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# *Managing Global Transitions*

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#### AIMS AND SCOPE

Transition is the widely accepted term for the thorough going political, institutional, organizational, social, and technological changes and innovations as well as economy-wide and sector changes in societies, countries and businesses to establish and enhance a sustainable economic environment.

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- Urban, rural, regional economics

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#### EDITORIAL OFFICE

University of Primorska  
Faculty of Management  
Cankarjeva 5, 6104 Koper, Slovenia  
Phone: +386 5 610 2021  
Fax: +386 5 610 2015  
E-mail: [mgt@fm-kp.si](mailto:mgt@fm-kp.si)  
[www.mgt.fm-kp.si](http://www.mgt.fm-kp.si)



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## *Internationalisation of the CEE Region: An Introduction to the Thematic Issue*

Łukasz Puślecki  
Poznań University of Economics, Poland  
lukasz.puslecki@ue.poznan.pl

Piotr Trąpczyński  
Poznań University of Economics, Poland  
piotr.trapczynski@ue.poznan.pl

The aim of the present issue of the *Managing Global Transitions* journal is to provide a contribution to exploring one of the key aspects related to the journal's positioning, expressed in its very title: transition. In fact, the entire region of Central and Eastern Europe (CEE), its economies and firms have undergone significant changes since the 1990s. Internationalisation has been both one of the key drivers of this process, and a symptom thereof. A wave of privatisation opportunities, as well as large consumer markets with comparative cost advantages have attracted multinational enterprises to the region. At the same time, however, the region itself has been a source of a new breed of multinationals. While the transition process *per se* has gradually been losing on interest amongst CEE-related international business studies, there is still significant economic diversity of (post-) transition economies and firms. This allows exploring both the specificity of the region's emerging multinational firms and their motives and strategies, as well as the importance of the region from the perspective of MNEs defining their regional value chains.

The present issue is a collection of contributions submitted to the international conference focused around international business in the CEE region entitled 'Competitiveness of the CEE Region in the Global Economy', organised by the CEE Chapter of the Academy of International Business (AIB-CEE) in Budapest on 9–11 October 2014. The papers belong to two overall categories. The first one revolves around determinants of outward and inward FDI from and into the CEE region, whereby the studies link FDI to firm competitiveness. This latter concept is also a leading motive of the second part of this issue, whereby different aspects of the international competitiveness of modern MNEs are discussed, with a specific focus on inter-firm cooperation and the concept of structural power.

The first contribution to the issue entitled 'Establishment Mode Choices of Emerging Multinationals: Evidence from Poland' is authored by Marian Gorynia, Jan Nowak, Piotr Trąpczyński and Radosław Wolniak. Their quantitative study identifies and investigates the determinants of FDI modes in the context of outward foreign direct investment (OFDI) undertaken by firms from Poland. The analysis covers the interfaces between selected host-country variables and firm resources with FDI modes. A conceptual framework for FDI mode determinants is presented as a basis for the ensuing empirical analysis. The research hypotheses based on previous research are subjected to statistical verification using survey data of 60 Polish foreign investors collected throughout 2013. The main findings show that an increase of previous host-country exposure, as well as host-country market attractiveness, favour the choice of green-field mode, while the lack of such exposure and the related knowledge favours acquisitions. Moreover the said green-field operations tend to be located in politically stable markets. The possession of intangible resources turns out to be irrelevant for FDI mode choice.

The subsequent paper by Małgorzata Szalucka, 'Does Location Really Matter? The Influence of the FDI Location On Enterprise Competitiveness: The Evidence from Polish Enterprises' is yet another contribution to the internationalisation of an emerging country, based on the context of Polish outward investors. The study builds on the premise that a company's competitiveness depends on the linkages between its resources and capabilities and location-specific factors where the company runs its activities. Companies combine the advantages of particular geographic locations with their resources and capabilities to enhance existing and develop new competitive advantages. The aim of this paper is to evaluate the impact of international operations in the form of foreign direct investments on the competitiveness of the investing companies as well as to identify areas of greatest benefits derived from international involvement based on the location of their foreign affiliates. The paper presents results of a field survey carried out in 2012 through direct interviews among Polish companies – direct investors. The research results revealed that the foreign activities of Polish enterprises have a positive influence on their competitiveness, however the FDI impact is not so clear as it was expected. The empirical findings also proved that the location of their foreign affiliates did not influence significantly the scale and nature of benefits from international activities in terms of the Chi-square analysis applied. However, we observe some tendencies, based on the impact

index, indicating some dependencies between the location of foreign affiliates and the fields of the FDI impact identified in the competitive potential of investing companies.

The third paper devoted to FDI turns to the inward perspective, i.e. FDI inflows into the CEE regions and their determinants. Agnieszka Dorożyńska and Tomasz Dorożyński in their article entitled 'Human Capital and FDI in Central and Eastern Europe' set out to assess the role of human capital in attracting FDI in the light of selected empirical studies conducted in Poland and globally. The literature on factors determining FDI location, including those relating to the importance of human capital, is dominated with studies at national or supranational level. Attracting foreign investment has become a key component of national strategies for the CEE countries. The paper makes an attempt to assess the relevance of human capital for FDI inflow at regional and local levels in Poland. At the same time, results of analyses were contrasted with quantitative surveys conducted in Central and Eastern Europe. Investing in education and human capital is important for creating good climate for investment. Evidence shows that achieving a certain minimum level of education is the precondition for a country to attract and maintain foreign direct investment and maximise indirect effects connected with human capital and resulting from the presence of businesses with foreign capital and maximise indirect effects connected with human capital and resulting from the presence of businesses with foreign capital. It should be taken into account that such a minimum is different for different sectors of the economy. Results of the study conducted in the Lodz Region demonstrated that human capital is an important factor, which attracts FDI to the region.

The fourth contribution draws the attention of the reader to the potential behind inter-firm cooperation as a key determinant of firm competitiveness. Łukasz Puślecki and Michał Staszków, authors of the paper called 'New Cooperation Modes: An Opportunity for Polish Biotechnological Clusters,' provide a review of new cooperation forms between companies, referring to the latest data from the ASAP (the Association of Strategic Alliance Professionals). Potential cooperation between companies, universities and research institutes in the field of biotechnology in Poland based on a model of open innovation alliances are presented. Biopharmaceutical companies are looking for new and innovative paths of development. They try to implement new strategies to transfer their research processes to a higher level. To achieve this, biopharmaceutical

companies often use open innovation model as an additional tool for developing new products. Thanks to the cooperation with universities in the framework of open innovation alliances, they can significantly reduce the risk, the cost of research, and most of all, through joint work with academic researchers on identifying disease mechanisms and on development of new drugs, they are able to create improved and appropriate medical therapy for patients.

Finally, Magdalena Śliwinska in her paper ‘The Structural Power of Enterprises: Beyond the Notion of Market Power’ aims to conceptualise of the notion of enterprises’ structural power. It allows to draw the attention to the process of diversification of enterprises and building of complex and multidimensional ownership structures as possible sources of the increase in the companies’ power and the possibility of its use and abuse in order to limit the competition and perform better on the market. The concept of structural power is a part of the scientific discussion on the sources and possibilities of using enterprises’ market power, and fits into the current research on one of the fundamental problems of economic theory: how to protect competition internationally and, therefore, determine the limit when the natural and desirable behaviour of enterprises aimed at increasing their international competitiveness begins to distort competition and adversely affect economic development. The analysis shows that the potential influence on other market participants may arise not only from the firm’s position on the relevant market and other factors related to its specificity, but also from the various types of linkages between firms.



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# *Establishment Mode Choices of Emerging Multinationals: Evidence from Poland*

Marian Gorynia  
*Poznań University of Economics, Poland*  
*m.gorynia@ue.poznan.pl*

Jan Nowak  
*IBD Business School, Poland*  
*jnowak@ibd.pl*

Piotr Trąpczyński  
*Poznań University of Economics, Poland*  
*piotr.trapczynski@ue.poznan.pl*

Radosław Wolniak  
*University of Warsaw, Poland*  
*wolniak@wne.uw.edu.pl*

This study identifies and investigates the determinants of FDI modes in the context of outward foreign direct investment (OFDI) undertaken by companies from Poland. The analysis covers the interfaces between selected host-country variables and firm resources with FDI modes. A conceptual framework for FDI mode determinants is presented as a basis for the ensuing empirical analysis. The research hypotheses based on previous research are subjected to statistical verification using survey data of 60 Polish foreign investors collected throughout 2013. The main findings show that an increase of previous host-country exposure, as well as host-country market attractiveness, favour the choice of green-field mode, while the lack of such exposure and the related knowledge favours acquisitions. Moreover the said green-field operations tend to be located in politically stable markets. The possession of intangible resources turns out to be irrelevant for FDI mode choice.

*Key Words:* foreign direct investment, FDI modes, emerging multinationals, Central and Eastern Europe

*JEL Classification:* F21, F23, P20

## **Introduction**

Poland and other Central and Eastern European (CEE) countries are currently witnessing an increasing tide of outward foreign direct investment (OFDI) undertaken by their firms (e.g. Radło 2012). Polish OFDI, which

TABLE 1 OFDI Stocks in Poland and Selected CEE Economies (in million USD)

Country	1990	2000	2012	Country	1990	2000	2012
Poland	95	1018	57525	Georgia	0	118	1195
Hungary	159	1280	34741	Latvia	0	23	1104
Kazakhstan	0	16	20979	Croatia	0	824	506
Czech Republic	0	738	15176	Montenegro	0	0	414
Ukraine	0	170	9351	Belarus	0	24	403
Slovenia	560	768	7796	Bosnia & Herzegovina	0	0	286
Azerbaijan	0	1	7517	Albania	0	0	206
Estonia	0	259	5791	Armenia	0	0	169
Lithuania	0	29	2521	Moldova	0	23	108
Serbia	0	0	2204	The FYR of Macedonia	0	16	105
Bulgaria	124	67	1867	Kyrgyzstan	0	33	2
Romania	66	136	1417	Total	1004	5543	171383

NOTES Adapted from UNCTAD (2013).

forms the empirical setting of the present study, has been on the increase since the opening up of former centrally planned economies in the CEE region at the beginning of the 1990s (see table 1). While initially Slovenia displayed the highest dynamics of the emerging outgoing investment, it was already in the early 2000s that Poland appeared as the new dominant source of OFDI in the region. This gradual expansion may be attributed to several factors, including *inter alia* Poland's large domestic market size, allowing local firms to benefit from economies of scale. Moreover, while Poland gradually liberalised its foreign trade and investment policy, the introduction of support measures for the internationalisation of domestic firms remained limited (Gorynia et al. 2014).

This rising trend has generated a need to provide explanations concerning numerous specific issues connected with the new breed of foreign investors and their competitive potential (Jaworek, Szałucka, and Szóstek 2009), motivations to invest abroad (Rosati and Wiliński 2003), investment modes connected with those motivations (Gorynia et al. 2013a; 2013b; 2014), the role of previous experience (Gorynia et al. 2013b), similarity of home and host country institutional environments as well as other important contextual factors (Svetličič and Jaklič 2003; Svetličič, Rojec, and Trtnik 2000).

However the vast majority of this research takes a macroeconomic per-

spective, where the locus of analysis is the entire country economy and/or its sectors (Antalóczy and Élterő 2003; Bohata and Zeplinerova 2003; Varblane, Reiljan, and Roolaht 2003), or a number of CEE countries in comparison (Svetličič and Jaklič 2003; Kalotay 2004), although one can find studies combining macro and firm level analysis (Svetličič, Rojec, and Trtnik 2000; Rugraff 2010; Zemplinerová 2012). The above studies point to the emergence of OFDI in the latter part of the 1990s and its subsequent acceleration in the 2000s, albeit the gap between inward and outward FDI is still reported to be relatively large. Meanwhile there is still a relative paucity of explanatory studies devoted to CEE firm internationalisation, particularly those linking specific internationalisation decisions to their firm- and host-country antecedents and explicitly providing normative contributions to research on emerging country multinationals (Gorynia et al. 2013a; 2013b).<sup>1</sup> Moreover, while there have been different attempts at explaining FDI mode choices of developed multinationals (e.g. Slangen and Hennart 2008a; 2008b; Brouthers and Brouthers 2001; Kogut and Singh 1988), virtually no such systematic evidence exists for emerging multinationals from the CEE region.

The predominantly explorative character of extant research, both related to the CEE region in general and Poland in particular, results from attempts focused on describing internationalisation paths, geographic trends and overall motivations of outward investors. However, in order to be able to draw comparisons against mainstream IB theory, a more normative approach seems to be needed, forming the rationale for the present study.

The present study addresses this gap by attempting to quantitatively investigate the relationship between FDI modes and their specific determinants which are relevant in the case of emerging multinationals. In particular the study considers the relationship between selected host country characteristics and available firm resources, and the choice of FDI modes, i.e. acquisitions and green-field investments by companies registered in Poland. Last but not least, this study also addresses the fundamental issue of linearity of the internationalisation process of emerging multinationals by considering FDI projects in the context of earlier foreign operations of the sample firms. A salient feature of this research resides in its timeliness as primary data used as research inputs have been collected through company surveys in the second quarter of 2013. This fact allows for confrontation of the findings of this study with received theory and previous research in the same subject area.

The study begins with a review of key literature on OFDI with focus on its modes. This is followed by a section presenting the justification of research hypotheses, anchored in the context of previous research on the region of Central and Eastern Europe. Thereafter an analytical framework is established for studying FDI modes and their determinants. The research hypotheses are subjected to a verification process based on statistical modelling. The last three sections contain respectively: the principal findings of the study, a discussion on their relevance and implications, and finally a brief summary with final conclusions, limitations on the said findings validity and suggestions for further research on currently investigated aspects of Polish OFDI and other related issues.

### **Theoretical Underpinnings of FDI Modes**

Among the most critical issues in international business (IB) is understanding why and how firms invest abroad (Dunning 2002). Such questions apply to FDI modes which are determined by a number of factors that can be conveniently classified as firm-level, industry-level and host-country determinants of FDI (Slangen 2005). Furthermore, the internationalisation path a firm follows provides a context to FDI modes which may or may not be preceded by non-equity entry modes. In this context the authors present in figure 1. an appropriate analytical framework. It shows the investigated variables and their relationships. In constructing this analytical framework a number of well-established theoretical concepts derived from the IB literature were considered. At its base are establishment modes which constitute the dependent variable of the present empirical study. The choice of FDI entry mode is determined by firm-specific determinants, firm prior international experience (in the form of non-equity internationalisation modes) and host-country characteristics. The theoretical underpinnings of the individual elements of the analytical framework are discussed below.

While a number of authors consider three choices in FDI establishment modes, i.e. green-field investment, acquisition and joint venture (see e.g. Buckley and Casson 1998; Gorg 2000; Kogut and Singh 1988; Padmanabhan and Cho 1995), Slangen and Hennart (2007) argue that both green-field investments and acquisitions can take either the form of a wholly-owned subsidiary (WOS) or a joint venture (JV). This view is shared by such authors as Barkema and Vermeluen (1998), and Larimo (2003). In this study the latter view is followed and the FDI establishment modes examined are acquisitions and green-fields. A large number

of variables influencing the choice of FDI entry mode are hypothesised in the relevant literature. However, the empirical research reviewed by Slangen (2005) reveals a lack of significance of most of them as well as a divergence of findings. Reasonably consistent and significant findings concern only a few variables, most of them being at firm-level, such as firm R&D intensity, degree of product diversity and relative subsidiary size (Slangen 2005, 9). Industry- and country-level factors seem to play a less significant role.

The study of FDI modes should be placed in a broader context of firm internationalisation, addressing the question whether firms precede their direct investment abroad with non-equity entry modes, such as exporting, licensing, franchising or contract manufacturing. According to the Uppsala Model developed by Johanson and Wiedersheim-Paul (1975) and Johanson and Vahlne (1977; 1990), firm internationalisation is a sequential and gradual process of increasing resource commitments in foreign markets. These authors also postulated that internationalised firms will first select foreign countries with similar market conditions and similar cultures to those of their home country, and introduced the concept of 'psychic distance' between home and host countries. Thus, according to the Uppsala Model, FDI modes are expected to be pursued by firms that have already internationalised through non-equity entry modes, notably exporting. However, critics of this and similar stages models point to their weaknesses and the limited explanatory power (e.g. Turnbull 1987), and call for developing a theory with better predictive ability and more in line with recent changes in the international business environment (Vissak et al. 2007). In the context of the present study it is therefore germane to also investigate how do FDI entry modes of the studied companies relate to their non-equity entry modes.

Firm determinants of FDI decisions can be derived from Dunning's Eclectic Paradigm of International Production and the Resource-based View of International Business. One of the three pillars of Dunning's Eclectic Paradigm (Dunning 1993; 1995; 1998), firm-specific ownership advantages (O-advantages), concerns resources, proprietary assets and capabilities that the firm can exploit abroad. O-advantages can take the form of a proprietary technology or production technique, trade mark, managerial knowledge and skills, and benefits of economies of scale. Such advantages allow a firm to offset the 'costs of foreignness,' inherent in its international operations. Similarly, according to the Resource-based View (Peng 2001), firms need to possess ownership advantages in order to

successfully expand into foreign markets. In addition to exploiting their unique assets, firms seek assets in international markets to improve their competitiveness. Here the Resource-based View provides a useful framework for analysing foreign affiliates' role in enhancing their parents' ownership advantages.

However, the view that in order to be a successful foreign investor a firm must possess such advantages prior to its international expansion has recently been challenged, based on the experience of multinational enterprises from emerging economies that may lack ownership advantages to be exploited and sustained abroad, and rather seek strategic assets abroad in order to enhance their international competitiveness (see e.g., Cui and Jiang 2010; Yamakawa, Peng, and Deeds 2008; Makino, Lau, and Yeh 2002). In fact, Mathews (2006) proposed, that emerging multinationals skip conventional stages of foreign expansion in order to catch up with international rivals in technological terms. In his 'LLL' (linkage, leverage, learning) concept he perceives linkages with other firms as a means of acquiring new resources necessary for competing in foreign markets. Further, the said linkages have to be leveraged by newcomers in their international operations. Not least, the learning aspect relates to the fact that latecomers need to internalise and distribute new knowledge within the internal network so as to enhance their international competitiveness. Likewise, Luo and Tung (2007) proposed in their 'springboard' approach that the latecomer disadvantage of firms from emerging markets can be overcome by acquisitions of intangible assets from developed country MNEs. Hence, the said firms frequently follow accelerated internationalisation paths. According to the imbalance theory of Moon and Roehl (2001), FDI is undertaken to increase productivity of existing assets or to acquire assets complementary to them, in order to balance out the asset portfolio. Imbalance indicates a situation whereby the latecomer does have certain firm-specific assets for which the current marginal value is below the market rate. The latter view can be regarded as less radical as it does not assume that firms from emerging markets are entirely deprived of skills and capabilities, a point which was also emphatically raised by Narula (2006). In order to accommodate these alternative, context-specific perspectives the authors of this study consider the influence of firm-specific advantages on FDI establishment mode, depending on whether a firm possesses strong or weak proprietary assets.

While there can be a myriad of host-country factors determining FDI decisions, falling into such categories as policy framework, economic de-

terminants and business facilitation (see table 5 in Dunning 2006), the literature on the subject points to the particular significance of such factors as market size and growth (Faeth 2009), political risk (Agarwal and Ramaswami 1992; Brouthers, Brouthers, and Werner 2009; Brouthers et al. 2009; Busse and Hefeker 2007), investment climate (Kinda 2010; Fabry and Zeghni 2002), factor endowments and costs (Blonigen 2005), geographic and cultural distance (Kuo and Fang 2009, Slangen and Hennart 2008; Brouthers and Brouthers 2001; Kogut and Singh 1998), government incentives (Faeth 2009), and institutional infrastructure (Dunning and Lundan 2008; Dunning 2005; Meyer and Peng 2005; Peng, Wang, and Jiang 2008). As far as the influence of these factors on FDI establishment mode is concerned, it appears from the above-reviewed literature that political stability and cultural distance may play the most significant role. However, on the other hand there is evidence that some firms, particularly those originating from emerging markets, may be better suited for operating in other emerging markets, due to their ability to cope with politically unstable environments and thus to mitigate different dimensions of distance between markets (Cuervo-Cazurra and Genc 2008; Del Sol and Kogan 2007).

### **Preliminary Evidence and Research Hypotheses**

Based on the literature review presented in the preceding sections and the results of an exploratory qualitative study, conducted by the authors and published separately (Gorynia et al. 2013a; 2013b), a number of hypotheses were formulated. They were grouped into the following two key areas: host-country variables vs. FDI modes and firm-specific resources vs. FDI modes.

#### **HOST-COUNTRY VARIABLES VS. FDI MODES**

The relationship between country-level determinants of FDI and FDI modes is expected to be relevant although empirical evidence is largely divergent in this respect. As revealed in mainstream studies the most significant country-level variables determining FDI mode seem to be political risk (Agarwal and Ramaswami 1992; Busse and Hefeker 2007) and cultural distance (Slangen and Hennart 2008b; Brouthers and Brouthers 2001; and Kogut and Singh 1988). However, focusing on the Polish context, Obłój and Wąsowska (2012) did not find political risk specific to the region to be an impediment to capital expansion. They analysed the impact of host-country determinants on the level of Polish outward invest-

ment, pointing to the dominance of market size and economic growth as key determinants, which was also confirmed by other Polish studies (Karpińska-Mizelińska and Smuga 2007; Kępką 2011). On the other hand, a preliminary study by Gorynia et al. (2013a) also revealed the possible impact of political risk and legal restrictions on FDI mode choice, such that it refrained firms from undertaking acquisitions of local firms. At the same time, some Polish firms perceive higher political risks as an opportunity owing to their experience with operating in hostile environments, thus increasing their propensity to accommodate more risk. Therefore, the following alternative hypotheses were set forth:

H1a *Firms perceiving high political stability of the host country tend to use acquisitions as the FDI mode.*

H1b *Firms perceiving high political stability of the host country tend to use green-field investment as the FDI mode.*

In a similar vein, cultural distance can be a factor determining the perceived appropriateness of a given establishment mode, which is related *inter alia* to integration costs (Slangen and Hennart 2008a). In the context of emerging multinationals it can be assumed that they have the advantage of coping with cultural distance, particularly for countries sharing a similar institutional heritage (Del Sol and Kogan 2007). The studies of Rosati and Wiliński (2003) and Gorynia, Nowak, and Wolniak (2011) reveal a geographic concentration of OFDI in the neighbouring European countries. A unique positioning of the Polish economy is related to the fact that these neighbours include both very close and distant countries with respect to culture as well as to the level of institutional and economic development. However, regardless of a more or less developed country market entry, excessive distance may hinder the acquisition process, increasing instead the propensity for internalising operations in the form of green-field investments. Hence, the following hypothesis was established:

H2 *Firms perceiving low cultural distance tend to use acquisition as the FDI mode.*

#### FIRM-SPECIFIC RESOURCES VS. FDI MODES

Previous research indicates that international and host-country experience both have a direct effect on FDI establishment modes. In line with previous findings, Slangen and Hennart (2008b) found that firms with little host-country experience were more likely to choose green-field over



acquisitions. On the other hand, it can be argued that experience increases the confidence of firms to establish own operations from scratch and rely on internal knowledge. However, in the previously quoted study (Gorynia et al. 2013a; 2013b) Polish foreign investors did not reveal a similar pattern. In fact, firms with more experience in the host country had more precise knowledge of local market conditions, including the structure of their respective industry, thus they were more likely to select and integrate targets abroad into their corporate network via acquisitions.

Therefore, the following two alternatives of Hypothesis 3 were formulated:

- H3a *Firms with prior experience in a host country tend to use acquisition as the FDI mode.*
- H3b *Firms with prior experience in a host country tend to use green-field investment as the FDI mode.*

The final hypothesis concerns the relationship between firm intangible assets, such as technological, new-product development and managerial capabilities, and FDI mode choice. The extensive literature review of empirical studies on FDI establishment modes, provided by Slangen and Hennart (2007), clearly shows that firm resources and capabilities play a central role in FDI establishment mode choice. It is also argued there that MNEs exploiting firm-embedded intangible assets are more likely to opt for green-field than acquisitions.

In the context of Slovenia, the study by Svetličič, Rojec, and Trtnik (2000) points to the emergence of OFDI in Slovenia as a result of lack of ownership advantages of local firms and their desire to improve competitiveness via FDI. Zemplerová (2012) in turn concludes that Czech companies invest in other countries not only to exploit their firm-specific advantages but also to access new markets. Thus, in the context of emerging Polish multinationals, given their latecomer status, the possession of higher-order skills and capabilities can all the more so constitute a source of competitive advantage to be leveraged by establishing own operations abroad. Accordingly, it is proposed that:

- H4 *Firms with superior intangible assets tend to use green-field investment as the FDI mode.*

To summarise, the analytical framework, as presented in figure 1, is derived from conventional IB literature in order to provide a basis for analysing the context of firms from an advanced emerging market – Poland. Thus, while the determinants discussed above are not novel in

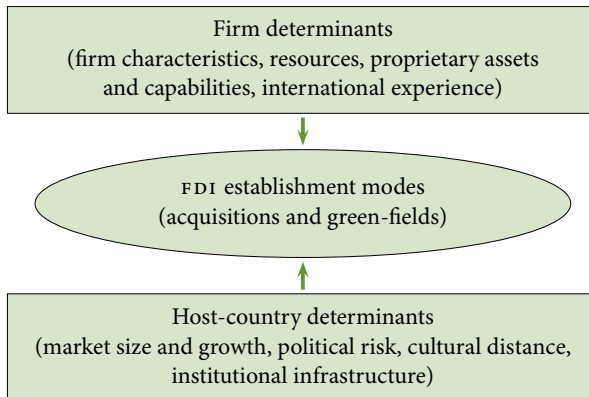


FIGURE 1 Analytical Framework for FDI Modes (Variables and Relationships Investigated in This Study)

themselves, nor context-specific, it is their application to the Polish context which the present study will focus on.

## Research Methods

### SAMPLE AND DATA COLLECTION

Given the research objectives, the input data came from a sample of companies investing abroad and registered in Poland. The use of several data sources (including Amadeus, Kompas Poland or Deal Watch) allowed to create a proprietary database of 910 firms. Between May and June 2013 an invitation to participate in the study with a link to a web-based survey (table 2) was sent to top managers directly responsible for foreign operations or other managers with a request to forward it to the former. Due to frequent concerns about technical reliability, response rates or security of electronic surveys (Kim and Gray 2008), an IT services agency was entrusted with the preparation of the survey, its execution and repeated reminders. The automated survey management system was supported by a substantial number of personal contacts with the sample firms in order to identify and persuade appropriate respondents to take part in the study. Moreover, additional interviews and secondary sources including annual reports were used to complete missing survey data. Therefore, a total sample of 60 complete surveys was obtained, which corresponds to a usable response rate of 6.6%.

While the sample size can by no means be regarded as representative for the total population and allow for generalisations, the response sam-

TABLE 2 Overview of Selected Items from the Survey Questionnaire

Question	Scale	$\alpha$
Legal restrictions in the host country	Five-point Likert scale (1 – significant, 5 – none)	
Cultural distance perception (legal regulations, economic system, political structure, cultural environment)	Five-point Likert scale (1 – very similar, 5 – very different)	0.86
Political stability at the start of investment	Five-point Likert scale (1 – very low, 5 – very high)	
Market attractiveness at the start of investment (industry growth rate, market size)	Five-point Likert scale (1 – very low, 5 – very high)	0.66
Intangible assets in relation to the major competitor (technological capabilities, new product development capabilities, managerial capabilities)	Five-point Likert scale (1 – far worse, 5 – far better)	0.85

TABLE 3 Sectoral Distribution of Major FDI of Each Firm in the Sample

Sector	Total manufacturing	Total services	Other
Number of FDI	29	27	7
Percentage	48.0	45.0	7.0

NOTES  $N = 60$ .

TABLE 4 Geographic Distribution of Major FDI of Each Firm in the Sample

Country	Germany	Ukraine	Romania	Czech R.	Slovakia	Russia	Other
No. of FDI	12	10	7	6	4	3	18
Percentage	20.0	17.0	12.0	10.0	7.0	5.0	30.0

NOTES  $N = 60$ .

TABLE 5 Firm Size Distribution of FDI in the Sample

Size*	0–49	50–99	100–249	250–499	500–999	100–1999	>2000
No. of firms	5	3	10	11	9	6	16
Percentage	8.0	5.0	17.0	18.0	15.0	10.0	26.0

NOTES  $N = 60$ . \* Number of employees.

ple distribution is to a large extent similar to that of the entire population with regard to industry classification and parent nationality. Thus, the collected data allow for a detailed exploration of the sectoral, geographic, modal and organisational structure of Polish OFDI (see tables 3–5). While in order to qualify for the study the firms had to be regis-

tered in Poland, their ultimate owners might be located abroad. Thus firms with more than 10% of foreign capital constituted 47% of the sample. With regard to the FDI forms used, 58% of the firms had experience with wholly-owned green-field subsidiaries while 20% had established joint ventures abroad. Also 48% of the sample firms had undertaken foreign acquisitions, out of which 12% could be classified as brownfield investments (Meyer and Estrin 2011). The studied firms located their major FDI projects mostly in Germany (20%), Ukraine (17%), Romania (12%) and the Czech Republic (10%). The still limited scope of foreign operations was reflected by the fact that 70% of the firms had foreign affiliates in up to only 3 countries, where sales and marketing activities were predominant.

#### DEPENDENT, INDEPENDENT AND CONTROL VARIABLES

The establishment mode of the largest foreign subsidiary in terms of total assets in the last fiscal year was chosen as the dependent variable. It assumed a value of 0 if it was a green-field subsidiary and 1 if it was an acquisition (Dikova and van Witteloostuijn 2007; Slangen and Hennart 2008b). While there are studies jointly comparing joint ventures, green-fields and acquisitions (e.g. Kogut and Singh 1988; Anand and Delios 1997), establishment modes can be perceived as a separate decision problem in international expansion. Thus, ownership choices (JV vs. wholly-owned subsidiaries) were not analysed here (also see Gorynia, Nowak, and Wolniak 2007; 2012).

On the location advantage side political risk was measured as the managerial perception of political stability at the moment of major affiliate establishment (Agarwal and Ramaswami 1992; Brouthers et al. 2009). A five-point bi-polar scale was used for this question. Further, cultural distance was likewise measured on a five-point scale in relation to 4 items: legal regulations, economic system, political structure and cultural environment with Cronbach's  $\alpha = 0.86$  (Brouthers, Brouthers, and Werner 1996). This relatively broad operationalisation remains in line with the understanding of Brouthers (2002, 91), whereby the cultural context is not confined to cultural values, but also embraces 'different host country economic, legal, political and cultural systems.' As for ownership advantages, host-country experience was measured as a dichotomous variable, adopting the value of one if the firm had prior experience in the host country in the form of equity or non-equity operation modes (Larimo 1993; Slangen and Hennart 2008b). Intangible assets (technological

capabilities, new product development capabilities, managerial capabilities, Cronbach's  $\alpha = 0.85$ ) were evaluated on a five-point bi-polar scale with reference to each firm's major competitor (Brouthers, Brouthers, and Werner 2008).

Finally, given the multitude of potentially relevant factors affecting the establishment mode choice, several control variables were introduced. Host-country legal restrictions at the moment of market entry were measured on a five-point Likert scale, with 1 meaning significant restrictions and 5 standing for no restrictions (Brouthers 2002). Market attractiveness at the moment of market entry was measured by two items on a five-point Likert scale (1-very low, 5-very high): industry growth rate and market size (Agarwal and Ramaswami 1992), yielding a Cronbach's alpha value of 0.66. A summary of key variables, their scales and measurement reliability is provided in table 2 (p. 111).

#### MODELLING PROCEDURES

Since the dependent variable, FDI mode choice, is dichotomous, logistic regression analysis (using SPSS software) was used to test the hypotheses referring to the effects of explanatory variables on FDI mode choice (Peng and So 2002). Precisely, a backward stepwise method employing the Wald statistic was employed. Accordingly, the modelling process started with the inclusion of all variables in the initial model and continued by a gradual reduction of the model with the aim of maximizing the number of statistically significant variables. Before running the regression models several statistical checks (correlation analysis, independent sample tests, Mann-Whitney test) were conducted in order to detect any multicollinearity between the explanatory variables as well as to provide an initial understanding of the relationships between FDI modes and both independent and control variables. In the case of several variables listed above recoding was necessary. Due to the problem of rare data, political stability and legal restrictions also required recoding from a five-point to a three-point categorical variable.

#### Findings

Given the nominal character of some of the variables, correlation analysis was only possible for cultural distance, intangible assets, firm size and market attractiveness (table 6). It did not reveal any multicollinearity problems except a weak correlation between market attractiveness and the said cultural distance. Chi-square tests were also conducted to detect

TABLE 6 Spearman's Rank Correlation for Continuous Variables

Variables	1	2	3	4
Cultural distance				
Intangible assets	-0.152			
Firm size	-0.014	0.013		
Market attractiveness	0.217*	0.171	-0.101	

NOTES \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ ,  $N = 60$ .

the relationship between FDI mode and the explanatory variables. It only revealed a significant relationship between political stability and experience ( $p < 0.05$ ).

In order to test all hypotheses, the authors ran several logistic regression models, using the stepwise backward method (see table 7). Accordingly, the baseline model contained all independent and control variables, while the subsequent models were computed with the aim of finding the optimal model in terms of statistical significance of the investigated variable. Thus, insignificant variables were gradually eliminated from the model. All five models were statistically significant at  $p < 0.05$ . The Hosmer and Lemeshow test revealed a good fit of the models with the empirical data. Most importantly, all the models were able to correctly classify more than 70% of FDI mode choices, which is a relatively high value (Padmanabhan and Cho 1996; Brouthers and Brouthers 2001).

In all five models political stability of the host country was found to be a significant predictor of the choice of acquisition mode. However, due to its recoding to a categorical variable with 3 levels it needs to be interpreted stepwise. The parameter of the sub-variable Stability (1) implies the change in the odds of choosing acquisition rather than green-field if stability decreases from level 3 to 1 as compared to 3, while that of Stability (2) refers to the decrease from level 3 to 2 as compared to 1. Since the coefficients of both sub-variables are positive, it can be stated that acquisitions are preferred when stability decreases, thus confirming Hypothesis 1b and rejecting Hypothesis 1a. Furthermore, host-country experience proved to be significant in all models, particularly the final model. Cultural distance turned out not to be significant, hence showing no support for Hypothesis 2. Contrary to Hypothesis 3a, the increase of previous host-country exposure favours the choice of green-field mode, thus providing strong support for Hypothesis 3b. Finally, the influence of intangible assets on FDI mode choice was not found to be significant, hence Hypothesis 4 cannot be supported. Among control variables, legal

TABLE 7 Logistic Regression Estimates of the Probability of Acquisition Entry

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Stability (1)	2.74*** (0.97)	2.72*** (0.96)	2.66*** (0.94)	2.44*** (0.89)	1.95*** (0.80)
Stability (2)	1.44 (0.97)	1.55* (0.92)	1.48* (0.90)	1.87** (0.87)	1.55* (0.80)
Experience	-1.29* (0.72)	-1.35* (0.71)	-1.32* (0.71)	-1.29* (0.69)	-1.33** (0.66)
Market attractiveness	-0.433 (0.42)	-0.47 (0.41)	-0.59 (0.37)	-0.67* (0.35)	-0.82** (0.33)
Firm size	0.00* (0.00)	0.00* (0.00)	0.00* (0.00)	0.00* (0.00)	
Restrictions (1)	0.26 (0.96)	0.45 (0.96)	0.89 (0.95)		
Restrictions (2)	1.405 (1.01)	1.43 (1.00)	1.32 (0.98)		
Resources	-0.42 (0.49)	-0.39 (0.48)			
Cultural distance	-0.154 (0.42)				
Constant	1.05 (2.11)	0.68 (1.84)	-0.21 (1.54)	0.58 (1.26)	1.74 (1.07)
Hosmer and Lemeshow Test	10.121	4.856	8.939	10.842	3.827
Percentage correctly classified	83.3	81.7	80.0	70.0	71.7
Chi-square	26.080**	25.946***	25.246***	22.501***	17.645***

NOTES Standard errors in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p \leq 0.10$ ,  $N = 60$ .

restrictions in the host country were not significant, while firm size was found to be slightly significant ( $p < 0.1$ ) and with marginal influence on mode choice. The rise of host-country market attractiveness was found to favour green-field investments (Models 4 and 5).

### Discussion

The above analysis shows that – in line with extant theory and studies on the internationalisation of firms from emerging and transition economies (Gorynia et al. 2013a) – the experience with doing business in the CEE region can be regarded as a key advantage in embarking on capital ex-

pansion in foreign markets. This corresponds to previous findings in the CEE context, whereby firms from the region internationalise gradually (see e.g. Antalóczy and Éltető 2003), but also to some of those related to advanced economy contexts (see e.g. Holmlund, Kock, and Vanyushyn 2007). However, in the case of firms originating from CEE countries, evolutionary behaviour in the internationalisation process can be interpreted as a phenomenon driven by the exploitation of previous business ties, established frequently before the beginning of the transition process in the early 1990s. In fact, most CEE countries share a similar, historically shaped institutional background, which tends to facilitate foreign expansion and – in certain cases – even omit certain stages of the gradual expansion sequence (Del Sol and Kogan 2007). This aspect of CEE firm internationalisation still requires further investigation in order to understand the relevance of the advantage of stemming from a similar institutional context.

With regard to the impact of political stability this study suggests that firms from a CEE country will enter politically more stable markets by establishing green-field operations, which may point to the aversion to assume excessive risk of becoming exposed to host-country conditions while investing in the establishment of a new affiliate. This is somewhat contradictory to the evidence provided by Barkema and Vermeulen (1998) that green-field investments are preferred in more risky countries. Given the above mentioned role of institutional similarity in the CEE region, the impact of stability (or risk) perception in foreign expansion decisions should deserve more attention in future research in this field. In the same vein, the lack of significance of cultural distance in the present study should be noted bearing in mind that most investments of Polish firms are located in neighbouring countries. Moreover, prior experience in host countries, which frequently commenced before the actual beginning of the transition process in the CEE region, might also have played a moderating role on the said distance. The former indeed does prove to be significant in the present study for the choice of green-field operations. This preference might suggest that host-country experience increases the propensity of firms to internalise their own advantage in the form of start-up operations, while the lack of such experience and the related knowledge favours acquisitions of firms already established in less familiar markets.

Finally, the possession of intangible resources – contrary to authors' expectations – turned out not to be relevant for FDI mode choices. One



of the possible explanations thereof might be the limited scope of intangible resources of CEE firms, which leaves room for the relevance of home country-related advantages in explaining the expansion process. This observation is also confirmed by the current focus of Polish firms' OFDI on seeking markets and much less on acquiring strategic assets. Thus this preliminary evidence from the Polish context can enrich the debate taking place in existing research on BRIC countries and extend the understanding about differences across emerging markets, which do not constitute a homogeneous category. The fact that Poland is an advanced emerging economy also adds to the novelty of scholarly discussion in this field, showing that firms from upper-middle income countries do share features of their counterparts from both more and less developed countries.

### **Conclusions, Limitations and Further Research Projections**

While the aim of the present study was not to contribute to mainstream theories of international business, it used them as a starting point for exploring the still under-researched phenomenon of foreign expansion of firms from developing/transition economies. The results of quantitative analysis on a sample of outward investors based in Poland point to the role of host-country experience in entry mode choice. Polish firms tend to leverage knowledge of regional, more familiar markets by establishing their own operations from scratch. At the same time, while their knowledge of the regional transition context would suggest a higher risk tolerance, green-field operations tend to be established in politically more stable markets.

This study is obviously burdened with several limitations, the major one being limited sample size. Nonetheless, it is part of a broader ongoing research program, hence these initial results should be regarded as exploration of the international expansion patterns of Polish firms. Another limitation refers to the unique use of survey data in measuring the applied variables. While the intention was to capture managerial perceptions relevant in expansion decisions, the use of secondary data might have improved the reliability and robustness of the obtained research results. Furthermore, some of the indicators, such as the binary variable for the presence or lack of host-country experience, might not capture the subtleties of learning from different types of host-country operations.

Future studies on the expansion of firms from CEE countries should investigate the role which different FDI motives have in different locations, notably economically and institutionally less or more advanced

than the home country. These motives might affect both the entry mode as well as location choice. Another relevant research problem is the impact of different types of distance on the internationalisation of emerging multinationals, given their limited exposure to international operations. While the perceived cultural distance turned out not to be significant in this study, further research should look into other specific types of distance, notably the institutional one, the variation of which even within the CEE region is quite significant. Moreover, the present study did not look into the effect of industry on the choice of establishment mode, which definitely constitutes another promising avenue for future studies. Finally, the performance outcomes of capital expansion, given the influence of firm- and host-country level determinants, would certainly add more normative evidence and substance to this field of inquiry.

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### Notes

- 1 OECD (2008, p. 12) defines MNEs as ‘companies or other entities established in more than one country and so linked that they may co-ordinate their operations in various ways.’

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# *Does Location Really Matter? The Influence of the FDI Location on Enterprise Competitiveness: The Evidence from Polish Enterprises*

Malgorzata Szalucka  
*Nicolaus Copernicus University, Poland*  
*m.szalucka@umk.pl*

A company's competitiveness depends on the linkages between its resources and capabilities and location-specific factors where the company runs its activities. Companies combine the advantages of particular geographic locations with their resources and capabilities to enhance existing and develop new competitive advantages. The aim of this paper is to evaluate the impact of international operations in the form of foreign direct investments on the competitiveness of the investing companies as well as to identify areas of greatest benefits derived from international involvement based on the location of their foreign affiliates. The paper presents results of a field survey carried out in 2012 through direct interviews among Polish companies – foreign direct investors. The research results revealed that the foreign activities of Polish enterprises have a positive influence on their competitiveness; however, the FDI impact is not so clear as it was expected. The empirical findings also proved that the location of their foreign affiliates did not influence significantly the scale and nature of benefits from international activities in terms of the Chi-square analysis applied. However, we observe some tendencies, based on the impact index, indicating some dependencies between the location of foreign affiliates and the fields of the FDI impact identified in the competitive potential of investing companies.

*Key Words:* foreign direct investment, location advantage, competitiveness, developed countries, developing countries

*JEL Classification:* F21, F23

## **Introduction**

International expansion has received a lot of attention from international business research in recent decades. Rapid globalisation of economic activities has greatly expanded the opportunities for company development and growth. This is illustrated by the experience of multinational enterprises (MNEs). MNE business practices confirm that globally dispersed

value adding activities may provide the company with a competitive advantage not available in the home country or in a single country, and subsequently significantly increase the company's competitiveness. It makes the decision to go abroad one of the most critical strategic decisions (Wind and Perlmutter 1977; Hill, Hwang, and Chan Kim 1990; Agarwal and Ramaswami 1992).

The MNE activity in the form of foreign direct investment (FDI) has registered rapid growth over the past three decades. This trend reflects the major importance of FDI in building and enhancing a company's competitiveness. FDI offers companies the opportunity to fully exploit the benefits of internationalisation, such as gaining access to new customers, spreading business risk across a wider market base, obtaining access to valuable natural resources, achieving lower costs or exploiting better-possessed resource. Both theory development and empirical studies strongly support a positive relationship between FDI and competitiveness of the company. However, most of them have focused on defining and investigating motives and the fundamental factors that drive FDI behaviour. There are not many empirical studies that directly investigate the FDI impact on the firm's competitiveness, illustrating areas where the impact was identified as a result of the investments made abroad (Dunning 1996; Dunning and McKaig-Berliner 2002; Szałucka 2008; 2009; 2010; 2014; Gibb and Szałucka 2012). We assume that the impact areas will vary depending on the location of foreign affiliates.

Most of the empirical studies on MNEs have focused on large and mature corporations from Western countries and Japan. MNEs from Central and Eastern Europe have attracted limited attention of empirical researchers, mostly due to its quantity, scale and relatively short history (Svetličič and Rojec 1994; Andreff 2002; Stare 2002; Svetličič and Jaklič 2003; Antalóczy and Éltető 2003; Bohata and Zeplinerova 2003; Rosati and Wilinski 2003; Varblane, Reiljan, and Roolah 2003; Kalotay 2004; 2005; 2008; Karpińska-Mizelińska and Smuga 2007; Rugraff 2010; Karaszewski 2009; Gorynia et al. 2013; Karaszewski et al. 2014). Polish companies doing business abroad in the form of FDI are still a recent phenomenon. However, their interest in foreign markets is growing steadily, and is reflected in a significant increase in Polish outward FDI from the perspective of flows and stocks.

The principal objective of this paper is to empirically investigate the impact of FDI by Polish MNEs on their competitiveness as well as to identify those areas that benefit most from the internationalisation of

economic activity in the form of FDI, depending on the location of their affiliates. The paper presents some of the results of a field survey of 64 Polish companies investing abroad via FDI. It proceeds as follows. It begins with a brief discussion of the theoretical approach to FDI and its location. Next, the authors present the empirical methodology and results of research carried out in 2012 among Polish companies investing abroad. The research focuses on differences in the FDI impact on the firm's competitive potential between companies locating their foreign affiliates mainly in developed countries and those with the majority of affiliates in developing countries. The paper attempts to identify the relative impact of the FDI location on the competitiveness of investors.

### **Location Advantages: The Theoretical Framework**

In order to better understand the relation between FDI location and the competitiveness of MNEs we have to refer to the concept of location advantages. The interaction between location advantages and the competitiveness of MNEs has been widely discussed in academic literature. Due to the complex nature of location advantages, they may be analysed from different conceptual perspectives. Most explanations of the location advantage are based both on conventional international trade theory and FDI theory (Rugman 1980; Rugman and Verbeke 2001; Dunning 1993; Misala 2003; Rymarczyk 2010). The theoretical base for the relation between location and the competitiveness can also be found in the new economic geography (Krugman 1991; 2000; Clark, Feldman, and Gerther 2000; Scott 2000). However, it is the conventional trade theory that formulates the first framework for location advantages by introducing the concept of the absolute advantage by Adam Smith extended into the comparative advantage in the Ricardian model. The issue is discussed further in the Heckscher-Ohlin model.

Rugman and Verbeke (2001) emphasise the need to distinguish different conceptual perspectives of analysing location advantages because they can vary significantly from each other. They write 'the distinction (between trade and FDI) is critical because the location advantages instrumental to exports or imports may be very different from the location advantages conducive to outward or inward FDI.' This paper provides a theoretical approach to the issue from the perspective of FDI theory, explaining the location advantage in relation to the foreign activities of multinational enterprises.

The economic paradigm of the activities of MNEs has long and exten-

sive history. A number of theories have been formulated to explain the phenomenon of FDI and the activities of MNEs. Authors proposing wide explanations of FDI include Hymer (1960), Kindleberger (1969), Vernon (1966), Buckley and Casson (1976) and Rugman (1980). However, they were perceived as fragmentary and not capable of fully explaining both the location of foreign activities of MNEs and the ownership and organisation of those activities. The eclectic theory of international production presented by Dunning (1977) and also known as OLI paradigm (an abbreviation from ownership, location, internalisation), has become the dominant analytical framework for explaining the foreign activities of MNEs over the last three decades. The OLI paradigm builds on the achievements of pre-existing FDI theories (the theory of monopolistic advantages, the location theory and the internalisation theory), attempting to formulate a comprehensive explanation of the international expansion pattern of enterprises (Dunning 1977; 1988; 1993; 2000).

The theory formulates three conditions that must be satisfied if the company is to engage in operations in the overseas market in the form of FDI (firstly the investing company must possess advantages specific to the ownership which can be exploit on foreign markets; secondly, it should be more beneficial for the company to make use of the ownership-specific advantages as part of its own activities rather than to sell or lease them to other companies; finally, there must be at least some location-specific advantages in a foreign location to attract the company to serve the market with the investment mode). The fulfilment of all conditions determines the ownership-specific, internalisation and location-specific advantages arising from foreign production which all simultaneously contribute to the competitive advantage of the company.

The OLI paradigm directly refers to location as a source of competitiveness and indicates an essential role of location advantages in the process of making FDI and strengthening the competitiveness of the investing company. The ability of the investing company to exploit location assets of a foreign market gives the company an opportunity to better deploy and protect the ownership-specific advantages on the one hand, on the other it also enables the company to develop new ownership-specific advantages based on different host country location assets.

The analysis of the academic literature on location advantages at the individual company level indicates that the location advantage is a result of the company's access to various factor endowments and capabilities spatially distributed within the world economies (Dunning 1993; Rug-

man 1980; Porter 1990; Misala 2003; Zorska 2007). The statement directly refers to location-related theories that seek to explain the location of value-added activities and the relationship between the spatial dimension and the competitiveness of the investing company. The theories assume that there is a geographical diversification of the spatial distribution of factor endowments and capabilities. Some of them might be specific to a particular location in origin and can only be deployed by a presence in a foreign location. We can conclude that the location advantage occurs if the location (a home or host country) is well endowed with factors and capabilities, particularly valuable for the company, which cannot be easily moved and deployed in another location. The advantage is based not only on Ricardian type endowments such as labour, land or capital, but also on networks, market structures, demand conditions and institutional factors such as the legal, political and cultural environment. The importance of particular resources and capabilities located in the host country varies in accordance with changing conditions of the global economy. In this context, Dunning (1998) currently stresses the critical role of knowledge as a 'key wealth creating asset,' while Porter (2000) emphasises the growing importance of spatial clustering and network linkages. Not all resources and capabilities located in the host country will create a location advantage. At the individual company level, we discuss only those location-specific factors and capabilities that truly contribute to the competitive advantage of a company.

The foregoing considerations might lead us to two important conclusions. Firstly, the location advantage is assigned to a particular location and its uniqueness stems from the immobility of certain factors and capabilities located there. Porter (1998) argues that anything that can be moved or sourced from a distance cannot be longer a competitive advantage. Consequently, we should seek sources of location advantages in immobile, natural or created factors and capabilities characterised by causal ambiguity, social complexity and unique historical conditions which can be deployed primarily by a presence in a foreign location (Barney 1991).

Secondly, location advantages may be different for each company, and what can contribute to the location advantage for one company may be unattractive and unimportant to another. They are subjective and vary between companies because they depend on characteristics of company's strategic objectives and ownership-specific advantages. Thus, the attractiveness of a location (of a host country) varies from one company to another. The location preferences of foreign direct investors and cor-

responding criteria for the overall attractiveness of various geographic locations are defined by the motives influencing international expansion that are directly related with the company's strategic objectives and ownership-specific assets (Baumann 1977; Daniels and Radebaugh 1989; Dunning 1993; Shenkar and Luo 2004). It allows us to conclude that the location advantage (at the level of the company) will be determined not only by factor endowments offered by the location (external variables) but also by the investing company's resources and capabilities (internal variables) that are reflected in its ownership-specific advantages.

Ownership-specific advantages originally defined by Hymer (1960) play an essential role in explaining why firms engage in international operations. They are a prerequisite for FDI to take place, but not a sufficient condition (Dunning 1993). However, this precondition has become less obvious nowadays, in the context of FDI from emerging market economies (Moon and Roehl 2001). Ownership-specific advantages are usually represented by such elements as product differentiation ability, marketing, logistic and management skills, trade marks and brand names, access to raw materials, economies of scale, access to capital, technology, patents, etc., which are unavailable to other companies and difficult to imitate. Recently, the literature also includes business relationships and networks within a company and between companies as an essential firm-specific factor that can lead companies to superior performance in foreign markets (Johanson and Vahlne 2009). They may be crucial in the case of country-specific factors located in the host country, under the control of host country firms and as a result not freely accessible. In this case, the development of a relationship with those companies is often a precondition to obtaining access to the desired factor endowments (Hennart 2009).

Itaki (1991) emphasises ownership-specific and location-specific advantages inseparability and argues that they are simultaneously determined. On the one hand, ownership-specific advantages must be combined with suitable location factors in the host country and they influence the location decision. On the other hand, the same ownership-specific advantages are affected by location factors. Consequently, FDI creates an option not only for exploiting and protecting existing ownership-specific advantages, but also for developing new ones by combining the company's resources and capabilities with advantages of those locations where affiliates are established.

The relationship between ownership-specific advantages and location-

specific advantages is also broadly illustrated by the concept of the diamond of competitive advantage suggested by Porter (1990) and later developed by Rugman and D'Cruz (1993) into the 'double' diamond of competitive advantage. Porter suggests in his work that the company's competitive advantage is determined by the economic environment in which it is embedded and it is location-bound resources that define the company's advantage over competitors.

In this paper we argue that the competitiveness of the company is created and shaped by a myriad of country- and firm-specific factors which find their reflection in a company's competitive potential. The competitive potential is a fundamental factor determining the ability to obtain and strengthen the competitive advantage. It is created by resources controlled by the company which enable it to compete effectively in the marketplace (Szafucka 2009). The advantage-generating resources have been widely described in the resource-based view literature which focuses attention on resources endowments of the firm as a factor explaining performance heterogeneity at the firm level (Peteraf 1993; Grant 1991; Barney 1991; Hall 1992; Amit and Schoemaker 1993). The competitive potential is deeply embedded in the economic environment which not only shapes it by verifying the value of the particular resources from the perspective of market but also by being the source of new resources. In this context, FDI with its internal transfers of resources between units in the organisation has merged as a tool enabling better exploitation and protection of resources already controlled by the company on the one hand. On the other hand, FDI allows to obtain and develop new resources based on various location endowments offered by foreign markets. The companies entering foreign markets via FDI gain access to a large and diverse resource pool located in the host countries which can be transformed by obtaining, developing, combining, and leveraging into the competitive advantage.

To summarise, the geographical distribution of value-added activities determines the scale and the nature of the benefits that accrue from international expansion in the FDI form. The theoretical approach allows us to assume that if all OLI conditions are satisfied, regardless of the location of the affiliate, theoretically the foreign involvement should contribute to competitive advantage. However, because there are significant differences in location-specific assets offered by various host countries, we can assume that there are differences in the fields of the FDI impact and the nature of benefits derived from affiliates located there.

In the paper we decided to group countries based on shared features of note into two categories – developing and developed countries. We assume that the benefits from internationalisation may be different in the case of these two categories of countries, due to their specific, structural conditions and their distinguishing features. Key features of developed and developing countries differ in terms of growth rate and prospects for markets expansion, needs of customers, level of income, economic development, labour productivity, technology level, competition intensity, market structure, infrastructure etc.

Based on the discussion above, the following hypothesis is suggested:

- H1 *There are significant differences in the fields of the FDI impact on competitive potential of the investing company depending on the FDI location.*

### **Methodology**

The research was carried out in 2012 among Polish companies that had already established direct investment activity abroad. The research covered the group of companies headquartered within the Republic of Poland with operations abroad in the form of FDI. The database developed by the research team included 622 companies. A non-random sampling method was applied which limited the extent to which findings can be statistically representative. Additionally, a small sample size was a limitation of the study. Therefore, the findings cannot be generalised to the entire population and we can test the hypothesis only in terms of initial indications.

The main research was carried out using direct interviews conducted by professional interviewers from Pentor Research International SA who used a standardised questionnaire developed by the research team. In most cases, the information was received from finance managers within the companies surveyed. The direct interview questionnaire, referring to the part of the research presented in this paper, contained only closed questions allowing companies to add their own responses. During the analysis of the research results, the number of respondents that had answered a specific question was always taken as the basis for any calculations.

We used frequencies and the Chi-squared test of independence at the significance level  $p = 0.05$  to analyse the data. Where questions required the respondent to establish a certain hierarchy by indicating his evaluation based on the impact criterion, we applied also the impact index in the following form:



TABLE 1 Number and Structure of Companies Surveyed and FDI Projects by Location

Location	(1)	(2)	(3)	(4)
Developing countries	143	49.3	25	39.7
Developed country	147	50.7	22	34.9
Developed & developing countries	-	-	16	25.4
Mainly projects in developing countries	-	-	32	50.8
Mainly projects in developed countries	-	-	30	47.6
Parity of projects in developing and developed countries	-	-	1	1.6
Total	290	100	63*	100*

NOTES Column headings are as follows: (1) number of projects, (2) percentage of total projects, (3) number of companies, (4) percentage of total companies. \* The results do not add up to 100% because two different categories of respondents are presented in a single table.

$$W = \frac{\sum_{i=1}^k n_i w_i}{k \cdot N}, \quad (1)$$

where  $W$  is the impact index,  $i$  is the evaluation index,  $n_i$  is the number of indications of a factor in the  $i$ -position;  $k$  is a maximum mark on the scale ranging from 1 to  $k$  (indicating the order of factors meant giving them marks in the reverse order),  $N$  is the number of respondents who have answered this question, and  $w_i$  is the evaluation reflecting the position of the  $i$  factor.

Overall 64 correctly completed questionnaires were received, representing an overall return rate of 10.3%.

Out of 64 Polish companies participated in the survey 51% of them had located the majority of their projects in developing countries (32 out of 63).<sup>1</sup> 25 companies undertook FDI in developing countries only. The developed countries as a FDI location predominated in the case of 30 companies surveyed (48%). 22 companies located their FDI projects only in developed countries (table 1).

The correctly completed questionnaires represented companies engaged in a total of 290 FDI projects. 147 out of 290 FDI projects were located in developing countries (51%), and the remaining 143 in developed countries (table 1). Respondents tended to locate their investment projects relatively close to the home market. Europe was the primary location for the surveyed companies, where they located 95% of their affiliates (figure 1). The companies chose mainly European Union member countries (67%). Other Central and Eastern European countries were



FIGURE 1 FDI Projects Surveyed by the Geographical Zones

another popular choice for locating FDI projects. This group of countries was host to almost 23% of the projects reported in the survey. The countries that were chosen most frequently among the developed countries were Germany (53 projects), followed by France (33) and Switzerland (10). Among the developing countries Russia predominated (30 projects), followed by the Czech Republic (29), Ukraine (24) and Slovakia (12).

### Research Results

In 48% of the surveyed companies with the majority of projects located in developing countries FDI contributed to improving their competitive potential, whereas for companies with projects predominantly located in developed countries the figure was 43% (table 2). Positive changes identified by both groups of respondents were mainly of a moderate nature. Only 7% of investors engaging in FDI located mainly in developed countries declared significant positive change in their competitive potential relative to major competitors on the domestic market. The investors with the majority of projects in the developing countries seem to benefit highly from FDI more often than the others (19%). However, all investors, irrespective of the FDI location, most frequently did not observe any changes in potential relative to their main competitors (52% in the case of companies investing principally in developing countries vs. 57% in the case of those investing predominantly in developed countries). In addition, none of the companies surveyed identified any deterioration in their potential. Small differences in percentages between the two groups of respondents are confirmed by the Chi-squared test ( $\chi^2 = 0.156$ ,  $df = 1$ ,  $p = 0.05$ ). The impact of FDI does not vary significantly between the two categories of companies. This confirms the general assumption that if the host country selection process is optimal and the company correctly combined its ownership-specific advantages with location assets, the locations selected should contribute to the competitive advantage of the companies irrespective of their geographical distribution.

In the case of the impact of FDI on the competitive potential relative

TABLE 2 The Impact of the Surveyed Companies' Foreign Direct Investment on Their Competitive Potential Relative to Major Competitors on the Domestic Market by FDI Location (%)

A majority of affiliates	(1)	(2)	(3)
in the developing countries	19.4	29.0	51.6
in the developed countries	6.7	36.7	56.7

NOTES Column headings are as follows: (1) significant improvement, (2) moderate improvement, (3) no change.

TABLE 3 The Impact of the Surveyed Companies' Foreign Direct Investment on Their Competitive Potential Relative to Major Competitors on the Foreign Market by FDI Location (%)

A majority of affiliates	(1)	(2)	(3)	(4)
in the developing countries	22.6	45.2	32.3	0.0
in the developed countries	13.3	30.0	53.3	3.3

NOTES Column headings are as follows: (1) significant improvement, (2) moderate improvement, (3) no change, (4) moderate deterioration.

to the main competitors operating on foreign markets, a more significant difference was identified between the two categories of companies surveyed (table 3). The percentage statistics point to a more explicit relationship between changes in competitive potential and the location of affiliates. Those respondents with affiliates mainly in developing countries more frequently identified positive changes in the competitive potential relative to major competitors in foreign markets than those that operate primarily in developed countries. Almost 68% of the former group evaluated the changes in their potential as positive and 23% of them described the improvement as significant. In contrast, companies that opted for affiliates in developed countries seemed to recognise lower benefits from FDI. In only 43% of cases, a positive change was identified and significant improvement was observed by 13% of respondents.

Although we can observe some differences between the two groups of respondents based on percentage statistics, and higher benefits seem to be declared by companies with the majority of FDI projects located in developing countries, the Chi-squared test did not confirm the association ( $\chi^2 = 3.682$ ,  $df = 1$ ,  $p = 0.05$ ). There is no significant difference between the frequencies in these two categories of respondents. We can say that the changes observed in the competitive potential as a result of FDI were independent of the FDI location.

TABLE 4 FDI Impact on the Competitive Potential Components among the Surveyed Companies by FDI Location (The Impact Index) and the Results of the Chi-Squared Test of Independence at the Significance Level  $p = 0.05$  for the Components of the Competitive Potential

Specifications	(1)	(2)	(3)	(4)
Research and development	0.36	0.26	<i>x</i>	<i>x</i>
Research and development facilities	0.29	0.18	0.31863	3.84146
Knowledge and skills in the area of creating innovations	0.36	0.29	1.19180	3.84146
Innovations in products and services	0.45	0.37	1.53822	3.84146
Innovations in production processes	0.33	0.19	2.35070	3.84146
Production/services	0.40	0.41	<i>x</i>	<i>x</i>
Production (service) facilities	0.38	0.34	0.80636	3.84146
Ability to gain advantages of scale	0.42	0.50	0.01378	3.84146
Level of technological advancement	0.48	0.32	5.03759	5.99146
Knowledge and skills in the area of technology	0.53	0.37	2.32481	5.99146
Employee competences	0.47	0.44	0.58518	5.99146
Access to labour resources	0.40	0.41	1.65618	5.99146
Access to natural resources	0.13	0.33	0.99467	3.84146
Access to raw materials and semi-products/ supporting services	0.21	0.37	1.14865	3.84146
Knowledge and skills in the area of logistics	0.43	0.53	1.24320	5.99146
Relations with suppliers	0.46	0.50	0.30492	5.99146
Quality assurance system	0.50	0.38	1.45022	5.99146
Knowledge and skills in the area of quality	0.38	0.39	0.05594	5.99146
Sales and marketing	0.50	0.56	<i>x</i>	<i>x</i>
Access to markets	0.50	0.75	4.13333	3.84146
Understanding customer needs and preferences	0.59	0.67	1.41432	5.99146
Understanding competitor behaviour	0.52	0.63	1.84153	5.99146
Ability to ensure reliable deliveries	0.47	0.33	1.71491	5.99146
Knowledge and skills in the area of marketing	0.50	0.45	0.91848	5.99146
Relations with customers	0.48	0.53	1.25156	5.99146
Ability to quickly respond to market changes	0.48	0.53	0.88686	5.99146

*Continued on the next page*

A detailed analysis of the FDI impact on the competitive potential based on the impact index revealed some differences in benefits from

TABLE 4 Continued from the previous page

Specifications	(1)	(2)	(3)	(4)
Finances	0.36	0.28	<i>x</i>	<i>x</i>
Equity capital	0.36	0.39	0.36504	5.99146
Access to debt capital	0.31	0.32	0.00007	3.84146
Cost level	0.33	0.19	1.89904	3.84146
Knowledge and skills in the area of finance management	0.42	0.23	4.77799	3.84146
Degree of risk diversification	0.36	0.28	0.27619	3.84146
Intangible assets	0.38	0.42	<i>x</i>	<i>x</i>
Enterprise reputation	0.47	0.45	1.02062	5.99146
Brand of products and services	0.47	0.47	0.21778	5.99146
Intellectual property rights	0.20	0.34	0.06889	3.84146
Organisation and management	0.39	0.36	<i>x</i>	<i>x</i>
Enterprise size	0.45	0.50	3.72117	5.99146
Organisation's culture	0.48	0.39	1.92488	5.99146
Organisation's structure	0.42	0.41	1.55615	5.99146
Knowledge and skills in the area of organisation	0.50	0.45	1.29777	5.99146
Interpersonal relations within the enterprise	0.37	0.34	1.00627	5.99146
Ability to allocate resources effectively	0.36	0.31	1.41432	3.84146
Ability to coordinate resources effectively	0.33	0.34	0.02568	3.84146
Location advantages resulting from legal norms and economic conditions for business activity	0.28	0.23	0.24295	3.84146
Other relations with the external environment	0.33	0.28	0.25833	3.84146

NOTES Column headings are as follows: (1) a majority of affiliates in the developed countries, (2) a majority of affiliates in the developing countries, (3)  $\chi^2$  statistic, (4)  $\chi^2\alpha = 0.05$ , *s*.

The impact index adopts the value from  $-1$  to  $1$ , whereas the index value  $-1 \leq w \leq 0,5$  signifies a negative influence,  $-0,5 \leq w < 0$  signifies moderate negative influence,  $w = 0$  signifies no influence,  $0 > w \geq 0,5$  signifies moderate positive influence, and  $0,5 > w \geq 1$  signifies positive influence.

internationalisation, depending on the location of the affiliates (table 4). These findings correspond to the theoretical approach presented earlier and provide empirical support for our hypothesis concerning differences in the areas of the FDI impact on competitive potential of the investing company, depending on the FDI location. The research results indicated that the affiliates located in the developed countries contributed most to

a better understanding of customer needs and preferences (0.59 – the impact index; ranked 1st), a higher level of knowledge and skills in the area of technology (0.53) and a better understanding of competitor behaviour (0.52). The findings are presented in figure 2. Strong benefits were also identified in knowledge and skills in the area of organisation and marketing as well as in access to markets and quality assurance systems (0.50). All components of the competitive potential were ranked 4th. FDI also contributed substantially to the improvement of organisational culture, the ability to quickly respond to market changes, relations with customers and the level of technological advancement. Significant differences between the two categories of respondents based on the impact index were noted primarily in the area of production, organisation and management. The affiliates located in developed countries in comparison to those located in developing countries contributed relatively more to improving knowledge and skills in the area of technology (2nd vs. 12th place in the ranking), quality assurance systems (4th vs. 11th place), the level of technological advancement (5th vs. 15th place), the ability to ensure reliable deliveries (6th vs. 14th place) and knowledge and skills in the area of finance management (9th vs. 19th place). Furthermore, the respondents with the majority of FDI projects located in developed countries also identified relatively higher benefits from their international operations compared to those respondents running their affiliates mainly in developing countries to knowledge and skills development in the areas of marketing and organisation, organisational culture and innovations in products and services.

Based on the analysis of the responses, companies with the majority of FDI projects located in developing countries manifest slight differences in the areas of FDI impact (figure 3). The most positive FDI impact was noted in access to markets (0.75), an element that was ranked lower by the companies running international operations mainly in developed countries (0.50, ranked 4th). Understanding of customer needs and preferences and competitor behaviour were ranked 2nd and 3rd respectively. Interestingly, the affiliates located in the developing countries led to a relatively high improvement in respondents' knowledge and skills in the area of logistics. This was ranked an equal 4th with the ability to quickly respond to market changes and relations with customers (0.53). The investors also evaluated higher the FDI impact on the size of the company, on relations with suppliers and on the ability to gain economies of scale (ranked an equal 5th) when compared to those running their foreign ac-

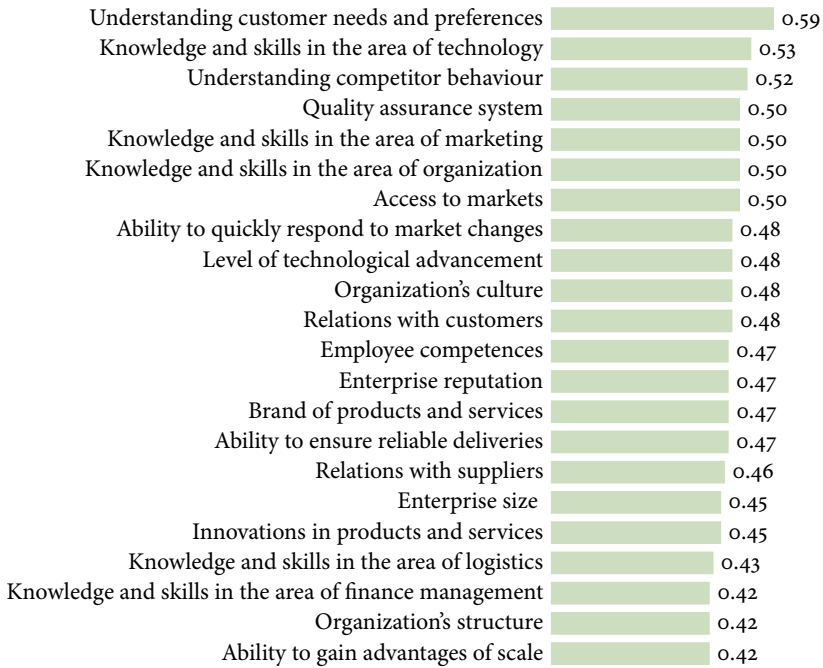


FIGURE 2 Foreign Direct Investment Impact on the Components of Competitive Potential among the Surveyed Companies with the Majority of Affiliates Located in Developed Countries (The Impact Index)

NOTES The impact index adopts the value from  $-1$  to  $1$ , whereas the index value  $-1 \leq w \leq 0,5$  signifies a negative influence,  $-0,5 \leq w < 0$  signifies moderate negative influence,  $w = 0$  signifies no influence,  $0 > w \geq 0,5$  signifies moderate positive influence, and  $0,5 > w \geq 1$  signifies positive influence.

tivities mainly in developed countries. In addition, higher scores were assigned to improvements in access to labour resources (ranked 9th), knowledge and skills in the area of logistics and equity capital (both ranked 10th). Finally, contributions to improving brand products and services as well as the reputation of the company were reported irrespective of the geographical location of the affiliates.

Although, based on the impact index, we can observe some differences in the benefits from FDI, the statistical analysis did not confirm these findings. We used the Chi-square test for independence to determine whether the areas of FDI impact are related to the location of the affiliate. Unfortunately, the Chi-square test did not reveal any significant differences in the fields of the FDI impact between the two categories of respondents (table 4). A significant association was observed only in 2 out



FIGURE 3 Foreign Direct Investment Impact on the Competitive Potential Components among the Surveyed Companies with a Majority of Affiliates Located in the Developing Countries (The Impact Index)

NOTES The impact index adopts the value from  $-1$  to  $1$ , whereas the index value  $-1 \leq w \leq 0,5$  signifies a negative influence,  $-0,5 \leq w < 0$  signifies moderate negative influence,  $w = 0$  signifies no influence,  $0 > w \geq 0,5$  signifies moderate positive influence, and  $0,5 > w \geq 1$  signifies positive influence.

of 39 components of competitive potential evaluated. Significant differences between the two categories of respondents were identified in the case of access to markets ( $\chi^2 = 4.133$ ,  $df = 1$ ,  $p = 0.05$ ) and knowledge and skills in the area of finance management ( $\chi^2 = 4.778$ ,  $df = 1$ ,  $p = 0.05$ ). The affiliates located in developed countries, when compared to those located in developing countries made a significantly higher contribution to improving knowledge and skills in the area of finance management, whereas the affiliates located in developing countries contributed significantly more to increasing market access.

### Discussion and Conclusions

A firm's international competitiveness is a complex phenomenon which is shaped by both firm-level advantages and country-level advantages. This suggests the direct link between geographic location and the competitive advantage of the firm. An international activity via FDI gives the com-



panies the possibility of exploiting advantage-generating assets from variety of locations around the world. Resources and the competitive potential directly linked to them seem to play an essential role in creating and maintaining the competitive advantage. Both elements are shaped and created by the environment, which shifts the central focus to location. There is no doubt that widely understood location assets assist the international competitiveness of the companies. What seems to be particularly important are these location assets which are location-bound, wealth creating and deeply embedded in the economic, cultural and institutional environments of the host country.

The findings reported in this research indicate that FDI made by Polish investors contributed to their competitiveness. Nevertheless, the impact is not as explicit as we expected. Furthermore, the research results proved that the location of their foreign affiliates did not significantly influence the scale and the nature of the benefits from international activities based on the Chi-square analysis applied. However, we can observe some tendencies based on the percentage statistics that suggest the presence of some dependencies related to the FDI location.

According to the research results based on the percentage statistics, the FDI projects undertaken by the surveyed companies improved their competitive potential, however the impact was rather low. In fact, we can say that in many cases FDI projects contributed to maintaining the competitive potential, which may prove a relatively low effectiveness of FDI as a tool for developing the company's competitiveness. However, it must be noted that maintaining the status quo in relation to the competition these days should also be recognised as a success.

Our findings also suggest that there were no statistically significant differences in the FDI impact as a result of the location of the affiliates. All locations, no matter whether developed or developing countries, contribute to the competitive advantage in a relatively same scale. However, based on the percentage analysis, we can observe a slightly higher positive impact in the case of companies that decided to locate their affiliates predominantly in developing countries. The explanation for these findings should be sought in the nature of competitive advantages represented by Polish MNEs and the geographical distribution of their FDI in developing countries. An in-depth analysis of the FDI projects in developing countries reveals that nearly 90% of them were located in Central and Eastern Europe, where Polish MNEs probably can build a competitive advantage more effectively than in the Western European markets

that constituted the bulk of the category of developed countries. The reason for this is the nature of the ownership-specific advantages of Polish companies, which are based to a large extent on home country advantages and are perceived to be more appropriate to Central and Eastern European markets than Western European ones. One of these specific advantages might be better political capabilities as they are used to operate in weak institutional environments with unstable governments (Cuervo-Cazurra and Genc 2008). These capabilities might very valuable for Polish companies especially in other European transition economies (Bevan, Estrin, and Meyer 2004; Marinov and Marinova 2000). Furthermore, the size of Central and Eastern European markets and their growth potential, the cultural and geographic proximity and the shared history and experience may favour Polish MNEs, for whom local access to markets and networks appears more straightforward than in developed markets (Jaworek 2013; Meyer 2001; Marinov and Marinova 2000). Additionally, the relatively undeveloped structures of those markets (particularly in Eastern European countries), the limited brand penetration in the minds of local customers (due to the relatively short history of the open economy) as well as the lower level of competition from local companies may also be essential factors that contribute to the better position of Polish MNEs in these markets and consequently greater benefits from the affiliates located there (Meyer 2001). In contrast, the position of Polish MNEs in Western European markets (which constitute almost 98% of the FDI projects located in developed countries) may be worse than that of local firms, the competitive advantages of which are based on advanced home country advantages. Developed markets of Western Europe are characterised by a high level of economic development, a lower growth rate, an intensive and demanding competition, a high focus on advanced technology and innovation, and strong local brands. Additionally, the image of Poland in Western countries does not always support Polish MNEs in those markets, although this has significantly improved in recent years. Consequently, Polish MNEs may face more difficulties entering Western markets as opposed to Central and Eastern European ones. This may result in higher costs and a higher probability of failure. As a result, the positive impact of the affiliates located in Western Europe may be lower than that of the affiliates embedded in Central and Eastern Europe.

The research results also indicate that generally there are no statistically significant differences in benefits from FDI between companies with the majority of FDI projects located in developed and developing countries.

Out of 39 components of competitive potential, the FDI location was statistically significant in only two instances. The results did not provide empirical support for the hypothesis, that there are significant differences in the fields of FDI impact on competitive potential depending on the FDI location. The Chi-square analysis did not allow us to confirm that the geographical distribution of foreign activities determines the nature of benefits from FDI. However, based on the impact index we can observe some trends that may indicate a slight dependency between the FDI location and the field of the FDI impact. The affiliates located in developed countries seem to contribute more than those located in developing countries to improving components of the competitive potential related to intangible resources, such as knowledge and skills in the area of technology, marketing, organisation or finance management, the level of technology advancement, quality assurance systems and organisational culture. It is a consequence of the economic environment offered by the developed economies, characterised by large ready markets, high levels of local competition, demanding customers, high expenditure on R&D, the presence of developed and modern infrastructure, and high technological development (Jaworek 2013). In contrast, benefits from the affiliates located in developing countries mainly reflect their size and rapid growth rates, as well as their cultural and geographical proximity, factors that contribute to improving access to markets, knowledge and skills in the area of logistics, relations with suppliers and the ability to gain advantages of scale (Meyer 2001; Marinov and Marinova 2000).

Although this study does not indicate a relationship between location and the nature of benefits derived from international activity we believe that our findings offer interesting insights for future research. An integrative approach to motives, ownerships-specific advantages and location advantages is needed to better understand the findings of this study. This issue was indirectly signalled in the paper, but it requires the further empirical research. Future research should also try to explore more deeply the location as a variable affecting the company's global competitive advantage from resource-based view of the firm. Moreover, international business research could benefit from cross-country comparison studies to identify the differences in the nature of FDI benefits between the companies from CEE region or developed and developing countries. Finally, the interpretation of this study's findings needs to be done in consideration of several limitations. Due to the small sample of companies surveyed and the non-probability sample selection applied in the study, the findings

should be interpreted with caution and described only in terms of some initial indications. The research hypothesis can be conceived as a pointer for future research based on larger and more representative sample where more objective based measures could be applied.

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### Notes

- 1 The division of the countries into developed and developing countries was made according to the classification used by World Investment Reports published by UNCTAD (2013). However, for the purpose of this article we decided to slightly modify the two categories of countries to better reflect two different directions of Polish FDI that are mainly located in Europe. We decided to include in the category of developing countries the new member states of the European Union: Bulgaria, Cyprus, Czech Republic, Estonia, Lithuania, Latvia, Malta, Romania, Slovakia, Slovenia and Hungary (as IMF still does in its classification). On the other hand, the group of the developed countries was expanded to include Singapore and South Korea.

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# *Human Capital and FDI in Central and Eastern Europe*

Agnieszka Dorożyńska  
University of Lodz, Poland  
adorozynska@uni.lodz.pl

Tomasz Dorożyński  
University of Lodz, Poland  
tdorozynski@uni.lodz.pl

The aim of this paper is to assess the role of human capital in attracting FDI in the light of selected empirical studies conducted in Poland and globally. The literature on factors determining FDI location, including those relating to the importance of human capital, is dominated with studies at national or supranational level. Attracting foreign investment has become a key component of national strategies for the CEE countries. The paper makes an attempt to assess the relevance of human capital for FDI inflow at regional and local levels in Poland. At the same time, results of analyses were contrasted with quantitative surveys conducted in Central and Eastern Europe. Investing in education and human capital is important for creating good climate for investment. Evidence shows that achieving a certain minimum level of education is the precondition for a country to attract and maintain foreign direct investment and maximise indirect effects connected with human capital and resulting from the presence of businesses with foreign capital and maximise indirect effects connected with human capital and resulting from the presence of businesses with foreign capital. We should also stress that such a minimum is different for different sectors of the economy. Results of the study conducted in the Lodz Region demonstrated that human capital is an important factor, which attracts FDI to the region.

*Key Words:* human capital, FDI, CEE countries, Lodz Region

*JEL Classification:* F21, F23, O15

## **Introduction**

International capital flows have an increasing impact on the performance of the world's economy. These flows take various forms and one of them is foreign direct investment (FDI), whose aim is to gain control over a business entity based in one country by residents of another country. FDI is seen as an essential factor in stimulating economic growth, expanding

capital, and increasing productivity, employment, innovation and technology transfer.

The European Attractiveness Survey 2013 by Ernst&Young (2013) suggests that the performance of all countries of Central and Eastern Europe has been the best for years. According to investors from across the world, the attractiveness of the region is higher than that of Brazil, Russia or India. Globally, China is still the most attractive. It is followed by Western Europe and North America, while Central and Eastern Europe ranks fourth. The CEE countries seek to attract and promote foreign investment to liberalise their economies to ensure free movement of capital and profits. Attracting foreign investment has become a key component of national strategies for the CEE countries. Even small regions can compete strongly for investments if they can provide sufficiently favourable investment conditions. This has created a potential to use FDI as an instrument to support the development of countries and regions that have earlier lagged behind in income and development.

With this idea in mind, we consider that a possible specific determinant of FDI inflows in Central and Eastern Europe could be human capital in the host country. Human capital has become an important factor for a location decision of multinational enterprises (MNE).

Hence knowledge, in its broader sense, is considered decisive for economic growth and we are looking for new ways of acquiring it. One of the channels of knowledge transfer, which gained in importance at the turn of the 20th and 21st centuries is FDI. On the other hand, research shows that human capital helps attract FDI. The paper focuses on the second aspect, that is why we want to assess the role of human capital in attracting FDI in the light of selected empirical studies conducted in Poland and globally. The literature on factors determining FDI location, including those relating to the importance of human capital, is dominated with studies at national or supranational level. The paper makes an attempt to assess the relevance of human capital for FDI inflow at regional and local levels in Poland. At the same time, results of analyses were contrasted with quantitative surveys conducted in Central and Eastern Europe.

The paper consists of four main parts. The first one is an overview of literature and studies exploring the links between human capital and FDI. The second part focuses on the assessment of investment attractiveness of the CEE countries. Further considerations relate to the assessment of human capital in CEE. Final part of the paper discusses selected results of questionnaire-based studies, which enabled the assessment of the at-

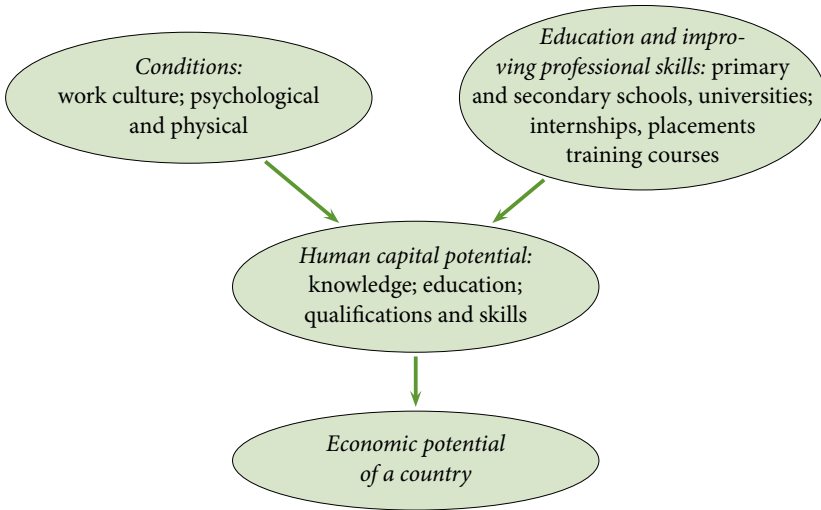


FIGURE 1 Conditions Shaping the Potential of Human Capital

tractiveness of human capital in the Lodz region as perceived by foreign investors. Conclusions from the study and analyses of links between human capital and FDI provide a deeper insight into regional studies since the review of literature has shown that usually studies are conducted at the level of a country.

### Relationship between Human Capital and FDI

The term 'human capital' was coined by Schultz (1961) and Becker (1962). They defined it as a set of characteristics, natural talents, predispositions, attitudes, respected values, acquired abilities and knowledge of people, which may be enriched through investment (Niklewicz-Pijaczyńska and Wachowska 2012, 45). Since the 1960s, the term evolved and has been carefully analysed by many researchers. That is why in literature we may come across many definitions.

For the needs of this paper, human capital is defined as a set of knowledge, education, qualifications and skills of a given society. It is created through education and improving professional skills, taking account of work culture aspects as well as psychological and physical conditions. This is how resources of valuable and useful knowledge can be used to foster economic potential (figure 1).

At international scale, knowledge transfer takes place through a variety of channels, e.g., through the exchange of goods, services, technolo-

gies and also as a result of FDI inflow. At microeconomic level, human capital impacts, e.g., salaries while at macroeconomic level it influences business location decisions or may determine innovation transfer as well as adaptation capabilities of technologies developed in other countries (Golejewska 2012, 29–30). Prospects of development for economies, especially the emerging markets and the developing world, are dependent on their potentials to make profitable investments and to accumulate capital. The Benhabib and Spiegel's (1994, 143; 2005) argument is that the countries with a high level of human capital are able to achieve higher growth rates through their ability to attract foreign enterprises and assimilate new technologies with efficacy.

It is stylised in the literature on foreign direct investment that a country's stock of human capital is one of the most important determinants of its inward FDI flow. Many countries see attracting FDI as an important element of their economic development strategies. FDI is one of the main avenues for the movement of technology across national borders. FDI can increase competition in the host economy, making domestic companies more efficient and stimulates sectoral and product diversification. A well-educated workforce is perceived as an important incentive for foreign investment location decision (Eicher and Kalaitzidakis 1997, 22–28).

Regarding CEE, Beavan and Estrin (2004) proved that foreign investors, when making an investment location decision in a particular region, consider economic factors, such as:

- unit labour costs,
- gravity factors,
- market size and proximity.

Talpas and Enache (2010) took up the task of analysing whether human capital positively correlates with FDI inflows in CEE. Their survey shows that 'FDI inflows in CEE have specific patterns and human capital determinants, different from the ones specific to the rest of developing countries. For CEE the quality of human capital matters in attracting FDI inflows. It seems that foreign investors in these countries are seeking quick and smooth technological transfer and hence, they value the most the level and the quality of human capital.'

The above quoted results confirm that many authors empirically confirmed significant role of human capital as a factor, which attracts FDI. However, we must point out that the role of human capital in FDI is not clear in the literature. Borensztein et al. (1998) state that FDI is positively

TABLE 1 The World's Most Attractive Regions for FDI in 2006–2014

Region	2006	2010	2014
Western Europe	68%	38%	45%
CEE	52%	24%	29%
North America	48%	22%	31%
India	18%	22%	17%
China	41%	39%	44%
Brazil	5%	12%	13%
Russia	5%	14%	19%

NOTES Adapted from Ernst&Young 2014, 11.

TABLE 2 The Most Attractive Countries for FDI in CEE

CEE	2014	(1)
Poland	31%	-6 pts
Czech Republic	11%	-4 pts
Romania	9%	+2pts
Hungary	8%	+3 pts
Ukraine	7%	+2 pts
Turkey	6%	+4 pts
Latvia	3%	+1 pts
Slovakia	2%	-1 pts

NOTES (1) Change from 2013. Adapted from Ernst&Young 2014, 12.

associated with economic growth but it depends on human capital. Countries with a low level of human capital do not benefit from FDI investment. Blomstrom, Lipsey and Zejan (1992) haven't found a positive impact of education on FDI. Hanson (1996) finds that the adult literacy rate was not a significant determinant of FDI. Narula (1996) indicates that the number of people with tertiary education was not a statistically important variable for FDI inflows. Hence, the above mentioned studies from different countries let us conclude that human capital is not necessarily one of important factors which attract foreign investors.

### **Investment Attractiveness of the CEE Countries As FDI Locations**

Market preferences for FDI are changing. In 2014 investors participating in an Ernst and Young study identified the countries of Western Europe as the most attractive FDI location in the world. China ranked second followed by North American countries and the CEE countries running fourth.

CEE ranked fourth (29%) slightly below North America. Moreover, there is a growing divergence in the perceived attractiveness of European countries. In 2014 discrepancies among the CEE countries when it comes to their investment attractiveness were rather substantial (table 1). Respondents considered Poland to be the most attractive FDI location (31%). The Czech Republic ranked second (11%) while the last places in the ranking were occupied by Latvia (3%) and Slovakia (2%). The over-

all attractiveness score of Poland and Czech Republic has declined by 6 and 4 percentage points, respectively. These countries are losing out to economies of South-East Europe (e.g. Turkey, Romania) (table 2). The foreign direct investment (FDI) inflows into the Central and Eastern European economies were a vital factor in the first stage of the privatisation process during the transition period. FDI has increased in the past twenty years, to become the most common type of capital flow needed for the reconstruction, stabilisation of the CEE economies and economic growth.

Table 3 presents FDI inflows into some of the CEE countries between 1990 and 2012. The size and increasing FDI inflows to CEE countries in-transition were impressive. Poland, Hungary, and the Czech Republic have become the most attractive destinations for foreign investments.

The inward FDI inflow as a percentage of GDP has been the highest in Hungary (reaching its maximum of 51.9% in 2007) and in the Czech Republic (reaching its maximum 10.8% in 2002). As Poland is the largest economy among the CEE countries, FDI expressed as a percentage of GDP in Poland is relatively low. In 2013 Poland reported net FDI inflow expressed as a percentage of GDP of -1.1% (table 5).

The FDI inflow measures the amount of FDI incoming into a country during a year. The FDI stock is the total amount of production capacity owned by foreign investors in the host country. This indicator has been high in Hungary, the Czech Republic, Slovakia, and constitutes respectively 81%, 69%, 60%. High share of stock in the GDP indicates that FDI are highly important for the economies of the CEE countries and are one of the principal indicators, which acknowledge the involvement of these countries in globalisation. It is worth adding, that the indicators for most of the CEE countries are higher than globally (table 4). The overall indicator for Europe reaches ca. 50% and Poland, together with Latvia, are approaching the European average.

Countries of Central and Eastern Europe experienced a series of deep transformations in the 1990s, as a result of which they shifted from centrally planned economy to market-based allocation of resources. The transformations were, and still are, taking place with different intensity and efficiency in individual countries.

The volume of FDI inflows has grown rapidly, as the Governments of the CEE countries have officially encouraged FDI and developed FDI promotion programs providing substantial incentives for foreign companies. After privatisation, local authorities in the CEE countries launched



TABLE 3 Inward FDI Flows in Millions of USA Dollars, in 1990–2012

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Slovenia	0	0	111	113	117	154	175	334	218	106	133	369	1620	305	826	588	644	1514	1947	659	360	998	59
Slovakia	0	0	0	179	255	2587	370	231	707	429	2720	2275	5865	2976	4029	3110	5803	4017	4868	6	1770	3491	2826
Romania	0	40	77	94	341	419	263	1215	2031	1027	1057	1158	1141	2196	6436	6483	11367	9921	13909	4844	2940	2522	2748
Poland	88	359	678	1715	1875	3659	4498	4908	3698	7271	9445	5701	4123	4588	12874	10293	19603	23561	14839	12932	13876	20616	6059
Latvia	0	0	32	44	213	178	382	522	356	346	413	132	253	304	637	707	1663	2322	1261	94	380	1466	1109
Hungary	554	1470	1477	2443	1143	5103	3300	4167	3355	3312	2764	3936	2994	2137	4266	7709	6818	3951	6325	1995	2202	6290	13983
Czech Rep.	0	0	0	653	868	2562	1428	1301	3716	6330	4985	5642	8482	2103	4974	11653	5463	10444	6451	2927	6141	2318	7984

TABLE 4 FDI Inward Stock As a Percentage of Gross Domestic Product in the World, and CEE Comparison, 1990–2012

Country	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
World	9.70	10.40	9.90	10.30	10.50	11.50	13.10	14.80	18.70	22.30	22.90	23.30	22.50	25.10	26.10	26.30	25.30	28.80	32.00	25.30	31.30	31.70	29.70
Europe	10.60	11.30	10.30	11.50	12.70	13.10	14.50	16.10	20.60	23.90	27.60	29.00	32.00	34.80	37.20	34.60	41.30	45.10	37.50	46.90	46.80	44.30	50.30
Czech Rep.	2.50	4.70	6.30	8.70	10.00	12.70	13.20	15.50	22.50	28.20	36.80	42.10	49.30	47.50	50.20	46.60	53.80	62.30	50.20	63.80	64.70	55.80	69.50
Hungary	1.60	6.20	9.00	14.20	16.70	24.80	28.90	38.60	43.20	48.20	49.30	52.00	54.60	57.90	60.40	55.40	71.20	70.20	57.10	78.00	71.20	62.20	83.10
Latvia	0.00	0.00	3.40	4.80	9.00	12.40	16.50	20.20	22.50	24.50	26.80	28.30	29.80	29.40	33.00	30.90	37.70	37.80	34.50	44.90	44.60	42.50	47.80
Poland	0.20	0.50	1.50	2.50	3.50	5.60	7.30	9.30	13.00	15.50	20.00	21.70	24.40	26.70	34.30	29.90	36.80	42.00	31.00	43.00	45.90	39.40	48.00
Romania	0.00	0.10	0.60	0.80	1.30	2.20	3.00	6.80	10.80	15.80	18.60	20.50	17.10	20.50	27.00	26.00	37.00	36.90	33.20	43.80	42.60	39.10	46.10
Slovakia	0.00	0.00	0.00	0.00	4.80	5.70	6.60	9.70	13.00	15.80	34.20	38.50	50.80	65.40	66.80	61.80	69.10	63.60	53.50	60.20	57.70	54.20	61.10
Slovenia	0.00	0.00	13.90	14.60	8.80	8.40	9.40	10.80	12.80	12.00	14.50	12.70	17.80	21.60	22.40	20.30	23.10	30.40	28.90	31.10	31.10	30.20	34.10
Turkey	5.50	5.90	6.00	5.50	8.00	6.60	6.40	6.40	6.50	7.30	7.10	10.40	8.10	11.00	9.80	14.80	17.90	24.00	11.00	23.40	25.60	17.60	23.80

TABLE 5 Foreign Direct Investment, Net Inflows As a % of GDP in 2000–2013

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Czech Rep.	8.5	8.8	10.8	2.1	4.4	8.9	3.7	5.9	2.9	1.5	3.1	1.0	4.1	2.5
Poland	5.5	3.0	2.1	2.1	5.0	3.6	6.3	6.0	2.6	3.3	3.6	3.4	1.4	-1.1
Romania	2.8	2.9	2.5	3.1	8.5	6.9	9.3	6.0	6.8	3.0	1.9	1.4	1.6	2.0
Hungary	6.0	7.5	4.5	2.6	4.2	7.7	16.6	51.9	48.6	-2.3	-16.4	-1.4	1.6	2.0
Slovakia	7.1	No data	11.8	1.2	5.4	4.9	5.9	4.6	4.2	1.8	2.4	3.8	1.7	No data
Slovenia	0.7	2.5	7.2	1.0	2.5	2.7	1.8	4.0	3.3	-0.7	1.4	1.6	-0.5	No data
Latvia	5.3	1.6	2.7	2.7	4.6	5.1	8.5	9.4	4.3	-0.2	1.8	5.3	3.8	No data

NOTES Based on data from UNCTAD (<http://unctadstat.unctad.org>).

TABLE 6 The Human Capital Index for Selected CEE in 2013

Country	Overall index		Education		Health and wellness		Workforce and empl.		Enabling environment	
	Rank*	Score	Rank*	Score	Rank*	Score	Rank*	Score	Rank*	Score
Poland	49	0.087	42	0.376	47	0.173	63	-0.139	57	-0.064
Czech Rep.	33	0.387	36	0.452	36	0.310	36	0.210	31	0.576
Romania	69	-0.176	57	0.077	61	0.048	85	-0.364	83	-0.463
Hungary	54	0.000	33	0.530	73	-0.064	77	-0.275	62	-0.190

NOTES \*The index covers 122 countries. Adapted from World Economic Forum (2013).

activities to improve the productivity, employment and transfer of new technologies to ensure sustainable economic growth.

Besides, the accession of the countries of Central and Eastern Europe to the European Union improved the image of the region, which is now perceived as open and stable for foreign investors, and contributed to bigger inflow of FDI. Empirical literature suggests that European economic integration has been accompanied by a rising level of foreign direct investment within the EU, and increased FDI flows from third countries (Kokko and Gustavsson 2004, 125).

Despite the fact that foreign investors consider Central and Eastern Europe one area, the countries in the region differ significantly with respect to economic achievements, FDI absorption capacity, and the approach to investment incentives. So, the developing of a labour force, knowledgeable and properly trained in demanded skills, may become a significant distinguishing element in attracting foreign investors, in particular in the face of intensifying competition of the developing countries (e.g. China, India, Brazil).

### **Human Capital in CEE**

One of the characteristics of rich industrial economies is the availability of workforce representing a high level of human capital. Because the level of human capital has been a crucial factor for FDI, it is necessary to evaluate host CEE countries' effort to develop it with a view to attract FDI. One can use The Human Capital Index for the purpose, which is a new measure for capturing and tracking the state of human capital development around the world (table 6). The Index includes four the following pillars (World Economic Forum 2013, 6–8):

- education,
- health and wellness,
- workforce and employment,
- enabling environment.

From the group of the CEE countries we selected the most attractive ones from the viewpoint of FDI in the region (Poland, Czech Republic, Romania and Hungary).

In 2013, the Czech Republic ranked first in the group of analysed countries, both for the overall Index, which measures the level of human capital development and for the majority of its pillars (i.e. Health and Wellness, Workforce and Employment, Enabling environment). Poland

TABLE 7 Ranking of Education Levels of the Society in Selected CEE Countries in 2013

Country	Tertiary education attainment*		Secondary education attainment*		Primary education attainment*	
	(1)	(2)	(1)	(2)	(1)	(2)
Czech Rep.	48	16	1	100	5	99
Hungary	38	20	5	98	1	100
Poland	34	21	27	82	11	99
Romania	62	12	21	87	15	98

NOTES Column headings are as follows: (1) rank/122 countries, (2) country value.

\* Percentage of population aged 25+.

ranked second with its 49th rank. Taking account of the education ranking, Hungary ranked high (33) while Poland managed to overtake just Romania. The following pillars scored the lowest: Workforce and Employment and Enabling environment in three countries: Romania, Hungary, and Poland.

Considering the level of education of people in the age group above 25 in individual CEE countries, in 2013 Poland ranked the highest in tertiary education while the Czech Republic in secondary education (table 7).

In conclusion we need to stress that in order to become a more attractive location for an investment project, it is necessary to invest in education. The data, in this part, show that in all the countries further initiatives should be launched to support human capital development by opening up perspectives of tertiary education, which has become increasingly demanded by high-value added multinational enterprises.

### **Human Capital Attractiveness in the Lodz Region in the Eyes of Foreign Investors (Case Study)**

The assessment of human capital role in attracting FDI to the Lodz Region was based on the results of a direct study conducted in 2011 among 188 companies.<sup>1</sup> Companies included in the sample represented two sectors: industry and services and all were partially financed with foreign capital. The size of their employment varied and they were divided into groups in accordance with binding classification of businesses. The most numerous were companies employing 10–49 and 50–249 people. The population of big businesses, which employ more than 249 people, was two times smaller than that of small or medium-sized companies. The group of micro-companies was the smallest.

The question concerning the reasons, which made a foreign investor

TABLE 8 Impact of Selected Factors on FDI Location Decision in the Case of Poland

No. Factor	(1)	(2)	(3)
1. Availability of workforce with adequate qualifications	5.054	1.780	3.182
2. Low salaries and labour-related costs	4.909	1.633	2.667
3. Big domestic market	4.829	2.067	4.272
4. Little competition	3.613	1.987	3.947
5. Good infrastructure	3.602	1.756	3.084
6. Entry into the single EU market	3.594	2.224	4.946
7. Availability of Polish subcontractors and suppliers	3.299	1.928	3.719
8. Availability of foreign subcontractors and suppliers	3.156	3.156	3.156
9. Vicinity of markets of the Community of Indep. States	3.154	1.868	3.490
10. Tax allowances	2.454	1.757	3.086
11. High quality, stable legal regulations	2.341	1.289	1.661

NOTES Column headings are as follows: (1) average answer, (2) standard deviation, (3) variance. Ranking based on average answers, The points on the scale were as follows: very big (7), big (6), quite big (5), neither big nor small (4), small (3), very small (2), none (1).

invest in Poland was answered by assessing 12 factors on a seven-point scale. Analysis of results, besides the distribution of answers, employed averages and dispersion measures. The analysis was preceded by the estimation of measurement reliability using the Cronbach's alpha coefficient. Its value informs about the correlation between answers to individual questions and the total result of the measurement. It demonstrates to what extent the items (factors) on the scale are homogenous and represent the same interpretation of questions by respondents. The value of Cronbach's alpha coefficient of 0.736 confirms high reliability of the measurement.

As shown by the study and data in table 8, one of the major reasons for locating FDI entities in Poland is the availability of the workforce with adequate qualifications. Another valid reason was low cost of labour.

Next part of the study was designed to identify the reasons why entities with foreign capital decided to locate their investments in the Lodz Region. Companies assessed the degree to which selected factors encouraged or discouraged them from doing so. They rated 27 reasons on a seven-point scale. Like in the part of the study concerning motivations behind investors' decisions to establish a FDI business in Poland, we used distributions of answers and statistical indicators: average answer, variance and standard deviation. Cronbach's alpha coefficient was 0.884 in this case, meaning a very reliable measurement.

Foreign investors were the most encouraged to locate their businesses

in the Lodz Region by factors relating to costs and employment. These were:

- relatively low salaries,
- low total costs of business activities,
- availability of workforce with adequate qualifications,
- availability of professionals with adequate qualifications.

In the following stage of analysis, reasons why investors selected the Lodz Region as the destination of their FDI we distinguished the most encouraging and the most discouraging factors.

Afterwards, we could rank the most important factors influencing foreign investors' location decisions:

- costs of production (services),
- salaries and wages,
- availability of professionals with adequate qualifications,
- availability of workforce with adequate qualifications.

When making location decisions, foreign investors also assessed the system of education, mostly secondary schools and universities. They are important factors as they supply skilled employees. In the opinion of companies, availability of professionals and workforce with adequate qualifications and appropriate profile of schools are key factors, which encourage foreign companies to invest in a region. High assessment of education means investors are convinced the system of education is capable of teaching skills consistent with their preferences. More than a half and 40% of companies, respectively, considered higher and secondary education 'very important' and 'quite important' in making their investment decisions.

#### FOREIGN INVESTORS' PREFERENCES

One of the factors deciding about the location of a foreign investment in the region is human capital. The following analysis refers to foreign investors' preferences from the voivodeship of Lodz with respect to recruiting Polish employees as managers and at lower positions and next to enhance their skills by training. Most companies have clear expectations vis-à-vis Poles recruited to managerial positions. This is confirmed by the majority of single selections in preference categories.

A Pole employee in managerial position desired by most of FDI companies is a person with the following profile:

TABLE 9 Preferences of FDI Companies with Respect to Recruiting Poles to Managerial and Non-Managerial Positions

<i>Level of education</i>				
Vocational	2	1.06	48	25.53
Secondary	24	12.77	89	47.34
Higher	164	87.23	56	29.79
Post-graduate	14	7.45	4	2.13
Not important	15	7.98	51	27.13
Total	219	116.49	248	131.92
<i>Education profile</i>				
Technical	113	60.11	108	57.45
Economics	100	53.19	54	28.72
Law	14	7.45	5	2.66
IT	29	15.43	21	11.17
Not important	24	12.77	49	26.06
Other	18	9.57	15	7.98
Total	298	158.52	252	134.04
<i>Age</i>				
19–25	7	3.72	40	21.28
26–35	77	40.96	80	42.55
36–50	56	29.79	25	13.30
51 and more	6	3.19	–	–
Not important	78	41.49	98	47.87
Total	224	119.15	243	125.00
<i>Work experience</i>				
None	6	3.19	35	18.62
1–5 years	62	32.98	74	39.36
Over 5 years	78	41.49	26	13.83
Over 10 years	18	9.57	11	5.85
Not important	37	19.68	75	39.89
Total	201	106.91	221	117.55
<i>Command of foreign languages</i>				
Very good	154	81.91	47	25.00
Intermediate	34	18.09	76	40.43
Not important	7	3.72	80	42.55
Total	195	103.72	203	107.98

- higher education,
- technical or economic background,
- age: 26–50 years,
- with work experience not longer than 10 years,
- fluent in foreign languages.

Among 164 companies preferring university graduates only 17 allowed

also for the possibility of a person in managerial position to have secondary education. The importance of post-graduate studies was stressed only by 14 respondents. Technical education is especially important in the industrial sector (over 66% of answers). In services, economic and IT faculties that were more often selected. Over 15% of the respondents preferred IT education and slightly fewer (ca. 13%) did not take account of education profile when recruiting a person to a managerial position.

56% of enterprises are looking for candidates at the age of 26–50 years. Young people are preferred but at the age of 25 years and more. Interestingly enough, more companies are ready to recruit a person of 26–35 years (50) than someone at the age of 35–50 years (29) to a managerial position. For over 40% of respondents the age was not important. There is little chance of employment for people below 25 and over 51 years of age.

An essential factor for foreign investors is the period of previous employment. Data show that they preferred people with work experience exceeding 5 years. FDI companies in general require fluent command of foreign languages from the managerial staff. It is especially important in the service sector and a little less important in industry.

Similar analysis was conducted for foreign investors' preferences with respect to hiring Polish workers to non-manual positions (table 9).

Respondents' answers indicate that a suitable Polish employee in non-manual position for most the FDI companies is a person with the following profile:

- secondary education,
- technical or economic,
- at the age of 26–35,
- with work experience not longer than 5 years,
- having intermediate command of foreign languages.

Technical background is preferred by FDI companies in industry. Command of foreign languages was not important for about 40% of companies, especially in industry. Fluency in foreign languages was, however, very important in the service sector. Age and work experience of potential employees were irrelevant to respectively 48% and 40% of FDI companies. Other preferred mostly young people with work experience up to 5 years and aged up to 35.

FDI companies attach great importance to professional training, giving their employees an opportunity to enhance and improve their skills.





FIGURE 2 Employees of FDI Companies Participating in Training

TABLE 10 Employees of FDI Companies Participating in Vocational Training by Business Sectors (%)

Sector	(1)	(2)	(3)	(4)
Industrial sector	3.13	5.21	79.16	12.50
including manufacturing	3.49	4.65	80.23	11.63
Service sector	10.87	4.35	73.91	10.87
including trade	9.43	3.77	73.59	13.21

NOTES Column headings are as following: (1) only staff, (2) only workers, (3) staff and workers, (4) lack of data.

Almost each surveyed company organised training in Poland and almost half of them also abroad.

The rule was to organise training both for managerial staff as well as for employees in non-managerial positions. The structure of training by sectors did not reveal bigger differences. In the service sector the share of training courses for managerial staff was higher and for managerial staff and workers lower than in industry. The differences, however, are minor.

Subjects of training courses organised by FDI companies were very differentiated. Most often, however, concerned three aspects:

- management and marketing, including production, quality and company management, attracting and servicing customers, negotiations,
- finance and banking, including accounting, taxes, personnel, salaries, audits, controlling,
- procedures, including health and safety at work, technical, construction, chemical procedures.

Two thirds of all training courses were connected with these areas. There were fewer professional, computer, foreign languages and soft skills courses. Clear majority of FDI analysed in the Lodz Region decided the changes were very positive. The output of production and services increased, together with the number of products placed on the market, employment, productivity, and value of assets; distribution networks also de-

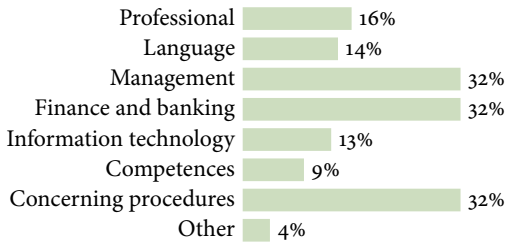


FIGURE 3 Subjects of Training Courses Organised by FDI Companies

veloped. The smallest positive changes were reported for advertising. In a small group of studied businesses negative phenomena occurred, such as a decrease in production and employment.

Innovation of companies with foreign capital in the Lodz Region was assessed based on the turnover in licenses, implementations of innovative solutions and R&D activities. Certificates, patents and protection rights were also analysed.

The majority of foreign investors (more than 60%) transferred solutions relating to products, technology and organisation developed in their parent companies or daughter companies to FDI companies. Importantly enough, half of businesses implemented also their own innovations. Every fourth FDI company has got an R&D unit and almost 1/3 collaborate with research institutes in developing and implementing innovative solutions. By improving the quality, lowering costs and better matching between the offer and market needs such activities improve competitiveness of businesses. On the other hand, however, their scope, in most cases, is quite limited. Only very few FDI companies sold licenses and most of them have no certificates, protection rights or patents, which is indicative of their low innovativeness.

#### INTERDEPENDENCE ANALYSIS OF THE SIZE OF EMPLOYMENT AND COMPANIES' PREFERENCES

In order to analyse interdependence between the size of a company reflected in employment or revenue and preferences vis-à-vis recruited persons in the area of professional experience or foreign languages we used the independence test  $\chi^2$ . The test may be used to study the compresence of variables scaled in orderly way as in the case of the survey in question.

In all analysed cases the value of  $\chi^2$  statistics was much lower than the threshold values. It means there are no grounds for rejecting the hypothesis about stochastic independence of variables. Cramer's V was also

TABLE 11 Interdependence Analysis between the Size of a Company and Preferences with Regard to Professional Experience and Languages for Persons Recruited to Managerial and Non-Managerial Positions (Calculations for the Independence Test  $\chi^2$ )

First variable	Preferences with regard to			
	Professional experience of persons recruited to managerial positions	Languages for persons recruited to managerial positions	Professional experience of persons recruited to non-managerial positions	Languages for persons recruited to non-managerial positions
Second variable	Employment	Employment	Revenue	Revenue
Categories of the first variable	3 <sup>1</sup>	2 <sup>2</sup>	3 <sup>1</sup>	3 <sup>3</sup>
Categories of the second variable <sup>4</sup>	4	4	4	4
No. of companies included in the survey	187	189	178	175
No. of degrees of freedom	6	3	6	6
$\chi^2$ – calculated	8.0622	2.655	1.060	3.1654
$\chi^2$ – theoretical	12.592	7.815	12.592	12.592
Significance level	0.05	0.05	0.05	0.05
Cramer's V	0.1468	0.1185	0.0646	0.0951

NOTES <sup>1</sup> Required professional experience: a – no experience or less than 5 years, b – professional experience exceeding 5 years, c – professional experience is irrelevant. <sup>2</sup> Required language skills: a – very good b – moderate, c – irrelevant. <sup>3</sup> Required language skills: a – very high, b – moderate, c – irrelevant. <sup>4</sup> Category of operators (based on the employment and revenue): micro, small, medium and big enterprises.

very low. The results do not suggest any dependence between the studied variables. It means that when it comes to professional experience and languages for persons recruited to managerial and non-managerial positions, human capital is an incentive for locating FDI in the region, irrespective of the size of a business. Similar dependence can be traced for costs and workforce qualifications. Micro, small, medium and big companies consider these factors in a similar way when looking for a location.

### Conclusion and Policy Implications

Investing in education and human capital is important for creating good climate for investment. It is stressed that achieving a certain minimum

TABLE 12 Interdependence Analysis of the Remuneration, Availability of the Workforce and the Size of Employment (Calculations for the Test of Independence  $\chi^2$ )

First variable	Remuneration as an incentive or deterrent for FDI location in the Lodz Region	Availability of adequately skilled workforce as an incentive or deterrent for FDI location in the Lodz region
Second variable	Employment	Employment
Categories of the first variable	4	4
Categories of the second variable <sup>1</sup>	4	4
No. of companies included in the survey	186	187
No. of degrees of freedom	9	9
$\chi^2$ – calculated	11.801	10.1
$\chi^2$ – theoretical	16.919	16.919
Significance level	0.05	0.05
Cramer's V	0.145	0.134

NOTES Category of Operators (Based on the Employment): Micro, Small, Medium and Big Enterprises.

level of education is the precondition for a country to attract and maintain foreign direct investment and maximise indirect effects connected with human capital and resulting from the presence of businesses with foreign capital. We should also stress that such a minimum is different for different sectors of the economy.

On top of that, care should be taken to avoid the so called educational gap between foreign investors and the host country as that might substantially reduce positive externalities. Access to skilled labour has been the main motive for various types of resource-seeking MNEs. Many companies now consider access to qualified and creative manpower an important factor of competitiveness.

Hence we should take steps to support and improve the quality of human resources at regional and local levels by:

- improving the skills of workers through vocational training schemes, language and IT technology courses;
- applying effective methods of human resource management;

- developing curricula and courses to meet the needs of foreign investors;
- changing the structure of employment and skills in the host country (to promote areas preferred by foreign investors);
- developing schemes and instruments that could attract highly skilled professionals into the region and reduce the outflow of graduates from the Lodz Region.

Results of the study conducted in the Lodz Region demonstrated that human capital is an important factor, which attracts FDI to the region. The presence of foreign investors has contributed to the improvement of the quality of the staff and workforce in the region. It is a consequence of the implementation of new organisational solutions and creation of a pressure on educational sector. Almost all FDI companies organised training for employees, some of them many times and abroad.

Human capital is especially important from the point of view of benefits that may be achieved by the economy of the Lodz Region from FDI. This factor, which, in the eyes of investors, improves the competitiveness of the region is the effect of favourable price to quality relation for human capital combined with high marginal efficiency of capital characteristic for all the Central and East European region.

### Notes

- 1 In this paper we used the partial outcomes of a research project Role of FDI in shaping current and future economic profile of the voivodeship of Lodz co-financed by the European Union under the European Social Fund.

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# *New Cooperation Modes: An Opportunity for Polish Biotechnological Clusters*

Łukasz Puślecki  
*Poznań University of Economics, Poland*  
*lukasz.puslecki@ue.poznan.pl*

Michał Staszków  
*Poznań University of Economics, Poland*  
*michal.staszkow@ue.poznan.pl*

This article reviews new cooperation forms between companies, referring to the latest data from the ASAP (the Association of Strategic Alliance Professionals). Potential cooperation between companies, universities and research institutes in the field of biotechnology in Poland based on a model of open innovation alliances are presented. Biopharmaceutical companies are looking for new and innovative paths of development. They try to implement new strategies to transfer their research processes to a higher level. To achieve this, biopharmaceutical companies often use open innovation model as an additional tool for developing new products. Thanks to the cooperation with universities in the framework of open innovation alliances, they can significantly reduce the risk, the cost of research, and most of all, through joint work with academic researchers on identifying disease mechanisms and on development of new drugs, they are able to create improved and appropriate medical therapy for patients.

*Key Words:* biopharma, strategic alliance, open innovation alliance, biotechnological cluster, science and technology parks

*JEL Classification:* M13, O32, O35

## **Introduction**

Many factors necessitate cooperation in partnerships of companies in different sectors of the economy. These include a greater risk and complex product development process, globalisation of the economies and demand for more and more innovative services and products (Puślecki 2010). This induces the growth of advanced and complex alliances between companies, including increase in global strategic relationships. In such partnerships, the organisational and cultural differences, as well as the involvement of many parties in the implementation of the partnership should be considered. Biopharmaceutical company (BioPharma companies – in the alliance referred literature, defined as a combination of the

biotech and pharmaceutical industries.) pursue joint projects using various types of strategic technological agreements, such as: joint-venture (JV), R&D contracts, R&D agreements, joint R&D agreements, research contracts (Duysters and Hagedoorn 2000). The cooperation within technological alliances enables significant synergy effects and enhances successful research and development projects. Through new and innovative paths of development and successful strategies of knowledge transfer, the entities involved have developed new models of collaboration with industry and universities in recent years. Alliances with universities and academic research institutes allow advanced preclinical and clinical research in the joint development of new drugs. Today's large biopharmaceutical companies can have from 20 to more than 40 alliances with universities and research institutions in their portfolios. Such collaboration allows companies to reduce their R&D cost significantly and to introduce new solutions and technologies to the market much faster than before (Laviets 2012). Using efficient alliance management tools and qualified alliance managers (also those employed at universities or in research institutes), the biopharmaceutical companies can achieve higher SRA (Success Rate of Alliances) of their alliances (De Man, Duysters, and Neyes 2009; De Man et al. 2012).

This paper reviews new cooperation forms between companies, based on the latest data from the ASAP (the Association of Strategic Alliance Professionals) and from international conferences, including the ASAP Annual Global Alliance Summit 2012 – Mastering the Art and Science of Alliance in Las Vegas, ASAP Annual Global Alliance Summit 2013 – Leadership. Performance. Value, in Orlando. The second and third chapter of the paper constitute a theoretical base of the analysis and are devoted to the different theoretical approaches to the phenomena of technological cooperation, strategic alliances and open innovation. The fourth chapter presents examples of open innovation alliances in biopharmaceutical industry. The analysis of Polish biopharmaceutical industry is conducted in order to present potential cooperation paths for Polish companies, universities and research institutes. The concept of open innovation alliances in two biotechnology clusters – the Life Science Park in Cracow and Lodz BioNanoPark is discussed. The last part contains conclusions and discussion.

### **Literature Review**

In the economic and management literature we can find many interesting publications on technological cooperation between companies:

#### *Managing Global Transitions*



the distinction between cooperation based on the transfer and exchange of technology, R&D arrangements and joint-ventures (Auster 1987; Casson 1987; Chesnais 1988; Contractor and Lorange 1988a). Technological agreement can be divided from one-directional to the ones that are based on strong relationships between companies, e.g. joint-ventures, research corporations, on the other hand, those which require less organisational dependencies (contractual arrangements such as joint R&D agreements or technology exchange agreements). Many studies have shown that these types of technological cooperation have different effects on the nature of the sharing of technology, organisational aspects and the possible economic consequences for the companies participating in cooperation (Auster 1987; Root 1988; Contractor and Lorange 1988b; Hagedoorn 1990; Hagedoorn, Link, and Vorontas 2000; Gomes-Casseres, Hagedoorn, and Jaffe 2006; De Man and Duysters 2007; De Man, Duysters, and Neyes 2009). Taking into account strategic alliances and open innovation, we can observe that these two streams of research have developed separately, including distinct assumptions and research questions. However, according to Joel West (2014) 'there is a natural affinity between these streams in terms of phenomena, theoretical predictions and managerial implications. Both streams assume that innovation is collaborative (and often complementary), and that such collaborations are crucial for firms to create and capture value from their innovations.'

In prior research strategic alliances were defined as a cooperation agreement between two organisations. They can be understood as a special mode of cooperation between at least two parties (competitors or partners) operating in the same or related sectors with the aim of achieving common goals which have been set up with the use of available resources, while preserving the autonomy of each partner, in a range of fields and areas not covered by the partnership agreement (Gomes-Casseres 1996; Das 2005). These alliances are typically formed between two firms but companies may also create alliances with universities, research institutes, nonprofit research organisations, or government institutions (Baum, Calabrese, and Silverman 2000). Taking into consideration technological alliances, they are implemented primarily through joint ventures (an alliance of two or more participants forming a separate entity with the aim of achieving common goals); so-called equity alliances; or, within capital alliances and R&D cooperation agreements, so-called non-equity alliances.

Technological alliances are understood as strategic if they improve the long-term perspective of the product market combinations for at least

one company involved in cooperation. Such strategic technology partnerships differ from other forms of alliances, for example those concluded in order to reduce costs, which are related more to control of transaction or operating costs of companies. Technological partnerships are defined as a form of cooperation which includes at least some innovative activity or an exchange of technology between partners (Duysters and Hagedoorn 2000).

Much of the interest in research on strategic alliances came from the possibility of spreading the costs and benefits of innovation, as a result of cooperation (Hamel 1991; Hagedoorn, Link, and Vonortas 2000; Kale, Harbir, and Howard 2000; Hagedoorn 2002; West 2014; Culpan 2014). For innovative activity of cooperating companies it is really important that alliances are relevant to open innovation and open innovation to alliances. From the beginning, the researchers focused on use of open innovation by companies to allow them improvement of innovation performance by leveraging innovation creation and commercialisation paths outside their firm boundaries (Chesbrough 2003; 2006; West, Vanhaverbeke, and Chesbrough 2006). According to the latest definition by Chesbrough open innovations is 'a distributed innovation process based on purposively managed knowledge flows across organisational boundaries, using pecuniary and non-pecuniary mechanisms in line with each organisation's business model' (Chesbrough and Bogers 2014). The results of research on open innovation have shown how firms manage both the inflows and outflows of knowledge and how they search for partners and the innovations they provide (Culpan 2014; West 2014). Moreover we can also observe how companies in specific industries (like biopharma) use the model of open innovation to create open innovation alliances not only with firms but also with universities, individuals, communities or other organisations (DeWitt and Burke 2012; OECD 2012; Wilks and Prothmann 2012).

Taking into account significant results of such cooperation in form of open innovation alliances, as well as public-private partnerships and research consortia in US and UK in biopharma industry, especially in drug discovery and implementation of new biopharmaceutical products, we discuss in this paper the potential cooperation between companies, universities and research institutes in form of open innovation alliances in Polish biotechnology clusters. Taking into consideration the potential of Polish biopharmaceutical industry we assume that open innovation alliances in biotech clusters could be implemented.

### Open Innovation Alliances: Cooperation of Business, Universities and Research

The need for cooperation on innovative projects affected use of modern models of partnerships involving the principles of Open Innovation. Chesbrough (2003) defines *open innovation* as the paradigm stating that companies can and should use external and internal ideas, as well as internal and external paths to enter new markets. This concept can be used within the framework of bilateral and multilateral alliances. Open innovation model is more dynamic than traditional alliances. Alliance partners are not in fact identified in the conventional, purposeful way. Relationships between partners rely more on the exchange of ideas and knowledge during the period preceding the establishment of the alliance. Open innovation alliances are created to support the free flow of knowledge and ideas that will lead to the creation of partnerships aimed not only at joint innovation, but also at risk and income sharing. Companies have defined and implemented open innovation in a number of ways, including building innovative ecosystems or innovations for users, crowd-sourcing or through the creation of joint development alliances. Open innovation alliances may include partnerships between profit-based companies and non-profit organisations (e.g. universities). This form of cooperation in recent years has aroused increasing interest of biopharmaceutical companies (Wilks and Prothmann 2012).

Biopharmaceutical companies have cooperated with universities for many years. At the beginning, the cooperation focused mainly on individual, single projects, from small research projects to large clinical trials. Then, the companies entered alliances with individual academic institutions, covering a wider range of cooperation, inter alia: research programs, clinical trials and translational research, in order to transfer the results of basic research to practical application. Companies also increasingly began to use different models of alliances, from individual links in research projects to multilateral agreements involving multiple research projects, including various models for open innovation, for example where the main role of an academic institution was the coordination and sometimes funding of other institutions. Moreover in last years biotechnology and pharmaceutical companies are more involved in multilateral cooperation in the framework of knowledge networks or open innovation alliances as well as public-private partnerships (for instance Pfizer or GlaxoSmithKline) (OECD 2012; Wilks and Prothmann 2012).

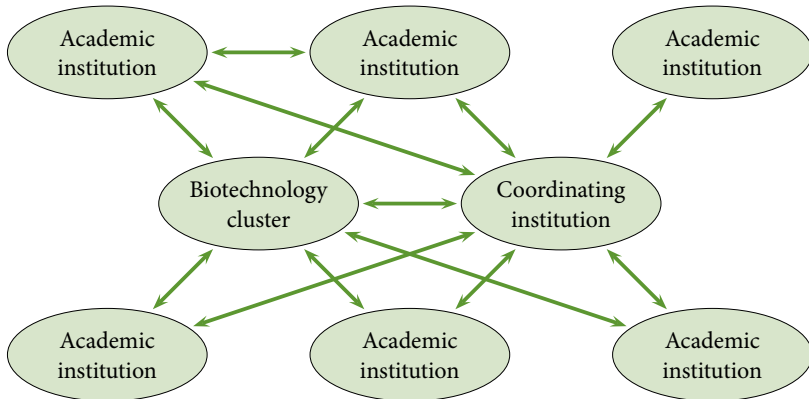


FIGURE 1 An Example of the Possible Use of Open Innovation with Academic Institution As a Coordinating (and Funding) Entity in Polish Biotechnology Clusters (adapted from Wilks and Prothmann 2012, 45)

The goal of these partnerships is to understand the mechanisms of diseases and the discovery of new utility of existing drugs that beyond their current curative role will allow identification and development of new drugs. By the development of partnerships with academic community, new alliance models have been developed, which are based on the open innovation model in order to share entrepreneurial risk and profit. Participation of coordinating institution significantly enhances the introduction of standardisation and has an impact on the effectiveness of the alliance. It also provides networking links and processes between academic institutions and firm, who are willing to form the alliance. Increased trust between companies from the industry and academic institutions thanks to the intermediary role, strengthens the innovation and provides support and funding for research proposals. The use of open innovation model can significantly speed up the production process of new drugs and biotechnology products (Laviertes 2012; Wilks and Prothmann 2012). Moreover, involvement in the cooperation of more interdisciplinary academic teams may also accelerate the production and application of new biotechnological products. That is why the co-operation of the same researchers is very important. With extensive contacts, interdisciplinary research teams have in-depth knowledge of many aspects of the research, which can be beneficial especially in the conceptual phase of product development. This mode of cooperation – open innovation alliance could be also implemented with positive results in Polish biotechnology clusters (figure 1).

In Poland there are many ongoing initiatives and projects referring to the concept of cluster. The most common definition of a cluster was developed by Porter (1998), according to whom a cluster is 'a group of companies existing in a geographical neighbourhood along with the institutions which are related to them and deal with a particular activity, connected by similarities and competing with one another.' The most important in this definition are relationships, cooperation and territorial bonds which in consequence should generate added value and lead to a competitive advantage on the market (Ratajczak-Mrozek and Herbec 2013). Ketels (2004) defined also main attributes of clusters:

- *Proximity*: the entities need to be sufficiently and spatially close to permit positive spill-over and enable the sharing of common resources to occur;
- *Linkages*: their activities need to share a common goal for them to be able to profit from proximity and interactions;
- *Interactions*: being close and working on related issues does not seem to be enough – some level of interaction is essential;
- *Critical mass*: a sufficient number of participants being present is required for the interactions to have a meaningful impact on companies.

Similar definition was provided by European Commission (2003): 'Clusters are groups of independent companies and associated institutions that are:

- Collaborating and competing;
- Geographically concentrated in one or several regions, even though the cluster may have global extensions;
- Specialised in a particular field, linked by common technologies and skills;
- Either science-based or traditional;
- Clusters can be either institutionalised (they have a proper cluster manager) or non-institutionalised.'

According to above mentioned definitions there are usually several parties in cluster initiatives. Those are first of all entrepreneurs, but also financial institutions, public entities – such as local authorities, universities, media and organisations stimulating cooperation. The situation in which the initiative to establish the cluster goes out of firms and is managed by them is so-called bottom-up approach, in contrary to top-down

approach, where activities are undertaken by public authorities. Bottom-up model seems to be more effective because it arises from the need of the market. This does not exclude cooperation with public authorities and public institutions, but allows to build trust, which in effect brings specific benefits (Cooke and Morgan 2002):

- Improving the economic efficiency by saving time and effort related to specific activities, because they can rely on the word of partner;
- Reduction of the risk associated with the activity;
- The development of the ability to learn by the fact that institutions and companies are parties in the process of information exchange.

### **Examples of Cooperation between Companies, Universities and Research Institutes in Biopharma in Poland**

The pharmaceutical and biotechnology industries are considered as one of the most innovative sectors of the Polish economy. Following secondary data from Polish Information and Foreign Investment Agency and FDI Intelligence Ranking, Poland was ranked 5th (in a tie with Russia) in the world ranking of foreign biotechnological investments in 2010, having attracted 14 large investors in biotech industry. It was a huge success since a year before, in 2009, Poland managed to attract only one investment from this sector. Countries who ranked higher were: USA (38 investments), China (27), Great Britain (22) and India (16). FDI Intelligence ranked Poland 11th place in the world in terms of attractiveness for R&D investment in the biotechnology sector (FDI Intelligence 2011).

High ranking positions would not have been possible had there not been top scientific staff available. Moreover, biotechnology is one of the most popular majors in Poland. Also, the pharmaceutical market in Poland is one of the industries with the longest tradition in Poland. This market has undergone a number of fundamental changes in the last twenty years. The ownership structure turned from state-owned into private. Additionally, new regulations (e.g. changes in the regulations concerning the rules for drugs' trading) are in place. The administrative system of public health service management has also been changed (introduction of the National Health Fund – NFZ). There were also structural changes in the industry: an increase in the number of pharmacies and pharmaceutical wholesalers and consolidation of the above mentioned and the growing role of foreign pharmaceutical companies as investors (Trąpczyński and Wrona 2012a; 2012b). According to the data

TABLE 1 The Biggest Pharmaceutical Companies in Poland

Company	Location/s	Market share
Sanofi-Grupa (including Zentiva)	Rzeszów, Chociw	8,5%
Novartis (including Sandoz)	Stryków	8,2%
GSK	Poznan	6,1%
Polpharma	Starogard Gdański, Duchnice, Sieradz	5,2%
Roche	Warsaw	4,6%
Servier	Warsaw	3,9%
Merck (MSD)	Warsaw	3,8%
Pfizer	Warsaw	3,4%
Teva Group	Cracow, Kutno	3,1%
AstraZeneca	Warsaw	3,1%
Krka	Warsaw	3,0%
Adamed (including Polfa Pabianice)	Pieńków, Pabianice	2,8%

NOTES Adapted from PAIIZ (2012, 5).

included in the report on pharmaceutical market in Poland, provided by Espicom Business Intelligence company and published by Polish Information and Foreign Investment Agency (PAIIZ 2011), over the past 10 years, the pharmaceutical market in Poland recorded a steady growth and reached PLN 22.3 billion in 2011. In comparison with the previous year, sales increased by an impressive 11%. The average annual growth rate in the period 2003–2010 was 6.5%. The estimated value will probably reach more than 60 billion PLN by 2016 (current prices). The pharmaceutical industry contributed to 0.8% GDP in 2010 (PAIIZ 2011; 2012).

Poland is the largest pharmaceutical market in Central and Eastern Europe (and the sixth in Europe). Nearly 33% of pharmaceutical and biotechnology companies have their headquarters in the Mazowieckie Region (Warsaw) (table 1). Almost 80% of all companies can be classified as micro-enterprises. The significant Polish advantage in the field of biotechnology and pharmacy is the nearly 20,000 university students and more than 3,000 graduates in biotechnology and pharmacy. In addition, biotechnology is one of the priority sectors supported by the Polish government (PAIIZ 2011; 2012).

In terms of the size of investment in research and development, Poland clearly stands out among the countries of the European Union on two levels. Poland has one of the lowest public expenditure on R&D (as per-

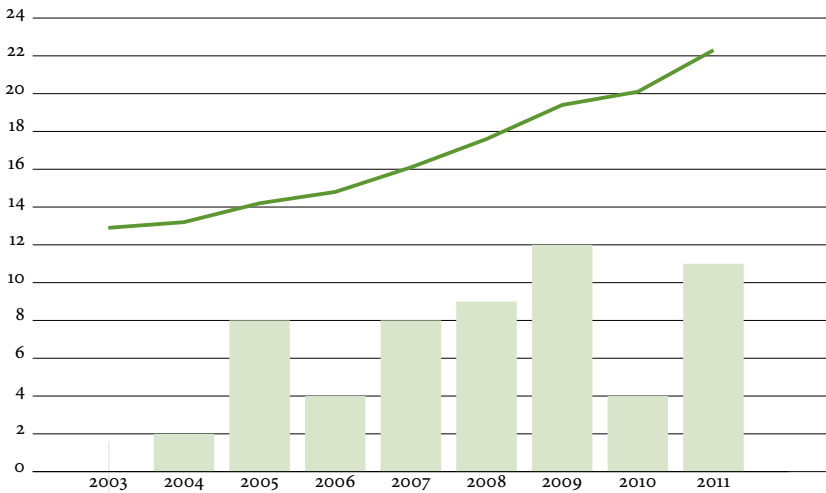


FIGURE 2 Value (Billion PLN, Current Prices – line) and Yearly Growth (% – columns) of the Pharmaceutical Market in Poland (adapted from PAIIIZ 2012, 4)

centage of GDP). Second, the public sector investment exceeds the expenditure incurred by private companies. However, Pelle, Bober, and Lis (2008) pointed five main areas in which government can help to improve the competitive position of the Polish economy:

- *Scientific and technological base* – concentration of public funding for research in strategic areas (including technological foresight), internationalisation of science and innovation, the development of institutions providing advisory and technical services for innovative entrepreneurs, widespread use of information – communication; financial aid should focus on institutions and organisations with the greatest potential to carry out successful research;
- *Formal and informal networks of science and industry* – to improve regulations on public-private partnerships and better protection of intellectual property in universities;
- *Institutional environment* – creating a business friendly environment, by simplifying the law and the tax system;
- *Staff development* – to create incentives for researchers to professional development and cooperation with business; the development of lifelong learning, knowledge transfer between R&D sphere and entrepreneurs through exchange of human resources and highlight the issues of entrepreneurship in educational programs;



TABLE 2 Main Features of Science and Technology Parks

Goal	Enhancing knowledge transfer from universities to business.
Infrastructural	High quality, low building construction ratio, coupled with a wide range of business support services.
Links	University or a suitable R&D centre must be formally committed to collaborate with the science park and firms (normally, universities should have an important role in the science parks management).
Access	Restricted to knowledge activities, with possible sectoral preferences (if knowledge base is significant across different scientific fields and there is entrepreneurial critical mass – not likely in many ‘followers’ regions).

NOTES Adapted from Almeida, Santos, and Silva (2009, 5).

- *Long-term innovation management program at the national level* – building planning system on innovation in the long term, and better individual institutions in the creation and implementation of innovation policy.

The answer to these demands is the concept of science and technology parks which was successfully implemented in more developed countries, like United States, Great Britain, Finland, Sweden or Germany. Science and technology parks (STPS) also contribute to the development of biotechnology and pharmacy in Poland. STPS promote the transfer of knowledge from universities to business (Staszków 2013). Table 2 presents the features of the park initiatives that facilitate networking between scientific institutions and entrepreneurs.

According to the PwC (2011) survey, every innovative pharmaceutical company participates on average in around 5 projects aimed at building a coalition inside the industry. There is a number of clusters and numerous technology parks in Poland that provide the infrastructure for the development of innovative biotechnological and pharmaceutical products – in particular, the laboratory space.

In 2012–2013, with funding from the Innovative Economy program, there were established organisations whose objective is the development of biotechnology in Poland. These include, the Life Science Park in Cracow and Lodz BioNanoPark.

Companies from the biotechnology, pharmaceutical, medical, food and environmental protection, research institutes, hospitals and foundations related to health care, local authorities, consultancies and other business support units from the Małopolska region clustered into the

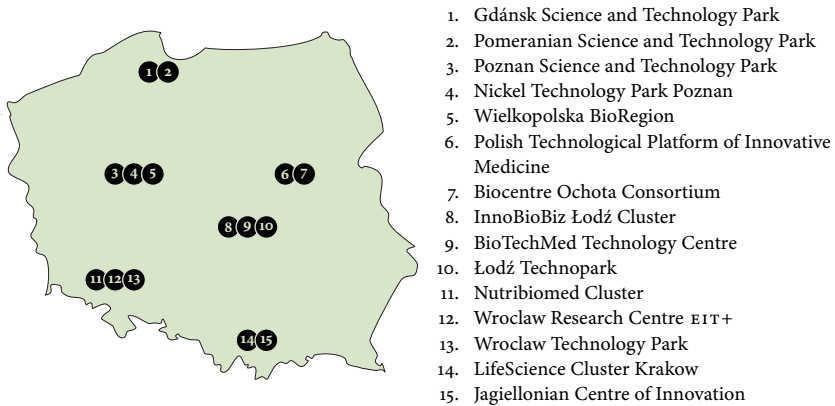


FIGURE 3 Location of Clusters and Science and Technology Parks Specialised in the Biotechnology and Pharmacy (Biopharma) in Poland (adapted from PAIIZ 2012, 5)

Life Science Cluster Cracow in 2006. To date, more than 70 entities have joined in. The largest group of businesses are SMES (47%), other public institutions (31%), while large enterprises account for 18%. The managing entity is the Jagiellonian Centre of Innovation, which was founded by the Jagiellonian University. Beside Jagiellonian, the cluster cooperates with other universities, including the AGH University of Science and Technology, the University of Physical Education in Cracow, Cracow University of Technology, Agriculture University of Cracow, the Chemical School of Cracow, R&D institutes, including Polish Academy of Sciences institutes: Institute of Pharmacology, Institute of Nuclear Physics, Institute of Catalysis and Surface Chemistry. Two other institutions are Oil and Gas Institute and the National Research Institute of Animal Production. Cooperation of the entities listed within the cluster aims at increasing the efficiency of use of the scientific, cultural, and economic potential of entities from Cracow and Malopolska. It also contributes to the commercialisation of research results and knowledge transfer to the business. Promotion and support of innovation in the field of life science is another activity of the cluster. The Cracow cluster in particular offers cooperation, facilitates access to knowledge and specialised research teams. It supports entrepreneurship and enhances links between companies and research centres (see <http://lifescience.pl/o-klastrze-lifescience>).

Another example of biotechnology cooperation at a science and tech-

nology park is BioNanoPark in Lodz, which operates within the Technopark Lodz. Technopark Lodz was established in 2003. Its main shareholders are the Municipality of Lodz, Lodz Marshal's Office, the University of Lodz, Lodz University of Technology, Medical University of Lodz and the Chamber of Industry and Commerce of Lodz. The BioNanoPark is one of Poland's state of the art laboratory complexes, worth PLN 76 million. Notably, PLN 53 million were the EU funds. By 2015, the BioNanoPark should receive additional PLN 100 million investment via the EU funding programmes. The BioNanoPark+ was founded within the European Centre for Bio- and Nanotechnology project, which was prepared by the Lodz University of Technology. There are two other universities who take part in this project – the University of Lodz and the Medical University of Lodz. The goal of the project is for the existing laboratories in biotechnology and biophysics laboratories to be complemented by laboratories of biosensors, food authentication, physical-chemical characterisation of nanomaterials and personalised medicine. Laboratories will be provided with the DLL machine, the so called supercomputer. FIRN EU, the Russian company that intends to use the scientific potential of Lodz students and a modern infrastructure of BioNanoPark, will also invest in technopark in Lodz (see [Biotechnologia.pl](http://Biotechnologia.pl)).

Analysing the number of entities involved in the operation of the Life Science Cluster Krakow and Lodz BioNanoPark, especially universities and research institutes, one can conclude that they can successfully apply the open innovation alliances cooperation model. In addition, the involvement of a coordinating institution in a cluster or park, can improve communication, strengthen standardisation and create networks and processes for academic institutions who are willing to form an alliance within a cluster. The model may also improve the efficiency of scientific, cultural, economic, and most of all, innovative potential. A greater focus of the businesses on cooperation with universities and research institutes may result in faster product commercialisation or reducing research-to-outcome schedules, which is of utmost importance for the development of biotechnology products. To achieve those goals it is important to create alliances with interdisciplinary research teams. Bilateral cooperation between the entities mentioned – Life Science Cluster Krakow and Lodz BioNanoPark is necessary. Joint activities within an alliance will contribute to the dynamic development of the biotech sector in Poland and improve the use of research potential both in Lodz and Krakow.

## Conclusions

Taking into account the development of the biopharmaceutical sector in recent years (the largest number of newly established technology strategic alliances (Puślecki 2012), it can be concluded that the sector is currently the most advanced platform for cooperation between different parties at different levels (e.g. sectoral alliances between companies, public-private partnerships, alliances between universities and research institutions, non-governmental organisations (NGOs), homogeneous and heterogeneous networks of alliances) (DeWitt and Burke 2012). Biopharmaceutical companies seek various forms of cooperation that will minimise the risk and will share the costs of R&D investment. Increasingly, in addition to partnerships within the industry, entities establish relationships with universities or research institutes. Thanks to the creation of the partnership and use of various tools, such as technology parks, firms may use the resources, competencies, technology and knowledge from partners, and thus easier respond to changes in the environment, and most of all, quickly launch new services and products (Wach 2005). We are seeing a slow process of extracting industry specialisation in Polish STPs. Profiles residents' specialisation include selection, cooperation with specific scientific entities and the development of specific services for a particular type of business. The most popular are in order: (1) ICT (65% of the parks), (2) health care, medical engineering and e-health (48%); (3) biotechnology (36%). Further areas include: electronics, renewable energy, environmental protection, advanced chemistry. Several indications also apply to industrial design and new materials (Portal Innowacji, n. d.). The results of research conducted by IASP on a sample of 78 parks in 34 countries confirm the trend of the development of these sectors in technology parks. 87.3% of STPs have Computer/Informatics as a technology sector represented in their park, 81% have IT/Telecommunications, 74.7% have Software, 70.9% have Internet technologies and services and 68.4% have Biotechnology/Life Sciences as a technology sector in their park (IASP 2014). The development trend in Polish parks is therefore positive, however, taking into account the demands set out in the OECD report, technology parks can become even more effective tool for building relationships and technology transfer.

Cooperation enables a number of innovative projects and allows significant synergy effects. Firms apply the model of open innovation as an additional tool in product development. The aim of the alliance is to sup-

port open innovation, the free flow of knowledge and ideas that will lead to the creation of partnerships aimed at joint innovation, as well as risk and profit sharing. Cooperating with academic institutions, particularly in the model of open innovation alliances, biopharmaceutical companies operating in clusters or technology parks in Poland can significantly reduce the risk and cost of research, and above all increase the likelihood of the development of new, or improve present biotechnology or pharmaceutical products.

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# *The Structural Power of Enterprises: Beyond the Notion of Market Power*

Magdalena Sliwiska  
Poznań University of Economics, Poland  
*m.sliwiska@ue.poznan.pl*

The purpose of this paper is the conceptualisation of the notion of enterprises' structural power. It allows to draw the attention to the process of diversification of enterprises and building of complex and multidimensional ownership structures as possible sources of the increase in the companies' power and the possibility of its use and abuse in order to limit the competition and perform better on the market. The concept of structural power is a part of the scientific discussion on the sources and possibilities of using enterprises' market power, and fits into the current research on one of the fundamental problems of economic theory: how to protect competition internationally and, therefore, determine the limit when the natural and desirable behaviour of enterprises aimed at increasing their international competitiveness begins to distort competition and adversely affect economic development. The analysis shows that the potential influence on other market participants may arise not only from the firm's position on the relevant market and other factors related to its specificity, but also from the various types of linkages between firms.

*Key Words:* competition, strategies of MNEs, market power, structural power, diversification

*JEL Classification:* L40, L22, L19, L10

## **Introduction**

Nowadays, no one seems to doubt that a properly functioning mechanism of competition is fundamental for an economic development. It is a factor motivating companies towards efficiency, innovation and growth. There is however also a broad consensus that competition may be distorted, among others, through the actions of the enterprises themselves, and that many industries are not very competitive. It widens the scope for public intervention aiming at protection of competition.<sup>1</sup> It is however of great importance to understand what kind of regulations are adequate in imperfectly competitive markets, what proves the fact that the Nobel Prize in economics 2014 is granted to Jean Tirole for his analysis of market power and regulation.

The importance of the issue of enterprises' power results from the fact that the widely understood company's power may restrict the proper functioning of the market mechanism which is essential for a dynamic and sustainable economic growth, thus also the enterprises themselves. On the other hand, the natural desire of the enterprises is the development of a strong competitive position to win against competitors in the market, and the result of these activities may ultimately be the growth of their market power and competition distortions. Moreover, the intensification of economic globalisation and international competition causes that enterprises have to be extremely creative in finding new ways to improve their competitiveness and increase their market and economic power in order to win the competitive battle.

Analysis of the earlier achievements of theoretical and empirical research in the field of widely understood corporate power draws attention to the fact that the issue of economic power is still not fully recognised by researches and the area of some strategic actions of enterprises, which may contribute to the increase in the enterprises' power is neglected as by economic theory, as by antitrust authorities. Therefore, the purpose of this paper is the conceptualisation of the notion of the enterprises' structural power, focusing attention on the process of diversification of enterprises and developing complex and multidimensional ownership structures as the possible sources of the increase in the companies' power and the possibility of its use and abuse in order to limit the competition and perform better on the market. The attempt at defining the notion of structural power is not about replacing any of the previous definitions of corporate, in particular market power but it is rather to widen the current concept of this phenomenon and join the discussion on its sources and possibilities of abuse. It is vital not only for the economic theory, but also for the competition policy and antitrust authorities aiming at protection of competition. It is also crucial for enterprises themselves, because they need to have clear guidelines which competitive strategies and behaviours are safe for competition mechanism and allowed by antitrust authorities in order not to be penalised for being the best on the market.

The paper is theoretical in nature and the inference is based on the analysis of literature, especially concerning the different concepts of enterprises' power and the Competition policy of the EU. It constitutes a part of a bigger research project on new competitive strategies of the MNEs and global competition restrictions.

The first part of the paper constitutes a theoretical base of the analysis

and is devoted to the different theoretical approaches to the phenomenon of enterprises' power. The second part of the paper aims at conceptualising the enterprises' structural power, defining the notion of structural power and looking closer at the process of diversification of the enterprises' activities and developing multidimensional ownership structures and networks of capital relations as sources of their power. In this part the reasons for the increase in the enterprises' structural power and the risks of its abuse from the point of view of competition mechanism are also analysed. The last part contains conclusions and discussion.

### **Theoretical Approaches to the Phenomenon of Enterprises' Power**

Social sciences often view the concept of power as an opportunity to influence others. Max Weber described it as the ability of individuals or groups to control or influence the behaviour of others, even in situations where there is an opposition (Thio 1986). Many authors agree with this approach, pointing out that the enterprises' power is a function of the situation and has a relative not the absolute character (Dahl 1957; Etzioni 1968). MacMillan and Jones (1986) also draw attention to the fact that strength is an ability, which means that one does not need to use it, to hold it and the very fact of its possession can affect the behaviour of others.

Mark Granovetter investigating the phenomenon of different types of relations within interpersonal networks shed a new light on the perception of the nature and strength of 'weak ties' (Granovetter 1973). He elaborated the concept of structural and relational embeddedness of economic behaviour (1985, 481–2) and argued that the level of social embeddedness of economic behaviour has always been and continues to be more substantial than is allowed for by formalists and economists. Social structures and social networks can affect not only economic outcomes like hiring, price, productivity and innovation, but also such as choice of alliance partners (Gulati and Gargiulo 1999), decisions to acquire other firms and strategies used to do so (Haunschild 1994) or the persistence of large family and ethnically oriented business groups in advanced economies (Granovetter 2005).

In the economic sciences, which constitute an essential part of the social sciences, the concept of power in relation to companies appears in various forms, but the neoclassical view constitutes still basis for analysis. The most common notions are economic power, market power,

monopoly power, financial or corporate power. Often are these terms used interchangeably, or even treated as synonyms. Many researchers, however, are trying to clearly distinguish between the meaning of the above mentioned concepts, which certainly helps to understand better this complex phenomenon, especially because very frequently the enterprise's power is defined by its source of origin, the possibility of its use or by a method of measurement.

The least doubt arises in the case of defining monopoly power because it is automatically associated with the classic monopoly, i.e. exerting complete control over the supply side of the market, the impact on prices and over the potential entry of other companies in the industry. The concepts of market power and economic power are often regarded as synonymous, but many authors believe that the concept of market power has a narrower scope than the concept of economic power, where the market power is associated with a strong position in the market, whereas the economic power – with a strong position in the sector, industry or in overall economy. Market power is usually defined as the ability to control prices and eliminate rivals (Baldwin 1987).

Generally, it is believed that the concept economic power is far broader than those previously mentioned, but it is not easy to clearly define what kind of phenomena it encompasses exactly (Greer 1988). Attention is drawn to the fact that the economic power is not necessarily associated with the market share. It may be a consequence of the unique bargaining position resulting from the product characteristics, conditions of sale, or buyer preferences, allowing imposing certain terms of the transaction on a partner (Peterson 1988, 21), independent of supply and demand in the given market (Dugger 1988, 83).

Regardless of the term researchers use with reference to the power held by the company, the power is usually defined as the ability to affect prices accepted by the market (Raper et al. 2000; Wilson 2000; Surratt 1998; Rogers 2001; Overbye, Weber, and Patten 2001; Roller and Sickles 2000; Barla 2000; Crespo and Herrera 2002; Pereira 2001), although depending on the market's specificity, it may be another variable (Malik 2002). This aim of affecting prices can be achieved by the company in different ways and can constitute a means to achieve similar yet different purposes. Therefore, some authors emphasise only the impact on prices, and others also highlight the desire to control the size of supply, or to eliminate competition from the market, all of which should ultimately lead to the increase in their profits and strengthening their market position.

The most common in the literature is the view that enterprise's power is closely linked with the concentration on the given market. Such thinking is based on the neoclassical concept of monopoly and monopoly power (Begg, Fischer, and Dornbusch 2011). Most economists agree, however, that in fact an enterprise does not need to have a monopoly position to try to influence the behaviour of other market participants. Nevertheless, a significant portion of the current research on the enterprises' market power assumes that it results mainly from a strong market position of the product (or service), and focuses on an identification of the additional factors affecting the strength of the company within a given market or industry (e.g. entry barriers, industry's specificity, size and number of competitors, etc.).

The obvious consequence of the wide variety of definitions of enterprises' power and different views on its origin is the absence of one universal way to measure it. So far, the most widely used measures of enterprises' power are the indicators based on the neoclassical model of the company, and several of them, the Lerner index, Rothchild index and marginal index 'price-cost' –  $PCM$  – price-cost margin (Collins and Preston 1969) played a special role. The feature which is common to them is the assumption of maximisation. However, since maximisation is in fact frequently not achieved, and quite often it is not even the aim of companies' activity, the effectiveness of the above mentioned indices in measuring the enterprises' power is limited.

An important role in the definition and understanding of the concept of the market and economic power play concentration factors, especially the four-firm ratio (FF) and Herfindahl Hirschman's index (HH). Their advantage is the simplicity and the possibility of a relatively easy and quick application.

However, they are often subjected to criticism, as a large concentration of the market may not necessarily result in a situation in which the market leaders are able to restrict competition (Zarnikau and Lam 1998; Crespo and Herrera 2002; Berry et al. 1999; Rogers 2001). The market power is determined by many other factors, among others, it depends on the relationships in the network (Overbye, Weber, and Patten 2001), a market structure understood as the number and size of economic entities (Barla 2000), the elasticity of demand and its characteristics, and the possibility of entering the industry, its growth rate, a brand strength (Wood 1999) or the power of contractors (Raper et al. 2000). According to J. Tirole (1988) not the size of oligopolistic firms, but their market behaviour constitute

evidence whether they possess and exercise their monopolistic position on the market.

Focusing on concentration in the local and national markets also constitutes a weakness of traditional methods since the global size of the company may be also crucial for assessing its market power (Wood 1999). It is also noted in the literature that in some industries, particularly in those dominated by innovations and new technologies, market shares can change very rapidly and there is a high probability of overestimation of the companies' power because of the too narrow definition of the relevant markets, which does not take into consideration the substitutes of the products and services (Pleatsikas and Teece 2001). This, among others, is due to an application of a static analysis to phenomena which are extremely dynamic. Qualitative research methods can therefore help in finding answers to the questions of where the power is rooted in the economic process and how the use of this power affects the members of society and the economic development.

Depending on the applied method of measurement the conclusions concerning the growing enterprises' strength may be different (Tullberg 2004) and the failure to construct methods which would be universal does not mean that this phenomenon does not exist, although the myth about the nonexistence of the enterprises' power in the economic reality is deeply rooted (Peterson 1988, 19). Numerous studies provide, however, solid scientific and empirical evidence that the enterprises' force defined and measured in the various, listed above ways, not only exists, but has been increasing over the last few decades.

Significant place in the search on above mentioned issues has the 2014 Nobel Prize winner in economics, Jean Tirole. His work has clearly shown that the complexity of the market power related phenomena caused that their analysis and understanding require combining different theoretical approaches (Tirole 1988). He analysed the behaviour and firms' interactions in imperfectly competitive markets and emphasised the fact that every industry and every case requires distinct analysis and in the end all regulation must be industry-specific (Laffont and Tirole 2000).

There remain, however, still many questions and unresolved problems related with the sources and consequences of market power. Therefore it is very important to continue the research looking for new factors affecting the increase or abuse of enterprises' power and the possibilities of companies to limit competition. The conceptualisation of the enterprises' structural power constitutes an attempt to take up this challenge

and widens the current notions of the dominant position (antitrust policy) and market power (theory).

### **The Conceptualisation of the Enterprises' Structural Power**

#### THE NOTION OF THE ENTERPRISES' STRUCTURAL POWER

The concept of the structural power, like other definitions of the enterprises' power, is related to a possibility of an impact on the behaviour of other market participants, so the possibility of the influence on the widely understood competitive conditions and its conceptualisation does not intend to replace any of the previous definitions of economic or market strength, but rather to draw attention to the sources of the economic power of companies, which tend to be underestimated in the literature and in consequence, in the competition policy. These sources of economic power are the diversification of the activities and the development of complex and multidimensional structures of ownership by the multinational corporations. These are two different processes, but the fact that, in practice they occur very often simultaneously and can significantly complement the construction and the subsequent use of the enterprises' power, and both in some way affect the structure of the same companies and their markets, caused that the power of companies resulting from these both processes was called the structural power.

The subject of structural power is complex and it is comprised of a group of companies, understood however more broadly than accounted for in the definitions most commonly cited in the literature, which emphasise the necessity for majority or controlling stakes of one enterprise in another, and a real influence on their functioning (see e.g. Romanowska 2011). The subject of the structural power constitutes in fact a vast and diverse network of direct and indirect capital relations and the associated personal contacts, which is derived from the fact that both of the above processes consist of the acquisition of majority or minority capital stakes in other companies, which results in an emergence of the enterprises' groups related with each other in different ways.

#### DIVERSIFICATION OF ENTERPRISES' ACTIVITIES IN THE CONTEXT OF STRUCTURAL POWER

Regardless of the differing views of scientists on the effectiveness of the different types of diversification strategies, the fact that companies follow the strategy of related but also unrelated diversification (Humes 1993; Niyajima and Inaqaki 2003; Dugger 1988) indicates that it must create

enough interesting opportunities to bear the risk of failure. Diversification of activities not related to the core business makes it essential that a group of companies reduces its dependence on the individual markets and industries, and increases the range of possible actions, thus contributes to the increase in its power (Dugger 1988, 90–4). It allows the companies to wait out and survive a crisis in particular industries and the economic declines in the individual economies, facilitates changes in customers and suppliers. It also facilitates the use of various forms of financing, moving operations from one country to another, and the choice of location with the lowest taxes and provides versatile information on many markets.

The proper aggregation of possessed information gives unique market knowledge and the ability to use emerging opportunities and to take appropriate decisions when it comes to investing in new areas. This gives a substantial advantage over smaller companies, or those not having the possibility to achieve synergy, allowing them to create completely new products and services, resulting from being present in many sectors of the economy. At the same time increasing the share in the global economy due to activities in the different economic sectors grants the power resulting from the size and scale of operations and the impression of being present everywhere, which can have significant effects on the behaviour of other market participants. Unrelated diversification also allows for reinvestment of profits in the business and continuation of the building the economic strength of the entire corporation in a situation where the development of activities in the main area would mean an infringement of competition law.

#### MULTIDIMENSIONAL OWNERSHIP STRUCTURES AND NETWORKS OF CAPITAL RELATIONS IN THE CONTEXT OF THE ENTERPRISES' POWER

Building more and more complex and multidimensional structures of ownership and legal-organisational form by multinational companies may also contribute to the increase in their economic power. Capital networks within and between large multinational companies become difficult to decipher, among others, due to their large number, length of chain links and the fact that they can take various forms, possessing a minority, the majority or hundred percent of shares in other companies. The overlap of these links further blurs the image of the existing relationships, causing increasing difficulties in identifying specific owners of individual



companies, hence establishing which of the competing companies on the market are linked financially.

Meanwhile, businesses in many ways related through the capital links are less likely to work against themselves, and it will be in their mutual interests to promote and safeguard the common interests, strengthen the competitive position of their markets and creating a strong group of companies, which will be discussed further in this paper.

#### THE REASONS FOR THE INCREASE IN THE ENTERPRISES' STRUCTURAL POWER

The increase in the above-defined enterprises' structural power can result from a number of factors, and some of them seem to be particularly vital. Firstly, a natural goal of enterprises is to strive for a business development, strengthening their position against competitors and generating ever larger profits. The sharpening of competition conditions due to the globalisation of economy makes firms which want to survive on the market forced to intensify their actions and innovation processes in the exploration of ways to increase their competitiveness and economic strength, needed to win the competitive battle. Both the process of diversification, as well as building the complex and multidimensional ownership structures therefore constitute in a sense, a business practice response to changing economic conditions.

Secondly, the factor influencing the growth of the structural power of enterprises, which becomes especially important in view of the above conclusions, is the current shape of the competition law of the EU and other developed countries, and in particular their two aspects (Śliwińska 2007, 150–1):

- the emphasis on the analysis of individual markets and the market shares of companies operating on those markets, and
- defining the group of enterprises as companies closely related with the bunch of control shares, or certain contracts that allow an effective control over another company.

Building the structural power may represent the response of practice for the actual shape of antitrust legislation in the EU and in the most highly developed countries.

It should be noted that structural power has not been defined yet as a threat to the proper functioning of the mechanism of competition. Both the market participants and the supervising institutions can be often un-

aware of the structural links connecting the entire groups of companies, which can provide them with multiple opportunities for an underestimated impact on the competitive process. The fact that structural power of companies is as if invisible and intangible is certainly also influenced by the fact that international law does not create an appropriate control basis of operations for the large international corporations (Saari 1999), and due to the legal and tax havens the enterprises can obtain an international legal anonymity, safeguarding of assets and secret operations (Saari 1999, 163–4; Lipowski 2002).

#### THE POSSIBILITIES OF ABUSE OF THE ENTERPRISES' STRUCTURAL POWER

There are many reasons to claim that the possession of structural power by enterprises can offer opportunities to reduce existing competition. Large networks of ownership, created by the above mentioned processes, render possibilities of influencing other market participants and creating entry barriers for new competitors. A rare bunch of research dealing with this topic until nowadays seems to confirm this view to a great extent.

According to OECD (2008) minority shareholdings and interlocking directorates can have negative effects on competition, either by reducing the minority shareholder's incentives to compete – unilateral effects, or by facilitating collusion – coordinated effects. Competition may be limited by the selection of the suppliers and customers within the group of companies or by the application of dissimilar conditions to a corporate transaction with 'stranger' and 'friendly' enterprises. When this phenomenon concerns the entire group of related companies, forming a closed circle with significant joint market shares, it can gradually rise, in an imperceptible way, an invisible at first glance restriction of competition. In addition, there can also be a problem that due to the multidimensional ownership structures and the functioning of the legal and tax havens, the apparent competitors may be strongly tied by equity, which may cause that instead of engaging in a strong competitive fight, which will not be in their interests, they will, in a more or less hidden way, co-operate. In this context, an important view gives the more and more developed theory of multimarket competition and the concept of mutual forbearance, which draw attention to the fact, that the more markets on which two companies compete, the lower the intensity of the competition between them (Stephan and Peters 2013).

Studies on the influence on competition of partial, not related to the

acquisition of control, shares in another enterprise has shown that the increase in the level of ownership linkages between competing firms reduces the size of their production and can facilitate tacit or open cartel between related by ownership enterprises (Reynolds and Snapp 1986). According to Reitman (1994) the negative influence on competition resulting from the possession and acquisition of the minority stakes may be even larger than under full merger of the typical fusion and may lead to a lower overall welfare, especially when the owner of the minority shares is a large enterprise and if the acquiring company reveals an even low degree of market power. A good example could constitute the cross shareholdings in Japanese keiretsu, where the minority shares of relatively large companies lead to the creation of substantial structural power and limit to a certain degree the competition.

Research on the motives of companies' possessing the minority stakes, in turn, have shown that many times they constitute a substitute for anti-competitive agreements, illegal according to the antitrust law (Meadowcroft and Thompson 1986; Milanese and Winterstein 2001). Studies on the effects of the mutual minority shareholdings in the horizontal arrangements revealed (Reynolds and Snapp 1986; Meadowcroft and Thompson 1986) that this type of cross-shareholdings on the concentrated markets with high entry barriers may have an impact on reducing the temptation of cheating a partner in the cartel. Meadowcroft and Thompson moved a step further by examining the minority shareholdings in the vertical arrangements and showed that the vertical integration with the dealer may be a suitable means to induce the recipient to exclusive trading with products, which are associated with minority shares of suppliers. Not all researchers agree on this point by stating that, in a situation of oligopoly, possessing the minority shares in a distributor company can provide an incentive to increase the production (Flath 1989). There are also arguments that such a restriction of competition may occur, but mostly in case when the recipient also has a minority shares of the vendor (Struilaart 2002, 181). However, researchers agree that integration marching in the opposite direction, e.g. the acquisition of minority shares of a manufacturer by the distributor, can adversely affect the conditions of competition and lead to increased prices and reduced choice for consumers, due to the fact that the distributor will in such a situation achieve measurable gains from reducing competition (Meadowcroft and Thompson 1986; Flath 1989). Another view on vertical relationships gives Tirole (2014). According to his analysis vertical relationships only require regu-

lation if they impose costs on outsiders that are greater than the benefits to insiders. Thus, a vital element of the analysis is a precise understanding of mutually beneficial contracts between sellers and buyers in a vertical chain.

The capital ties are closely linked with the issue of various types of personal relationships, including the system of so called interlocking directors (Murray 2000; Mintz and Schwartz 1985). For example, companies linked by capital and personal ties may even know the secrets of each other's business and plans for the future and render to each other different types of anticompetitive favours. It is difficult to assume that this type of relationship between companies would favour mutual intensification of competition, especially in the face of better and better recognised by the researchers phenomenon of the growing influence of managers, which exceeds far beyond the area connected with the management of the company (Rodrigues and António 2011) and more and more recognised phenomenon of influences of enterprises' networks on governments, thanks to the concept of the power bloc (Hayden, Wood, and Kaya 2002).

It may be of high interest for potential contractors to have good relations with the company belonging to a group of enterprises possessing a structural power. Because of fear of a possible elimination from the market, they will be willing to agree to the terms of cooperation that they would never agree to under more competitive conditions. In this way, the structural power can negatively affect the conditions of competition, even without its direct abuse by enterprises possessing this power, which directly refers to what MacMillan and Jones (1986) said – that one does not need to use the power to hold it and the very fact of its possession can affect the behaviour of others.

### **Conclusions and Discussion**

Studies on the structure and possibilities of abuse of enterprises' power belong to the difficult field of research, both from the theoretical and practical point of view. On the one hand, they deal with one of the fundamental economic problems – interference into the market mechanism, which is certainly necessary, but as recent history of economy has taught – very dangerous. On the other hand, they deal with the very complex issues of economic globalisation and developmental strategies of multinational corporations, where winning the necessary sensitive data for analysis is difficult and in many cases impossible. However, due to the awareness of the high importance of the problem for the protection of compe-

tition, the research on the widely understood enterprises' power and its economic implications is evolving within different economic theories.

An overwhelming part of research done so far associates enterprises' power with the concentration on the market and the market share of enterprises and, looking from this point of view, it analyses additional factors influencing the market power like entry barriers, the size and number of competitors or technological changes in the industry. The conceptualisation of structural power goes beyond the analysis of the concentration on the relevant market and aims at drawing the attention to the fact that both, the unrelated diversification and the minority shareholdings, can constitute important sources of enterprises' power and contribute to the restrictions of competition also in the international dimension. The concept of structural power extends the subject of economic power to the group of tied companies with unrelated diversification and the minority shareholdings. It allows to draw the attention to the fact that the potential influence on the other market participants may arise not only from the firm's position on the relevant market and the factors related to its specificity, but also from the various types of linkages between firms. There appears the need for a broader approach, going beyond the analysis of narrowly defined relevant geographic or product market, in order to have a closer look at the issue of restricting the competitive process in the globalised economy.

The attempt to define structural power of companies had an aim to join the discussion in this field and to present the problem from a different perspective. The intention was not to replace any of the previous definitions of enterprises' power, but rather to complement the existing ones, in order to draw attention to both above mentioned processes as the possible sources of the power of international business. It constitutes also a response to already noticed by the literature problem (McNutt 2001) that, in contrast to the widely discussed concept and many attempts to formulate a precise definition of the 'relevant market,' relatively little attention is attached to the term of 'relevant firm,' whereas further inference about the position occupied by companies on the market or in the industry and the possibilities of limiting competition depends on the definition of the enterprise. The conceptualisation of enterprises' structural power and basing its sources on the unrelated diversification and the minority equity relations could therefore be a part of the discussion on the contemporary definition of the company (see e.g. Cyfert 2012) and the group of companies (see e.g. Romanowska 2011).

Fornalczyk (2007) identifies many areas where business and strategic and operational management encounter competition law and explains which strategic behaviours of enterprises are forbidden by antitrust regulations, presenting economic argumentation. The concept of structural power takes one step back and joins the discussion on one of the fundamental problems of economic theory and – as a consequence – competition policy, which relies on the difficulty in defining the limit to which point the natural and desired increase in enterprise's power contributes to the increase in its competitiveness and economic development, and when it begins to jeopardise the proper functioning of the competitive process in the international dimension and consequently, dynamic and sustainable economic development.

Present studies' results confirm the possibility of limiting competition through the developing the structural power, and they constitute a sufficient argument that the increase in the structural power of enterprises should be the subject of thorough interest of antitrust authorities pursuing the policy of competition protection. Meanwhile, structural power of enterprises can be built in accordance with the EU competition law, although some elements affecting its growth are taken under control. This situation has three possible causes. The first one is linking the concept of dominance and power of companies with so called relevant market and not with the presence in many sectors of the economy. The second reason constitutes the applied by antitrust authorities definition of the group of companies, where the main criterion is the differently understood control of another company, which excludes qualifying to one group the companies related only with minority shareholdings. The third reason is the non-recognition in many cases by EU competition law of the vertically related diversification, and the more unrelated, as having influence on the growth of possibilities for reducing competition by enterprises implementing such strategies. It is vital in this context that European Commission, in November 2011, announced its intention to conduct a study on the economic importance of minority shareholdings in the EC economy and on the need for the Commission to have the power to review the purchase of minority shareholdings (Ignjatovic and Ridyard 2012).

For the above mentioned reasons, there is a need for further research on the problem of growth of the structural power, and on the possibilities it provides to reduce competition. In particular, the multiple case study should be applied in order to get a better insight into the mechanism of developing and using structural power by international operating enter-

prises. It also seems to be important to develop the concept of 'relevant firm' trying to determine the type of relations between enterprises, contributing to the growth of their potential to restrict competition. Of fundamental importance is the theoretical and empirical research around the question of determining the limit to which point the natural and desired increase in the enterprise's power contributes to the increase in its competitiveness and economic development, and from which point it begins to jeopardise the proper functioning of the competitive process and the economic development. This includes e.g. finding answers to the question to what degree the negative effects of limiting competition (cartel, strategic alliance) are lesser than the positive effects of technological or economic progress obtained as a result of these restrictions.

### Notes

- 1 Within the confines of the competition policy/antitrust policy the phenomenon of 'market power' is known as a problem of domination or dominant position.

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### **Izbire načina ustanovitve nastajajočih multinacionalk: dokazi s Poljske**

*Marian Gorynia, Jan Nowak, Piotr Trąpczyński in Radosław Wolniak*

Ta študija določa in raziskuje determinante FDI (Foreign Direct Investment – neposredne tuje investicije) načinov v kontekstu izhodnih neposrednih tujih investicij (Outward Foreign Direct Investment – OFDI) ki jih izvajajo podjetja na Poljskem. Analiza zajema vmesnike med spremenljivkami izbrane države gostiteljice in trdnimi viri s FDI modeli. Konceptualni okvir za determinante FDI načinov je predstavljen kot osnova za kasnejšo empirično analizo. Raziskovalne hipoteze, ki temeljijo na predhodnih raziskavah, so predmet statističnega preverjanja, ki uporablja anketne podatke, zbrane v letu 2013 s sodelovanjem 60 tujih investitorjev na Poljskem. Najpomembnejše ugotovitve kažejo, da se rast predhodne izpostavljenosti države gostiteljice, pa tudi atraktivnost tržišča države gostiteljice najraje povezuje z greenfield načinom (načinom začetne vzpostavitve), med tem ko pomanjkanje tovrstne izpostavljenosti in s tem povezanega znanja daje prednost prevzemom. Poleg tega se navedene greenfield operacije ponavadi nahajajo na politično uravnoteženih trgih. Posedovanje neopredmetenih sredstev pa se je pri izbiri načina FDI izkazalo kot nepomembno.

*Ključne besede:* neposredne tuje investicije, FDI načini, nastajajoče multinacionalne družbe, Centralna in Vzhodna Evropa

*Klasifikacija JEL:* F21, F23, P20

*Managing Global Transitions* 13 (2): 101–124

### **Je lokacija res pomembna? Vpliv FDI lokacije na konkurenčnost podjetij: dokazi iz podjetij na Poljskem**

*Małgorzata Szalucka*

Konkurenčnost podjetja je odvisna od povezav med njegovimi viri in sposobnostmi ter posebnimi dejavniki lokacije, na kateri podjetje opravlja svoje dejavnosti. Podjetja združujejo prednosti določenih geografskih lokacij s svojimi viri in sposobnostmi za dodatno povečanje že obstoječih in razvoj novih konkurenčnih prednosti. Cilj tega članka je ovrednotenje vpliva mednarodnih operacij v obliki tujih neposrednih investicij na konkurenčnost vlagajočih podjetij, kakor tudi ugotavljanje področij največjih ugodnosti, izhajajočih iz mednarodnega sodelovanja,

temelječega na lokaciji njihovih tujih podružnic. To delo predstavlja rezultate terenske raziskave, izvedene v letu 2012 na način neposrednih razgovorov v podjetjih na Poljskem – neposredni tuji vlagatelji. Rezultati raziskave so pokazali, da imajo dejavnosti poljskih podjetij na tujem pozitiven vpliv na njihovo konkurenčnost; vendar pa vpliv FDI ni tako jasen, kot je bilo pričakovati. Empirične ugotovitve so tudi dokazale, da lokacija njihovih tujih podružnic ni pomembneje vplivala na obseg in naravo prednosti mednarodnih dejavnosti, glede na uporabljeno analizo s pomočjo hi-kvadrata. Vendar pa je mogoče opaziti določene težnje, temelječe na indeksu učinka, ki kažejo nekaj odvisnosti med lokacijo tujih povezanih podjetij in področjem vpliva neposrednih tujih naložb, opredeljenih v konkurenčnem potencialu vlagajočih podjetij.

*Gljučne besede:* tuje neposredne naložbe, lokacijska prednost, konkurenčnost, razvite države, države v razvoju

*Klasifikacija JEL:* F 21, F 23

*Managing Global Transitions* 13 (2): 125–149

### Človeški kapital in FDI v Srednji in Vzhodni Evropi

*Agnieszka Dorożyńska in Tomasz Dorożyński*

Namen tega dela je oceniti vlogo človeškega kapitala pri privabljanju tujih neposrednih naložb (FDI) v luči izbranih empiričnih študij, ki so bile izvedene na Poljskem in globalno. V literaturi o dejavnostih, ki določajo lokacijo FDI, vključno s tistimi, ki se nanašajo na pomen človeškega kapitala, prevladujejo študije na nacionalnem ali nadnacionalnem nivoju. Privabljanje tujih naložb je postalo ključni sestavni del nacionalnih strategij za države CEE (Srednje in Vzhodne Evrope). Članek poskuša oceniti pomen človeškega kapitala za priliv tujih neposrednih naložb na regionalnih in lokalnih nivojih na Poljskem. Hkrati so rezultati analiz primerjani s kvantitativnimi raziskavami, izvedenimi v Srednji in Vzhodni Evropi. Vlaganje v izobraževanje in človeški kapital je pomembno za ustvarjanje ugodne klime za naložbe. Dokazi kažejo, da je doseganje določenega minimalnega nivoja izobrazbe predpogoj, da država privabi in obdrži neposredne tuje naložbe in kar najbolj poveča neposredne učinke, povezane s človeškim kapitalom in izhajajoče iz prisotnosti podjetij s tujim kapitalom ter tudi posredne učinke, povezane s človeškim kapitalom in izhajajoče iz prisotnosti podjetij s tujim kapitalom. Potrebno je poudariti, da je minimum lahko različen glede na različne sektorje gospodarstva. Rezultati študije v regiji Łódź kažejo, da je človeški kapital pomemben dejavnik, ki privablja tuje neposredne naložbe.

*Gljučne besede:* človeški kapital, FDI, države CEE, regija Łódź

*Klasifikacija JEL:* F 21, F 23, O 15

*Managing Global Transitions* 13 (2): 151–170

### **Novi načini sodelovanja: priložnost za biotehnoške grozde na Poljskem**

*Lukasz Puślecki in Michał Staszaków*

Ta članek je pregled novih oblik sodelovanja med podjetji in se nanaša na najnovejše podatke iz ASAP (združenje strateškega zavezništva profesionalcev – the Association of Strategic Alliance Professionals). Predstavljeno je morebitno sodelovanje med podjetji, univerzami in raziskovalnimi inštituti na področju biotehnologije na Poljskem, temelječe na modelu zavezništva odprtih inovacij. Biofarmaceutvska podjetja iščejo nove in inovativne poti razvoja. Poskušajo izvajati nove strategije in tako prenesti njihove raziskovalne procese na višji nivo. Da bi to dosegla, biofarmaceutvska podjetja pogosto uporabljajo model odprtih inovacij kot dodatno orodje pri razvoju novih proizvodov. Po zaslugi sodelovanja z univerzami v okviru zavezništev odprtih inovacij lahko opazno znižajo tveganje, stroške raziskave, predvsem pa so preko združenega dela z akademskimi raziskovalci na področju identificiranja mehanizmov bolezni in razvoja novih zdravil sposobni ustvariti izboljšane in ustrezne zdravstvene terapije za paciente.

*Ključne besede:* biofarma, strateško zavezništvo, zavezništvo odprtih inovacij, biotehnoški grozd, znanstveni in tehnološki parki

*Klasifikacija JEL:* M13, O32, O35

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### **Strukturna moč podjetij: preseganje pojma tržne moči**

*Magdalena Sliwinska*

Namen dela je konceptualizacija pojma strukturne moči podjetja. Omogoča usmerjanje pozornosti na proces diverzifikacije podjetij in gradnjo kompleksnih in večdimenzionalnih lastniških struktur kot možnih virov naraščanja moči podjetij in možnosti njegove uporabe in zlorabe z namenom omejevanja konkurence ter doseganja boljših rezultatov na trgu. Koncept strukturne moči je del znanstvene razprave o virih in možnostih rabe tržne moči podjetja in je skladen s potekajočimi raziskavami enega izmed temeljnih problemov ekonomske teorije: kako zaščititi konkurenco na mednarodnem nivoju in posledično določiti prelošnico na kateri naravno in zaželjeno vedenje podjetij, usmerjeno v dvig njihove mednarodne konkurenčnosti preide v vedenje, ki izkrivlja pogled na konkurenco in negativno vpliva na gospodarski razvoj. Analiza kaže, da lahko potencialni vpliv na druge udeležence na trgu izhaja ne le iz položaja podjetja na pomembnem tržišču in drugih dejavnikov, povezanih z njegovo specifičnostjo, pač pa tudi iz različnih tipov povezav med podjetji.

*Ključne besede:* konkurenca, strategije MNE (multinational enterprise – multinacionalno podjetje), tržna moč, strukturna moč, diverzifikacija

*Klasifikacija JEL:* L40, L22, L19, L10

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