

*Oh Suk Yang\**, *Marcela Julia Niedzielska\*\**

## **RAPID FDI EXPANSION OF FIRMS FROM EMERGING MARKETS: EVIDENCE FROM POLAND**

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The conventional theory of gradual internationalization goes against the global trend of rapid foreign expansion as applied in particular to emerging markets. In this study we examine the conditions of rapid foreign direct investment (FDI) expansion that can be beneficial to firm performance. In order to do so we examine a firm's internal factors, such as firm specific advantages (FSAs) and strategy, as well as external factors including domestic and foreign influences that moderate the relationship between firm performance and the speed of FDI expansion. By conducting empirical tests on data on Polish firms' expansion, we find that some FSAs (profit per employee and foreign sales), as well as some aspects relevant to strategy (geographic and cultural distances), negatively influence the relationship between speed of FDI expansion and firm performance. From our results we conclude that Polish companies are unique in the way that neither gradual internationalization nor rapid foreign expansion amounts to a suitable strategy for them. The Polish market, exhibiting a combination of transition and emerging economy characteristics, must apply its own distinctive FDI strategy to compete in foreign markets.

**Keywords:** FDI, speed of internationalization, emerging markets, multinational enterprises

**JEL Classifications:** F21; F23

**DOI:** 10.15611/aoe.2017.2.15

### **1. INTRODUCTION**

Conventional knowledge indicates that a gradual approach is the most favorable way to invest abroad (Johanson and Vahlne, 1977). However, recent studies have argued that in the case of emerging markets the well-known stepwise method of FDI expansion might not be appropriate (Luo and Tung, 2007; Guillén and García-Canal, 2009). It is believed that for companies from emerging markets an accelerated speed of internationalization is significantly beneficial. The Polish market is a good example of an emerging market, where companies are believed to behave differently from well-known modern multinational enterprises (MNEs). The latter

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\* Kangwon National University, South Korea.

\*\* Hanyang University, South Korea.

originate from Great Britain, North America, and mainland West European countries, where the industrial revolution in the 19th century led to the development of intangible assets such as technology and brands. Therefore modern MNEs could expand around the world by utilizing assets that accrued within the company (Guillén and García-Canal, 2009). However, MNEs from emerging markets are believed to be different in that they lack particular critical assets and therefore are less competitive than traditional MNEs. To overcome competitive weaknesses and late entrant position, their foreign expansion has been more aggressive and accelerated (Luo and Tung, 2007; Guillén and García-Canal, 2009). The speed of internationalization is one of the most important distinctive characteristics of companies from emerging markets, hence we stress the importance of the impact that the pace of FDI has on Polish firms' performance in the global environment. As a further matter, we investigate the circumstances under which fast FDI expansion can be beneficial to a company's performance.

The process of Poland's global integration began in 1989 after the collapse of communism. At that time the Polish economy was in transition and seeking deeper integration; this was followed by accession to the European Union in 2004. Studies on this process generally examine Poland as a receiver of FDI (Kochut, 2012; Kornecki, 2011; Chidlow *et al.*, 2009), or in terms of the macro trend of its international development path and the major trends in Polish FDI (Boudier-Bensebaa, 2008; Gorynia *et al.*, 2010; Gorynia *et al.*, 2012; Buczkowski, 2013). However, much has changed since that time. According to the data of OECD, the Polish FDI stock has grown from USD 1,776 million to USD 22,281 million in the period from 2005 to 2015. During the economic downturn (2008–2009) the flows were lower than in the pre-crisis time, however it was not a drastic change as the flows accounted to USD 1,858 million in 2008 and USD 1,807 million in 2009. During 16 years (2005–2015) Polish enterprises switched to disinvestment only once in 2013 and withdrew USD 451 million from abroad.

As for the geographical distribution of Polish outward FDI (OFDI), Polish companies invest mainly in Europe (total FDI stock at the end of 2015 amounted to EUR 19,329 million as reported by the National Bank of Poland). The share of Polish FDI in Europe in total stock at the end of 2015 stood at 88%, whereas for Africa it was less than 1%, for the Americas 7%, and for Asia 3.8%. The main European locations attractive for Polish investors in 2015 were Cyprus, Luxembourg, the Czech Republic, the Netherlands, Switzerland and Germany. The top locations in North America were Canada and the United States, and Chile in South America. In Asia,

Polish companies invested mainly in India, Georgia and Kazakhstan, whereas in Africa Polish investors choose Liberia, Senegal and Morocco as their top destinations.

As far as the sectoral structure of Polish OFDI is concerned, the biggest contribution to outward stock in 2015 was made by the financial and insurance sector (EUR 11,248 million), followed by manufacturing which accounted for EUR 3,587 million, administrative and support service activities (EUR 3,473 million), and professional, scientific and technical activities (EUR 2,649 million).

Thus the growth of Polish OFDI volume should not be overlooked; Poland is no longer only a host country for FDI, it has also begun to be a home country that invests abroad. Nonetheless, available data on this are very scarce since only a few macro data studies on Polish investment can be found. The reasons for this may include the lack of firm-level data on FDI, the quite short time covered by available reports on FDI outflows produced by the Polish National Bank (available only from 2005), and the relatively small scale of Polish investments.

Through the use of data collected directly from Polish companies' websites, this paper is one of the few that do actually utilize firm-level information in a study on outward Polish FDI. Much has been said about the home and host countries' characteristics and their impact on FDI (Rama-murti, 2008; Majeed and Ahmad, 2009; Tadesse and Ryan, 2004), however the idea of investing abroad is born inside the company, regardless of the country in which the company is located. Hence, we are convinced that looking at the situation at a firm's level is the most effective way to investigate FDI.

This study attempts to empirically verify the conditions under which rapid FDI expansion can boost firm performance. In order to do so, we examine a firm's internal factors, such as firm specific advantages (FSAs) and strategy, as well as external factors including domestic and foreign influence that moderate the relationship between firm performance and the speed of FDI expansion.

The remainder of this paper is organized as follows. In Section 2 we review the literature showing what was achieved in previous studies on FDI and how the phenomena of investing abroad have been explained. We then develop our hypotheses on determinants of Polish outward FDI on the basis of the literature review together with our own knowledge and reflections, in the same section. Next in Section 3 our sample collection process and the methods used in this study are introduced. Finally, the results are presented, discussed, and summarized in Sections 4 and 5.

## 2. THEORY AND HYPOTHESES

It is widely known that the potential benefits of international expansion encourage firms to engage in international operations. For MNEs, increased market power and internationalization in response to market imperfection are beneficial, as has been argued in industrial organizations, transaction cost economics, and internalization models (e.g. Hymer, 1976; Rugman, 1979; Caves, 1982; Buckley and Casson, 1976). According to Vernon (1966) and Hennart (1982), exploitation of low-cost labor, evading high transaction costs, reaping tax benefits, and profitable common purchasing are other potential advantages of foreign expansion. In addition, increases in sales due to operations in host-markets enables companies to spread marketing or research and development (R&D) costs across larger numbers of units (Franko, 1989). The list of potential benefits is even longer and all of these contribute to the rapid growth of foreign expansion.

Recently another interesting aspect of overseas investment has been discussed by scholars: the speed of FDI. This was defined by Chang and Rhee (2011) as “the average number of FDI in new countries per year since a firm’s first FDI” (Chang and Rhee, 2011: 980). The speed of FDI might seem controversial since there are two totally different approaches to it.

On the one hand, the study of Vermeulen and Barkema (2002) conducted on 22 multinational firms over 26 years, shows that high speed negatively moderates profits from internationalization. What is more, the Uppsala model presented by Johanson and Vahlne (1977) explains how firms gradually intensify their foreign activities by increasing their experiential knowledge and in consequence become successful in foreign markets. The slow pace of gradual internationalization is caused by local market regulation and organizational learning, which are time consuming activities (Johanson and Vahlne, 1977). Similarly, Barkema and Drogendijk (2007) find that gradual foreign expansion may increase local learning and lead to successful FDI. In addition, Chang (1995) in his studies on Japanese firms argues that they are subsequently more likely to invest in one host-market starting from their core business or a business where they have stronger competitive advantages over local firms. Consequently rapid FDI expansion might be seen as a factor driving firms to poor performance.

On the other hand, the positive effects of rapid internationalization may be seen in the existence of the beneficial first-mover advantages (Chang and Rhee, 2011). Late movers can also use rapid expansion as a way to catch up with companies that are already firmly operating in the industry, in order to

become equal rivals (Mohr *et al.*, 2014). In addition, MNEs can reap the benefits from rapid FDI expansion by achieving economies of scale and economies of scope more quickly than their slower competitors (Mohr *et al.*, 2014). Guillén and García-Canal (2009), by comparing traditional multinational enterprises with new MNEs (mainly from emerging markets), conclude that the FDI speed of the latter is accelerated. The reason behind this phenomenon is the attempt to narrow the gap in global presence and market reach between multinationals from developed countries and those from emerging markets (Mathews, 2006). Chang and Rhee (2011) found that gradual as well as rapid FDI expansions had their strong and weak points.

Clearly, we can see that nowadays the pattern of FDI has changed and, in the case of MNEs from emerging markets, they seem to focus on time-based competition that may positively affect firm performance. Achieving a quick pace of introducing new products is important in the case of firms that have a fast development capability (Cohen *et al.*, 1996); moreover, a study on the semiconductor industry proves that the high speed of constructing new manufacturing factories induces better performance (Salomon and Martin, 2008). These potential benefits of rapid FDIs have been recently motivating firms from emerging markets to quicker foreign expansion. According to the International Monetary Fund (IMF), Poland is considered to be one of the emerging markets, consequently its companies should follow the new MNE pattern by investing in increased speed. With all this in mind, we propose the following:

**Hypothesis 1: MNEs from emerging markets show a positive relationship between rapid speed of FDI expansion and firm performance.**

#### **Moderators: FSAs**

According to Hymer (1976) and Dunning (1977), a firm with ownership advantages is able to invest abroad. Hymer (1976) explains such advantages as comprising some strong points demonstrated by firms, such as property rights or other intangible assets that lead to dominance over other companies in the same industry. These advantages are called FSAs, since they are examined at the firm's level. Taking into consideration the concept of industrial organization, firm performance might be seen as a relationship between its internal efficiency, market position, and external conditions (Shepherd, 1979). Here, internal efficiency simply refers to firm-specific advantages. These are important, especially for firms investing abroad, in terms of transferring already existing FSAs to a foreign subsidiary. Hence, new subsidiaries located in other countries have had essential advantages

from the beginning, achieved through transfer from the home company. This leads them to a better performance.

According to Siripaisalpipat and Hoshino (2000), FSAs can be defined as resources that companies have been accumulating over the years and which are essential in order to compete in a certain industry, as well as the learning skills acquired from previous foreign operations. These are know-how, specific knowledge, proprietary rights to products, technology, and other intangible assets, as well as particular abilities concerning economic, political, and legal systems that help to cope with the liability of foreignness (Cyert and March, 1963; Levitt and March, 1988; Siripaisalpipat and Hoshino 2000). In this study we measure FSAs according to the definition of Siripaisalpipat and Hoshino (2000). FSAs could be seen as the total assets of the company, R&D output, average productive output that each employee can generate degree of internationalization, experience in the industry, and years since the first expansion, representing years of experience in a certain host-country and age of the firm (Siripaisalpipat and Hoshino 2000).

The heterogeneity of firms based on FSAs causes the birth of monopolistic advantages. Consequently, according to Hymer's (1976) monopolistic advantage theory, a company may successfully compete against domestic rivals in foreign settings if it possesses some kind of proprietary advantage. In this context, it is very apparent that FSAs allow firms to be competitive in foreign markets and therefore encourage them to conduct foreign expansion (Hymer, 1976). This process might be seen as the exploitation of FSAs. According to March (1991, p. 85), "the essence of exploitation is the refinement and extension of existing competencies, technologies, and paradigms." Consequently, companies which are expanding into foreign markets, based on their FSAs, are simply exploiting them in order to gain competitiveness. However, FSA exploitation alone is not a key to successful foreign expansion. The key is to introduce one's FSA faster than the company's rivals and to be the first-mover that reaps the benefits of FDI earlier. Therefore we suggest that a combination of the first-mover advantages and FSAs can be more beneficial to a company's performance. To sum up, the possession of FSAs enables firms to cope with their liability of foreignness and to gain monopolistic advantages which should encourage firms to implement faster internationalization and are predicted to positively influence the interaction between speed of FDI expansion and firm performance. Hence, we propose the following:

**Hypothesis 2: FSAs positively moderate the relationship between speed of FDI expansion and firm performance.**

**Strategy**

Companies aiming at becoming multinational enterprises must wisely explore opportunities in foreign countries. Those which have already taken the first step, i.e. the decision to invest abroad, now have to figure out which FDI strategy would be the best and most effective. We divide the strategy into two main components: location and rhythm of FDI. We believe that strategy is the key point for successful expansion. A company that knows its positive and negative characteristics faces the question of whether it should go global or not. Having strong advantages inside or outside the company does not necessarily mean that foreign investment will be successful. The crucial aspect is to wisely explore those advantages by implementing an appropriate strategy.

Location as the fundamental part of FDI strategy might be defined as the particular foreign country in which a company makes its investment. Geographical distance between countries is a major indicator of bilateral international trade and international investment flows, as has been shown in various studies (Frankel and Rose, 2002; Baltagi *et al.*, 2003; Blonigen *et al.*, 2007). Ekholm (1998) presented evidence that the patterns of trade and foreign production are coincident under the gravity model. Subsidiaries' production levels decrease with geographical distance; in other words, the close location of the parent country positively affects a firm's production level (Ekholm, 1998). More productive firms are known to be more efficient and successful (Melitz, 2003). Therefore we can clearly see that the close location of the host country positively affects firm performance. Firms knowing this dependence between geographical distance and better performance of a subsidiary will be encouraged to invest in countries closer to their home country. We are convinced that, motivated by the higher probability of a successful expansion, companies will not hesitate and will be quicker and more determined to go global so that they can more quickly enjoy the benefits as compared with the late movers. Hence, we propose the following:

**Hypothesis 3a: Geographical distance will negatively moderate the relationship between speed of FDI expansion and firm performance.**

Firms tend to operate on a regional rather than a global scale as shown by Rugman and Verbeke (2004) who created a regional strategy theory (RST) based on empirical facts. According to this theory, expanding intra-

regionally is associated with lower costs, as shown to be true by Rugman and Verbeke (2004), based on their concept of liability of inter-regional foreignness. This liability is believed to be connected with all the costs occurring when doing business across regions (Qian and Rugman, 2013). Other scholars also agree that most of the largest companies in the world are home-region-based and this has led them to the conclusion that intra-regional diversification is much more effective in comparison with inter-regional diversification (e.g. Asmussen, 2009; Banalieva and Dhanaraj, 2013; Dunning *et al.*, 2007; Rugman and Verbeke, 2004, 2008). Since going global within the same region is believed to be more effective and more successful, companies which are investing on that level and follow the pattern of accelerated expansion should reap the benefits of foreign expansion earlier than their later-mover competitors. The positive relationship between firm performance and home region concentration was proved to be strengthened by the speed of internationalization (Mohr *et al.*, 2014). Knowing that expanding intra-regionally requires a lower-level information process (Ghemawat, 2005), companies which expand more quickly than their rivals can immediately reap the advantages of home region concentration, such as lower transportation, international transfer, and distribution costs (Mohr *et al.*, 2014). All this considered, we propose the following:

**Hypothesis 3b: Inter-regional expansion will negatively moderate the relationship between speed of FDI expansion and firm performance.**

According to the Uppsala internationalization model, the localization choice is closely connected with the phenomenon of cultural distance (Johanson and Vahlne, 1977). It has been shown that differences in national culture result in dissimilar administrative and organizational practices and work culture (Bendix 1956; Lincoln *et al.*, 1981). Larger cultural distance is believed to cause difficulties in understanding foreign market environments, and therefore investing in culturally different countries is costly and comes with a higher risk of failure. Consequently, companies choosing the location of an FDI might be less anxious and might further be encouraged to make a quicker decision if they are planning to invest in countries that are of a less cultural distance. Potentially easier success should raise the speed of the investment. Hence, cultural distance could be seen as a criterion for an evaluation of the location strategy. Knowing that investing in culturally closer countries requires lower costs than investing in culturally remote markets, firms will be stimulated to invest. However, the investment itself is not the key point. The key to success in this fiercely competitive global



market is to act more quickly than challengers. Therefore, companies that are planning on investing abroad will be quicker in making their decision when they know that culturally closer markets are potentially easier to enter. Considering all this, we propose the following:

**Hypothesis 3c: Cultural distance will negatively moderate the relationship between speed of FDI expansion and firm performance.**

Last but not least, the rhythm of FDI is one of the components of the strategy. The rhythm is defined as the regularity of the process of establishing new subsidiaries (Vermeulen and Barkema, 2002). It shows how evenly firms distribute their foreign expansion events in terms of timing (Chang and Rhee, 2011). According to Vermeulen and Barkema (2002), there are two types of rhythm: one is regular (for example, a firm which expands by one subsidiary every year) and the other one is irregular (a firm which expands rapidly during a few years, followed by long periods of inactivity). A rhythmic pace is said to be better in reaping the benefits from expansion, since firms can utilize their absorptive capacity without overstretching it (Vermeulen and Barkema, 2002). The absorptive capacity is very important for companies for the reason that the development and management of such capacity enhance their performance (Lane *et al.*, 2001; Zahra and George, 2002; Narasimhan *et al.*, 2006; Rothaermel and Alexandre, 2009). Consequently, we assume that a beneficial regular rhythm will encourage companies to implement rapid FDI expansion on the grounds of effectively used absorptive capacity, which leads to better firm performance. Achieving better performance through a regular rhythm of FDI must be secured faster than the opponents, in order to enjoy the first-mover advantage or to keep up with the foreign competitors who have already entered the market. The combination of a regular rhythm of FDI and rapid FDI should be the best option for companies in today's highly competitive and quickly changing global environment. Therefore, we propose the following:

**Hypothesis 3d: Regular rhythm will positively moderate the relationship between speed of FDI expansion and firm performance.**

**Foreign influence**

Gorg and Greenaway (2004) reach the conclusion, based on earlier findings reported in their paper, that when it comes to developed countries there is a significantly positive relation between inward FDI and economic growth (Caves, 1974; Globerman, 1979). Host-countries are expected to greatly benefit from inward FDI, since MNEs' FSAs spill over to local

firms through labour mobility, imitation, competition and export (Markusen and Venables, 1999; Gorg and Greenaway 2004; Kurtishi-Kastrati, 2013). However, the spillover effects are believed to be dependent on host-country characteristics, and especially on absorptive capacity (Gorg and Greenaway, 2003). Zanfei (2012) examines the effects regardless of host-country development status. He explains that MNEs impact the host-country not only regarding its knowledge; they also trigger certain pecuniary effects, where knowledge transmission has the positive effect of extending the production frontier. Financial effects positively affect the profit function of domestic firms (Zanfei, 2012). This happens for example, through a demonstration and imitation process where foreign companies bring technologies, products or managerial practices that were unavailable in the host country. In this way they demonstrate that the production technique is feasible in that country and local firms imitate this by reverse engineering, informal contacts, or industrial espionage (Koizumi and Kopecky, 1977; Zanfei, 2012). Through the learning process, local firms follow the pattern of foreign companies' globalization. Consequently, we can assume that what local firms have learnt and obtained from foreign investors encourages them to implement rapid FDI expansion as the next step in their development and internationalization process since it boosts their firm performance (Caves, 1974; Globerman, 1979; Liu *et al.*, 2000). The knowledge acquired from foreign companies persuades domestic firms that they can be competitive in a foreign environment on the same terms as the foreign firms are in their domestic market. This fact should encourage them to go global and act quickly in their expansion to gain a greater market share than the late movers (Chen and MacMillan, 1992).

Furthermore, inward FDIs might lead to fiercer competition between foreign and local companies. Dunning (1988) showed, by referring to the example of United Kingdom firms which were threatened by the entry of Japanese rivals, that their reaction to this included the improvement of product quality and the diversification of their product portfolio. Similar results were found in Alcácer *et al.* (2013) and Chang and Rhee (2011). The host country's companies, which face sharp competition caused by the entry of foreign firms, are seriously affected by this. Not only must they quickly respond to the competitors, but also the response must be accurate. Such fierce rivalry triggers changes in the host country companies' production process, product quality, organization, and many other factors. We must remember that the response to the intensified competition from foreign firms

should be unequivocal and fast, which can also be manifested in rapid FDI expansion by the home country's companies.

The positive influence of foreign competitors operating in domestic markets as well as the negative influence induced by them stimulates domestic companies to implement faster foreign expansion, as explained above. All things considered we assume the following:

**Hypothesis 4: Inward home-country FDI's will positively moderate the relationship between speed of FDI and firm performance**

**Domestic influence**

Facing intense domestic competition forces firms into vigorous rivalry. Salomon and Martin (2008) in their studies on the global semiconductor industry find that under the threat of the possible entry of rivals, firms build plants faster. The quick response by building new plants results in defending their competitive position. Chang and Rhee (2011) in their research on FDI speed proved that rapid FDI expansion was seen as more favourable when firms operate under intensified domestic competition. Alcácer *et al.* (2013) found that firms invested abroad mainly because of the impact of rivalry, which was more important than the impact of the location and firm characteristics. Firms facing harsh rivalry in their home country must respond to their competitors' moves not only correctly and effectively, but also quickly (Zajac and Bazerman, 1991). Chen and MacMillan (1992) in their studies conducted on competitive behaviours by US airlines found that there was a quicker and more decisive response to the threat of rivals in important markets. In addition, they ascertained that in such a situation responders and attackers gained market share, however responders gained less of this in comparison with attackers, but even so, quicker responders were in a better situation than slow responders who gained less market share. Firms might be left at a disadvantage if they failed to deal with competitive pressure quickly (Chang and Rhee, 2011). Therefore, companies which face only slight pressure from domestic rivals might stick to a slow foreign expansion strategy. However, those operating in highly competitive industries should implement a rapid FDI expansion strategy, leading to better performance (Chang and Rhee, 2011). Hence, we propose the following:

**Hypothesis 5: Domestic industry competition will positively moderate the relationship between speed of FDI expansion and firm performance.**

### 3. RESEARCH METHODS

#### **Sample and Data Collection**

To test the hypotheses outlined above, a sample of Polish firms was selected. The Polish market is a good example of an emerging market classified as an emerging market by the IMF (IMF, 2015) as well as the FTSE Group (FTSE, 2016). The country is also listed as an emerging market in the MSCI Emerging Market Index (MSCI, 2016), where companies are believed to behave differently from well-known modern MNEs and to expand at an accelerated speed. The data used for empirical analyses came from publicly listed companies in the OSIRIS database. A total sample of 387 companies operating in Poland was collected. Firstly, we removed foreign-owned companies and then we removed those which could not be used due to lack of information and those from the financial sector. The final sample consisted of 37 companies. The data on age and foreign sales were collected from companies' official websites and their financial statements and we also obtained the information needed to calculate speed of FDIs, international management capabilities, interregional expansion and rhythm. Information on patents was gathered from the Patent Office of the Republic of Poland. Geographical and cultural distance data were found from the CEPII (Centre d'Études Prospectives et d'Informations Internationales) and the Hofstede homepage, respectively. The information on FDI net inflows into Poland was collected from the World Bank Database. The rest of the data come from the OSIRIS database. The very first sample was from 1985 to 2014; however, due to the missing information from 1985 to 2007 and in 2014, we restricted the sample to the period from 2008 to 2013. According to the European industry standard classification system NACE (Nomenclature of Economic Activities), four of the companies belong to the mining and quarrying industry, twenty five to the manufacturing industry, three to the wholesale and retail trade industry, three to the information and communication industry, one to the administrative and support services, and one to the electricity, gas steam and air conditioning supply industries. The most popular destinations for Polish FDIs were Germany (18 cases), Russia (17 cases), Ukraine (16 cases), Lithuania (11 cases) and the Czech Republic (10 cases). Overall, our sample of Polish firms entered 47 countries in the period under study. Data for all variables are described in detail in Table A1 in the Appendix.

#### **Methods and measures**

Our sample consists of 90 firm and year observations related to 37 companies. Following Chang and Rhee (2011) we adopt the panel data technique which includes firm and year fixed effects. This controls for an

unobserved firm heterogeneity. We test for first-order autocorrelation between the variables, and no such autocorrelation is indicated. To test the moderating effects of FSAs, strategy, foreign influence and domestic influence on the contribution of speed to firm performance, we ran moderated multiple regressions. To eliminate multicollinearity and to maximize interpretability of interactions, we centred the variables included in the interactions around the mean as suggested by Aiken and West (1991, 9) and Marsh *et al.* (2012). We used the variables listed below in the models.

### ***Firm performance***

Profitability of a company is used to measure the performance. One of the measures of a firm's profitability is return on invested capital (ROIC), which is net income less dividends, divided by total capital. This measure attempts to show how well the company is using money in order to generate returns. Evaluating a company's performance by its profitability seems to be very natural, since making profits is every firm's primary goal. As alternative ways to measure the profitability of a company we used return on assets (ROA) and return on equity (ROE). ROA is defined as net income divided by assets, whereas ROE is defined as net income divided by average shareholders' equity. We performed robustness tests using both of these and the results remained consistent with ROA as dependent variable and insignificantly different with ROE as dependent variable. Following Vermeulen and Barkema (2002) as in Chang and Rhee (2011), we used two fixed effects: year and company to control for other factors that might affect firm performance.

### ***Speed of FDI expansion***

Following Chang and Rhee (2011), we used a simple formula to calculate speed of foreign expansion, i.e. the average number of foreign subsidiaries in new host countries, divided by the number of years since the first FDI. This measure varies each year and fully reflects a company's total number of new foreign subsidiaries in new countries. The more FDIs are undertaken, the higher the value of the variable.

### ***FSAs controls***

Following Siripaisalpipat and Hoshino's (2000) definition of FSAs, we introduce several variables to measure the internal assets of a company. First, we control for the asset power of the parent firm through the firm's total assets. Larger firms tend to possess vital assets and a dominant position in the market (Siripaisalpipat and Hoshino, 2000). Second, the measurement for managerial know-how as an important booster of efficiency and

productivity of a firm is based on the average profit that each employee generates. Third, we control for a firm's general experience in the market by the age of the company. Fourth, as a measurement of international management capabilities, as in Siripaisalpipat and Hoshino (2000), the number of years since the firm's first FDI is used. Fifth, as proxy for international experience we use the ratio of foreign sales to total sales. Sixth, the number of patents that each company possesses is used as proxy for the output of R&D intensity.

### ***FDI strategy controls***

Location strategy is controlled by geographical distance, inter-regional investment and cultural distance. Geographical distance is calculated as the average air distance in kilometres between the capital cities of partner countries and Poland for all FDIs. Inter-regional investment is measured by a dummy variable. If a Polish company has invested outside its region, this takes the value 1; if not, it takes the value 0. We use seven geographical regions as in Delios and Beamish (2005); these are Asia, Africa, Europe, the Middle East, North America, Oceania, and South America. Poland is located in Europe, therefore any FDI outside Europe is seen as an inter-regional expansion. The variable of cultural distance is computed using the Kogut and Singh (1988) formula, based on Hofstede's (1980) four cultural dimensions, to calculate the average cultural distance between host countries and Poland for all FDIs. For the rhythm strategy we took the kurtosis of the count of new FDIs made by a company each year through the years as in Chang and Rhee (2011). This variable measures how evenly distributed new FDIs are in terms of timing.

### ***Foreign influence control***

To control for foreign influence, we use the ratio of FDI net inflows into Poland to GDP. The value of FDI net inflows (as % of GDP) shows how much investment was made in Poland each year and this, therefore, controls for foreign companies' influence. The higher the ratio, the more foreign investors were attracted into Poland, consequently the level of competition is higher. This shows how market competition was changing throughout the years; if the ratio is high, this indicates fiercer market competition. However, not only negative consequences are controlled by the FDI net inflows to GDP ratio, it also controls for the positive influence of foreign investors. The higher the ratio, the greater are the spillovers of foreign companies to local firms. Therefore, the foreign influence measurement allows us to check the negative as well as the positive impact of foreign investors.

### ***Domestic influence control***

Competitive pressure is computed using the future market share competition formula (Körösi *et al.*, 2006). This is based on NACE sectors and measures non-price competition. Non-price competition's indirect calculation is theoretically justified by Sutton (2002), who emphasizes the importance of endogenous sunk costs and innovation in shaping the firm's market structure. According to Sutton's model, the competitive pressure generated and faced by firms is closely related to innovation and endogenous sunk costs. Hence, it is logical to use the future market share competition equation as a measurement of the industry competition control. The formula is as follows:  $I_i = \sum_j FI_{ij} / \sum_j FA_{ij}$ , where  $I_i$  is the NACE sector (from NACE 1-digit to NACE 3-digit),  $FI_{ij}$  is the value of firm's fixed investment and  $FA_{ij}$  is the firm's total fixed assets (Körösi *et al.*, 2006).

## **4. RESULTS**

Tables 1 and 2 present descriptive statistics and correlations for all variables included in the model. Table 3 exhibits the results from the fixed-effect regression models in which the dependent variable is ROIC. Model 1 in Table 3 shows the basic model where the main effects of FSAs, strategy, foreign influence and domestic influence are included.

Table 1  
Descriptive statistics

<b>Variable</b>	<b>Mean</b>	<b>Std. dev.</b>	<b>Min</b>	<b>Max</b>
1. ROIC (%)	15.02	17.12	-58.63	163.56
2. Speed	0.65	0.55	0.00	4.00
3. Total assets (log)	12.73	1.53	9.85	16.66
4. Profit per employee	17.23	42.41	-42.88	324.62
5. Firm age	37.23	24.25	7.00	103.00
6. Foreign sales (%)	2.02	10.47	0.00	81.22
7. Years since firm's first FDI	7.74	4.92	0.00	22.00
8. Patent	14.79	27.60	0.00	136.00
9. Average cultural distance	1.39	0.80	0.00	4.21
10. Inter-regional expansion	0.79	0.41	0.00	1.00
11. Average geographical distance	1573.23	1889.62	0.00	9863.91
12. Rhythm	4.66	2.30	0.00	9.14
13. FDI net inflow (% of GDP)	2.28	1.60	-0.89	3.63
14. Future market share (%)	0.02	0.04	0.00	0.25

Source: authors' own table.

Table 2  
Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	1													
2	-0.2796	1												
3	0.0249	-0.1523	1											
4	0.2908	-0.0027	-0.1445	1										
5	0.2478	0.0607	0.3106	0.1298	1									
6	-0.1187	0.0204	0.0064	0.0286	-0.0925	1								
7	-0.0785	0.0541	0.4345	-0.0518	0.2576	-0.2449	1							
8	0.453	0.3423	-0.4695	-0.0052	-0.3991	0.0691	-0.1333	1						
9	-0.115	-0.0831	-0.4492	0.1549	0.1139	-0.0337	-0.1546	0.0741	1					
10	-0.2568	0.028	-0.0589	-0.1364	-0.0395	-0.0527	-0.018	0.0535	-0.0594	1				
11	0.4301	-0.2298	-0.0222	-0.072	-0.0011	-0.0366	-0.1237	-0.4874	-0.0595	0.5586	1			
12	-0.211	-0.2476	-0.031	0.2096	-0.1703	-0.0187	0.0482	-0.1223	0.1361	-0.0325	0.2194	1		
13	0.153	-0.1256	0.2025	-0.0264	0.0549	-0.0527	0.3007	-0.1623	-0.1405	-0.092	-0.008	0.0023	1	
14	0.2476	0.0289	-0.0449	0.0168	-0.1447	0.0088	-0.0153	-0.0553	0.0114	-0.0538	-0.1573	0.0403	0.0352	1

Correlation coefficients greater/lower than  $\pm 0.05$  are significant at the 5% level.

Source: authors' own table.



Table 3

Regression models of profitability (ROIC) at the firm level with fixed-effects

	M-1	M-2	M-3	M-4	M-5	M-6	M-7	M-8	M-9	M-10	M-11	M-12	M-13	M-14
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Total Assets	19.327*** (7.311)	19.453*** (7.455)	17.570** (7.793)	14.628* (7.591)	19.673*** (7.471)	19.464*** (7.524)	21.409*** (7.421)	18.832** (7.635)	17.758** (7.372)	19.317** (7.579)	9.326 (7.542)	19.485*** (7.502)	19.305** (7.768)	19.254** (7.486)
Profit per employee	0.242*** (0.060)	0.242*** (0.061)	0.251*** (0.062)	0.216*** (0.060)	0.236*** (0.061)	0.240*** (0.062)	0.246*** (0.060)	0.240*** (0.061)	0.231*** (0.060)	0.240*** (0.062)	0.318*** (0.061)	0.244*** (0.061)	0.242*** (0.062)	0.238*** (0.061)
Firm age	-0.011 (5.252)	-0.013 (5.301)	0.082 (5.315)	7.261 (6.211)	-0.247 (5.315)	-0.055 (5.354)	-0.563 (5.222)	-0.338 (5.389)	-0.687 (5.211)	-0.089 (5.374)	2.772 (4.956)	0.297 (5.361)	0.041 (5.398)	-0.675 (5.385)
Years since firm's first FDI	-0.588 (5.408)	-0.643 (5.477)	-0.905 (5.500)	-8.363 (6.473)	-0.642 (5.486)	-0.572 (5.541)	-0.341 (5.388)	-0.235 (5.592)	0.049 (5.385)	-0.517 (5.591)	-4.557 (5.186)	-1.022 (5.550)	-0.680 (5.550)	0.167 (5.592)
Foreign Sales	0.014 (0.071)	0.014 (0.071)	0.015 (0.072)	0.014 (0.069)	0.011 (0.072)	0.014 (0.072)	-1.150* (0.696)	0.013 (0.072)	0.014 (0.070)	0.014 (0.072)	0.013 (0.066)	0.015 (0.072)	0.014 (0.072)	0.012 (0.072)
Patent	-0.883* (0.479)	-0.875* (0.489)	-0.930* (0.494)	-0.782 (0.476)	-0.952* (0.497)	-0.880* (0.494)	-0.939* (0.482)	-0.934* (0.510)	-1.375** (0.556)	-0.897* (0.515)	-0.864* (0.450)	-0.950* (0.508)	-0.895 (0.556)	-0.883* (0.491)
Rhythm	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)
Average cultural distance	-8.309** (3.263)	-8.212** (3.394)	-8.623** (3.436)	-6.015* (3.455)	-8.380** (3.404)	-8.047** (3.538)	-8.597** (3.344)	-7.906** (3.485)	-9.952*** (3.470)	-8.183** (3.430)	-12.203*** (3.358)	-8.049** (3.426)	-8.148** (3.525)	-7.671** (3.473)
Average geographical distance	0.005 (0.003)	0.005 (0.004)	0.005 (0.004)	0.004 (0.003)	0.005 (0.004)	0.005 (0.004)	0.005 (0.003)	0.005 (0.004)	0.006* (0.004)	0.005 (0.004)	0.005* (0.003)	0.005 (0.004)	0.005 (0.004)	0.005 (0.004)
Inter-regional expansion	-0.156 (7.330)	-0.218 (7.417)	0.197 (7.451)	1.961 (7.268)	-2.638 (7.886)	-0.089 (7.517)	-0.855 (7.302)	0.406 (7.598)	-4.744 (7.708)	-0.810 (8.446)	-4.625 (6.963)	-0.132 (7.465)	-0.199 (7.491)	0.337 (7.476)
FDI net inflow	1.191 (0.932)	1.179 (0.947)	0.989 (0.975)	0.614 (0.957)	1.339 (0.964)	1.187 (0.956)	0.788 (0.959)	1.230 (0.960)	1.093 (0.930)	1.213 (0.983)	0.116 (0.931)	1.148 (0.954)	1.173 (0.959)	1.313 (0.965)
Future market share	-37.408 (24.676)	-37.600 (24.957)	-37.074 (25.029)	-32.404 (24.331)	-37.496 (24.996)	-37.737 (25.198)	-40.915* (24.617)	-38.644 (25.251)	-41.531* (24.571)	-37.432 (25.215)	-19.074 (23.680)	-37.579 (25.114)	-38.541 (28.004)	-38.824 (25.094)
Speed (H1)		-0.354 (2.986)	2.494 (4.481)	-4.398 (3.485)	-7.633 (8.510)	-0.466 (3.074)	-11.303 (7.143)	-1.243 (3.589)	-6.260 (4.440)	-0.786 (4.153)	0.865 (2.775)	-1.263 (3.386)	-0.437 (3.201)	-2.807 (4.313)

Table 3, cont.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Speed x Total Assets (H2)				-3.386 (3.963)											
Speed x Profit per employee (H2)					-0.370** (0.177)										
Speed x Years since firm's first FDI (H2)						-1.224 (1.339)									
Speed x Firm age (H2)							-0.023 (0.125)								
Speed x Foreign Sales (H2)								-6.428* (3.823)							
Speed x Patents (H2)									-0.104 (0.229)						
Speed x Average geographical distance (H3a)										-0.009* (0.005)					
Speed x Inter-regional expansion (H3b)											2.363 (15.626)				
Speed x Average cultural distance (H3c)												-15.463*** (4.769)			
Speed x FDI net inflow (H4)													0.850 (1.459)		

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Speed x Future market share (H5)														-9.078	
														(117.953)	
Speed x Rhythm (H3d)															1.745
															(2.206)
Number of observations	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
R <sup>2</sup>	0.475	0.475	0.482	0.515	0.483	0.475	0.502	0.477	0.505	0.475	0.563	0.478	0.475	0.481	
Rmse	7.206	7.273	7.292	7.053	7.284	7.340	7.151	7.328	7.131	7.341	6.697	7.319	7.342	7.299	
Adjusted R <sup>2</sup>	0.134	0.118	0.113	0.170	0.115	0.102	0.147	0.105	0.152	0.101	0.252	0.107	0.101	0.112	
Hierarchical F test		0.020	1.073	6.302**	1.224	0.070	4.099**	0.318	4.538**	0.053	15.187	0.510	0.028	0.922	
$\frac{df_{mult} - df_{add}}{N - df_{mult} - 1}$		1	1	1	1	1	1	1	1	1	1	1	1	1	
		76	75	75	75	75	75	75	75	75	75	75	75	75	

Note: \*\*\*p<0.001; \*\*p<0.01; \*p<0.05; +p<0.10. ; Firm and year dummies are not shown.

Source: authors' own table.

Model 2 tests if Polish companies as MNEs from emerging markets show a positive relationship between the speed of FDI expansion and firm performance. However, speed turns out to be insignificant, what does not support our Hypothesis 1.

Models 3–14 display the results of interaction of FSAs, strategy, foreign influence, and domestic influence variables with speed. Out of twelve interactions, four are significant. The first one, which is the interaction of speed and profit per employee, is significantly negative and the inclusion of this interaction significantly increases the predicting power ( $F = 6.302$ ,  $P < 0.01$ ), as shown in Model 4. Profit per employee, which measures the level of managerial know-how, is significantly negative in combination with rapid FDI expansion. This evidence suggests that during high-speed foreign investments, Polish firms' managerial know-how is not efficiently used, what is in conflict with Hypothesis 2.

The interaction term of speed and foreign sales is significantly negative in relation to ROIC as exhibited in Model 7, which is in conflict with Hypothesis 2. This means that Polish firms do not adequately make use of their international experience if they expand rapidly. This interaction term also significantly raises the explanatory power for performance variations ( $F = 4.099$ ,  $P < 0.01$ ). The impact of foreign sales on firm performance in almost all models is insignificant. Only in Model 7 it is significant and negative, what could be explained by saying that the foreign sales activities and investments are costly (outweighing the returns from such investments). Overall, foreign sales do not have a strong direct effect on firm performance. Other interactions of speed and FSAs tested in Models 3, 5, 6, and 8 turn out to be insignificant.

Model 9 shows the results for the moderating role of geographical distance on the relationship of speed and firm performance. The interaction term of geographical distance and speed is significantly negative and the inclusion of this interaction significantly increases the predicting power ( $F = 4.538$ ,  $P < 0.01$ ). These results support Hypothesis 3a. One interesting result is that the impact of geographical distance on firm performance is significant and positive, i.e. it is in conflict with the previous study by Ekholm (1998). This might be justified by the fact that Poland is one of the emerging markets where the well-known stepwise method of FDI expansion might not be appropriate (Luo and Tung, 2007; Guillén and García-Canal, 2009).

The interaction of cultural distance and speed is significantly negative and the inclusion of this interaction significantly increases the predicting power ( $F = 15.187$ ,  $P < 0.1$ ), as shown in Model 11. This supports Hypothesis 3c.

The direct effect of cultural distance is significantly negative in all models. Hence, in the case of cultural distance, regardless of applied speed there is only one beneficial option, namely not to invest in culturally different countries. However, in the case of geographical distance, Polish firms might choose between two options: to rapidly invest in closely located countries or to invest in countries located far away but not at high speed.

The interactions between inter-regional expansion as well as rhythm and speed are insignificant; this does not support our predictions in Hypotheses 3b and 3d, as shown in Models 10 and 14. Model 12 displays the results of FDI net inflows interacted with high speed and firm performance. The results are insignificant, i.e. Hypothesis 4 is not supported. The same is true for Hypothesis 5, tested in Model 13.

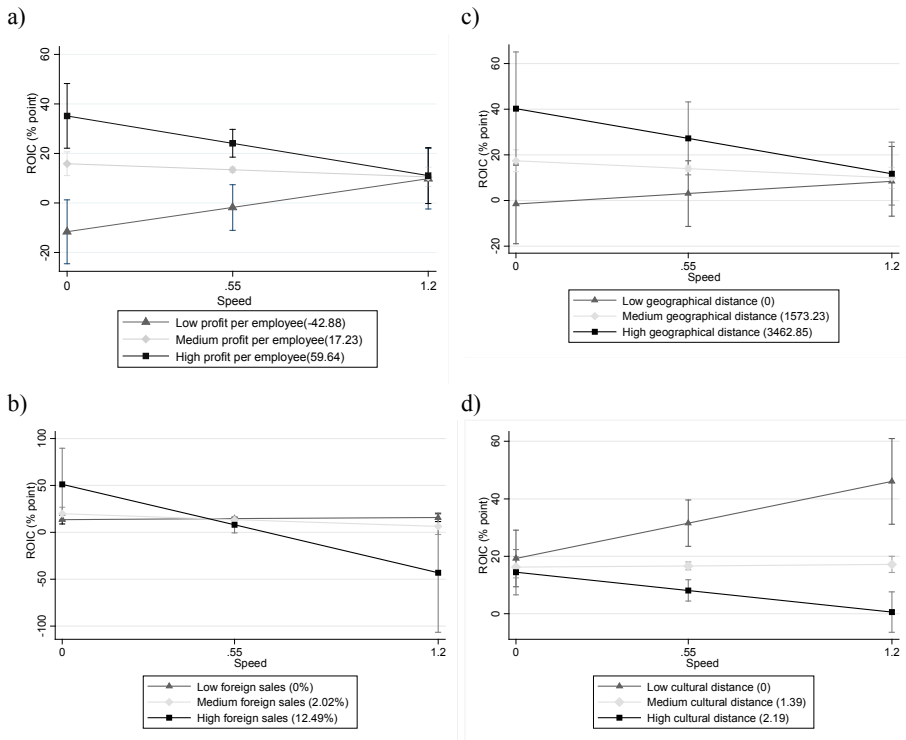


Figure 1. Graphical interpretations of the impact of speed on firm performance: (a) with low, medium and high levels of profit per employee; (b) with low, medium and high levels of foreign sales; (c) with low, medium and high levels of geographical distance; (d) with low, medium and high levels of cultural distance.

Source: authors' own figure.

Figures 1a, 1b, 1c, and 1d present the combined impact of the main effect of speed and its interaction effects. Impact is measured with different speed levels and three different levels of profit per employee, foreign sales, geographical distance and cultural distance. The levels of speed vary between the lowest possible and the highest possible level. The levels of profit per employee are -42.88, 17.23, and 59.64, which correspond to the lowest level of profit per employee, the mean, and the mean  $\pm 1$  standard deviation. The levels of foreign sales are 0%, 2.02%, and 12.49%, which correspond to the lowest level of foreign sales, the mean, and the mean  $\pm 1$  standard deviation. The levels of geographical distance are 0, 1573.23, and 3462.85, which correspond to the closest geographical distance, the mean, and the mean  $\pm 1$  standard deviation. Finally, the levels of cultural distance are 0, 1.39, and 2.19, which correspond to the closest cultural distance, the mean, and the mean  $\pm 1$  standard deviation. When a firm's speed is 0.55 and its profit per employee is 59.64, its ROIC decreases to 24.10 percentage points. For the same speed, but with a profit per employee of -42.88, a firm's ROIC increases to -1.79 percentage points. Similarly, when a firm's speed is 1.2 and its foreign sales are 12.49% of total sales, its ROIC decreases to -42.90 percentage points. For the same speed, but with foreign sales of 0.0% of total sales, a firm's ROIC increases to 51.38 percentage points.

## DISCUSSION AND CONCLUSION

This study explores the question of under what circumstances rapid foreign expansion is the proper method of FDI strategy, beneficial to a company's performance. Recent studies prove that an accelerated speed of internationalization is significantly beneficial for companies from emerging markets. According to the IMF, Poland is an emerging market, hence we predict that Polish firms should fit into the new multinational enterprise pattern by investing at increased speed. To research how well the theory fits the reality, we investigate the potential moderators of the relationship between speed of FDI expansion and a company's performance. We predict that the relationship will depend on the firm's internal resources as well as its strategy, foreign influence and the competitive pressures acting on a local firm.

We find that rapid FDI expansion negatively influences firm performance when combined with the FSAs (profit per employee, foreign sales) as moderators. In the case of the moderating role of strategy, rapid expansion is beneficial if the location strategy is consistent with the gradual localization

approach, i.e. investing in countries that are culturally and geographically close to the home country. Up to 2011, Polish companies invested in almost 100 countries and the majority of them (almost 85%) were based in Europe, while immediate neighbouring countries, such as Germany, the Czech Republic, Slovakia, Ukraine, Belarus, Lithuania and Russia, accounted for over a half of Polish companies' foreign entities (Klysik-Uryszek and Kuna-Marszalek, 2015). By doing so, they follow the traditional Uppsala model (Johanson and Vahle, 1977).

Poland is also a transition economy and this has an enormous impact on Polish companies' pattern of FDI. Not so long ago the Polish market metamorphosed from a centrally planned economy to a market economy. Companies that were previously state-owned or newly set up have not yet caught up with the global environment and are still in the process of learning how to internationalize and operate in the new market economy in Poland, let alone in foreign markets. Therefore they might not perfectly fit with the emerging market's characteristics. FSAs possessed by Polish companies are not effectively used when placed under high-speed foreign market expansion. This means that business know-how has not been properly acquired in such a way as to be able to utilize it on a global scale.

Polish firms need more time to correctly make use of the managerial know-how and knowledge acquired from international experience. When it comes to localization strategy, Polish companies should follow the steps of the well-known gradual internationalization (Johanson and Vahlne, 1977). The liability of foreignness faced in new markets is hard to overcome. Hence, Polish firms should start from culturally and geographically close countries and then move forward to further foreign markets if expansion is taking place at an accelerated speed. This motive is found in the investments of Action S. A., established in 1991, which is a distributor and manufacturer of consumer electronics, IT hardware, home appliances and office products. It entered the Ukrainian market in 2004 and opened a German branch in 2013.

Another example of a company that started its internationalization from a culturally and geographically close country is Bioton S.A.. Its first international investment took place in 2004 by incorporating ZAO Bioton Wostok in the Russian Federation, followed by the incorporation of Bioton-Asia TOO in Kazakhstan in 2005 and investments in Ukraine and China in 2006. In 2007, it took over Biopartners Holdings AG of Switzerland.

This study has important managerial implications. Considering the results, rapid FDI expansion is effective for firms that implement the right

localization strategy, yet the study suggests that managers should introduce a countermeasure to eliminate the negative moderating effect of speed combined with FSAs. Managerial know-how and international experience should not be overlooked, and more attention should be given to these so that they can be effectively utilized in the internationalization process.

Despite a number of theoretical contributions our research has several limitations. First, it does not consider the modes of FDI expansion. The moderating role of the foreign entry mode on the relationship between speed and performance should be included in future studies. The difference between acquisitions and greenfield investments is significant, particularly where the speed of the investment should be fitted to the mode of FDI expansion. Second, future research should expand the range of our study by including companies from other transition, as well as emerging economies, to see if the pattern of FDI expansion resembles the pattern of Polish firms. Finally, data limitations prevent us from considering whether the industry to which a firm belongs moderates the relationship between speed and performance. Future studies should include industry influences in their research.

All these considered, our study shows that the choice of rapid or slow FDI expansion is not easy and is indeed ambiguous. Our results demonstrate that upon facing such a choice, all internal contingencies should be carefully considered. Firms vacillating between rapid and unhurried FDI expansion must assess their FSAs and FDI strategy so as to be able to wisely decide on the appropriate speed of prospective FDI expansion; then they will be successful in foreign markets.

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*Received: March 2016, revised: February 2017*

## APPENDIX

Table A1  
Data sources

Variable	Definition	Source
1	2	3
FSAs		
<b>Total assets</b>	Log form of firm's total assets; USD 1,000; control for assets power of parent firm	Osiris database
<b>Profit per employee</b>	Average profit that each employee generates; USD 1,000; measurement of managerial know-how	Osiris database
<b>Firm age</b>	Years since establishment; proxy for firm's general experience	Osiris database Companies' official websites
<b>Years since firm's first FDI</b>	Number of years since firm's first FDI; measurement of international management capabilities	Companies' official websites Financial statements
<b>Foreign sales</b>	Ratio of foreign sales to total sales; proxy for international experience	Companies' official websites Financial statements
<b>Patents</b>	Number of patents that each company possesses; proxy for the output of R&D intensity	Patent Office of the Republic of Poland
Strategy		
<b>Average cultural distance</b>	Average cultural distance between host countries and Poland for all FDIs; computed using the Kogut and Singh (1988) formula, based on Hofstede's (1980) four cultural dimensions, to calculate the average cultural distance	Hofstede homepage
<b>Inter-regional expansion</b>	Dummy variable: investment outside Europe region – value 1; investment inside Europe region – value 0	Companies' official websites Financial statements
<b>Average geographical distance</b>	Average air distance in kilometres between capital cities of partner countries and Poland for all FDIs	CEPII
<b>Rhythm</b>	Kurtosis of the count of new FDIs made by a company each year through the years	Companies' official websites Financial statements
Foreign influence		
<b>FDI net inflow</b>	Net inflows (new investment inflows less disinvestment) in Poland from foreign investors, divided by GDP.	World Bank Database

Table A1, cont.

1	2	3
Domestic influence		
<b>Future market share</b>	$I_i = \frac{\sum_j FI_{ij}}{\sum_j FA_{ij}}$ , where $I_i$ is the NACE sector (from NACE 1-digit to NACE 3-digit), $FI_{ij}$ = the firm's fixed investment; $FA_{ij}$ = the firm's total fixed assets; measures non-price competition.	Osiris database
FDI speed		
<b>Speed</b>	Average number of foreign subsidiaries in new host countries, divided by the number of years since the first FDI.	Companies' official websites Financial statements
Firm performance		
<b>ROIC</b>	Net income less dividends, divided by total capital	Osiris database
<b>ROA</b>	Net income divided by assets	Osiris database
<b>ROE</b>	Net income divided by average shareholders' equity	Osiris database

Source: authors' own table.