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**Article**

## The location premises of FDI in Poland: The case of the Lodz Province

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**The Location Premises Of FDI In Poland.  
The Case Of The Lodz Province**

**Abstract**

*This paper aims to study the role of various factors in attracting foreign capital to the Province of Lodz. Conclusions are based on the direct questionnaire study conducted among 188 companies with foreign capital which invested in the region. The obtained results indicate that specific Lodz Province (voivodeship) characteristics were of little importance to foreign investors. Both in Poland and in the voivodeship, they were looking for relatively cheap and skilful labour in order to lower their total costs of production. We confirmed that investment incentives were of little importance for the inflow of FDI to the communes and counties of the Province of Lodz. The factors which most discouraged investment in the region were poor transport infrastructure and an uninteresting social infrastructure decisive for the quality of everyday life. Our conclusion is that the inflow of FDI does not eliminate intra-regional disproportions; on the contrary it probably deepens them.*

**Keywords:** FDI, Lodz Province, Location Decisions

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## 1. Introduction

The development of international trade theory has resulted in the divergence from the Heckscher-Ohlin's model, which formed the foundation of previous analyses, and in recent decades theories evolved, mostly due to the novel approaches of Krugman (Krugman 1979) and Melitz (Melitz 2003), towards the development of more realistic models of international trade referred to as the "new" new trade theory (NNTT). According to its assumptions, there are increasing returns to scale, products have many varieties, firms differ among themselves with their cost function and the economy operates in accordance with the rules of monopolistic competition. The basic model may be also extended to oligopolistic market structures, where companies play strategic games (Neary 2010). Hence it is natural that the theory focuses not only, as was the case in Heckscher-Ohlin's model, on the trade in goods but also on the economic operations of multinational enterprises (Rainelli 2003; Helpman 2013), i.e. operators who exercise control over production assets in various countries as a consequence of foreign direct investment (FDI).

One of the three major questions which NNTT is trying to answer with respect to multinational enterprises (MNE) is to identify the factors decisive for the selection of a country wherein to locate economic activities (Antràs, Yeaple 2013). Data concerning the intensity of flows and the size of FDI stock indicate that, when it comes to these aspects, the attractiveness of countries is very much differentiated and also changes over time (e.g. WIR 2013). For the governments interested in obtaining more of the assets usually brought in by FDI, such as capital, technology, managerial know-how and access to foreign markets, it is crucial to understand the background of the phenomenon. On the other hand, experts in international business stress that the decision regarding FDI location is one of the crucial decisions in a multinational enterprise as it impacts on access to markets, production resources, and strategic assets, and by the same token it is vital for the efficiency and competitiveness of such an enterprise (Kandogan 2014).

The assets brought in by foreign investors are especially in demand in economies which, like Central Europe, go through a process of intensive modernisation. This is why global competition for FDI has been going on for many years, which is evidenced by the progressing liberalisation of regulations concerning the FDI in most countries. At the same time, these regulations have become more selective, which may suggest that governments are more and more aware that not all investors are equally welcome from the point of view of their own economic policy objectives (WIR, 2013). According to the vast literature on FDI, their net balance for growth and development is not always positive (see, e.g., Moran, Graham, Blomström eds. 2005, Tytel, Yudaeva 2006, Herzer 2012, Temiz, Gökman 2014).

External factors which impact on the selection of concrete sites in concrete countries or regions have been widely described in the economic literature (for an overview, see, e.g., Blonigen 2005), but researchers have failed to explain many issues and the matter will probably remain open for a long time to come (Blonigen 2005). In addition, firm-specific characteristics influencing location decisions, such as ownership structure, are much less often analysed. They may also play a role, as pointed out by Strange et al. (2009).

From the macroeconomic perspective, in a uniform general equilibrium-based model of location selection only aggregated FDI flows can be considered. In two basic cases the horizontal MNEs are attracted by the big size of the market when trade costs are high enough (Markusen 1984), and the vertical MNEs by the abundance of production factors needed to optimise their geographic configuration of the value chain (Helpman 1984). These are very general reasons, referred to as fundamental and long-term (Azémar, Desbordes 2010), hence they are not very useful for recommendations vis-à-vis current economic policy. On the other hand, the analysis of the many detailed factors that together make up the size of the market, trade costs and abundance of resources causes researchers to use partial equilibrium models and focus on concrete cases which allow them to draw conclusions on what attracts investors, always with the reservation “it depends”.

There is a long list of location-specific attributes which impact FDI inflow. Independent variables used by researchers in various combinations include: economic and social stability in the host country (Asiedu 2001, Bartels, Napolitano, Tissi 2014); its foreign exchange rate, taxes, institutions, barriers to trade, and trade with FDI home country (Blonigen 2005); size of the host market and the ease of entry into neighbouring markets; cost of labour, employees’ skills, availability and quality of infrastructure, agglomerations benefits (Cheng, Kwan 2000); political risk (Jimenez, de la Fuente, Duran 2011); border effects (Ciešlik 2005); subsidies to foreign investors (James, 2009); a liberalised labour market (Azémar, Desbordes 2010); promotion activities of host governments (Harding, Javorcik 2011); and the size of domestic investment in the host country (Lautier, Moreau, 2012). The importance of these factors may vary over time (Bartels, Napolitano, Tissi 2014). However, despite the plethora of analyses devoted to individual variables, the only one undisputable conclusion is that FDI inflow depends on demand as estimated by an entrepreneur (market size) and the estimated investment risk (stability of the business environment and conditions), i.e. it is subject to the general investment decision rules formulated already by Keynes (Lautier, Moreau 2012).

Hence general knowledge concerning the factors decisive for foreign investors’ location decisions, so useful to decision-makers, can be supplemented by case studies. They may be of interest not only to central governments but also

to regional and local authorities (Christiansen, Oman, Charlton 2003). This is true not only of federal but also unitary states, where territorial self-governments are separate entities with some degree of independence from the central government. For example in Poland they perform their own economic and social tasks, using their own financial resources, economic assets and human resources, i.e., administration and public services (Wojciechowski 2012). Hence, the inflow of FDI into territories administered by autonomous local governments may create an opportunity to better execute tasks entrusted to them by law.

First of all, local governments, due to their legal and political obligations vis-à-vis their communities, should be very much interested in the positive long-term outcomes of FDI inflow: new production facilities, more employment opportunities, better paid jobs, local suppliers' connections to more advanced enterprises, and additional tax revenues. Economic successes which improve the standard of living of the population are strong arguments for winning votes in an election campaign. At the same time, the arrival of a foreign investor may easily destabilize the local community and economy by, e.g., threatening the natural environment, crowding out local businesses, contributing to higher unemployment (Gorynia ed. 2005), or increasing demand for specific categories of workers and skyrocketing their wages (Mullen, Williams 2007). A high quality job done by local authorities may facilitate the absorption of positive outcomes of FDI and mitigate their negative impact (Wang et al. 2013). This is the case because, in contrast to the central or even regional levels, foreign investors are not anonymous to local authorities, who often engage in direct contact with them. Thus, effectively dealing with an investment at the local administrative level, cross-cultural sensitivity, moderation of potential conflicts between an investor and the local community (Calvano 2008), and readiness to help the investor, especially in recruiting appropriate employees, become much more important. Last but not least, the presence of a big MNE may turn out to be more crucial to building a positive image of the local economy and its local authorities in the world than for the image of the country as a whole. In sum, the attitudes and professionalism of local authorities are decisive for the economic and social climate, which is an important factor for any businessperson.

Empirical studies over the determinants of FDI spatial distribution are much more numerous with respect to the developed countries' perspective than with respect to countries with transition economies (Chidlow, Salcuviene, Young 2009), where they are focused mainly on China (Cieślik, 2005a). In Poland the issue has been dealt with at the regional level by, *inter alia*, Cieślik (2005), Cieślik

(2005a), and Cieřlik, Ryan (2005), and at the macroregional level by Chidlow, Salcuviene, Young, (2009),<sup>1</sup> while at the local level of the Lodz voivodeship it has been analysed by Rózański (2010) and Świerkocki (2011).

This article analyses the role of various factors in attracting foreign capital to the Province of Lodz as of the end of 2010.<sup>2</sup> It is a descriptive presentation which, contrary to other surveys in Poland, makes an effort to examine internal location factors within the province at the level of communes and counties (LAU2 and LAU1).<sup>3</sup> Thus we try to broaden the scope of the current research on FDI in Poland by concentrating on the local economy, and we offer implications for both the practice and policy of local authorities. Conclusions are drawn based on the results of a direct questionnaire study.

## 2. Study description and method

This article was drafted on the basis of results of a direct questionnaire study conducted in 2011 by a team of academics of the University of Lodz from the Department of International Trade, and students from the Faculty of Economics and Sociology who conducted the polls (Świerkocki 2011).

The study included 188 companies with foreign capital (CFCs) from the voivodeship of Lodz i.e. 9% of their overall number. They were located in 28 towns and cities in the Province (voivodeship) of Lodz. Statistical data show that the operations of foreign investors are concentrated in cities, therefore almost all of the respondents were based there. We managed to reach the CFCs from all the more important cities of the voivodeship. As many as 63% of CFCs in the sample were based in the city of Lodz, i.e. the capital of the voivodeship. According to National Register of Economic Entities (REGON 2009), this proportion accurately reflects the share of CFCs from the capital of the voivodeship in relation to their total population.

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<sup>1</sup> Following the distribution pattern of FDI in Poland, the authors grouped the provinces (voivodeships) into five macroregions, while the classification by the Central Statistical Office (Polish abbr. GUS) distinguishes six macroregions in accordance with NUTS1 (GUS, 2014).

<sup>2</sup> The earlier version of the text was presented at the 40th European International Business Academy (EIBA) Annual Conference in Uppsala, Sweden, in December 2014. We want to thank the two anonymous referees and conference participants for their comments.

<sup>3</sup> A Local Administrative Unit (LAU) is a low level administrative division of a country, ranked below a province or a region. In the EU LAUs are basic components of NUTS regions, according to Eurostat classification.

The sample included CFCs from the industry and services sectors only. The study covered mostly manufacturing CFCs and only 5% of construction enterprises. Among CFCs active in services, half was made up of trade companies and 8% were transport and warehouse companies. Other types of businesses were very much dispersed.

### **3. Motivations behind the location of FDI in Poland**

When working on the study we assumed that seeking a particular location for an FDI begins with the identification of the desired host country. There are no uniform rules, however. For example decisions on FDI location made by Spanish businesses vary depending on whether the expansion is to take place in the countries of the “old” or “new” European Union (Jimenez, de la Fuente, Duran, 2011). Some of our respondents admitted that when considering the choice they immediately compared the characteristics of Lodz with its competitors (e.g. with Bratislava, Kosice, Prague, Brno, Budapest), disregarding the comparison of conditions at the national level.

To the best of the respondents’ knowledge the most important motivation behind FDI location in Poland was connected with the possibility to find a relatively cheap labour force with suitable skills (Świerkocki 2011). This was the most common reason given by foreign investors in Poland (e. g. Różański 2010, Kalinowski 2008, Cieślik 2005), and the study confirmed them.

Hopes for sales in the Polish market also ranked high in location motivation. They were assessed as a relatively large, especially when compared to other countries of the “new EU” which were most often considered as an alternative place of an investment’s location. However the answers varied a great deal. While a large number of declarations indicated that the factor was seriously considered, almost one quarter of companies’ representatives stated that it did not play any role or that its impact was “very little” or “little” (Świerkocki 2011).

This variation can be explained by the differing shares of exports in sales. The manufacturing sector in particular was export-oriented. In the opinion of two thirds of its companies achieving more than 75% of revenues abroad, the size of the domestic market in the choice to locate the investment in Poland was of little or no importance. The biggest impact of the domestic market upon the decision to invest in Poland was declared by trade companies (Świerkocki 2011).

#### 4. Motivations behind FDI location in the Lodz Region

In order to identify the reasons for location of FDI in the voivodeship of Lodz, the representatives of CFCs were asked to evaluate the extent to which specific factors were encouraging or discouraging. On a 7-degree scale, they assessed 26 suggested reasons (see Table 1 below).

**Table 1. FDI location determinants in the voivodeship of Lodz \***

No.	Specification	Average of answers	Standard deviation	Variation
1.	Possibility to find staff with adequate skills	5.887	1.240	1.539
2.	Salaries and wages	5.816	1.078	1.162
3.	Possibility to find workers with adequate skills	5.812	1.308	1.710
4.	Production costs (services)	5.737	1.208	1.460
5.	Closeness (geographical) to suppliers and business partners	5.339	1.335	1.782
6.	Availability of developed plots, production, office and warehouse space, etc.	5.049	1.461	2.134
7.	People's mentality	4.995	1.389	1.929
8.	Profile of vocational schools and universities	4.984	1.270	1.614
9.	Possibility to sell in the market of the voivodeship	4.866	1.152	1.328
10.	Economic image of the voivodeship	4.720	1.079	1.164
11.	Presence of business environment institutions	4.640	1.000	1.000
12.	Attitude of commune authorities to foreign investors	4.627	1.358	1.844
13.	Existing competition in the market of the voivodeship	4.602	1.077	1.160
14.	Lodz Special Economic Zone	4.529	1.035	1.071
15.	Attitude of county authorities to foreign investors	4.489	1.250	1.563
16.	Public safety	4.443	1.314	1.726
17.	Attitude of voivodeship authorities to foreign investors	4.435	1.190	1.416
18.	Access to information about the voivodeship	4.435	1.064	1.132
19.	Support for foreign investors from communes, counties or the voivodeship	4.321	1.327	1.760
20.	Natural environment	4.258	0.952	0.906
21.	Social infrastructure (hotels, catering, culture, etc.)	4.151	1.470	2.161
22.	Railway infrastructure	3.941	1.356	1.840
23.	Speed of operations and flexibility of administration at various levels in the voivodeship of Lodz	3.871	1.619	2.621
24.	Stability of regulations adopted by the authorities at various levels in the voivodeship of Lodz	3.863	1.248	1.558
25.	Road infrastructure	3.763	1.958	3.836
26.	Airport infrastructure	3.753	1.687	2.847

\* Using the following responses to each factor: encouraging to the following extent: large (7), medium (6), little (5), neither encouraging nor discouraging (4), discouraging to the following extent: little (3), medium (2), large (1).

Source: own study.

Similar to the part concerning the motivation of foreign investors to come to Poland, in this analysis both the distribution of answers and statistical ratios (average of answers, variation, and standard deviation) were used. The calculated Cronbach's alpha coefficient was 0.884, which indicates a very high accuracy of the measurement.

The answers were mostly positive and neutral. The latter, describing a given factor as one "of no importance" shows that it was not considered when making the decision whether to invest in the voivodeship of Lodz. Negative answers indicating that a factor was rather insignificant were relatively few.

All factors included in the questionnaire could be divided into three groups, reflecting supply conditions, demand conditions and institutional conditions.

It turned out that foreign investors were attracted to the voivodeship of Lodz mostly by its favourable supply conditions, such as:

1. low nominal salaries and wages,
2. low level of overall costs of doing business,
3. possibility to find workforce with suitable skills,
4. opportunity to find management staff with suitable skills.

Answers evaluating the impact of salaries and wages and overall costs were rather unanimous. There were no major differences of opinion among companies from different sectors and with different export orientations. As for the possibility to find suitable employees (workforce and staff), the diversification of answers was also not very large across companies by sections and sectors of the economy. However, the latter element constituted a greater encouragement to invest in manufacturing, compared to trade.

Greater differences in the evaluation of the importance of available human capital occurred among companies with differing levels of internationalization. Those with larger shares of exports in sales (from 25%) much more appreciated the possibility to find skilful workers than those which did not export or those which do so only occasionally. In Polish conditions exports, especially to Western countries, may still require an offer of better quality than that for the domestic market. Sales abroad also entail a large organizational effort and higher trade costs, as is explained in numerous theoretical works (e.g. Melitz 2003) and confirmed by empirical research (e.g. EFIGE 2011). Therefore companies oriented at foreign markets emphasise the employment of workers with relatively high skills and greatly appreciate the possibility of finding them. As a consequence of this demand, CFCs positively evaluated the profile of education in local universities and vocational schools. There were fewer neutral opinions and on average the opinions were more favourable.

CFCs also paid much attention to agglomeration benefits resulting from the presence of suppliers and business partners. Some of them invested in the region following producers of final goods with whom they used to cooperate in other countries. They appreciated developed plots, production space, and the availability of offices at competitive prices compared to other parts of Poland. In the respondents' opinion market competition was not very intense, and business environment institutions (i.e. Lodz Regional Development Agency, Foundation for Promotion of Entrepreneurship in Lodz, Lodz Regional Science and Technology Park) were quite numerous although not very important for implementing their projects.

An important part of supply conditions concern the availability and quality of various types of infrastructure, which in sum rather discouraged the respondents from investing in the region. Transport infrastructure ranked especially low, and the averages obtained in this category were the lowest of all factors in the study. The critical opinions referred almost unanimously to all types of transport infrastructure: roads, railways, and airport. While we also came across positive ratings, they were much more scarce than for other factors. The distribution of ratings divided by sections and sectors of the economy and export involvement were very consistent. Poor transport infrastructure clearly did not allow the region to make good use of its geographical advantage. Our respondents had a little better opinion about public safety and social infrastructure like hotels, restaurants, and cultural amenities making business and private life easier.

The impact of demand conditions in the voivodeship on the FDI location decision was assessed differently (see Table 2 below). Half of our respondents indicated that the possibilities of sales in the local market were of "no importance" and were not taken into consideration in choosing the site for an investment. The other half consisted mostly of trading CFCs, for which, obviously, this factor was rather decisive in making a positive decision.

**Table 2. Impact of market size in the decision to locate in the voivodeship of Lodz**

Factor:	Number of CFCs with the share of the Lodz voivodeship in sales:				Lack of data	Total
	to 0.99%	1% - 24.99%	25% - 49.099%	over 50%		
discouraging to a medium extent	-	1	-	-	-	1
of no importance	50	35	5	4	10	104
encouraging to a little extent	6	16		1	3	26
encouraging to a medium extent	7	13	1	5	2	28
encouraging to a large extent	3	7	3	14	-	27
Lack of data	1	-	-	1	-	2
Total	67	72	9	25	15	188

Source: own study.

**Institutional conditions** (in the behavioural sense) consist of formal (legal) rules and informal constraints stemming from various social norms (see, e. g., North, 1991). They were not evaluated in a homogenous way by CFCs. The factor defined as “people’s mentality” (i.e. attitude to foreigners and foreign working methods, reflecting cultural distance and clearly belonging to the category of informal institutions) was considered on average as relatively encouraging to invest in the region. In the opinions of one third of respondents the factor did not matter. They perceived the relations with territorial self-government less positively. Half of the CFCs declared that the attitude of authorities at various levels vis-a-vis foreign investors was generally of no importance. This suggests that local civil officers neither encouraged nor discouraged foreign entrepreneurs when it came to the location of an investment project in the voivodeship, being thus indifferent to their presence. Also half of the CFCs stated that formal institutions, i.e. the possibility of receiving various forms of support from the authorities, were of no importance in their decision either. This may mean that available instruments (limited mostly to tax breaks, legal and economic advice, assistance in searching for investment sites, and providing road infrastructure to large investors) were not attractive enough when compared with the fundamental supply factors. In this context it is worth stressing that a clear majority of respondents claimed that the presence of the Lodz Special Economic Zone (SEZ) offering conditioned tax incentives and other assistance did not have any bearing on their choice of the region. As many as 37% of surveyed companies launched their operations within the present borders of the voivodeship of Lodz before the Lodz Special Economic Zone was established in 1997, and other respondents did not wish to operate in the Zone. Similar conclusions about the insignificance of the SEZ for FDI location decisions in Poland can be found in Róžański (2010), Cieřlik (2005), Cieřlik and Ryan (2005).

In general, the distribution of opinions about the attitude of territorial self-government towards investors was similar at the different levels (communes, counties and the voivodeship). There were no major differences in this respect among companies representing different sections of the economy and engaged in exports to a different degree. At the same time, the most critical evaluation concerned two aspects of relations with the administration – speed and flexibility of decision making, and the stability of adopted regulations. The obtained average scores (below 4), indicate a prevalence of negative opinions and are among the lowest for all factors which impact location decisions in the region. Such a critical assessment prevailed among CFCs from all industries and sectors of the economy (see Table 3 below).

**Table 3. Evaluation of territorial self-government and the location of FDI in the voivodeship of Lodz\***

Sector or section of economy	Speed and flexibility of reaction by the administration at various levels in the voivodeship of Lodz	Stability of regulations adopted by authorities at various levels in the voivodeship of Lodz
	Average of answers	
Industry,	3.947	3.979
including manufacturing	3.940	3.881
Services,	3.793	3.742
including trade	3.792	3.596
Total	3.871	3.863

\* Ranking scale of answers as in Table 1

Source: own study.

The question concerning determinants of FDI location in the Province of Lodz also provided for an open answer as it included the option “Other, please specify”. Thus we were able to learn about a collection of various motives reflecting the role of informal institutions behind the location decision, which often are based on special cases. These include: an attempt to acquire a particular company based in the voivodeship of Lodz; former business links with enterprises in the region; personal contacts; and emotional reasons such as the origin of a foreign investor or even historical sentiments from before World War II. As over two-thirds of respondents did not select the “Other” option, we should thus assume that the majority of them thought that the list of potential factors given in the closed question was complete and the study well reflected the reality. But on the other hand it should be noted that the remaining one third who selected the “Other” response usually claimed that it was the most important and decisive element for choosing the location for their company in the region of Lodz. Such a large margin of individuality in business decisions, combined with the necessary economic calculations, probably reflects the fact that most of investors established small and micro-CFCs here. Their owners usually have a different business perspective than the managers of large MNEs (Strange et al. 2009).

## 5. Factors encouraging or discouraging for the location of FDI in the Lodz Region

In order to verify the accuracy of the answers regarding the 26 selected factors which could influence the decision about investing in the Lodz voivodeship, we additionally asked our respondents to select from among them the three the most encouraging and three the most discouraging ones. Accordingly we received and compared new rankings based on Table 1. The first group consisted of:

1. factors identified most often as encouraging (ranked first, second or third),
2. factors considered as the most encouraging (ranked first),
3. factors which scored the highest averages in the scale question.

**Table 4. The most encouraging factors for the location of FDI in the voivodeship of Lodz**

	Production costs (services)	Closeness (geographical) to suppliers and business partners	Possibility to recruit staff with adequate skills	Possibility to recruit workers with adequate skills	Salaries and wages	Possibility to sell in the market of the voivode-ship	Availability of developed plots, production, office and warehouse space, etc.	Mentality
<b>1. Factors indicated as the most encouraging and ranked first, second or third</b>								
Number of scores	62	57	51	49	44	33	27	-
Order	1	2	3	4	5	6	7	-
<b>2. The factor indicated as the most encouraging</b>								
Number of scores	22	30	15	19	8	21	11	-
Order	2	1	5	4	7	3	6	-
<b>3. Ranking based on average of answers calculated in the scale question*</b>								
Average of answers	5.737	5.339	5.887	5.812	5.816	x	5.049	4.995
Order	4	5	1	3	2	x	6	7

\*contained in Table 1.

Source: own study.

In the first two perspectives the results were very similar (Table 4, points 1,2). They contained the same items, with some differences only in their positions in the rankings. Both hierarchies showed a large similarity to the selection of factors, based on the averages calculated from the answers to the scale question (Table 4, point 3). Its first five items also coincided with the most important ones in two previous rankings. Differences were present for further ranks. To summarize, based on Table 4 one could indicate with certainty the group of the most important factors for foreign investors. They were:

1. low production costs,
2. geographical vicinity of suppliers and business partners,
3. possibility to recruit staff with adequate skills,
4. possibility to recruit workers with adequate skills,
5. low salaries and wages.

Among factors essential, but probably a little less important, we found:

1. possibility to sell in the market of the voivodeship,
2. availability of developed plots, production, office and warehouse space, etc.,
3. people's mentality.

The second group of new rankings based on Table 4 consisted of:

1. the factors most often mentioned as discouraging (ranked first, second or third),
2. factors considered the most discouraging (ranked first),
3. factors which scored the lowest averages in the scale question.

The question about discouraging factors, unlike the one concerning the encouraging ones, was troublesome to many respondents. They were often unable or unwilling to point out any specific element. Perhaps the main reason was that we were not able to ask this question to those companies who abandoned the idea of investing in the Lodz voivodeship and located their facilities elsewhere in Poland or in other countries. So it may be said that the rankings point rather to disadvantages (weaknesses) of doing business in the region rather than factors discouraging investment in the region. Therefore the percentage of obtained answers was only 70%.

In the first two rankings based on a non-scale question one finds the same factors and their order is identical (Table 5, points 1, 2). They also occur (although in a different order) in the list based on the average from the scale question (Table 5, point 3). With the exception of railway infrastructure, the results are coherent. Thus we can conclude that the most discouraging factors for foreign investors in the region are the ones from Table 5, points 1, 2.

**Table 5. The most discouraging factors for the location of FDI in the voivodeship of Lodz**

	Road infrastructure	Speed and flexibility of administration at various levels	Stability of regulations adopted by the authorities at various levels	Airport infrastructure	Social infrastructure	Railway infrastructure
<b>1. Factors identified by respondents as the three most discouraging</b>						
Number of scores	51	39	38	34	26	-
Order	1	2	3	4	5	-
<b>2. The factor identified by respondents as the most discouraging</b>						
Number of scores	39	22	13	11	5	-
Order	1	2	3	4	5	-
<b>3. Ranking based on average of answers calculated in the scale question*</b>						
Average of answers	3.763	3.871	3.863	3.753	4.151	3.941
Order	2	4	3	1	6	5

\*contained in Table 1.

Source: own study.

## **6. FDI location and the differences in the development of counties in the Lodz Province**

So far we have outlined the motivation behind choosing Poland and its provinces as FDI location by investors who launched their economic operations in the Lodz voivodeship. Now we shall identify relations between the characteristics of the various counties in the Lodz voivodeship and FDI distribution. Our main reference point will be the level of economic development of counties, which represents in a nutshell the factors decisive for the location decision, such as agglomeration benefits, workers' skills, labour costs, and availability and quality of infrastructure (Cheng, Kwan 2000).

The administrative structure of the Lodz voivodeship includes 24 counties (poviats) with three townships (towns having the rights of counties). Development rankings or similar surveys concerning intra-regional differentiation at the level of these units have been conducted so far by only a handful of public institutions and research centres in Poland (Jabłoński, Robaszek 2000, Spójność... 2009, Diagnoza... 2013). We used the study by Krajewska (2012) and the ranking of counties by the percentage of urban population. The first choice was dictated by the

comprehensive nature of the study, which compared counties in 12 economic and social categories. The second was guided by the results of other analyses, which suggested that counties with a higher percentage of urban population achieve a higher level of economic development (Burdziak, Myślińska 2008). Hence, the indicator may be interpreted as its approximate measure.

On top of that, our analysis takes account of the following individual variables which describe the economic performance of a given county (Krajewska 2012) and may impact its overall location attractiveness:

1. communes' own revenue per capita, aggregated at the level of counties,
2. gross fixed assets per capita,
3. number of economic operators per 10 K inhabitants,
4. industrial production sold per capita,
5. average gross remuneration,
6. EU funds per capita,
7. unemployment rate.

The above seven variables were identified for each county, starting from the best position in the hierarchy (1) to the worst (24). The sum of scored points determined the rank of a given county. Rankings of individual variables and general development rankings of the counties in the Lodz voivodeship were compared to the rankings of counties by the number of CFCs and FDI stock value in 2011, which we computed based on the data of the Central Statistical Office (GUS 2014). In order to specify which variables might impact the choice of a county as an FDI location we used the Spearman's rank order-correlation coefficient ( $r_s$ ). It assesses the statistical relationship between two variables, i.e. two-dimensional correlation. By using it, we could identify the strength and make suppositions about the direction of dependence between analysed characteristics by comparing the ranks of two variables. This coefficient, contrary to the Pearson correlation coefficient, measures a broader scope of relationships showing a monotonic dependence between them, which does not have to be linear. It is also more resilient to the presence of outliers in a sample (Sobczyk 2010).

There are several versions of Spearman's coefficient. The study was conducted using the formula used in the SPSS software (version 14.0 PL). The coefficient adopts values within a closed interval [-1, +1]. The closest the  $r_s$  is to the absolute value of 1, the stronger is an analysed relationship. A positive sign indicates that there is correlation, while a negative sign means the distinguished characteristics are divergent. The rank correlation coefficient may be assessed against its statistical significance.

Coefficient  $r_s$  may be used when analysed characteristics are measurable and the sample is small, and also when the characteristics are qualitative and we can put them in order (Rószkiewicz 2002, Sobczyk 2010). The data used in the study met these conditions.

Results of the calculations are presented in Table 6. They demonstrate, firstly, that general coefficients reflecting the level of economic development of counties are clearly correlated with FDI stock in two aspects (quantitative and value-wise). The correlation is highly significant at the level of  $p = 0.01$ , and significant at  $p = 0.05$  (respective values of the coefficients are below these thresholds).

**Table 6. Correlation between the development level and FDI location in the counties of the Lodz voivodeship – Spearman’s rank correlation**

Item	value of the coefficient (p)		significance of the coefficient (p)	
	No. of CFCs	FDI value	No. of CFCs	FDI value
<b>General coefficients</b>				
General ranking	0.579	0.540	0.003	0.006
Percentage of urban population	0.766	0.689	0.000	0.000
<b>Individual coefficients</b>				
Own revenues of communes in the county per capita	0.749	0.627	0.000	0.001
Gross fixed assets per capita	0.673	0.695	0.000	0.000
No. of economic operators per 10 K inhabitants	0.578	0.448	0.001	0.028
Industrial production sold per capita	0.390	0.446	0.060	0.029
Average gross remuneration	0.260	0.421	0.220	0.041
EU funds per capita	0.047	0.033	0.826	0.880
Unemployment rate	-0.090	0.156	0.090	0.467

Source: own computations based on SPSS software.

Secondly, there is a strong correlation dependence in counties between the number of CFCs and the value of FDI resources, on the one hand, and communes’ own revenues, the value of fixed assets, and the number of economic operators per capita on the other hand. These dependencies are statistically highly significant, which is shown by the value of p coefficients.

Thus, both patterns suggest that there is correlation between the distribution of FDI stock in the Lodz Region and the development level of its counties. This would mean that FDI deepens territorial economic differentiation in the voivodeship rather than eliminating it.

At the same time, some individual variables connected with economic development turned out to be insignificant to investors. The first one is the use of structural funds by counties. The reason may be the timing of our study, which overlapped with the beginning of the programming period, when the allocation of funds had not yet fully started. Another possible reason may be the relatively low interest of MNEs in regional EU programmes, as the access to these is hampered by numerous and complex administrative procedures. This may also confirm the slight importance of state aid tools, partly co-financed with EU money, to foreign investors. The same was suggested by the results of another study, which concluded that investment incentives were not important for the inflow of FDI entities to the communes and counties of the Lodz voivodeship (Dorożyński, Świerkocki, Urbaniak 2014).

Another individual variable not connected with the inflow of FDI is the unemployment rate in counties. There are several reasons for this. First and foremost, the unemployment rate in all counties, including Lodz, remains high, albeit differentiated. Answers to the questionnaire show that when choosing a location in a region, investors were guided by the low costs of labour and the possibility to find skilled workers. This is confirmed by the statistically significant and positive correlation between average remuneration in counties and the stock of FDI, which concentrated in more developed locations where the remuneration was higher because of the higher skills of the workers. But we cannot forget that CFCs usually pay their employees better than domestic companies, so FDI inflow increased the average wage in the county.

The third individual variable which was little correlated with FDI is the value of industrial production sold per capita in a county. The dependence confirms a small relationship between the condition of a particular industry and investors' location decisions, as the investors were probably not very much interested in cooperation with local businesses and did not look for subcontractors. Hence the technological and financial *spillover* effects, which FDI may potentially bring, were surely modest in the Lodz region.

## **7. Conclusions and recommendations for local and regional authorities**

The main objective of the paper was to identify those factors decisive for the inflow of FDI into the Lodz voivodeship. The voivodeship is one of moderately prosperous, moderately internationalised and moderately attractive regions in Poland, which in turn, despite a relatively high GDP growth rate in the last 25 years, is still one of the least wealthy EU member states (Kaliszuk 2014). Our empirical study demonstrated that the region's individual characteristics were of little

importance to those foreign entrepreneurs who decided to launch their economic operations here. In both in Poland in general and the voivodeship in particular, they were looking first of all for relatively cheap and skilful labour, meaning that they were guided primarily by the will to enjoy the advantages stemming from low costs of production. That motivation was true mainly for investors whose expected a larger part of their output to be exported rather than sold in the domestic market. At the same time, skills were more important than remuneration, as more FDI targeted counties with a lower unemployment rate and higher salaries and wages. Investment incentives offered by the authorities at the central, regional or county (commune) level were of secondary importance for the location decision.

Foreign investors also listed factors which were the most discouraging in terms of commencing economic operations in the Lodz voivodeship, and indicated its main disadvantages. These included: poor transport infrastructure (road, airport, and railway) and a little interesting social infrastructure, decisive for the quality of life in the region (lack of international schools in the region, poor quality of hotel, restaurant and entertainment offers). The obsolete infrastructure prevented CFCs from fully exploiting the location advantage of the voivodeship, which is naturally situated at the junction of transportation routes North – South and East – West. Many critical remarks, although not of fundamental importance, concerned the regional and local administration. On the one hand, they resulted from the opaqueness of Polish law, and on the other hand from complex administrative procedures, lack of business information, and the moderate-at-best quality of services offered by public institutions. It also seems that many local authorities did not pay much attention to attracting foreign capital to their jurisdictions.

The Lodz voivodeship is very much differentiated when it comes to the level of economic development of counties. The inflow of FDI does not eliminate these disproportions; on the contrary it rather deepens them. This is because there is a clear correlation between FDI inflows (in terms of value and quantity) and the development level of counties. A similar dependence has been observed between FDI inflows and communes' own revenues in a county, and fixed assets values.

The results of our study can be used as inspiration for several conclusions addressed to regional and local authorities, bearing in mind however their limited competence, as most questions are decided by the central administration (e.g.; law making and funding for infrastructure above the regional level). Firstly, the policy that they pursue vis-a-vis FDI should result from the economic development strategy of a given voivodeship and be based on knowledge about its comparative advantages. Secondly, various tools should be used more extensively in order to promote the region. In particular counties and communes need to have a presence in the Internet and seek to establish direct

relationships with potential investors by, *inter alia*, being actively involved in business missions abroad. Thirdly, education is worthy of attention as it should facilitate matching regional labour resources with foreign investors' demands (e.g. through grants and internship schemes). Fourthly, there is still a lot of room for manoeuvre to improve services to investors, in particular in smaller towns, through closer cooperation among the administrations at different levels and with the business environment institutions. Fifthly, having an attractive offer of investment location and good social infrastructure are vital. Sixthly, we need a professional and stable staff in local government institutions, which would be responsible for economic policy-making at both the regional and local levels.

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## Streszczenie

### PRZESŁANKI LOKALIZACJI BIZ W POLSCE. PRZYKŁAD REGIONU ŁÓDZKIEGO

*Głównym celem artykułu jest ocena znaczenia czynników, które przyciągają kapitał zagraniczny do województwa łódzkiego. Podstawę do wyciągania wniosków stanowią wyniki badania kwestionariuszowego przeprowadzonego wśród 188 przedsiębiorstw z udziałem kapitału zagranicznego. Uzyskane wyniki wskazują, że specyficzne cechy województwa miały niewielkie znaczenie dla inwestorów zagranicznych. Zarówno w Polsce, jak i w regionie, poszukiwali oni przede wszystkim taniej i wykwalifikowanej siły roboczej, aby obniżyć całkowite koszty produkcji. Potwierdziłmy również, że zachęty inwestycyjne miały drugorzędne znaczenie dla napływu BIZ do gmin i powiatów województwa łódzkiego. Do inwestowania w regionie najbardziej zniechęcała infrastruktura transportowa oraz społeczna, która determinuje jakość życia w województwie. Podsumowując, napływ BIZ nie eliminuje dysproporcji wewnątrzregionalnych, wręcz przeciwnie, raczej je pogłębia.*

**Słowa kluczowe:** BIZ, region łódzki, decyzje lokalizacyjne