

Aleksandra Wąsowska, Ph.D. Candidate
School of Management, University of Warsaw, Poland

Krzysztof Oblój, Professor
School of Management, University of Warsaw &
L.Kozminski University, Poland

RESOURCE - BASED DETERMINANTS OF INTERNATIONALIZATION OF POLISH COMPANIES

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ABSTRACT

In this paper we address the question how firm-level resources, capabilities and organizing context affect the propensity of Polish public companies to internationalize their operations? In doing so we make three contributions to the literature. First, it provides insight into the little examined emergent economies of Eastern and Central Europe. Second, we try to extend the theory by testing impact of firm-specific resources on the process of internationalization exploiting all three major approaches to resource-based view of the firm – resource heterogeneity, capabilities and organizing context (Newbert, 2007). Finally, we extend our knowledge about resources and internationalization of Polish companies listed at the stock exchange. Our analysis of total sample of Polish listed companies show that general availability of resources influences positively level and scope of their internationalization but specific types of tangible and intangible resources influence level and scope of internationalization in different ways.

Resource-based determinants of internationalization of Polish listed companies

1. Introduction

Meyer and Peng (2005) in their important paper on management and IB theories claim that the transformation of Central and Eastern European (CEE) countries from planned to market economies has provided us with a unique research setting to test the applicability of existing theories in a new context (Meyer & Peng, 2005). They indicate three areas for future research. The first area relates to motives and entry strategies of foreign entrants, especially in the form of JVs that were a predominant mode in the 80s and 90s, and acquisitions and greenfield investments later on. The second area consists of research on local incumbents' moves, especially those related to restructuring and adaptation efforts. The third area, relatively the most recent in comparison with the former two, deals with entrepreneurship, i.e. newly established local firms that after an initial period of development might decide to internationalize their operations (Bruton, Ahlstrom, & Obloj, 2008). Meyer and Peng's (2005) conclusion from the extensive analysis of types of theories applied and tested, and research performed, was that CEE research agenda focused mainly on the importance of contextual influences such as institutions. It seems to be a very natural development because of very different transformation paths that these countries took and their immediate impact on (institutions') development of institutions. For example, we can consider Poland as a representative of a drastic, 'cold turkey' approach to the transformation of a political, economical and institutional environment (Slay, 1994). Poland started to build an institutional framework appropriate to a market economy and a political democracy immediately after 1989, when drastic austerity and institution development programs were introduced in order to transform the economy. Other CEE countries, like the Czech Republic or Hungary took a more evolutionary approach to transformation of its political, economic and institutional environment (Slay, 1994). As a result different institutional environments emerged that allowed researchers to explore their dynamics and impact upon firms' decisions and actions.

Research questions related to resources that are crucial in such institutional environments to the firm's success (Meyer & Peng, 2005;) and to internationalization paths that firms from CEE take remain relatively underdeveloped (Yamakawa, Peng, & Deeds, 2008). In this paper we address the question that relates to both of these areas: how do firm-level resources, capabilities and organizing context affect the propensity of Polish public companies to internationalize their operations? In doing so we make three contributions to the literature. First, we provide insight into the still little examined emergent economies of Eastern and Central Europe. Second, we try to extend the theory by testing

impact of firm-specific resources on the process of internationalization exploiting all three major approaches to a resource-based view of the firm – resource heterogeneity, capabilities and organizing context (Newbert, 2007). Finally, we extend our knowledge about resources and internationalization of Polish companies listed on the stock exchange. Initially we decided to use a set of public companies for two reasons. First, one of the crucial problems in doing research in Central Europe is a lack of good and reliable databases. Due to institutional requirements public companies have to publish reliable data on their performance and operations which increases validity of research. Second, public companies are very visible in emerging economies and serve as a benchmark of good management practices for other companies. However, once we started to study the literature we were surprised to discover that the number of studies of public companies' actions and behaviors in CEE, and emerging economies in general, is very limited. We reviewed published research on performance and operations of listed companies in 30 of the most influential journals (used in FT research ranking) from January 1995 to April 2009.¹ We used the following key words in our search: public companies, listed companies, performance, internationalization, developing countries, emerging economies, China, India, Brazil, Russia, Central Europe, Eastern Europe, Central and Eastern Europe, Poland. The result of this review is striking. In spite of all calls in the field of IB to study firms from CEE, we found no studies of the relationship of public companies' resources and their internationalization, which adds validity to our choice of sample and topic.²

The article is structured as follows. In section 2 we discuss a theoretical framework of resource based view and internationalization process. Hypothesis development follows. Then we detail the data selection procedure and model specification. In section 4 we provide the results of the analysis. We conclude with a discussion on implications and limitations of our findings.

2. Theoretical framework and hypotheses

A significant body of international business literature has focused on the role of firm-specific advantages in the internationalization process (Dunning and Lundan, 2008). Since Hymer's (1976) study of the role of firm's proprietary resources in the process of internationalization via FDI, researchers have identified several factors supporting internationalization. Most of the studies concentrate on evaluating the significance of different resources for the development of firm's

¹ We decided to use 1995 as a threshold because of time lag of transformations' effects and publication cycle. We have excluded some journals that seemed unsuitable for our study like Journal of American Statistical Association, Journal of Operations Research and so called practitioners journals – Academy of Management Perspectives, CMR, HBR and SMR. We understand that the result of our research would be different if we had extend our analysis to lower class journals or if we had used different key words.

² It has to be stressed that we found several studies of Chinese and Indian public companies from RBV perspective.

presence and/or competitive advantage in foreign markets. The main evolution path of this research stream led from studying the impact of tangible assets to studies of the role of intangible resources that are fungible, flexible, and difficult to imitate. An integration of these studies was performed by J. Dunning in the well-known OLI framework (Dunning & Lundan, 2008). The framework postulates that there are three main sources of advantages that explain firms' decision to internationalize their production and operations. Ownership-specific advantages take form of privileged possession or access to tangible and especially intangible assets (e.g. economies of scale, scope and specialization, production, marketing, organizational systems, knowledge and accumulated experience, institutions like incentive systems, culture, leadership). Location-specific factors refer to uneven spatial distribution of natural and created resources. Internalization advantage means the ability to circumvent or exploit market imperfections.

The IB approach to the relationship between firm's ownership, location and internalization advantages and its actions to internationalize operations parallels resource-based concepts of firm's competitive advantage in the theory of strategy (Kotha, Rindova, & Rothaermel, 2001). The Resource-based View (RBV) sees organizations as bundles of resources which can generate performance heterogeneity and rent differentials across firms. These resources can be either of a tangible or intangible nature, although recent research has argued, similarly like OLI framework, that intangible resources are the principal source of competitive advantage (Amit & Schoemaker, 1993; Peteraf & Barney, 2003;).

Particularly today, intangible resources are thought to be crucial for competitive advantage since competition is increasingly characterized by rapid technological and regulatory changes with fewer restrictions in information transfer (Hall, 1992). Intangible resources are by definition not easily transferred (Szulanski, 2000), harder to imitate than tangible assets, exhibit time compression diseconomies (Dierickx & Cool, 1989), and are difficult to trade on the market for resources (Peteraf & Barney, 2003). Despite the importance of intangible resources, there has been little theoretical integration of research on the relationship between a firm's intangible resources, the resulting capabilities, and the firm's performance (Makadok, 2001; Carmeli & Tishler, 2004). Recent assessment of empirical research on the resource-based view of the firm (Newbert, 2007) indicates three parallel (but not mutually exclusive) approaches categorized according to independent –dependent variable pair.

The first approach focuses on the impact of the quantity and heterogeneity of resources and correlates it with measures of firm performance or competitive advantage. An example of this approach would be a study by Bruton and Rubanik (2002) that showed that tangible resources like financing, technology, logistical systems of entrepreneurial firms are particularly restricted in emergent economies and limit

their ability to develop competitive advantage. The result is that entrepreneurial firms in emergent economies need to be more proactive, able to acquire and leverage their intangible resources, and learn to an even greater degree than entrepreneurs in developed economies (Knott, Bryce, & Posen, 2003; Obloj et.al.,2010).

The second approach focuses on the role of possession of dynamic capabilities onto competitive advantage (Eisenhardt & Martin, 2000). Strategy scholars employing this approach study primarily human resource, innovative, IT, technological, learning capabilities (Newbert, 2007). An interesting example of a very recent work following this path is a study of impact of managerial ties of Chinese managers with suppliers, buyers, competitors, business associations, government official on their firms performance (Zhang & Li, 2008)³

Finally, there is a group of scholars interested in specific firm-level conditions that facilitate utilization of resources and capabilities that a firm controls. This approach focuses on the impact of such variables as firm's routines rooted in its history, organization (structure), strategy, level of diversification on resources and capabilities exploitation.

Integrating a framework proposed by Newbert (2007) with research in the field of IB we propose a research model of Polish public companies shown in Figure 1.

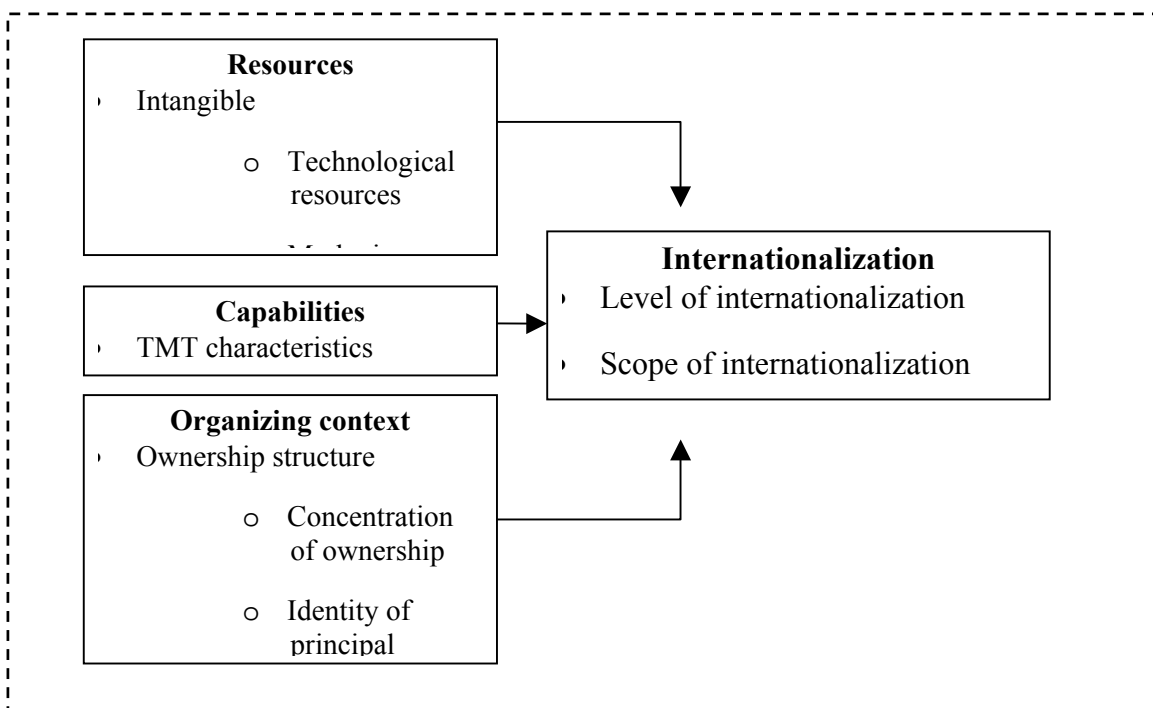


Figure 1. Hypothetical relations between firm-specific variables and internationalization strategies of Polish public firms..

³ We treat social capital in this case as capability because ties were measured with actions related questions e.g. : „to what extent have you utilized personal ties with the top executives at suppliers firms during the past three years?”.

According to theoreticians of organizational strategy, innovativeness constitutes one of the main sources of competitive advantage in the global economy (Bettis & Hitt, 1995; Witz, Mathieu, & Schilke, 2007). The relation between innovativeness and potential to compete on foreign markets was suggested by technological models of foreign trade, such as technological gap theory (Posner, 1961) and product life cycle theory (Vernon, 1966). Technological resources are also one of the sources of ownership advantages, analyzed in OLI model (Dunning J., 1980). The relation between innovativeness and foreign direct investments was confirmed by research conducted both on industry (Caves, 1974) and firm levels (Trevino & Grosse, 2002). Technological resources (product innovations, patents and process innovations) were also found to positively affect export propensity and export intensity (Lopez-Rodriguez & Garcia-Rodriguez, 2005). We will therefore hypothesize that:

H. 1.1. Technological resources are positively related to the degree of internationalization.

H. 1.2. Technological resources are positively related to the scope of internationalization.

Empirical research proves that product differentiation, followed by marketing resources, positively affects firms' capability to compete on several markets (Helsen, Jedidi, & DeSarbo, 1993). Literature on foreign direct investment suggests that high advertising intensity is related to capital forms of internationalization (Gatignon & Andersen, 1988), assuring higher control over intangible assets (Caves, 1974). We will expect marketing resources to be associated with entering new foreign markets through FDIs. Thus, we hypothesize that:

H.2. Marketing resources are positively related to the scope of internationalization.

One of the relatively new research questions in the IB literature relates to the impact of Top Management Teams (TMT) on the process of internationalization. Early studies conducted in this area focused on the influence of TMT on export behavior (Leonidou, Katsikeas, & Piercy, 1998). This field of research suggested that propensity to export and export intensity depend on the age of managers (McConnel, 1979), (Czinkota & Ursic, 1991), level of education (Dichtl, Koglmayr, & Miller, 1990), international experience (Dichtl, Koglmayr, & Miller, 1990), nationality (Simmonds & Smith, 1968), command of foreign languages (Dichtl, Koglmayr, & Miller, 1990), (Holzmuller & Kasper, 1990) and psychological characteristics, such as propensity to risk (Simmonds & Smith, 1968), (McConnel, 1979), innovativeness (Simmonds & Smith, 1968), adaptation capabilities (Holzmuller & Kasper, 1990).

Research on the influence of TMT characteristics on firm's actions is grounded in the upper echelons theory, which states that a strategy can be seen as a sequence of decisions, taken under the conditions of limited rationality and depending on the cognitive lenses employed by managers (Hambrick & Mason, 1984). These cognitive lenses are structured by the way in which managers perceive future events, possible courses of action and their consequences (March & Simon, 1964). Upper echelons theory operationalizes these psychological factors using observable characteristics, such as age, experience, background, diversity within TMT (Hambrick & Mason, 1984).

Empirical research suggests that the age of managers affects the decision-making process (Wiersema & Bantel, 1992). Hambrick and Mason (1984) associate the age of TMT with the propensity to take risks, reflected in product innovations, diversification and using high financial leverage. Herrman and Datta (2005) have proved that younger managers are more willing to undertake geographic diversification (Herrmann & Datta, 2005). On this basis we hypothesize that:

H.3.1. Age of the CEO negatively affects the level of internationalization.

H 3.2. Age of the CEO negatively affects the scope of internationalization.

Competing on foreign markets requires specific managerial capabilities, such as cross-cultural communications skills, global perspective combined with local responsiveness, capability to cooperate with foreign partners (Adler & Bartholomew, 1992). On this basis we hypothesize that:

H.4.1. Presence of foreigners in TMT positively affects the level of internationalization.

H. 4.2. Presence of foreigners in TMT positively affects the scope of internationalization.

Hypotheses 1-4 relate to resources and capabilities, expected to influence the internationalization strategy. According to the VRIO model (Barney, 1991), building the sustainable competitive advantage requires not only valuable, rare and inimitable resources, but also a specific organizing context. Ownership structure is one of the main factors influencing ways to mobilize resources. Empirical research confirms that the ownership structure is one of the determinants of internationalization process (Lien, 2005). On this basis we formulate a general hypothesis on the relation between the ownership structure and the internationalization strategy

Managers may be willing to undertake geographical diversification even if it decreases the shareholders' value. Internationalization, contributing to the growth of the company, enhances prestige

(Jensen, 1986), increases the salary of managers (Jensen & Murphy, 1990), and, thanks to the diversification of financial flows, makes it easier to manage financial liquidity (Amihud & Lev, 1981). At the same time, research proves that the concentration of ownership strengthens shareholders' control, thus preventing managers from taking risky decisions (Burkart, Gromb, & Panunzi, 1997) and decreasing the propensity to diversify excessively (Amihud & Lev, 1981). We may therefore hypothesize that:

H.5.1. Concentration of ownership is negatively related to the level of internationalization.

H.5.2. Concentration of ownership is negatively related to the scope of internationalization

While the influence of shareholders on firm's strategy depends on the level of concentration of capital, their goals depend mostly on the identity of shareholder (family, institutional investor, bank, etc.) (Thomsen & Pedersen, 2000). The impact of the identity of shareholder on the strategy of firms is an important, yet rarely explored research question (Tihanyi, Johnson, Hoskisson, & Hitt, 2003), (Fernandez & Nieto, 2006). Research shows that the identity of shareholder influences the access to resources (Shrader & Simon, 1997) and the propensity to take risk (Thomsen & Pedersen, 2000).

Research investigating the relationship between the ownership structure and the level of internationalization focused mostly on family firms, considered as insufficiently endowed in technological and financial resources and managerial competencies (Graves & Thomas, 2006), and thus less likely to pursue international expansion (Fernandez & Nieto, 2006). However, there is also research suggesting that family firm owners, in the interests of assuring long-term survival and sustainable growth, are more willing to undertake risky decisions to internationalize (Zahra, 2003). Presence of funders of the firm in its capital structure is associated with long-term orientation towards reputation and sustainable growth (Anderson, Mansi, & Reeb, 2003). On this basis we hypothesize that:

H.6.1. Presence of individual investor is positively related to the level of internationalization.

H.6.2. Presence of individual investor is positively related to the scope of internationalization.

Research shows that announcement of foreign acquisition may lead to an extraordinary increase in stock price (Doukas & Travlos, 1988). Therefore, the presence of short-term oriented shareholders, such as investment funds is expected to enhance internationalization (Tihanyi et.al., 2003). Pension funds, although more conservative and long-term oriented than investment funds, were also found to favor internationalization, considered a vehicle of long-term growth (Tihanyi, Johnson, Hoskisson, &

Hitt, 2003). On this basis we may expect both types of institutional investors to be willing to pursue international expansion. We therefore hypothesize that:

H.7. Presence of institutional investor is positively related to the scope of internationalization.

Companies deciding to go international incur additional costs, resulting from the ‘liability of foreignness’. The presence of foreign investors is regarded as a factor enhancing knowledge on foreign markets (Fernandez & Nieto, 2006), thus shortening the perceived distance between the company and its potential customers abroad. On this basis we hypothesize that:

H.8.1. Presence of foreign investor is positively related to the level of internationalization.

H.8.2. Presence of foreign investor is positively related to the scope of internationalization.

3. Data and methodology

3.1. Data set

The sample examined in the empirical research consists of Polish non-financial companies listed on the Warsaw Stock Exchange. Due to the lack of comprehensive databases of Polish companies, the first step of the present research was to create a multisource database, containing information on resources, capabilities and internationalization strategies. Taking into account difficulties in collecting survey data from companies operating in transition economies, reported in previous studies, we decided to focus our research on companies traded on the stock exchange, for which financial data is publicly available. The data employed in this study was extracted from annual reports for 2006 and National Court Register and Polish Patent Office databases.

3.2. The Warsaw Stock Exchange – Some history and facts.

Founded in 1817, the Warsaw Stock Exchange (WSE) or Commercial Exchange functioned through most of the first part of the nineteenth century. Like most of the early exchanges in Europe and America, it traded mostly bonds and a few equity securities. Not all securities were traded through the exchange. Nevertheless, by the second half of the century, buying and selling equity shares became the main activity at the stock exchange. Between World War I and II, the Polish stock exchange operated smoothly and ran several subsidiary exchanges throughout Poland – in Katowice, Cracow,

Lodz, Poznan and Vilnius. After World War II, when a planned economy was introduced in Poland by the Communist governments imposed by the Soviet Union, the WSE ceased to operate.

In 1989, with the beginning of the transformation from a planned to a market economy and from communism to democracy, the new Polish governments started to reintroduce institutions necessary in a modern society. In October 1990, the French and Polish governments signed a cooperative agreement to develop the Warsaw Stock Exchange. In April 1991, the Warsaw Stock Exchange was re-established in the form of a joint stock company and trading began, at first only once a week. Five companies were listed at this time – Tonsil SA, Prochnik SA, Krosno SA, Kable SA and Exbud SA. By the end of 1991, there were nine companies quoted with a total market value of 100 million Polish zloty. (Table 1 shows growth of WSE in some details.)

The WSE developed naturally over time. In 1993, it became totally computerized and parallel markets in derivatives and other instruments were created. In 1994, share options were introduced and traded; trading instruments was extended throughout the workweek, and the WSE became a member of the World Federation of Exchanges. Continuous trading was introduced in 1996. By 1997, the WSE's market capitalization had reached over USD 10.0 billion, representing 100 quoted companies. The American Committee of Exchanges and Securities recognized the WSE as a designated international market, thus confirming that the WSE had attained, U.S. standards for corporate governance and control in the eyes of American regulators. By 1998, market capitalization exceeded USD 20.0 billion. With new securities and options introduced and traded each year, the WSE is considered the most sophisticated and largest exchange in the CEE region (See Figure 2).

By the end of 2001, two hundred thirty companies were quoted on the WSE, representing three main sectors: manufacturing (138 companies), financial services (25 companies), and other services (51 firms). Their ownership structures are very different and difficult to characterize, since in many cases they evolved over time. Nevertheless, we can group them by their origins. Fifty-two companies were first listed on the stock exchange by the Polish State Treasury. After the first nine companies were put on the market in 1991, the State Treasury added an average of five companies per year, until the very end of the 90s when the pace slowed down considerably. As late as 1998, the State Treasury privatized through public offerings five companies – Polish Telecom was the largest placement. In both 1999 and 2000, in contrast, only one company per year was privatized in this manner. (In 1999, for example, PKN Orlean, Poland's largest petrochemical company.) The second significant group of companies at the stock exchange are former state-owned companies that were privatized through

private placement, management buyouts (MBOs) or initial public offerings (IPOs) on the WSE, but to a limited number of shareholders. The third group of companies are firms that participated in the program of National Investments Funds. Their shares were placed on the WSE by investments funds. The largest group, however, sixty-four companies, are private companies on the WSE. These firms were generally formed in the beginning of 90s and listed on the stock exchange by their original owners as a means of getting capital for further expansion. The majority of placements occurred in the ‘good years’ of 1998 and 1999, and 2005-2007.

Table 1. WSE development

	1992	1995	1998	2001	2006	2009
Total market capitalization in Polish zł (bn)	0,3	9,4	53,6	103,4	437,8	285,6
Number of companies quoted WIG	16	65	198	230	284	376
	1040,7	7585,9	12795,6	13 922,16	50 411,82	30 419,03

Source: 10 years of WSE, *WSE Publications*, Warsaw 2001; www.gpw.pl

As of 31 December 2006, there were 279 companies listed on the Warsaw Stock Exchange. Excluding foreign companies, financial sector companies and companies that were withdrawn from quotation after December 2006 and whose financial statements were no longer publicly available at the moment of building the database, the sample consisted of 210 companies.

3.3. Description of variables

Among three main internationalization strategies: export, licensing and foreign direct investments, the first one is most commonly used by Polish companies. Out of the 210 companies included in the sample, 154 had revenues partly based on foreign markets, while 77 had operations abroad. For the purpose of the present study, international involvement will be defined as 1) selling products or services outside the Polish territory 2) having foreign operations. Our main dependent variables are 1) degree of internationalization (DOI), assessed as a foreign sales to total sales ratio and 2) scope of internationalization, assessed as the number of countries in which the company has foreign subsidiaries. Independent variables include tangible and intangible resources, capabilities and organizing context variables, as suggested in section 2. We control for firm size, age since Initial Public Offering, “newness” of tangible resources and industry. Table 2 summarizes the variables included in the study and their operationalization.

Table 2. Definitions of variables

Variable	Operationalization
Dependent variables	
Degree of internationalization (DOI)	Foreign sales / total sales
Scope of internationalization (SOI)	Number of foreign countries in which the company has its subsidiaries
Independent variables	
Marketing resources (MARKETING)	Selling expenses / total assets
Knowledge intensity (KNOWLEDGE)	Intangible assets / total fixed assets
Patent applications (PATENTS)	Patent applications submitted in the last 20 years (0, 1), dummy variable
Foreigners in TMT (FOR_TMT)	Number of foreigners in Top Management Team
CEO age (AGE_CEO)	Age of the CEO
Concentration of ownership (OWN)	% of shares owned by principal investor
Principal shareholders – corporate (COR_OWN)	0/1, dummy variable
Principal shareholder – financial (FIN_OWN)	0/1, dummy variable
Principal shareholder – private (PRIV_OWN)	0/1, dummy variable
Principal shareholder – foreign (FOR_OWN)	0/1, dummy variable
Former state-owned company (STATE)	0/1, dummy variable
Control variables	
Size (SIZE)	Ln (total assets)
Tangible assets renewal (TANGIBLES)	Net tangible assets / gross tangible assets
Public age (AGE)	Age since Initial Public Offer
Industry	Sectors, according to Warsaw Stock Exchange classification in line with WSE industry indexes (Food, Construction, Chemicals) and Technology – intensive index (Techwig) included as dummy variables.

3.4. Methodology of analyses

The objective of the empirical research is to determine firm-specific factors related to 1) selling products and services in foreign markets, 2) having foreign operations. In the first step of our analysis we conduct descriptive and parametric test statistics. We test for differences between 1) firms that sell products and services in the foreign markets and those who sell only in Poland, 2) firms that have

foreign operations and those which operate only in Poland. In the second step we estimate multiple regression models, explaining 1) the level of internationalization, 2) the scope of internationalization.

4. Empirical results

Table 3 reports the differences between firms that sell products and services in foreign markets and those who sell only in Poland. In table 4 we present differences between companies having foreign operations and those operating only in Poland. Statistically significant differences provide preliminary evidence for association between company resources and internationalization.

Table 3. Mean comparison test (companies with foreign sales vs. companies without foreign sales)

	Companies without foreign sales	Companies with foreign sales	Diff
PATENTS	0,16	0,47	0,31***
MARKETING	0,08	0,08	0,00
TANGIBLES	0,57	0,63	0,05*
KNOWLEDGE	0,15	0,08	-0,07**
FOR_TMT	0,30	0,11	-0,19**
AGE_CEO	44,49	45,26	0,77
STATE	0,23	0,50	0,27***
OWN	0,35	0,39	0,04
FIN_OWN	0,25	0,12	-0,13**
COR_OWN	0,21	0,41	0,19***
PRIV_OWN	0,52	0,42	-0,10
FOR_OWN	0,18	0,19	0,02

Difference of means significant at the * 1% level, **5% level, ***1% level

Table 4. Mean comparison test (companies with foreign operations vs. companies without them)

	Companies without foreign operations	Companies with foreign operations	Diff
PATENTS	0,32	0,51	0,18***
MARKETING	0,07	0,09	0,01
TANGIBLES	0,60	0,63	0,03
KNOWLEDGE	0,09	0,10	0,01
FOR_TMT	0,16	0,14	-0,02
AGE_CEO	45,10	45,03	-0,07
STATE	0,37	0,53	0,15**
OWN	0,36	0,41	0,06*
FIN_OWN	0,17	0,13	-0,04
COR_OWN	0,30	0,45	0,15**
PRIV_OWN	0,50	0,36	-0,13*
FOR_OWN	0,15	0,26	0,11*

Difference of means significant at the * 1% level, **5% level, ***1% level

Table 5.

Correlation matrix (companies with foreign sales, n = 154)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1. Techwig	1,00																							
2. Construction	-0,11	1,00																						
3. Chemicals	-0,06	-0,05	1,00																					
4. Real estate	-0,04	-0,04	-0,02	1,00																				
5. Telecom	0,33	-0,04	-0,02	-0,01	1,00																			
6. Fuels	-0,05	-0,04	-0,02	-0,02	-0,02	1,00																		
7. Media	0,20	-0,05	-0,03	-0,02	-0,02	-0,02	1,00																	
8. Food	-0,11	-0,10	-0,05	-0,04	-0,04	-0,04	-0,05	1,00																
9. IT	0,71	-0,08	-0,04	-0,03	-0,03	-0,04	-0,04	-0,08	1,00															
10. Age	-0,15	0,27	-0,19	-0,03	-0,04	-0,10	-0,10	-0,03	-0,01	1,00														
11. State	-0,05	-0,03	-0,01	-0,01	-0,02	-0,01	-0,02	-0,04	-0,04	0,10	1,00													
12. Marketing	-0,06	-0,25	-0,05	-0,08	-0,06	-0,07	-0,02	0,14	-0,06	-0,08	-0,10	1,00												
13. Size	-0,16	-0,07	0,21	0,15	-0,08	0,43	-0,01	0,08	-0,10	0,08	0,11	-0,07	1,00											
14. Knowledge	0,29	-0,08	-0,02	-0,06	0,00	-0,05	0,06	-0,06	0,26	-0,23	-0,02	0,11	-0,07	1,00										
15. FOR_TMT	-0,07	-0,06	-0,03	-0,02	-0,02	-0,03	-0,03	0,07	-0,05	0,01	-0,02	-0,04	-0,03	0,02	1,00									
16. AGE_CEO	-0,07	0,10	-0,05	0,00	0,02	0,00	-0,05	-0,07	-0,04	0,11	0,03	-0,16	-0,01	-0,01	0,83	1,00								
17. OWN	-0,09	-0,10	0,08	0,07	-0,01	0,11	-0,06	0,09	-0,03	-0,13	0,07	-0,09	0,30	0,04	-0,08	-0,07	1,00							
18. FIN_OWN	0,06	0,02	-0,06	-0,04	-0,04	-0,05	-0,06	0,09	0,07	0,00	-0,05	0,01	-0,15	0,21	-0,07	-0,12	-0,24	1,00						
19. COR_OWN	-0,04	0,06	-0,05	0,14	0,02	-0,02	0,03	0,01	-0,04	0,16	0,15	-0,06	0,20	-0,02	0,00	0,08	0,32	-0,31	1,00					
20. PRIV_OWN	0,03	-0,04	-0,06	-0,10	0,02	-0,12	0,03	0,00	0,01	-0,18	-0,11	0,03	-0,20	-0,08	0,14	0,06	-0,18	-0,28	-0,68	1,00				
21. FOR_OWN	-0,07	0,19	-0,08	0,09	-0,06	-0,07	0,02	0,07	-0,05	0,11	-0,05	0,16	0,17	0,11	-0,08	0,05	0,14	0,06	0,36	-0,35	1,00			
22. Tangibles	-0,03	-0,03	-0,01	-0,01	-0,01	-0,01	-0,01	-0,02	-0,02	-0,08	-0,01	0,05	-0,08	-0,04	-0,02	-0,06	-0,11	-0,03	-0,07	0,10	-0,04	1,00		
23. Patents	-0,17	0,11	0,09	0,01	-0,11	0,15	-0,16	-0,16	-0,13	0,26	0,02	-0,27	0,15	-0,17	-0,18	-0,07	0,11	0,00	0,00	-0,07	-0,04	-0,08	1,00	
24. DOI	-0,32	0,08	0,13	-0,04	-0,13	-0,01	-0,19	-0,15	-0,24	0,18	-0,01	-0,07	0,22	-0,22	-0,02	0,01	0,08	-0,02	0,06	-0,06	0,00	-0,04	0,33	1,00

Table 6.

Correlation matrix (companies with foreign operations, n=77)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1. Techwig	1,00																						
2. Construction	-0,11	1,00																					
3. Chemicals	-0,05	-0,06	1,00																				
4. Real estate	-0,05	-0,06	-0,03	1,00																			
5. Fuels	-0,06	-0,07	-0,03	-0,03	1,00																		
6. Media	0,36	-0,04	-0,02	-0,02	-0,02	1,00																	
7. Food	-0,08	-0,09	-0,04	-0,04	-0,05	-0,03	1,00																
8. IT	0,83	-0,09	-0,04	-0,04	-0,05	-0,03	-0,07	1,00															
9. Age	-0,06	0,30	-0,19	-0,04	-0,14	-0,11	-0,03	0,04	1,00														
10. State	-0,05	-0,03	-0,01	-0,02	-0,01	-0,02	-0,03	-0,04	0,10	1,00													
11. Marketing	0,00	-0,28	-0,03	-0,13	-0,12	-0,02	0,08	-0,07	-0,20	-0,13	1,00												
12. Size	-0,01	-0,10	0,17	0,15	0,52	0,17	-0,02	-0,13	0,07	0,08	-0,26	1,00											
13. Knowledge	0,45	-0,10	0,01	-0,10	-0,09	0,17	-0,02	0,30	-0,28	0,01	0,13	-0,15	1,00										
14. FOR_TMT	-0,04	-0,04	-0,02	-0,01	-0,03	0,00	-0,03	-0,03	0,10	0,00	-0,03	-0,02	-0,05	1,00									
15. AGE_CEO	-0,04	0,24	-0,04	0,03	0,03	-0,01	-0,20	-0,06	0,25	-0,02	-0,20	0,10	-0,10	0,71	1,00								
16. OWN	-0,07	-0,07	0,02	0,07	0,13	-0,06	-0,04	-0,05	-0,13	0,12	-0,16	0,21	-0,07	-0,14	-0,14	1,00							
17. FIN_OWN	0,15	0,12	-0,06	-0,06	-0,08	-0,04	0,21	0,21	0,04	-0,05	-0,02	-0,13	0,33	-0,04	-0,12	-0,36	1,00						
18. COR_OWN	0,07	0,03	0,01	0,18	-0,05	0,13	0,08	-0,03	0,10	0,13	-0,12	0,14	-0,09	0,13	0,19	0,24	-0,35	1,00					
19. PRIV_OWN	-0,15	-0,08	-0,12	-0,12	-0,15	-0,09	-0,09	-0,09	-0,13	-0,10	0,13	-0,26	-0,09	0,14	0,02	-0,09	-0,21	-0,64	1,00				
20. FOR_OWN	0,02	0,28	-0,10	0,09	-0,12	0,19	-0,04	-0,04	0,04	-0,07	0,13	0,00	0,11	-0,05	0,16	-0,04	0,04	0,35	-0,32	1,00			
21. Tangibles	-0,22	-0,16	0,17	0,21	0,04	-0,11	0,06	-0,19	-0,33	-0,01	0,06	0,20	-0,18	-0,13	-0,22	0,30	-0,10	-0,01	0,10	0,02	1,00		
22. Patents	-0,05	0,00	0,00	0,00	0,20	-0,12	-0,16	-0,06	0,17	-0,10	-0,30	0,23	-0,18	-0,12	-0,01	0,17	-0,01	-0,09	-0,06	-0,24	0,01	1,00	
23. SOI	0,07	-0,18	0,10	0,13	0,17	-0,01	-0,10	-0,04	-0,02	0,07	0,08	0,44	0,07	-0,05	-0,18	0,10	-0,13	0,07	-0,05	-0,12	0,20	0,10	1,00

Tables 5 and 6 present correlation matrices of variables employed in the study. Two basic empirical models (one including only control variables) are estimated to test for hypotheses referring to the degree of internationalization of Polish listed companies (table 7). Similar procedure was conducted for the scope of internationalization (table 8). All models are statistically significant below the 1% level.

As expected, Model 1 (table 7) confirms that size and industry are related to the level of internationalization and thus need to be controlled in more comprehensive models. However, no significant relation between the age since IPO and the level of internationalization was observed. Model 2 (table 6) reveals that technological resources are related to the level of internationalization. We found a positive and significant relationship of PATENTS with DOI. Interestingly, KNOWLEDGE proves to be negatively related to DOI. State history is not a significant variable. Variables relating to TMT characteristics and the ownership structure were not included in the final specification of the model.

Table 7. Regression results (dependent variable: DOI)

	Model 1 (control variables)	Model 2
Constant	-0,125	-0,132
PATENTS		0,096***
KNOWLEDGE		-0,200*
STATE		-0,002
SIZE	0,037***	0,037***
Techwig	-0,198***	-0,160***
Food	-0,172***	-0,151***
Fuels	-0,244*	-0,312***
Media	-0,201*	-0,172*
Real estate	-0,206	-0,225
AGE	0,004	
R-Squared	0,228	0,290
Adjusted R-Squared	0,191	0,245
F-Statistic	6,144***	6,526***

*p<0,1; **p<0,05; ***p<0,01

TMT characteristics proved to be statistically significant in explaining SOI (Model 2, table 8). As expected, the age of the CEO was found to be negatively related to the scope of internationalization, while the presence of foreigners in TMT is positively related to the scope of internationalization. The coefficients of variables identifying marketing resources and knowledge intensity are positive, but not statistically significant.

Table 8. Regression results (dependent variable: SOI)

	Model 1 (control variables)	Model 2
Constant	-5,132**	-3,462
AGE_CEO		-0,138***
FOR_TMT		0,068*
KNOWLEDGE		2,873
FIN_OWN		-1,093
MARKETING		4,015
SIZE	0,712***	1,047***
Food	-1,197	-1,817
Media		-3,883
Fuels		-1,805
Construction	-1,375	
R-Squared	0,220	0,373
Adjusted R-Squared	0,188	0,289
F-Statistic	6,884***	4,431***

*p<0,1; **p<0,05; ***p<0,01

5. Discussion and conclusions

The objective of this paper has been to investigate the resource-based determinants of internationalization. Using a broad sample of Polish public companies, we focused on understanding the nature of the relationship between several firm-specific factors, such as intangible resources, TMT characteristics and ownership structure and the level and scope of internationalization.

In the RBV literature, the firm size is regarded as a reflection of a greater availability of resources (Lopez-Rodriguez & Garcia-Rodriguez, 2005) or as a tangible resource facilitating the extension of the firm's resources and capabilities on an international level (Trevino & Grosse, 2002). We found that a greater company size correlates strongly with both the level and the scope of internationalization. This result is consistent with previous research on the determinants of export (Lopez-Rodriguez & Garcia-Rodriguez, 2005) and FDI (Trevino & Grosse, 2002).

With regard to intangible resources, knowledge intensity was found to be negatively related to the level of internationalization and positively related to the scope of internationalization, yet the former relation is not statistically significant. This result may indicate that the endowment in intangible assets enhances foreign operations and not foreign sales. This conclusion is also consistent with the IB literature, suggesting that capital modes of entry (as opposed to export) assure a high level of control

over intangible assets (Caves, 1974). Seeking patent protection was found to be positively correlated with the level of internationalization. No such effect was observed in the case of the scope of internationalization. Our results do not support the hypotheses relating to the positive relation between marketing resources and the scope of internationalization, since the coefficient of this variable, although positive, is not statistically significant.

Managerial capabilities have proven to be significant only in the case of the scope of internationalization. This result may indicate that the age of the CEO and the presence of foreigners in TMT are important indicators of more risky international strategies (foreign operations as opposed to foreign sales). As expected, the age of the CEO was found to be negatively correlated with the scope of internationalization. This result is consistent with prior research, suggesting that younger managers are more willing to undertake foreign expansion (Herrmann & Datta, 2005). As expected, the presence of foreigners in the TMT structure is positively related to the level of internationalization. A possible explanation of this result could be that the presence of foreigners in the TMT enhances the global orientation of the decision-making team.

Our findings do not confirm the hypotheses on the relation of the ownership structure and the level and scope of internationalization, suggested in prior research (Tihanyi, Ellstrand, Daily, & Dalton, 2000). We may assume that the relation between the ownership structure and the company strategy is dependent upon institutional factors and thus we believe that the proper interpretation of this result needs further investigation in the context of transition economies and relatively new capital markets.

The results reported in this study are subject to several limitations. First, samples used to estimate models explaining both the level and the scope of internationalization were relatively small and limited to public companies. Second, the cross-sectional nature of this study limits our interpretation of causality between the resources, capabilities and ownership structure and the level and the scope of internationalization. In order to gain a better understanding of the real causation we would need rich case-based longitudinal studies documenting the decisions and processes used by the firms in our sample to internationalize their operations. Third, we acknowledge the difficulties in measuring valuable resources, reported in previous studies rooted in the RBV perspective (Yeoh & Roth, 1999). We are also aware of the “black box” limitations resulting from the usage of demographic characteristics of TMT as proxies of managerial capabilities. Similar methodological problems are related to considering the identity of shareholders as an indicator of their strategic goals and objectives.

The present study is, to our best knowledge, the first attempt to explore the resource-based determinants of internationalization of Polish companies. It is also one of the very few studies in CEE conducted on the specific samples of publicly traded companies. In this context, we believe that the preliminary findings presented in this paper contribute to enrich our comprehension of the determinants of internationalization of the CEE companies.

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