows to individual Polish regions and what conditions them. In the statistical analysis, the determinants of FDI inflow to Poland between 2010 and 2017 referred to selected macroeconomic indicators that allow the foreign investor to determine the level of economic stability of a country or region. This choice was based on literature and own research on the investment attractiveness of a country and the determinants of FDI inflow. The empirical part of the article was prepared on the basis of GUS statistical data. This source of data was opted for, as it enabled showing FDI engagement by provinces.

**Keywords:** direct investments, foreign investment, regional economy, location of activity, empirical analysis.

### 1. Introduction

Many factors determine a region's resources and potential competitiveness, including its geopolitical location or historically shaped socio-economic structure. Although these are largely linked with nationwide factors, it is not easy to precisely estimate their significance for the inflow of foreign capital. In particular, the lack of adequate statistical data, or the use of

different research methodologies, make it difficult to reliably evaluate the importance of regions for foreign investment (Jaworek, Karaszewski, 2018, p. 44).

Foreign investments, especially in the direct form (FDI), are widely recognised as one of the main factors of economic development of countries and regions, especially in lagging countries with low savings rates, being crucial for many favourable changes to take place in the area of an investment location (Skawińska, 2018). Advantages arising from the location of FDI spring from the characteristics of an area (a country, a region) in which business activity is initiated and developed. Areas offering an optimal combination of location factors are viewed as attractive, since they make it possible to reduce investment outlays and the current operating expenditure of an enterprise, thereby facilitating the maximisation of profits and lowering the risk of investment failure. The vast majority of FDI inflow is directed towards metropolitan areas, with the exclusion of peripheral areas, which is justified by the availability of infrastructure, human resources and the broadly understood business-related services<sup>1</sup>.

Currently, foreign direct investment is considered the most important factor of regional development in the world, as it significantly influences the functioning of regional economic structures and the degree of their use, which is particularly noticeable in some countries, including Poland (Hlaváček, Bal-Domańska, 2016; Weresa, Napiórkowski, 2018). Therefore, the aim of this article is to present the regional distribution of foreign direct investment in Poland, with a particular view to presenting differences in the volume of foreign direct investment inflows to individual Polish regions and what conditions them.

The regional structure of FDI in Poland was considered, taking into account the number of foreign-invested enterprises and the value of share capital at their disposal.

An analysis of the development of FDI in individual Polish provinces (*voivodships*) was presented using the dynamics method, while its regional diversification relied on the structure method. In the statistical analysis, the determinants of FDI inflow to Poland between 2010 and 2017 referred to selected macroeconomic indicators that allow the foreign investor to determine the level of economic stability of a country or region. This choice was based on literature and own research on the investment attractiveness of a country and the determinants of FDI inflow. The research was based on indicators pointing to the most important market and resource determinants influencing foreign investors in their decisions to allocate funds<sup>2</sup>, i.e. through the

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<sup>1</sup> Foreign direct investment is primarily located in regions that have extensive production and social infrastructure, have achieved a relatively high degree of urbanisation and have created sufficiently large and absorbent internal markets (Ancyparowicz, 2009, p. 95).

<sup>2</sup> When assessing the classification of motives (reasons) for foreign investment in developing countries, it can be noted that enterprises are *de facto* driven by the same factors that were described by F. Root in his model in the 1970s. Root divided FDI motives into resource- and market-related factors. The former are taken up to acquire better or less expensive factors of production (e.g. raw materials or manpower) than those available in the domestic market, whereas the latter - to maintain or increase sales or reduce transport costs (za: Kłysik-Uryszek, 2010, p. 67-68).

Between 1990 and 2017, market and resource factors were the most important economic motives that encouraged foreign investors to choose Poland as the location of their capital in the form of direct investments. According to M. Jaworek and Karaszewski (2018, p. 46, 53) “the [market factors] are still as relevant. However, there has

participation of provinces and Poland's ranking position for GDP and population, as well as by percentage deviation from the national average and the ranking position for GDP *per capita*, nominal gross market income *per capita*, unemployment rate, average monthly gross wages, labour productivity and the number of students per 10,000 residents.

In doing so, the analysed provinces were ranked according to the degree of implementation of the motivations of foreign investors deciding to locate their FDI in Poland.

In this study, the time period 2000-2017 was analysed, and therefore, the most recent statistical data was considered. On this basis, conclusions were formulated regarding possible changes to the motivations for the location of FDI in Poland.

The empirical part of the article was prepared on the basis of GUS statistical data. This source of data was opted for, as it enabled showing FDI engagement by provinces.

## 2. The influence of foreign direct investment on regional development

The effects of FDI on a host region's economy are not clearly evaluated, since the positive and negative implications associated with their inflow cannot be applied equally to every area (Oziewicz, 1998; Karaszewski, 2004; Jaworek, 2006; Michałowski, 2006; Jonek-Kowalska 2007; Ambukita, 2013; Puchalska, 2015; Skawińska, Wyrwa, 2018; Wyrwa, 2018). The influence of FDI on the economy of a region receiving foreign capital in the direct form can be observed in many aspects, of which the most analysed are the following (Puchalska, 2016b, p. 91):

- direct participation of foreign-invested enterprises in the economy, change of economic structure, production profile, etc.,
- changes in the labour market,
- links with international trade, in particular the propensity to export and dependence on imports,
- changes in the area of competition,
- spillover effects in the field of technology and other external effects.

In principle, two basic paths of impact of FDI companies on the regional economy can be distinguished (Puchalska, 2016a, p. 300): (1) direct effects – resulting from the operation of foreign enterprises on the market, including their supply and demand links with local co-operators, (2) indirect effects – emerging as a by-product of external effects in the field of technology and the business environment. The direct effects include: direct participation of FDI companies in the regional economy, change in the economic structure, production profile,

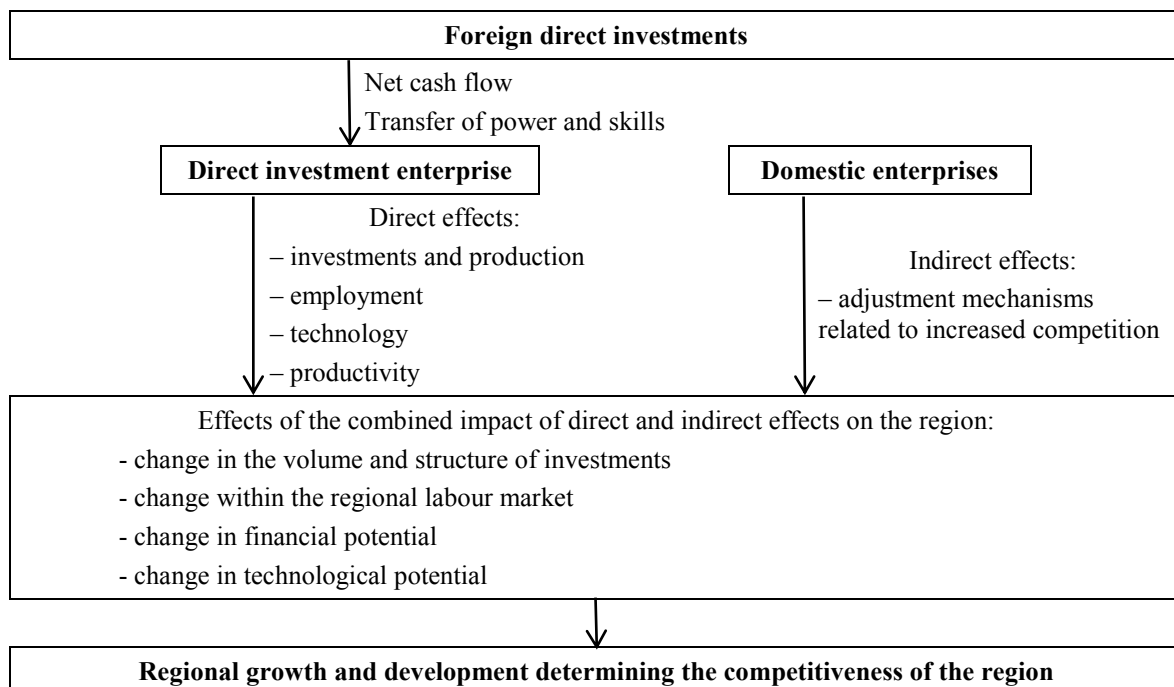
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been quite a clear evolution in the area of resources. In the initial period, they were dominated by cost advantages, i.e. efficiency determinants (mainly labour costs), but over time, the qualitative characteristics (employee qualifications, skills) grew in importance”.

changes in the labour market, links with international trade (particularly a propensity to export and dependence on imports), as well as changes in the area of competition. The indirect effects, meanwhile, are primarily the impact on quality improvement and modernisation and modernity of technologies used by enterprises in the host region. According to K. Puchalska (2010, pp. 352-353), one can also point to the effect of improving the technological potential in the context of innovativeness. In literature, the opinion prevails that the penetration effect ultimately leads to an increase in the competitiveness of the host region. Most often, the following potential penetration channels are distinguished (Jaworek, 2006, p. 62; Puchalska, 2016a, pp. 300-301):

- the demonstration effect – regional companies may adapt technologies introduced by transnational corporations,
- migration of human resources – employees trained by corporations may transfer knowledge to local companies, not only by changing their place of work, but also by setting up their own companies in which they apply transferred knowledge and technologies,
- vertical connections – corporations may transfer technologies to companies that are potential suppliers of subassemblies, semi-finished products or customers buying their products.

A mechanism of the influence of foreign direct investment on regional economy is shown in Figure 1.



**Figure 1.** Mechanism of FDI impact on regional economy. Source: own study based on: Szczepkowska-Flis, 2006, p. 13.

It is generally assumed that the advantages brought by FDI outweigh their undesirable aspects and that FDI stimulates the economy in which it is located (Ozga, 2009; Kaźmierczyk, 2011; Ambukita, 2013; Skawińska, Wyrwa, 2018). However, the potential benefits of FDI are not immediately observed, and they are not equally distributed between countries and economic sectors. In order for FDI to have the most positive effects, host countries need to introduce general conditions favourable to investment and to strengthen the human and institutional capacities necessary to exploit them (Ambukita, 2013, p. 14).

In existing literature, three main paths that FDI can follow to revive economic development are distinguished (Ambukita, 2013, pp. 15-16). The first concerns liberalisation of limits for regional savings through the flow of foreign capital. In this case, foreign direct investments increase the low regional savings rates by means of the capital accumulation process. Secondly, FDI is the main route for accessing technology transfer. This transfer, along with technological repercussions, entails improved productivity and more efficient use of resources, which in turn triggers growth. Last but not least, FDI translates into increasing exports resulting from increased capacities and greater competition in regional and national production. In addition, it can be argued that the existence of a correlation between FDI and development depends on the country and its economic sectors<sup>3</sup>.

It should be noted, however, that a positive assessment of the impact of FDI on the host country's economy may be accompanied by an unfavourable disparity in the diversification of individual regions in terms of their economic development. This results, among others, from regional disproportions that were shaped by past events. Other reasons include a relatively low mobility of capital, which springs from supply and willingness to invest in particular regions. Practice shows that, in the majority of cases, capital flows into the economically strongest regions, which in turn accentuates disproportions in spatial development (Heller, Warzała, 2005, p. 788).

### **3. Regional distribution of foreign direct investment in Poland**

Distribution of foreign investments in Poland is marked by a significant disparity depending on the region. Over time, foreign investments led to a concentration of companies with foreign capital in the most industrialised parts of the country. This means that foreign investments have not been stimulating all of Poland in equal measure, as a result of which positive effects related to technology transfer, diffusion of knowledge and the inflow of capital have been limited only to the regions in which foreign investments were located. This, in turn, may further widen the economic and social gaps between particular areas of the country (Ozga, 2009, p. 116).

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<sup>3</sup> E. Ambukita (2013, p. 16) argues that "every country, region or city, as well as every sector, should be examined in order to correctly estimate the link existing between the two phenomena".

In 2017, there was an average of 6.0 entities per 10,000 persons with foreign capital in Poland – the most in the Mazowieckie Province, and the fewest in the Świętokrzyskie Province (Table 1). Compared to 2010, the number of entities with foreign capital per 10,000 residents saw the largest increase in the following provinces: Podkarpackie, Podlaskie and Lubelskie. According to the report *Atrakcyjność inwestycyjna regionów* [Regional investment attractiveness] (2017), the Mazowieckie Province is the most attractive from among Polish regions in terms of investment. Meanwhile, Eastern Poland provinces are becoming increasingly attractive for business in the services sector.

In 2010-2017, the value of the share capital of foreign-invested enterprises in Poland increased by over 15% (from PLN 118 812.5 billion to PLN 218 770.9 billion, respectively – Table 2). However, its dynamics in individual regions developed differently. The relatively largest increase in the share capital was recorded in the following provinces: Lubelskie, Wielkopolskie, Małopolskie and Zachodniopomorskie (Table 2). A very marked increase also concerned the provinces of Podkarpackie and Opolskie. In six provinces, capital gains slightly exceeded 100% (Łódzkie, Dolnośląskie, Śląskie, Mazowieckie, Kujawsko-Pomorskie and Podlaskie), while a decline in capital was reported in four provinces: Warmińsko-Mazurskie, Lubuskie, Świętokrzyskie and Pomorskie.

However, the dynamics of capital inflow was not reflected in the structure of the share of individual provinces in the total inflow of capital to Poland. By the end of 2017, over 75% of the capital was located in four provinces, including 46.6% in Mazowieckie, and almost one-third in the following three: Wielkopolskie, Śląskie and Dolnośląskie. Among the last three, the highest dynamics of capital inflow were observed only in Wielkopolskie. In the remaining twelve provinces, none of the shares exceeded 8% of the total value of capital invested in Poland, although some showed relatively significant increases in share capital (including Zachodniopomorskie, Podkarpackie, Kujawsko-Pomorskie and Pomorskie), due mainly to the possibility of achieving specific business goals by direct investors.

In the provinces with the largest total amount of foreign capital inflows, the highest level of GDP *per capita*<sup>4</sup> (Table 3) and the highest average wages in Poland were recorded (Table 4). The opposite can be observed in regions where the level of foreign capital is small. In 2010-2016, GDP *per capita* above Poland's average was noted in only three provinces. These were Mazowieckie (60% higher), as well as Śląskie, Wielkopolskie and Dolnośląskie (where it generally did not exceed 12%). In the other twelve provinces, income *per capita* was lower than the national average, while in six of these provinces (Lubelskie, Podkarpackie, Podlaskie, Warmińsko-Mazurskie, Kujawsko-Pomorskie and Świętokrzyskie), it was from 26% to 31% lower. This clearly discouraged foreign investors to do business there and, even less so, to set up

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<sup>4</sup> GDP *per capita* is a measure that reflects both the level of disposable income and the quality of demand for more advanced and higher-quality goods (Wawrzyniak, 2010, p. 92; Nakonieczna-Kisiel, 2018, p. 286).

enterprises specialising in more advanced processing, since income *per capita* this low did not guarantee an adequate demand for their products.

At this point, it might also be worth mentioning the results of research carried out by A.S. Bedi and A. Cieřlik (as cited in: Gorynia et al., 2006, p. 193), which confirms that wages in the Polish industrial sector are exponentially correlated with the involvement of foreign companies. The wages of employees in these sectors are also growing at a faster pace. In addition, the cited study found that the benefits arising from the presence of foreign investors influence the entire wage distribution without increasing the inequality between different groups of employees.

The level of foreign direct investment in Poland also affects the unemployment rate. The provinces in which the largest amount of foreign capital was invested *per capita* are also the ones with the lowest unemployment rate in the country, with the only exception being Dolnořlęskie. At the end of 2018, an unemployment rate below the national average (5.8%) was recorded in six provinces: Wielkopolskie, Małopolskie, řlęskie, Mazowieckie, Pomorskie and Dolnořlęskie (Table 4). In the remaining ten provinces, an unemployment rate above the average was noted. However, the high availability of workforce did not encourage direct investors to invest in these regions, and neither did the lower average level of gross monthly remuneration (except for Zachodniopomorskie). The reason for this was the relatively lower labour productivity compared to the national average (in Podkarpackie, Lubelskie, řwiętokrzyskie and Podlaskie – Table 4). On the other hand, a higher cost of workforce, when combined with a relatively higher labour productivity than the national average, was a factor encouraging the inflow of FDI to the provinces of Mazowieckie, Dolnořlęskie, řlęskie, Pomorskie and Zachodniopomorskie. The list also included Wielkopolskie and Małopolskie, despite the observed relatively lower wages and labour productivity compared to the country's average. What tipped the scale in the case of these two provinces were the more favourable market motivations (cf. Nakonieczna-Kisiel, 2018, p. 287).

The analysis revealed that the most important determinants for FDI location in 2010-2016 were the volume and absorbency of the internal market and low labour costs. However, the importance of market determinants was on the rise as well.

In the near future, a radical change in the directions of capital inflow should not be expected, and this will keep on feeding the richest regions. At the same time, one should expect the influence of foreign investments on the consolidation of the nature of the regions. According to this hypothesis, labour-intensive investments will be located in areas with the largest resources of cheap labour force and other ways of reducing these costs, whereas technologically advanced investments will be implemented in the largest growth centres.

Regional diversification of FDI distribution throughout Poland is explained, among others, by A. Cieřlik. In that study, the following findings are presented (Cieřlik, 2005, pp. 186-206):

- 1) the activity of foreign companies in a region has a significant impact on the inflow of other companies with foreign capital, since the region's initial predominance extends over time thanks to the expanding network of suppliers of goods and intermediary services targeted at foreign companies;
- 2) the external effects related to the availability of specialised services in the region are of significant importance for the decision on the allocation of FDI;
- 3) the important criteria for the location of FDI are the economic size of the region, the state of the technical infrastructure, the real wage rate and the schooling index;
- 4) a high unemployment rate discourages investors from allocating FDI in a region;
- 5) the development of technical infrastructure in regions with high unemployment, by reducing the costs of economic activity related to access to sources of supply and markets, may favour the inflow of FDI.

#### **4. Conclusion**

Since the beginning of the process of political changes in Poland in the early 1990s, a dynamic inflow of foreign capital in the form of direct investments has been observed. The analysis showed that these investments play an increasingly important role in the Polish economy. They contribute to the improvement of the country's economic situation, and as such, they improve the competitiveness of the Polish economy on the international market. Foreign direct investment is the most desirable form of inflow of foreign capital to Poland. Unlike other sources of external financing (loans or credits), FDI does not cause an increase in foreign debt, and in addition to the inflow of capital, it is accompanied by other important effects for economic development, such as: flow of technology, know-how, management and access to new markets.

The study concerned the analysis of the main factors determining the inflow of foreign direct investment to Poland. By the end of 2017, the running total value of FDI was at PLN 218770.9 billion, therefore indicating a 16% increase within the last 7 years. In this respect, Poland is a leader in Central and Eastern Europe (Przychodzeń, 2012, pp. 17-18; Czech, 2016, p. 36; Limański, Drabik, 2017, p. 237; Cieřlik, 2018a, p. 375; Cieřlik, 2018b, pp. 33-34; Jirasavetakul, Rahman, 2018).

The relatively high investment attractiveness of Poland is mainly due to favourable conditions in the area of traditional factors, in particular the country's stable political and legal situation, absorbent internal market, dynamic economic growth, labour market potential, degree of financial market development, exchange rate stability, low-wage labour costs and low



business taxes. However, these advantages are being gradually undermined by the conditions constituting the investment climate. In this respect, the Polish economy fares rather poorly within the international context. This mainly concerns the poor road and rail infrastructure, low clarity and consistency of legal regulations, administrative and non-administrative procedures related to setting up a business and high non-wage labour costs. Without addressing these issues, it will be very difficult for Poland to retain its leading position in Central and Eastern Europe and remain an attractive location for the inflow of foreign direct investment.

The results indicate that the main reasons for foreign investors to pursue business ventures in Poland were the search for a large and absorptive sales market, as well as a cheap and efficient workforce. Provinces that met these expectations dominated the regional FDI structure, especially Mazowieckie, Śląskie, Wielkopolskie, Dolnośląskie, Małopolskie and Pomorskie. Meanwhile, the least attractive for foreign investors were the following provinces: Podlaskie, Warmińsko-Mazurskie, Lubuskie, Lubelskie, Opolskie, Świętokrzyskie, Podkarpackie and Kujawsko-Pomorskie. Regions with a high FDI level are characterised by a lower unemployment rate, higher average wages and, above all, a higher level of gross domestic product *per capita*.

In Poland, as much as 75% of foreign capital has been located in the four most developed regions. In the near future, no improvement should be expected in this respect, as Poland will be receiving FDI that is increasingly more technologically advanced, and – as research suggests – these investments will be located mainly in highly developed regions.

Although foreign direct investment positively affects many elements related to the economy, it does not yet reflect the competitive position of Poland in global markets, which remains fairly weak. As signalled by the report of the International Institute for Management Development (IMD) in Lausanne, in 2018, Poland ranked 34<sup>th</sup> out of 63 countries in terms of competitiveness – up 4 places compared to 2017, and down 2 compared to 2010 ([https://www.imd.org/...](https://www.imd.org/)). Poland fared slightly better in a ranking developed by the World Economic Forum (WEF). In the ranking of this organisation, Poland ranked 39<sup>th</sup> (by GCI – Global Competitiveness Index) out of 137 countries surveyed in 2017-2018 ([https://www.weforum.org/...](https://www.weforum.org/)).

Particularly important is the impact of foreign direct investments on the competitiveness of the Polish economy at a national and regional level. Foreign capital, to a large extent, makes up for the existing capital shortages of the Polish economy and favours the increase of its effectiveness and competitiveness.

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## References

1. Ambukita, E. (2013). Bezpośrednie inwestycje zagraniczne jako czynnik rozwoju regionalnego [Foreign Direct Investment as a Factor of Regional Development]. *Biblioteka Regionalisty*, 13, 7-16.
2. Ancyparowicz, G. (2009). Bezpośrednie inwestycje zagraniczne w Polsce po akcesji do Unii Europejskiej [The Direct Foreign Investment in Poland after Accession into EU]. *Zeszyty Naukowe Szkoły Głównej Gospodarstwa Wiejskiego w Warszawie. Ekonomika i Organizacja Gospodarki Żywnościowej*, 77, 89-103.
3. *Atrakcyjność inwestycyjna regionów [Regional investment attractiveness]* (2017). Warszawa: Szkoła Główna Handlowa, Polska Agencja Inwestycji i Handlu.
4. Cieślík, A. (2005). *Geografia inwestycji zagranicznych. Przyczyny i skutki lokalizacji spółek z udziałem kapitału zagranicznego w Polsce*. Warszawa: Wydawnictwo Uniwersytetu Warszawskiego.
5. Cieślík, A. (2018a). Determinanty działalności przedsiębiorstw międzynarodowych z krajów OECD w Polsce [Determinants of the Activity of Multinational OECD Enterprises in Poland]. *International Business and Global Economy*, 37, 374-385.
6. Cieślík, A. (2018b). Determinanty bezpośrednich inwestycji zagranicznych z nowych krajów członkowskich UE w Polsce [Determinants of Foreign Direct Investment from the new EU Member States in Poland]. *Studia Ekonomiczne/Uniwersytet Ekonomiczny w Katowicach*, 352, 33-43.
7. Czech, K. (2016). Zagraniczne inwestycje bezpośrednie (ZIB) w relacjach Polski z krajami grupy BRICS – stan obecny i perspektywy rozwoju [Foreign Direct Investment in Relations Between Poland and BRICS Countries – Current State and Perspectives]. *Studia Ekonomiczne/Uniwersytet Ekonomiczny w Katowicach. Ekonomia*, 272(5), 31-43.
8. *Działalność gospodarcza podmiotów z kapitałem zagranicznym [Economic activity of entities with foreign capital]* 2010 (2011), 2011 (2012), 2012 (2013), 2013 (2014), 2014 (2015), 2015 (2016), 2016 (2017), 2017 (2018). Warszawa: Główny Urząd Statystyczny.
9. Gorynia, M., Bartosik-Purgat, M., Jankowska, B., and Owczarzak, R. (2006). Efekty zewnętrzne bezpośrednich inwestycji zagranicznych – aspekty teoretyczne i wyniki badań empirycznych. *Ekonomista*, 2, 185-204.
10. Heller, J., and Warżała, R. (2005). Regionalne uwarunkowania napływu bezpośrednich inwestycji zagranicznych do Polski. *Ekonomista*, 6, 785-799.
11. Hlaváček, P., and Bal-Domańska, B. (2016). Impact of Foreign Direct Investment on Economic Growth in Central and Eastern European Countries. *Inżynierine Ekonomika-Engineering Economics*, 27(3), 294-303.
12. <https://www.imd.org/wcc/world-competitiveness-center-rankings/world-competitiveness-ranking-2018/>.

13. <https://www.weforum.org/reports/the-global-competitiveness-report-2017-2018>.
14. *Investor's Guide – Poland – How to do business* (2017). Warsaw: Polish Information and Foreign Investment Agency (PAIiZ).
15. Jaworek, M. (2006). *Bezpośrednie inwestycje zagraniczne w prywatyzacji polskiej gospodarki*. Toruń: Towarzystwo Naukowe Organizacji i Kierowania, Stowarzyszenie Wyższej Użyteczności „Dom Organizatora”.
16. Jaworek, M., and Karaszewki, W. (2018). Ewolucja determinant podejmowania bezpośrednich inwestycji zagranicznych w Polsce. *Kwartalnik Naukowy Uczelni Vistula*, 2(56), 42-59.
17. Jirasavetakul, L-B.F., and Rahman, J. (2018). Foreign Direct Investment in New Member States of the EU and Western Balkans: Taking Stock and Assessing Prospects. *IMF Working Paper, WP/18/187*, 1-37.
18. Jonek-Kowalska, I. (2007). Wpływ inwestycji bezpośrednich na procesy współdziałania gospodarczego przedsiębiorstw. In W. Karaszewski (ed.), *Bezpośrednie inwestycje zagraniczne w budowaniu potencjału konkurencyjności przedsiębiorstw i regionów* (pp. 351-365). Toruń: Wydawnictwo Uniwersytetu Mikołaj Kopernika.
19. Karaszewski, W. (2004). *Bezpośrednie inwestycje zagraniczne. Polska na tle świata*. Toruń: Towarzystwo Naukowe Organizacji i Kierowania, Stowarzyszenie Wyższej Użyteczności „Dom Organizatora”.
20. Kaźmierczyk, J. (2011). *Technologiczne i społeczno-ekonomiczne determinanty zatrudnienia w sektorze bankowym w Polsce*. Warszawa: Wydawnictwo CeDeWu.
21. Kłysik-Uryszek, A. (2010). *Bezpośrednie inwestycje zagraniczne w gospodarce regionu. Teoria i praktyka*. Warszawa: Wydawnictwo CeDeWu.
22. Limański, A., and Drabik, I. (2017). Ryzyko lokalizacji bezpośrednich inwestycji zagranicznych [Foreign Direct Investment Location Risk]. *Zeszyty Naukowe Politechniki Śląskiej. Organizacja i Zarządzanie*, 108, 229-241.
23. Michałowski, T. (2006). Międzynarodowe przepływy kapitałowe we współczesnej gospodarce światowej. In E. Oziewicz (ed.), *Przemiany we współczesnej gospodarce światowej* (pp. 102-128). Warszawa: PWE.
24. Nakonieczna-Kisiel, H. (2018). Przyczyny regionalnego zróżnicowania zagranicznych inwestycji bezpośrednich w Polsce [Reasons for Foreign Direct Investment (FDI) Regional Diversification in Poland]. *Studia i Prace WNEiZ US*, 53(2), 281-294.
25. Ozga, M. (2009). Wpływ bezpośrednich inwestycji zagranicznych na dysproporcje międzyregionalne w Polsce [The Influence of the Foreign Direct Investments on the Regional Disproportions in Poland]. *Equilibrium*, 3(2), 111-123.
26. Oziewicz, E. (1998). *Zagraniczne inwestycje bezpośrednie w rozwoju gospodarczym krajów Azji Południowo-Wschodniej (ASEAN)*. Gdańsk: Wydawnictwo Uniwersytetu Gdańskiego.

27. Przychodzeń, W. (2012). Czynniki warunkujące napływ bezpośrednich inwestycji zagranicznych w Polsce [Factors Determining Inflow of Foreign Direct Investment in Poland]. *Handel Wewnętrzny*, 6, 10-20.
28. Puchalska, K. (2010). Bezpośrednie inwestycje zagraniczne w kontekście innowacyjności i modernizacji regionu [Direct Foreign Investment in the Context of Innovation and Modernization of the Region]. *Nierówności Społeczne a Wzrost Gospodarczy*, 16, 348-359.
29. Puchalska, K. (2015). Bezpośrednie inwestycje zagraniczne jako czynnik modernizacji polskiej gospodarki [Foreign Direct Investment as a Factor of the Modernization of the Polish Economy]. *Nierówności Społeczne a Wzrost Gospodarczy*, 41(1), 400-411.
30. Puchalska, K. (2016a). Zróżnicowane polskich regionów w aspekcie bezpośrednich inwestycji zagranicznych [The Differentiation in Polish Regions in Terms of Foreign Direct Investment]. *Zeszyty Naukowe Wyższej Szkoły Ekonomiczno-Społecznej w Ostrołęce*, 21, 296-308.
31. Puchalska, K. (2016b). Rola bezpośrednich inwestycji zagranicznych w kształtowaniu profilu gospodarczego województwa podkarpackiego [The Role of Foreign Direct Investment in Shaping Economic Profile Subcarpathian Voivodship]. *Przedsiębiorstwo i Region*, 8, 88-98.
32. Skawińska, E. (2018). Międzynarodowe przepływy kapitału portfelowego i bezpośrednich inwestycji zagranicznych. In E. Skawińska, P. Kułyk, and A. Niewiadomska, *Międzynarodowe stosunki gospodarcze w XXI wieku. Poszukiwanie równowagi* (pp. 87-122). Warszawa: Wydawnictwo CeDeWu.
33. Skawińska, E., and Wyrwa, J. (2018). Specyfika i znaczenie bezpośrednich inwestycji zagranicznych w kształtowaniu rozwoju województwa lubuskiego [The Nature and Importance of Foreign Direct Investment in the Development of the Lubuskie Voivodeship]. *Intercathedra. Scientific Quarterly – Faculty of Economics and Social Sciences Poznań University of Life Sciences*, 37(4), 379-388.
34. Szczepkowska-Flis, A. (2006). Podstawy teoretyczno-metodyczne badania roli inwestorów bezpośrednich w gospodarce regionu. In L. Wojtasiewicz (ed.), *Rola zagranicznych inwestorów bezpośrednich w gospodarce Wielkopolski* (pp. 9-16). Poznań: Bogucki Wydawnictwo Naukowe.
35. Wawrzyniak, D. (2010). Determinanty lokalizacji bezpośrednich inwestycji zagranicznych [The Location Determinants of Foreign Direct Investment]. *Gospodarka Narodowa*, 4, 89-111.
36. Weresa, M.A., and Napiórkowski, T.M. (2018). FDI and Innovation in Central European Countries, *Przedsiębiorczość i Zarządzanie*, 19(2)(2), 235-251.
37. Wyrwa, J. (2018). Foreign Direct Investments And Poland's Economic Development – Current Situation And Development Prospects. *Acta Oeconomica Universitatis Selye. International Scientific Journal*, 7(2), 188-200.

**Appendix  
Annex 1:**

**Table 1.**  
*Entities with foreign capital by voivodships in the years 2010-2017 in Poland*

Voivodships	Number of entities								Dynamics (2010 = 100)							Structure (%)							
	2010	2011	2012	2013	2014	2015	2016	2017	2011	2012	2013	2014	2015	2016	2017	2010	2011	2012	2013	2014	2015	2016	2017
Dolnośląskie	2 274	2 367	2 390	2 370	2 339	2 260	2 252	2 075	104	105	104	103	99	99	91	9,9	9,5	9,2	9,1	8,8	8,7	8,7	8,9
Kujawsko-pomorskie	571	587	592	589	572	557	562	522	103	104	103	100	98	98	91	2,5	2,4	2,3	2,3	2,2	2,1	2,2	2,2
Lubelskie	343	353	384	400	446	460	495	441	103	112	117	130	134	144	129	1,5	1,4	1,5	1,5	1,7	1,8	1,9	1,9
Lubuskie	777	809	768	731	717	657	674	598	104	99	94	92	85	87	77	3,4	3,2	3,0	2,8	2,7	2,5	2,6	2,6
Łódzkie	950	1 033	1 057	1 086	1 050	1 047	1 040	926	109	111	114	111	110	109	97	4,1	4,1	4,1	4,2	4,0	4,0	4,0	4,0
Małopolskie	1 471	1 575	1 635	1 651	1 754	1 762	1 962	1 813	107	111	112	119	120	133	123	6,4	6,3	6,3	6,3	6,6	6,8	7,5	7,8
Mazowieckie	8 576	9 447	9 979	10 098	10 321	10 030	9 821	8 473	110	116	118	120	117	115	99	37,2	37,9	38,5	38,6	39,0	38,6	37,8	36,5
Opolskie	471	492	504	488	467	434	428	411	104	107	104	99	92	91	87	2,0	2,0	1,9	1,9	1,8	1,7	1,6	1,8
Podkarpackie	345	387	427	461	494	529	571	519	112	124	134	143	153	166	150	1,5	1,6	1,6	1,8	1,9	2,0	2,2	2,2
Podlaskie	141	159	181	183	182	196	211	191	113	128	130	129	139	150	135	0,6	0,6	0,7	0,7	0,7	0,8	0,8	0,8
Pomorskie	1 246	1 353	1 406	1 430	1 430	1 373	1 350	1 201	109	113	115	115	110	108	96	5,4	5,4	5,4	5,5	5,4	5,3	5,2	5,2
Śląskie	2 077	2 245	2 356	2 388	2 442	2 407	2 421	2 211	108	113	115	118	116	117	106	9,0	9,0	9,1	9,1	9,2	9,3	9,3	9,5
Świętokrzyskie	174	181	182	184	184	177	175	169	104	105	106	106	102	101	97	0,8	0,7	0,7	0,7	0,7	0,7	0,7	0,7
Warmińsko-mazurskie	301	320	318	302	299	273	260	230	106	106	100	99	91	86	76	1,3	1,3	1,2	1,2	1,1	1,1	1,0	1,0
Wielkopolskie	2 062	2 222	2 291	2 302	2 333	2 302	2 290	2 070	108	111	112	113	112	111	100	8,9	8,9	8,8	8,8	8,8	8,9	8,8	8,9
Zachodnio-pomorskie	1 299	1 380	1 444	1 465	1 434	1 497	1 503	1 363	106	111	113	110	115	116	105	5,6	5,5	5,6	5,6	5,4	5,8	5,8	5,9
Ogółem	23 078	24 910	25 914	26 128	26 464	25 961	26 015	23 213	108	112	113	115	112	113	101	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0

Source: own study based on Statistics Poland, *Działalność gospodarcza podmiotów z kapitałem zagranicznym* (for relevant years).

**Table 2.**

Share capital of entities with foreign capital by voivodships in the years 2010-2017 (in mln zł) in Poland.

Voivodships	Value							Dynamics (2010 = 100)							Structure (%)								
	2010	2011	2012	2013	2014	2015	2016	2017	2011	2012	2013	2014	2015	2016	2017	2010	2011	2012	2013	2014	2015	2016	2017
Dolnośląskie	15 901,1	16 608,6	17 507,2	17 365,2	16 587,7	17 668,7	18 469,3	18 438,3	104	110	109	104	111	116	116	8,4	8,6	8,5	8,3	7,7	7,9	8,2	8,4
Kujawsko-pomorskie	3 011,4	3 223,7	3 129,8	3 100,9	3 046,2	2 960,0	2 987,3	3 250,1	107	104	103	101	98	99	108	1,6	1,7	1,5	1,5	1,4	1,3	1,3	1,5
Lubelskie	1 269	1 503,9	1 526	1 547,3	1 719,7	1 836,0	2 149,1	2 147,4	119	120	122	136	145	169	169	0,7	0,8	0,7	0,7	0,8	0,8	1,0	1,0
Lubuskie	2 027,5	1 949	1 958,1	1 957	1 549,7	1 509,6	1 741,3	1 721,9	96	97	97	76	74	86	85	1,1	1,0	0,9	0,9	0,7	0,7	0,8	0,8
Łódzkie	4 627,6	4 998,8	5 096,1	5 115,6	5 273,8	5 401,0	5 593,7	5 520,5	108	110	111	114	117	121	119	2,5	2,6	2,5	2,4	2,4	2,4	2,5	2,5
Małopolskie	10 989	11 313	13 148,5	13 592,3	14 165,9	13 713,9	17 444,7	17 311,0	103	120	124	129	125	159	158	5,8	5,8	6,4	6,5	6,6	6,2	7,8	7,9
Mazowieckie	92 921,4	92 113	98 456,7	102 572,7	107 963	106 679,4	107 713,2	101 994,7	99	106	110	116	115	116	110	49,2	47,4	47,6	49,0	50,1	47,9	48,0	46,6
Opolskie	1 729,7	1 690,6	1 708,4	2 234,5	2 327,1	2 239,8	2 133,5	2 205,8	98	99	129	135	129	123	128	0,9	0,9	0,8	1,1	1,1	1,0	1,0	1,0
Podkarpackie	2 198,4	2 234,5	2 463,9	5 981,7	6 003,7	5 973,3	3 031,2	2 977,2	102	112	272	273	272	138	135	1,2	1,2	1,2	2,9	2,8	2,7	1,4	1,4
Podlaskie	536,8	582,3	686,5	771,8	453,8	492,5	584,8	551,4	108	128	144	85	92	109	103	0,3	0,3	0,3	0,4	0,2	0,2	0,3	0,3
Pomorskie	11 555,7	15 042,1	15 837,1	8 957,3	9 304,8	9 742,5	7 297,4	7 306,4	130	137	78	81	84	63	63	6,1	7,7	7,7	4,3	4,3	4,4	3,3	3,3
Śląskie	17 529,2	18 137,2	19 124	19 067,4	18 226,2	19 260,0	19 499,3	19 388,9	103	109	109	104	110	111	111	9,3	9,3	9,2	9,1	8,5	8,7	8,7	8,9
Świętokrzyskie	2 819,8	2 683	2 925,8	2 984,7	3 023,2	2 967,0	2 770,7	2 367,2	95	104	106	107	105	98	84	1,5	1,4	1,4	1,4	1,4	1,3	1,2	1,1
Warmińsko-mazurskie	1 553,9	1 653	1 666,2	1 580,4	1 565,7	1 491,4	1 532,0	1 460,8	106	107	102	101	96	99	94	0,8	0,9	0,8	0,8	0,7	0,7	0,7	0,7
Wielkopolskie	15 524,2	15 988,8	16 661,9	16 889,1	16 531,5	22 650,5	24 719,9	25 192,7	103	107	109	106	146	159	162	8,2	8,2	8,0	8,1	7,7	10,2	11,0	11,5
Zachodnio-pomorskie	4 617,8	4 439,1	5 096	5 412,2	7 853	7 947,9	6 839,0	6 936,5	96	110	117	170	172	148	150	2,4	2,3	2,5	2,6	3,6	3,6	3,0	3,2
Ogółem	188 812,5	194 160,6	206 992,2	209 130,1	215 594,8	222 533,6	224 506,4	218 770,9	103	110	111	114	118	119	116	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0

Source: own study based on Statistics Poland, *Działalność gospodarcza podmiotów z kapitałem zagranicznym* (for relevant years).

**Table 3.**  
Indicators showing the market determinants of FDI location by voivodships in Poland

Voivodships	GDP (in current prices)						GDP per capita (in current prices)						Population						Gross nominal income in the households sector per capita					
	2010		2013		2016		2010		2013		2016		2010		2013		2017		2010		2013		2016	
	share in %	ranking position	share in %	ranking position	share in %	ranking position	in zł	ranking position	in zł	ranking position	in zł	ranking position	share in %	ranking position	share in %	ranking position	share in %	ranking position	in zł	ranking position	in zł	ranking position	in zł	ranking position
Dolnośląskie	8,5	4	8,5	4	8,4	4	42295	2	48179	2	53659	2	7,6	5	7,6	5	7,6	5	23 998	4	27 370	3	30 500	4
Kujawsko-pomorskie	4,5	8	4,5	8	4,4	8	31127	10	35280	10	39503	10	5,4	10	5,4	10	5,4	10	21 381	10	23 261	10	26 175	10
Lubelskie	3,9	9	4,0	9	3,8	10	25875	16	30449	16	33371	16	5,7	8	5,6	8	5,5	9	20 056	14	22 470	14	25 327	14
Lubuskie	2,2	15	2,2	15	2,2	14	31723	9	35786	9	40639	8	2,7	15	2,7	15	2,6	15	21 933	8	23 484	9	26 123	11
Łódzkie	6,1	6	6,1	6	6,0	6	34747	6	40145	6	45199	6	6,6	6	6,5	6	6,4	6	23 946	5	26 568	5	29 806	5
Małopolskie	7,6	5	7,7	5	8,0	5	32909	7	38167	7	43865	7	8,7	4	8,7	4	8,8	4	21 835	9	24 758	8	27 583	8
Mazowieckie	21,7	1	22,1	1	22,3	1	59666	1	69028	1	77359	1	13,7	1	13,8	1	14,0	1	27 523	1	31 853	1	35 243	1
Opolskie	2,2	16	2,1	16	2,1	16	30818	11	34640	11	38551	11	2,6	16	2,6	16	2,6	16	21 103	11	23 157	11	26 346	9
Podkarpackie	3,8	10	3,9	10	3,9	9	26122	15	30585	15	34120	15	5,5	9	5,5	9	5,5	8	18 307	16	20 668	16	23 189	16
Podlaskie	2,3	14	2,3	14	2,2	15	27381	13	31374	13	34299	14	3,1	14	3,1	14	3,1%	14	19 762	15	22 100	15	24 516	15
Pomorskie	5,7	7	5,7	7	5,8	7	36017	5	41457	5	46913	5	5,9	7	6,0	7	6,0	7	23 118	7	25 497	6	28 176	7
Śląskie	12,9	2	12,5	2	12,3	2	40201	3	44796	4	50184	4	12,0	2	11,9	2	11,8	2	26 187	2	29 821	2	32 542	2
Świętokrzyskie	2,6	13	2,4	13	2,3	13	28968	12	31392	12	34633	12	3,3	13	3,3	13	3,2	13	20 612	12	22 627	12	25 575	12
Warmińsko-mazurskie	2,7	12	2,7	12	2,7	12	27197	14	30776	14	34514	13	3,8	12	3,8	12	3,7	12	20 507	13	22 512	13	25 329	13
Wielkopolskie	9,4	3	9,6	3	9,9	3	39454	4	46150	3	52844	3	8,9	3	9,0	3	9,1	3	24 318	3	27 213	4	30 599	3
Zachodniopomorskie	3,8	11	3,7	11	3,7	11	32061	8	35851	8	40592	9	4,5	11	4,5	11	4,4	11	23 191	6	25 250	7	28 242	6
Polska	100,0	–	100,0	–	100,0	–	37 524	–	43034	–	48432	–	100,0	–	100,0	–	100,0	–	23304	–	26196	–	29182	–

Source: own calculations based on Statistics Poland (Local Date Bank) (for relevant years).

**Table 4.**  
Indicators showing the resource determinants of FDI location by voivodships in Poland

Voivodships	Unemployment rate						Average monthly gross wage						Students of higher education institutions per 10 thousand population						Labour productivity per one employee					
	2010		2013		2018		2010		2013		2017		2010		2013		2017		2010		2013		2016	
	%	ranking position	%	ranking position	%	ranking position	in zł	ranking position	in zł	ranking position	in zł	ranking position	person	ranking position	person	ranking position	person	ranking position	in zł	ranking position	in zł	ranking position	in zł	ranking position
Dolnośląskie	13,1	9	13,1	12	5,2	10	3 412,4	3	3 868,9	3	4 654,5	2	577	3	487	3	404	3	106 963	2	122 993	2	127 705	2
Kujawsko-pomorskie	17,0	3	18,2	2	8,8	2	2 910,8	14	3 322,1	13	3 886,2	14	403	10	332	10	278	8	82 922	9	96 860	10	102 757	10
Lubelskie	13,1	10	14,4	8	8,0	4	3 099,6	9	3 488,6	9	4 020,3	10	466	6	398	6	308	6	65 566	16	77 814	16	81 789	16
Lubuskie	15,5	4	15,7	6	5,8	9	2 920,4	13	3 282,1	15	3 951,0	12	258	16	186	16	137	16	87 611	8	102 128	7	109 645	7
Łódzkie	12,2	12	14,1	10	6,1	8	3 066,0	10	3 510,2	8	4 141,9	8	452	7	367	7	298	7	81 891	10	97 136	9	103 942	9
Małopolskie	10,4	13	11,5	13	4,7	12	3 169,9	5	3 574,2	5	4 347,1	5	635	2	564	1	440	2	80 018	12	93 312	12	100 619	12
Mazowieckie	9,7	15	11,1	15	4,9	11	4 279,6	1	4 773,4	1	5 523,7	1	614	1	554	2	438	1	120 823	1	141 571	1	147 962	1
Opolskie	13,6	8	14,2	9	6,3	7	3 137,3	6	3 473,4	10	4 144,9	7	392	11	308	12	207	13	88 524	7	101 689	8	107 399	8
Podkarpackie	15,4	5	16,3	5	8,8	2	2 877,4	16	3 282,7	14	3 837,2	15	345	14	295	13	220	12	67 343	15	79 312	15	85 093	14
Podlaskie	13,8	7	15,1	7	7,8	5	3 019,8	11	3 432,7	11	4 005,9	11	441	8	352	8	257	9	73 508	13	85 316	13	88 680	13
Pomorskie	12,3	11	13,2	11	4,9	11	3 383,6	4	3 847,1	4	4 496,6	3	471	5	444	4	356	4	94 238	4	112 225	4	117 622	4
Śląskie	10,0	14	11,3	14	4,3	13	3 528,2	2	4 022,8	2	4 481,6	4	391	12	314	11	250	10	99 101	3	112 582	3	122 175	3
Świętokrzyskie	15,2	6	16,6	4	8,3	3	2 971,6	12	3 349,8	12	3 911,5	13	357	13	266	15	198	14	72 330	14	79 910	14	84 759	15
Warmińsko-mazurskie	20,0	1	21,6	1	10,4	1	2 880,0	15	3 264,6	16	3 803,0	16	344	15	272	14	200	15	81 052	11	94 320	11	101 178	11
Wielkopolskie	9,2	16	9,6	16	3,1	14	3 126,4	7	3 515,3	7	4 124,1	9	476	4	413	5	336	5	88 696	6	104 354	6	111 549	6
Zachodniopomorskie	17,8	2	18,0	3	7,4	6	3 120,2	8	3 539,1	6	4 154,3	6	416	9	336	9	238	11	92 795	5	107 015	5	115 074	5
Polska	12,4	–	13,4	–	5,8	–	3435,0	–	3877,4	–	4527,9	–	472	–	402	–	336	–	91915	–	107098	–	113872	–

\* Gross value added per person employed

Source: own calculations based on Statistics Poland (Local Date Bank) (for relevant years)