Rapid Internationalization and Long-Term Performance: The Knowledge Link

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ABSTRACT

Drawing on the knowledge-based view and organizational learning theory, we develop and test a set of hypotheses to provide a first attempt at analyzing the effect of speed of internationalization on long-term performance. Using a panel-data sample of Spanish listed firms (1986-2010), we find that there is an inverted U-shaped relationship between speed of internationalization and long-term performance. We also find that whereas technological knowledge steepens this relationship, the diversity of prior international experience flattens it. Our results contribute to the existing IB literature on the performance of FDI, cross-country knowledge transferability, and non-sequential entry.

Keywords: Internationalization; firm performance; speed; knowledge-based view; organizational learning theory.

1. Introduction

Given the growing importance of time-based competition in the international markets (Stalk and Hout, 1990), the interest in the speed at which firms internationalize has grown dramatically in the last two decades (e.g., Acedo and Jones, 2007; Chang, 2007; Coviello, 2015; Guillén and García-Canal, 2009; Jørgensen, 2014; Knight and Cavusgil, 2004; Knight and Liesch, 2016; Li, Qian, and Qian, 2015; Mohr and Batsakis, 2014; Oviatt and McDougall, 2005; Vermeulen and Barkema, 2002; Zucchella, Palamara, and Denicolai, 2007). A large number of these studies have been devoted to the analysis of the relationship between speed of internationalization and performance. However, results are still far from being conclusive.

Consistent with the insights from the Uppsala school (e.g., Johanson and Vahlne, 1977; Johanson and Wiedersheim-Paul, 1975), some scholars argued and provided evidence showing that firms should expand abroad slowly and gradually as they accumulate resources and international experience (Chang, 2007; Vermeulen and Barkema, 2002; Zeng, Shenkar, Lee, and Song, 2013). Building upon the concept of time-compression diseconomies (Dierickx and Cool, 1989), the rationale behind their findings lies on the existence of time restrictions in the process of building a resource base for international operations that leads to diminishing returns. In contrast, recent evidence shows that some firms are able to expand successfully at a higher speed of internationalization than what the conventional views suggest, as illustrated by the cases of the "born globals" (Li, Qian, and Qian, 2012; Zhou and Wu, 2014), "born-again globals" (Jantunen, Nummela, Puumalainen, and Saarenketo, 2008), and "latecomer" multinationals (Chang and Rhee, 2011). These somewhat conflicting findings can be reconciled into nonlinear patterns, as previously done by Hilmersson and Johanson (2016), Wagner (2004), or Yang, Lu, and Jiang (2016). However, the mere existence of

a non-linear relationship does not explain why some firms are able to speed up their internationalization process successfully while others are not. Therefore, there is a need for more studies that delve into the moderating factors of the relationship between speed of internationalization and performance.

To fill this gap, this study aims to provide a better understanding of the impact of speed of internationalization on long-term performance (i.e., Tobin's q). For the purposes of this study, we understand speed as the average speed of internationalization through FDI, computed as the cumulative number of new countries that the firm has entered through FDI as of a given year divided by the number of years elapsed since it entered the first foreign country. We develop a theoretical framework that is grounded on the knowledge-based view (Grant, 1996; Kogut and Zander, 1993; Martin and Salomon, 2003; Mudambi, 2002) and the organizational learning theory (Cohen and Levinthal, 1990; Huber, 1991; March, 1991; Nonaka and Takeuchi, 1995). We conceptualize internationalization as an iterative process of knowledge accumulation, transfer, and adaptation in which the firms have to learn how to combine their own knowledge base with additional knowledge gathered from foreign markets that could eventually be transferred to other countries. By adopting this framework, we are able to identify the knowledge-related factors that moderate the relationship between speed of internationalization and long-term performance.

We focus on two types of knowledge that are likely to influence the performance of a rapid expansion process: technological knowledge and experiential knowledge in international markets. The first one is related to the knowledge that multinationals aim to deploy in foreign markets, while the second one is related to the organizational assets and routines that multinationals require to effectively deploy that technological knowledge across borders (Narula, 2014, 2015). We predict that the multinationals'

level of technological knowledge will steepen the inverted U-shaped pattern, as its exploitation eventually suffers from time-compression diseconomies. On the contrary, we expect that a diversified portfolio of international experience will flatten the relationship.

We tested and confirmed our hypotheses by using a panel-data sample from 1986 to 2010 that comprises all Spanish firms listed in 1990. One of the advantages of focusing on Spanish firms is that their international expansion is a recent phenomenon (Guillén and García-Canal, 2010). Consequently, this timeframe allows us to provide a complete picture of Spanish multinationals' internationalization history. This is particularly valuable to fulfil the aim of our paper given our conceptualization of speed of internationalization. In order to account for a potential self-selection bias, we implemented Heckman's two-step estimation method (1979). Furthermore, we ran additional robustness checks the validity of our results.

We add above and beyond the insights of prior studies on the relationship between speed of internationalization and performance in several key ways. Theoretically, we extend former studies on the speed of the internationalization-performance link by identifying and explaining the pattern and knowledge-related moderating effects of the relationship between speed of internationalization and performance. Empirically, we add to this stream of research by focusing on the long-term effects of the speed of internationalization rather than relying in short-term profitability measures. Previous research has mainly focused on accounting measures of performance (e.g. ROA, ROIC, ROS), which introduces a bias in the results as these measures capture only the short-term performance consequences for the firm. For this reason, we use Tobin's q to proxy long-term performance. Besides capturing the firms' current profitability, Tobin's q is also able to account for their growth prospects (Lang

and Stulz, 1994). In addition, we contribute to the literature on cross-country knowledge transferability (e.g., Rugman and Verbeke, 1992, 2004, 2008) by showing that internationally transferable knowledge weakens the inverted U-shaped relationship between speed of internationalization and long-term performance. We also contribute to the literature on non-sequential internationalization models (Cuervo-Cazurra, 2011) by demonstrating that a diverse international experience helps offset the disadvantages associated to a rapid foreign expansion. Both theoretical and empirical contributions carry important managerial implications for multinationals.

2. Conceptual background

The nature of the relationship between speed of internationalization and performance has been an ongoing debate within the International Business literature for more than four decades (e.g., Chang and Rhee, 2011; Hörnell, Vahlne and Wiedersheim-Paul, 1972; Johanson and Vahlne, 1977; Johanson and Wiedersheim-Paul, 1975; Trudgen and Freeman, 2014; Vermeulen and Barkema, 2002). However, few researchers have tested empirically the link between both variables and those who have tried have not reached an agreement yet regarding the pattern that this relationship displays.

Table 1 summarizes the main quantitative speed of internationalization-performance studies. It demonstrates that the current lack of consensus on the nature of this relationship is aggravated by the difficulty of conceptualizing both speed of internationalization and performance.

Insert Table 1 about here

As displayed in the table, different views exist in relation to the definition of *speed of internationalization* (for a review please refer to Chetty, Johanson, and Martín Martín, 2014). Some studies understand it as the time elapsed until a firm begins to export or becomes a multinational (Hsu, Lien, and Chen, 2013; Jantunen *et al.*, 2008; Khavul, Pérez-Nordtvedt, and Wood, 2010; Li *et al.*, 2012; Zhou, Wu, and Barnes, 2012). Other studies, however, focus on the speed of establishment of foreign ventures once the firm has already started to invest abroad (Chang, 2007; Chang and Rhee, 2011; Hilmersson and Johanson, 2016; Jiang, Beamish, and Makino, 2014; Mohr, Fastoso, Wang, and Shirodkar, 2014; Vermeulen and Barkema, 2002; Wagner, 2004; Yang *et al.*, 2016; Zeng *et al.*, 2013; Zhou and Wu, 2014).

Consequently, it is evident that there is a need to make a further explicit distinction between these two closely related but fundamentally different issues to develop more rigorous studies (Casillas and Acedo, 2013; Casillas and Moreno-Menéndez, 2014; Jones and Coviello, 2005). Tan and Mathews (2015) go one step further and claim that it is also critical to distinguish between a high speed of internationalization and an accelerated internationalization. In this vein, they propose that the key characteristic of an accelerated internationalization is the change in the "rapidity" of such internationalization.

Our definition of speed of internationalization stands in contrast to those related to the timing of first international entry, the degree of acceleration, and the speed of establishment of foreign ventures. As previously noted, we focus on the cumulative number of countries. We do so because we are interested in the adaptation efforts of multinationals to the characteristics of the host countries. As Tallman and Li (1996) stated, country-count measures are more accurate than subsidiary-count measures when addressing scope issues.

Measuring performance is also a challenging endeavor (Miller, Washburn, and Glick, 2013; Verbeke and Forootan, 2012). We can observe in Table 1 that there is a large heterogeneity in the performance measures used in papers attempting to analyze the link between speed of internationalization and performance. This table further illustrates the existence of a research gap regarding the use of market performance measures.

To the best of our knowledge, this is the first paper that focuses on long-term performance. We argue that long-term performance is a more accurate measure than the ones used in prior research for two reasons. First, it captures more rigorously the consequences of a rapid internationalization than accounting measures, which have a short-term orientation. Second, it is a better proxy of future growth prospects than survival measures since they do not discriminate among profitable investments.

3. Theory and hypotheses

The proponents of the knowledge-based view argue that knowledge is the most strategically important resource that firms possess (Grant, 1996; Nonaka, 1994). Organizational learning theory complements the knowledge-based view by addressing the processes by which organizations integrate new knowledge into their already existing knowledge base (Argote, 1999; Cyert and March, 1963; March, 1991). The International Business literature has often considered that the rationale behind the existence and foreign expansion of multinationals lies in their knowledge and learning abilities (e.g., Johanson and Vahlne, 1977; Kogut and Zander, 1993; Martin and Salomon, 2003).

In this section we develop a theoretical framework based on the combination of the knowledge-based view and the organizational learning theory to analyze the effect of the speed of internationalization on long-term performance. Consistent with the

knowledge-based view, we understand the firm as a bundle of knowledge resources. We suggest that the need for knowledge upgrade and adaptation when firms expand to new countries conditions the relationship between speed of internationalization and performance. We also propose that technological adaptation is more difficult and time-consuming than commercial adaptation. Finally, the degree of diversity of the firm's prior international experience is a factor that facilitates rapid expansion. Figure 1 summarizes the causal relationships that we establish in our hypotheses, which we describe in detail in the following paragraphs.

Insert Figure 1 about here

3.1. Speed of internationalization and long-term performance

We expect the relationship between speed of internationalization and long-term performance to follow an inverted U-shaped pattern. We argue that multinationals that increase their speed of internationalization can obtain certain knowledge-related benefits. Knowledge is the primary source of competitive advantage in firms (Grant, 1996; Kogut and Zander, 1993). Since knowledge depreciates over time (Arthur and Huntley, 2005; Dierickx and Cool, 1989), we suggest that multinationals that expand abroad rapidly are better prepared to overcome the liability of foreignness (Hymer, 1976; Zaheer, 1995). In other words, they are better fitted to buffer the negative consequences in performance that they might suffer when entering a new country. We expect this to become particularly true when they do not invest in upgrading their knowledge in order to maintain its value (Dierickx and Cool, 1989).

Apart from alleviating the negative effects of knowledge depreciation, venturing into new countries allows multinationals to search for new knowledge to complement

and upgrade their current knowledge base (Eriksson, Johanson, Majkgård, and Sharma, 1997; Guillén and García-Canal, 2009; Kim, Hoskisson, and Lee, 2015). We suggest that this fact has a positive effect on long-term performance. Indeed, one of the aims of multinationals when expanding abroad is the access to new knowledge and location-specific assets (Benito, 2015; Cuervo-Cazurra, Narula, and Un, 2015; Madhok, 1997; Meyer, 2015; Narula, 2012).

However, drawing on concepts from organizational learning theory, we propose that there is a limit to the multinationals' ability to reap the benefits of a rapid internationalization. This limit will be largely determined by the emergence of two obstacles for a rapid foreign expansion: time-compression diseconomies (Dierickx and Cool, 1989) and a limited absorptive capacity (Cohen and Levinthal, 1990), two issues that often intertwine when multinationals internationalize rapidly (Vermeulen and Barkema, 2002).

Investing in foreign countries is a complex process that involves managers making several key decisions, such as when to establish a new venture (Casillas and Moreno-Menéndez, 2014), where to establish it (Kraus, Ambos, Eggers, and Cesinger, 2015), and the preferred mode of entry (Brouthers, 2002). Furthermore, once in the country, managers must learn how to operate in a different setting and add value to new stakeholders (Hsu, Chen, and Cheng, 2013). Since decision making is time consuming and learning in foreign markets is achieved through several cycles (Knight and Liesch, 2002; Nonaka and Takeuchi, 1995), trying to speed up the internationalization process leads to diminishing returns as a result of the emergence of time-compression diseconomies (Dierickx and Cool, 1989). This goes hand in hand with the fact that the multinationals' speed of internationalization conditions their absorptive capacity; that is, their ability to capture, process, and apply new knowledge (Cohen and Levinthal, 1990).

Thus, the higher the speed of internationalization, the lower the likelihood of multinationals' acquiring and assimilating correctly the new knowledge gained from their foreign ventures.

Taking into account these arguments, we argue that speeding up internationalization will have a positive impact on the long-term performance of multinationals because it enables them to deploy and upgrade their knowledge before it becomes outdated. Nonetheless, it needs to be acknowledged that beyond a certain speed, the benefits that they achieve by spreading their international presence rapidly can be offset by the existence of time-compression diseconomies and a limited absorptive capacity. Hence, we predict that the relationship between speed of internationalization and long-term performance follows an inverted U-shaped pattern. Thus, we formulate the following hypothesis:

H1: The relationship between speed of internationalization and long-term performance displays an inverted U-shaped pattern.

3.2. Speed of internationalization, technological knowledge, and long-term performance

Previous research has shown how firms that possess distinctive technological knowledge are more likely to transfer it across a wide arrange of countries and succeed in doing so (Franko, 1989; Lichtenberg and Siegel, 1991; Morck and Yeung, 1991, 1992; Zhang, Li, Hitt, and Cui, 2007). Following this line of argument, we propose that one of the advantages of speeding up the internationalization process is the reduction of technological obsolescence risks and, thus, the preservation of the technological knowledge value to deal effectively with the potential liabilities of internationalization. Another advantage of pursuing a rapid internationalization is linked to cost efficiency,

as it allows multinationals to spread their R&D fixed costs over a larger sales base (Chang and Rhee, 2011).

Nonetheless, we suggest that these advantages will be eventually outweighed by the need to adapt the multinationals' technology to the characteristics of the host countries where they operate. Technological knowledge is a part of the bundle of resources that conform the firm, and adapting it is very difficult and time-consuming (Demsetz, 1988). Therefore, adapting technology within a short-time span is likely to intensify time-compression diseconomies, increasing costs and the likelihood of failure. Furthermore, technology adaptation requires that managers devote more time and attention to an additional task on top of the rapid internationalization process, thus enhancing the negative consequences of the multinationals' limited absorptive capacity.

Opting to exploit technological knowledge across locations without carrying out any modifications does not lack problems either. As Rugman and Verbeke (2004) previously stated, there are limits to the transferability of the multinationals' technological knowledge base. As a consequence, failing to recognize differences among locations will probably result in a lack of fit between the technology and the host country and, therefore, an erosion of the value of the multinationals' technological knowledge.

Given the above arguments, we argue that the possession of technological knowledge steepens the inverted U-shaped link between speed of internationalization and long-term performance. Even though transferring technological knowledge rapidly across borders intensifies the positive effect of ownership advantages on long-term performance, it also enhances the negative consequences of time-compression diseconomies and managers' limited absorptive capacity. Hence, we expect that:

H2: Technological knowledge will steepen the inverted U-shaped relationship between speed of internationalization and long-term performance.

3.3. Speed of internationalization, diversity of prior international experience, and long-term performance

Past experiences play a pivotal role in the success of the multinationals' international strategy (Barkema, Bell, and Pennings, 1996; Eriksson, Majkgård, and Sharma, 2000; Fang, Wade, Delios, and Beamish, 2007). Experiential learning is at the core of the process of knowledge accumulation, transfer, and adaptation. For this reason, we expect that the diversity of prior learning experiences will affect the relationship between speed of internationalization and long-term performance.

As previously argued, one of the benefits of a rapid internationalization is the possibility of gaining access to complementary knowledge. However, the higher the diversity of prior international experience, the lower the odds of gaining access to additional valuable complementary knowledge. Thus, multinationals that have a high diversity of prior international experience and increase their speed of internationalization do not increase by much their learning opportunities. Nonetheless, a diverse experience allows the development of more effective routines that alleviate the negative consequences of internationalizing at a high speed. As the level of diversity of international experience increases, so does the multinationals' absorptive capacity (Cohen and Levinthal, 1990; Zhou and Guillén, 2015). With a more diverse international experience, it is more likely that they are able to integrate new information into their pool of knowledge (Zhou and Guillén, 2015). This ampler knowledge base may help managers in deciding more rapidly the multinationals' course of action.

Consequently, expanding to diverse institutional contexts eventually leads multinationals to generate a pool of knowledge and experience that allows them to outweigh the setbacks of a rapid international expansion.

In line with the above discussion, we argue that the multinationals' diversity of prior international experience flattens the inverted U-shaped relationship between speed of internationalization and long-term performance. Even though investing in a diverse set of foreign contexts reduces the multinationals' opportunities to benefit from accessing complementary knowledge it also helps them to improve their response time and deploy their knowledge across markets more effectively, thus limiting the negative consequences of a high speed of internationalization. Hence, we predict that:

> *H3: Multinationals' diversity of prior international experience will flatten the inverted U-shaped relationship between speed of internationalization and long-term performance.*

4. Research setting, data, and methods

4.1. Research setting and data

The sample used in this study comprises 120 Spanish firms that were listed in the Madrid Stock Exchange as of 1990. We focused on firms listed on this market because, despite the fact that there used to be several stock exchanges in Spain (now integrated in *Bolsas y Mercados Españoles*), the Madrid Stock Exchange is by far the largest and most important one.

The choice of Spanish firms as our research setting is especially appropriate since they have carried out the bulk of their operations abroad in a short-time span. More specifically, the entrance of Spain in the European Economic Community (the

current European Union) in 1986 triggered the growth of the country's outward Foreign Direct Investment (FDI). For this reason, we use 1986 as the initial year of our study, which covers a 25-year span (1986-2010).

Our sample comprises firms from a wide range of industries: 1) energy (electricity, oil, and gas) and water; 2) transport and telecommunications; 3) banking and financial services; 4) construction services; 5) other soft services[1]; 6) other hard services[2]; 7) food and drink; 8) iron and steel; 9) machinery and equipment; 10) construction and building materials; 11) chemical products and medical equipment; and 12) paper.

We focused our analysis on internationalization through FDI, understanding it as any investment in a foreign subsidiary in which at least 10% of its equity is controlled by the investing firm (the multinational), which is also actively involved in its management (US Bureau of Economic Analysis, 2004). Data from these FDI operations was obtained from the *Systematic Database on International Operations of Spanish Companies*, developed under the sponsorship of the Spanish Institute for Foreign Trade, ICEX (see Guillén and García-Canal, 2007). In the following subsection we describe in more detail the method of analysis we implemented as well as the measures we used and how they were created.

4.2. Method of analysis

This study analyzes the impact of speed of internationalization on long-term performance. In order to control for self-selection, we implemented Heckman's two-step estimation method (1979) using STATA 14. In the first step, we estimated a panel-

[1] Soft services are those that require simultaneous production and consumption. Therefore, the firm and the customer base must be co-located (Guillén and García-Canal, 2010).

[2] Hard services are those in which production and consumption can be separated. As a result, they can be exported at arm's length (Erramili, 1990).

data probit model to examine the probability of firm *i* having operations in foreign countries in year *t*. After running it, and consistent with previous works correcting for this potential bias (Dastidar, 2009; Kim *et al.*, 2015), we calculated the inverse Mills ratio and introduced it in the second stage (panel-data GLS regressions) to account for self-selection. The Hausman test suggests that random-effects regressions are appropriate since we cannot reject the null hypothesis that there are no systematic differences in coefficients from using fixed or random-effects models (χ^2 = 33.69, p-value = 0.710). The Breusch Pagan Lagrangian Multiplier test further confirms that we need to perform a randon-effects panel-data analysis (χ^2 = 686.24, p-value = 0.000).

Since we aim to study the effect of speed of internationalization on performance, our second stage only comprises observations from firms operating abroad and, more specifically, for the years when they were internationalized. As a result, the first stage includes 1,434 firm-year observations and 117 firms. Meanwhile, the second one comprises 913 firm-year observations and 73 firms. Following Wan and Hoskisson (2003), we lagged all the independent and control variables. In the paragraphs below we explain more thoroughly the variables that we used in each stage.

4.3. First-stage variables: the internationalization decision

In the first stage of the analysis we modelled the probability of firm *i* having operations in foreign countries in year *t* as a function of its characteristics and its primary industry of operation. In addition, since our study lies in a panel-data analysis, we introduced a continuous year control to account for the specific year of the observation.

We included the following firm-level measures[3]: size (total sales); technological knowledge (number of patents accumulated by the firm since the year of its establishment); leverage (long-term debt to total assets); firm age (difference between the firm's year of establishment and the year of the observation); a sales growth ratio; a dummy depicting whether the firm had undergone a merger in the previous year; ownership structure (i.e., percentage of stock owned by the firm's foreign investors, the Spanish government, and Board of directors, respectively); firm control (CEO tenure, a dummy indicating whether the CEO acted also as the Chairman of the Board of Directors, and the percentage of Board members with prior international education and/or work experience); and a product diversification instrument.

Prior works have acknowledged that product diversification, as internationalization, is also subject to be affected by endogeneity issues (Campa and Kedia, 2002; Villalonga, 2004). For this reason, we used an instrumental variable approach to account for endogeneity. To this end, we ran a panel-data GLS regression whose dependent variable is the product diversification measure developed by Haleblian and Finkelstein (1993). This variable considers the unrelated product diversification undertaken by the firm. It is defined as the percentage of unrelated industries where a firm develops its activity. Since it is a measure of unrelated diversification, we only considered the two-digit Standard Industrial Classification codes where the firm operates, identified through the information disclosed by the firm to the Spanish Securities Market Commission and corporate reports. Based on the studies of Campa and Kedia (2002) and Villalonga (2004), we included the following measures as

[3] We sourced the financial data from COMPUSTAT, DATASTREAM, the Spanish Securities Market Commission, and the firms' websites. We extracted patent data from ESPACENET. We retrieved the data related to the firm's year of establishment from corporate reports and news databases. In the case of the ownership and managerial structure, we also searched for information in press, apart from several directories (DICODI, DUNS, The Maxwell Espinosa Shareholders Directory), and the papers of Vergés (1999, 2010) regarding Spanish privatizations.

explanatory variables: the firm's profitability (EBIT/Sales); its liquidity (cash and cash equivalents to current liabilities); and its ownership structure, proxied by the percentage of stock held by the founder and/or his family, and the ownership concentration of the three major shareholders, calculated through Herfindahl's index (1950). In addition, we included industry dummies as a control for the primary industry of the firms in the study and a year control.

Finally, apart from the aforementioned firm-level variables, we included two industry-level measures in our first stage. Specifically, we followed Dastidar (2009) and Kim *et al.* (2015) and introduced a proxy to account for the firm's global mimetic behavior. We defined this measure as the percentage of firms which were geographically diversified within an industry in a certain year. We also used a dummy variable to account for the primary industry where the firms operate.

4.4. Second-stage variables: the effect of speed of internationalization on long-term performance

In the second stage we examined the effect of speed of internationalization on long-term performance, proxied by the multinationals' Tobin's q[4]. This measure has been largely used in the existing management literature as a future-oriented market measure that is able to account for both the firms' current profitability and growth prospects (e.g., Morck and Yeung, 1991; Li and Tallman, 2011). Tobin's q predictive power relies on the assumption that capital markets are efficient. DePenya and Gil-Alana (2007) defend the efficiency of the Spanish stock markets in predicting returns,

[4] We calculated Tobin's q by applying Chung and Pruitt's formula (1994). We retrieved the financial data used to build this variable from COMPUSTAT, DATASTREAM, the Spanish Securities Market Commission, and the multinationals' websites.

which further validates our choice of firms listed in the Madrid Stock Exchange as our research setting.

The independent variable is the speed of internationalization. We measured it as the number of new countries that the multinational had entered through FDI as of a given year divided by the number of years elapsed since it entered the first foreign country. It must be noticed that in the case of multinationals which had gone through a merger with another multinational from our sample, the host countries entered by the target became part of the accumulated foreign countries of the bidder. In addition, for multinationals involved in mergers, we considered the year of the first foreign expansion to be the one of the first investment abroad, regardless of the firm that made it (bidder or target). Since we expect the relationship between speed and market performance to be non-linear, we also took this variable in its quadratic form.

Table 2 illustrates the differences in speed of internationalization among the multinationals in our sample grouped by industries. This table shows the mean and standard deviations of the speed of each industry and the overall sample. In addition, it displays the percentage of the observations within each industry whose speed of internationalization is low, moderate, and high. We have used the mean of the overall sample ± 0.5 standard deviations to define the limits of these three levels of speed. We consider a low speed to be lower than the mean speed of the overall sample minus 0.5 standard deviations. A high speed of internationalization comprises those values that are higher than the mean speed of the overall sample plus 0.5 standard deviations. A moderate speed of internationalization covers the interval between the two aforementioned bands. The table shows that the speed of the multinationals operating in energy and water, transport and telecommunications, construction services, and the food and drink industries tend to be around or above the mean. Meanwhile, the average speed

of internationalization of the remaining industries usually stands around or below the mean of the overall sample.

Telefonica—Spain's no. 1 telecommunications provider—serves as an illustrative example of a multinational that has undertaken a rapid foreign expansion. It invested in 33 different countries within the 25-year span of our study. Telefonica became a multinational in 1986. By 1993 the firm had entered 17 new countries, or 2.5 per year since 1986. Since 1993 its cumulative speed has gradually diminished, first oscillating between 2 and 1.5 countries per year and finally reaching a minimum of 1.3 countries per year as of 2010.

The case of Unipapel, one of the most well-known Spanish stationery and office supplies firms, provides a contrasting example. Unipapel expanded to 4 different countries during the period of analysis. This multinational made its first FDI in 1993 and from that moment onwards its cumulative speed oscillated between 0.5 and 0.15 countries per year, with a maximum of 1 country per year in 1994 and a minimum of 0.15 countries per year in 1999.

Insert Table 2 about here

Our moderating variables assess the level of technological knowledge possessed by the multinationals in the sample (number of accumulated patents), as well as the diversity of their prior international experience. We proxied this last variable by the weighted standard deviation of distance between Spain and their host country base. This conceptualization allows us to capture the degree of differentiation of the past foreign experiences of the multinationals in our sample. A thorough explanation on how to

calculate this measure can be found in Zhou and Guillén (2015). In order to operationalize "distance" we applied Ghemawat's (2001) CAGE framework, thus taking into account cultural, administrative, geographic, and economic distances. We did this because even though scholars have traditionally devoted all their attention at cultural differences among countries, recent studies show the necessity of using when possible more than one distance measure in order to obtain more reliable estimates (Ambos and Håkanson, 2014; Berry, Guillén, and Zhou, 2010). We defined geographic distance as the pairwise distance between countries' capitals (in kilometers). We specified the remaining distance dimensions using data extracted from the cross-national distance database developed by Berry *et al.* (2010)[5]. Since the resulting weighted standard deviation variables of distance were highly correlated, we created an index to enter in our regressions following the procedure previously carried out by Campbell, Eden, and Miller (2012).

In order to account for additional factors that can potentially affect long-term performance, we included the following control variables. First, we added the multinationals' cumulative number of foreign ventures since the multinationals' overall international footprint may affect long-term performance (Allen and Pantzalis, 1996). As previously done by Chang and Rhee (2011), we also controlled for the chosen entry mode by introducing the percentage of operations carried out using wholly-owned subsidiaries. Furthermore, we included the average GDP growth of the countries where the multinationals had established operations[6]. We introduced the multinationals' return on assets because prior short-term performance may influence long-term performance (Cho and Pucik, 2005). We also included some first-stage variables as controls in this second stage. Specifically, we included size, a dummy accounting for any mergers

[5] This database is publicly available online at the Penn Lauder CIBER webpage.
[6] We retrieved this data from the World Bank webpage.

signed in the previous year, Board ownership, foreign ownership, CEO tenure, CEO duality, and the percentage of Board members with prior international education and/or work experience. Additionally, we introduced industry and year dummies as controls in all our models. In this second-stage regressions we conceptualized our year control as a dummy instead of as continuous variable—as we did in the first stage—given the significance of our time fixed-effects test (χ^2 = 194.47, p-value = 0.000). Finally, as previously mentioned, we entered the inverse Mills ratio as a control for self-selection.

Table 3 displays the correlations and descriptive statistics for the main variables included in this stage. The remaining correlation matrixes are not displayed but are available upon request. We mean-centered the main effects and moderating variables before building the interaction terms to avoid high correlations between them (Jaccard and Turrisi, 2003). Most of the pairwise correlations are low. The only exceptions are the diversity of prior international experience (highly correlated with the speed of internationalization) and the multinationals' number of FDI operations (highly correlated with their speed of internationalization, diversity of prior international experience, and size). Our results are robust to the removal of the diversity of prior international experience and the number of FDI operations from our regressions, thus showing that multicollinearity is not an issue in our study. We also examined the Variance Inflation Factors (VIFs) of our baseline model to account for potential multicollinearity issues. All VIFs were below the recommended cutoff value of 10 (Kutner, Nachtsheim, Neter, and Li, 2004: 409), further proving that multicollinearity does not affect our results. We do not include neither the robustness checks nor the VIFs in the paper for the sake of brevity. However, they are available from the authors upon request.

Insert Table 3 about here

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5. Results

Table 4 shows the panel-data random-effects regression that we ran in order to obtain the instrumental variable of product diversification. Meanwhile, Table 5 exhibits the panel-data probit model of the internationalization decision. As the main goal of this study is the analysis of the shape that the relationship between speed of internationalization and performance displays, and these stages are only instrumental, for the sake of brevity we only report the estimates.

Insert Tables 4 and 5 about here

Table 6 presents the results from the panel-data random-effects regressions in the second stage using seven different models: Model I only includes the control variables, Model II adds the linear term of speed of internationalization, Model III adds the quadratic term of speed of internationalization, Model IV also includes the moderating variables, Models V and VI also comprise the interaction effects for the speed of internationalization and, finally, Model VII includes all the variables of our second stage. This table also displays two sets of chi-square statistics for the models. The first set measures the overall significance of our models, which is always below the $p<0.01$ level. The second set accounts for the joint significance of additional variables included in each of our models as compared to simpler versions of them (specified in a superscript between parentheses).

Insert Table 6 about here

Consistent with Hypothesis 1, we observe that the relationship between the firms' speed of internationalization and their long-term performance displays an inverted U-shaped pattern. Even though Model II estimates a positive and significant relationship between speed and performance, Models III and IV—which test a non-linear relationship between these variables—fit better with the data and show an inverted U-shaped effect. Thus, whereas low and moderate levels of speed have a positive influence on long-term performance, there is a limit beyond which a rapid internationalization destroys value for the multinationals.

Model V introduces the moderating effect of technological knowledge on the relationship between speed of internationalization and long-term performance. Our results display a positive interaction effect of the linear term of speed of internationalization and technological knowledge ($\beta = 0.013$, $p < 0.01$) and a negative interaction with the quadratic term ($\beta = -0.005$, $p < 0.01$). Therefore, Hypothesis 2 is supported because the relationship between speed of internationalization and long-term performance is more convex as the level of technological knowledge increases. Figure 2 shows that the inverted U relationship between speed of internationalization and long-term performance becomes more steepened as the level of technological knowledge of the multinational increases. Whereas the difference between expanding abroad slowly or fast is almost imperceptible when the multinational possesses a low level of technological knowledge, the graph shows that extreme levels of speed combined with high levels of technological knowledge dramatically decrease the performance of the multinational.

Insert Figure 2 about here

In Model VI we test the interaction effect between speed of internationalization and the diversity of the firm's international experience. Our estimates support Hypothesis 3, given the negative interaction effect of the linear term of speed of internationalization and diversity of prior international experience ($\beta = -0.386$, $p < 0.05$) and the positive interaction with the quadratic term ($\beta = 0.233$, $p < 0.05$). As illustrated by Figure 3, the opposite signs of the coefficients lead the inverted U-shaped relationship between speed of internationalization and long-term performance to become flatter when the diversity of prior international experience increases, making the pattern even slightly concave. Therefore, it seems that multinationals expanding abroad rapidly are able to benefit from increasing the diversity of their host-country portfolio.

Insert Figure 3 about here

It is worth noticing that Model VII provides further support to our results by showing that our estimates continue to hold when we introduce all the effects within the same regression.

Finally, regarding control variables, our results suggest that the multinationals' past accounting performance has a positive effect on current long-term performance. Zeng *et al.* (2013) also included profitability as one of their controls when studying the effect of speed of internationalization on subsidiary mortality. However, this variable lacked a significant effect on their performance variable. Foreign ownership and the use of wholly-owned subsidiaries when venturing abroad also seem to be rewarded in the

long-term, although in these cases our estimates are less consistent. Entry mode also failed to be consistently significant in previous studies linking speed of internationalization and performance (Chang and Rhee, 2011; Jiang *et al.*, 2014; Zeng *et al.*, 2013). CEO and Board-related variables turned out to be non-significant, as did the size of the multinationals, their mergers, the location of their investments, and the inverse Mills ratio. The multinationals' cumulative number of foreign ventures also lacked significance. The non-significance of this variable goes in line with the results obtained by Morck and Yeung (1991), who found that the international footprint of multinationals has no significant effect on Tobin's q.

6. Robustness checks

We ran additional tests to examine the robustness of our findings and to check whether they were due to potential endogeneity biases. The results of these tests are not shown in the paper, but are available from the authors upon request. First, we analyzed whether there was any reverse causality between the multinationals' technological knowledge and their long-term performance by running a Granger causality test (1969). Our results show that there is no sign of long-term performance causing an increase in technological knowledge, thus rejecting the existence of a reverse causality issue between both variables. We also checked if our estimates could be affected by reverse causality by lagging our independent and control variables two periods instead of one. Our results held, outlining again that reverse causality does not seem to be an issue in our study.

Second, we ran an additional test to discard endogeneity issues in our variable of speed of internationalization. In order to do so, we carried out a Durbin-Wu-Hausman test, which turned out to be non-significant (χ^2 = 0.81, p-val = 0.367). Therefore, our

variable of speed of internationalization does not seem to be endogenous. In order to run the Durbin-Wu-Hausman test, we introduced speed of internationalization$_{t-2}$ and international experience$_{t-2}$ as instruments of the speed of internationalization. Following Semadeni, Withers, and Trevis Certo's (2014) guidelines, we conducted over-identification as well as weak-identification tests for our instruments of the speed of internationalization. The Sargan-Hansen over-identification test statistic led us to conclude that our instruments are valid (χ^2 = 0.144, p-val = 0.704). In addition, the Cragg-Donald Wald F test statistic was larger than the 10 percent maximal IV size Stock-Yogo (2005) critical values, which further confirms the validity of our instruments.

Third, we carried out additional analyses with alternative performance variables in our second stage. Specifically, we introduced the multinationals' market-to-book ratio as an alternative dependent variable since prior literature has also considered that it captures the long-term performance (e.g., Yuan, Qian, and Pangarkar, 2016). The resulting estimates exhibited patterns of significance similar to those reported for the Tobin's q.

Finally, we examined if our results held when using different subsamples. In this vein, we removed from our regressions the firms which had been involved in mergers during the period of analysis. The pattern of results did not substantially change. We tested as well if our results held after removing from our sample the observations related to the financial crisis period (2008-2010). We took out those observations to account for the possibility of the crisis being the reason behind the downturn in performance which appears beyond a certain speed. Our estimates were consistent to this modification of our study's timeframe, further proving the robustness of our results.

7. Discussion

7.1. Contributions to the existing literature

In this paper we examine the relationship between speed of internationalization and long-term performance. Our study reconciles two conflicting views in the International Business literature regarding the effect of speed of internationalization on performance. Whereas the traditional view argues in favor of gradual internationalization, recent studies show that some multinationals are actually able to benefit from a rapid process of internationalization. To the extent of our knowledge, only Hilmersson and Johanson (2016), Wagner (2004), and Yang *et al.* (2016) reconciled these contradictory findings into non-linear patterns, consistent with our results. However, they managed to do so by using short-term performance measures instead of long-term performance ones.

We have built an integrated theoretical framework that is grounded on the knowledge-based view and the organizational learning theory. Tan and Mathews (2015) emphasized the need of developing dynamic frameworks in order to study variables affected by time. Given that the knowledge-based view has been previously criticized for its static nature (Eisenhardt and Santos, 2002), we also used organizational learning theory to introduce an element of dynamism in our theoretical framework. We extended these literatures by focusing on the long-term performance effects of speed of internationalization. In addition to the inverted U-shaped pattern, we showed the knowledge-related moderating effects that explain why some firms can expand abroad successfully at a higher speed than others.

We focus on two types of knowledge that are likely to determine the success of multinationals in the long term: technological knowledge and experiential knowledge in

international markets. We find that proprietary technological knowledge steepens the inverted U-shaped relationship between speed of internationalization and long-term performance. Meanwhile, a more diverse international experience leads to a subtle shape-flip[7] of the inverted U-shaped relationship between speed and performance, turning it into a faint U. Therefore, our estimates show that multinationals with higher diversity in their previous international experience are better equipped to speed up their internationalization process. These results do not only add to the knowledge-based view and organizational learning literatures but also to prior discussions regarding location-bound and non-location-bound ownership assets.[8] According to Rugman and Verbeke (2004), technological knowledge is location-bound due to the erosion in its value when transferred across regions. Their findings also imply that prior international experience is more valuable when transferred across similar countries or regions. Building on their study, we argue and find that the degree to which experiential knowledge is location-bound depends on how diverse this knowledge is. Moreover, we find that location-bound and non-location-bound ownership assets have a different effect on the relationship between speed of internationalization and long-term performance. Accordingly, location-bound assets (such as technological knowledge) steepen the relationship between speed of internationalization and long-term performance. By contrast, non-location bound ownership assets (such as a diverse international experience) flatten this link.

Our results also contribute to the literature on non-sequential internationalization models (Cuervo-Cazurra, 2011). Contrary to the Uppsala School staged model, which

[7] It must be highlighted that, according to Haans, Pieters, and He (2015), even though shape-flip is likely to occur in strategy research (e.g., Uotila, Maula, Keil, and Zahra, 2009; Zahavi and Lavie, 2013), this phenomenon has usually been neglected in the existing management literature.

[8] Location-bound ownership assets have a limited potential to be exploited beyond national or regional borders. On the contrary, non-location bound ownership assets can be potentially leveraged internationally (Rugman and Verbeke, 1992, 2004, 2008).

proposed a progressive increase in the diversity of experience as the best way to profit from establishing a foreign presence, these models show alternative paths that firms can take to expand abroad to distant countries. We add to this literature by showing how a diverse experience set allows further benefits for the firm's internationalization. We also complement the findings of Zhou and Guillén (2015), who showed that having a diverse international experience reduces the liability of foreignness in subsequent FDIs, by demonstrating that it also facilitates speeding up the internationalization process.

Following Andersson, Cuervo-Cazurra, and Nielsen (2014), we analyzed to what extent the reverse interaction in which the speed of internationalization moderates the relationship between our moderating variables and long-term performance is plausible. Taking into account that both technological knowledge and diversity of prior experience overall influence a firm's growth prospects beyond the limits of international expansion through FDI, we can rule out these reverse interactions. For example, technological knowledge can be licensed (Arora and Fosfuri, 2000) or used to expand into a new industry (Cesaroni, 2004). In a similar vein, the diversity of prior experience could be applied to other areas such as innovation (Singh and Fleming, 2010) or alliance management (Liu and Ravichandran, 2015), among others.

Our paper also offers the first analysis of the effect of speed of internationalization on long-term performance. We operationalize this variable as the multinationals' Tobin's q. Venkatraman (1989) emphasizes the importance of fit in research. We argue that long-term performance measures are a better fit to study the outcomes of speed of internationalization than short-term performance measures since learning in foreign markets is achieved in the long-term, as previously stated in the organizational learning theory (Knight and Liesch, 2002; Nonaka and Takeuchi, 1995).

We expect accounting measures to provide biased results due to the large amount of resources that must be committed and the higher coordination and adjustment costs that a rapid internationalization entails in the short term. In order to analyze the short-term effects of performance, we estimated additional regressions with accounting measures as our dependent variables (available from the authors upon request). We measured profitability as the multinationals' ROA and the 3-year moving average of ROA at time t-1, t, and t+1. In both cases the inverted U-shaped relationship lost its significance. The only results that remained unchanged were those of the interactions between speed of internationalization and technological knowledge, which displayed an inverted U-shaped pattern. Therefore, one important implication of our findings is that they seem to support that long-term measures are a better fit when studying the consequences of the speed of internationalization.

7.2. Managerial implications

Our study is directly relevant to managers. First, our findings suggest that the speed of internationalization has a different effect on performance depending on the timespan considered. Whereas it fails to have a significant effect in the short term, it displays an inverted U-shaped pattern in the long term. This implies that managers should not only pay attention to short-term measures of performance but also to long-term measures to have more accurate estimations of the effect of a rapid internationalization.

Our results also highlight that some multinationals can actually benefit from a high speed of internationalization. Nonetheless, managers need to acknowledge that there is limit to the positive relationship between the firms' speed of internationalization and their long-term performance.

Furthermore, managers should take into consideration their multinationals' knowledge base. Whereas technological knowledge might be helpful at first to reap the benefits of a rapid internationalization, it may become detrimental beyond a certain speed. On the contrary, even though a diverse international experience limits the benefits of increasing the multinationals' speed of internationalization, it also may buffer the negative consequences of a rapid foreign expansion.

Finally, we expect that our findings are of particular interest to managers of established multinationals due to the research setting we have used. Even though previous papers have found that a rapid internationalization can have positive consequences for multinationals, these studies have primarily focused on latecomer multinationals from emerging economies trying to catch up at a fast pace with their developed-market counterparts (Chang and Rhee, 2011; Guillén and García-Canal, 2013; Kerin, Varadarajan, and Peterson, 1992; Mathews, 2002). We demonstrate that firms from the "old" Europe can also keep with the new trends in internationalization and profit from speeding their internationalization process, thus providing a silver lining to the managers of established multinationals from developed economies whose global leadership has been threatened or undermined by these newcomers to the international scene.

7.3. Limitations and future research

In spite of our contributions and the robustness of our findings, our study is not exempt of limitations. First of all, our lack of access to primary data restricted the empirical operationalization of some of our arguments, such as those related to managerial cognition and absorptive capacity. Data restrictions also prevented us from distinguishing empirically between the different degrees of asset exploitation and asset

augmentation in the multinationals' international expansion. Furthermore, our analysis only comprises publicly-listed Spanish firms. Therefore, it could be interesting trying to replicate our results using a multi-country sample.

All in all, our study provides a first attempt at disentangling the relationship between speed of internationalization and long-term performance. In this sense, it offers several avenues for future research. The relationship between the age at which firms become multinationals and their performance was beyond the scope of our paper, but is also an interesting research endeavor. Another future line of research is the study of the outcomes of a rapid internationalization depending on the different degrees of asset exploitation and asset augmentation that multinationals undertake. Finally, an intriguing finding that deserves more attention is the relationship between location-bound/non-location bound ownership assets and their performance implications in the context of a rapid internationalization.

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Figure 1. Conceptual framework

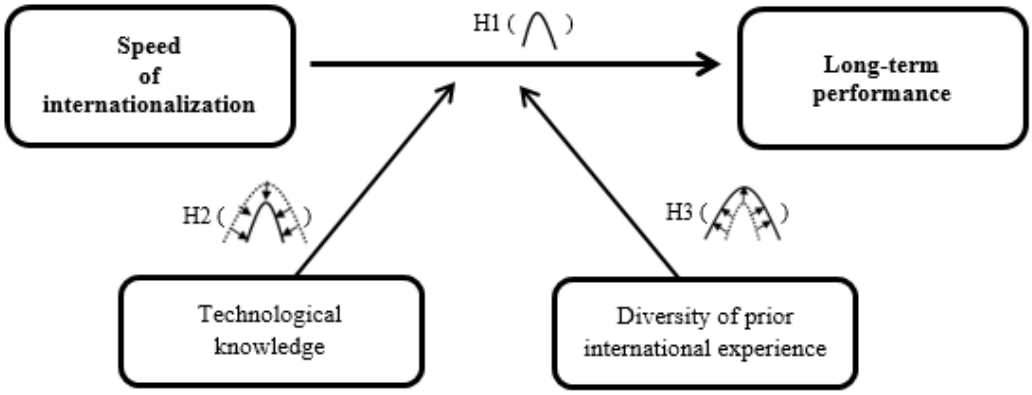


Figure 2. Long-term performance and speed of internationalization by technological knowledge

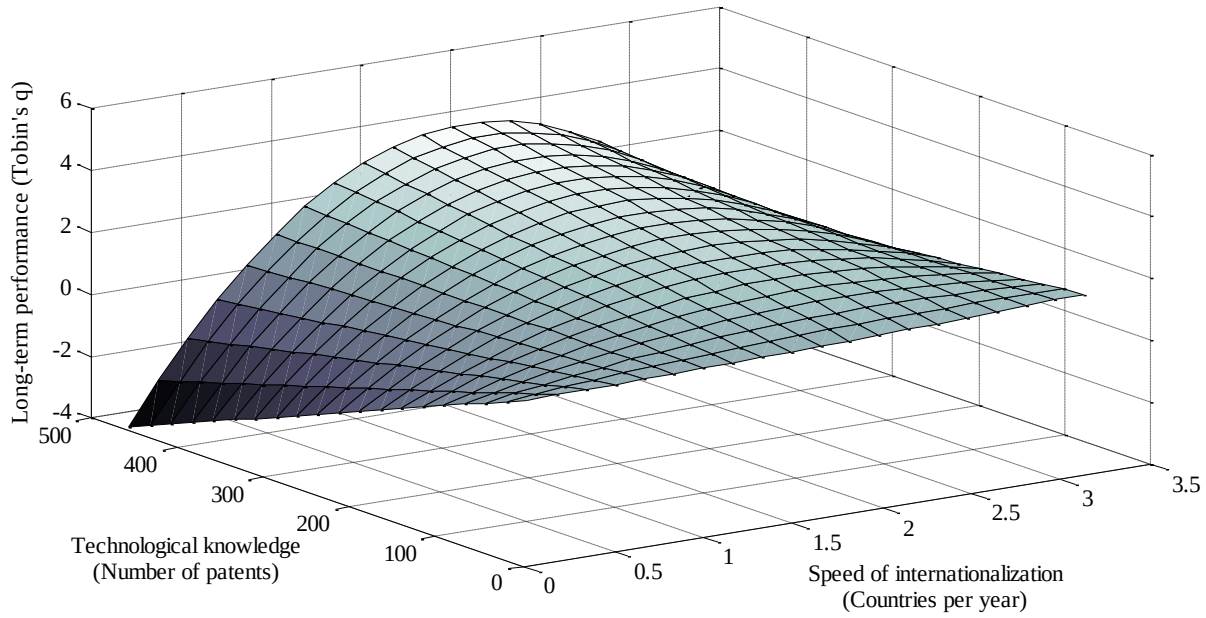
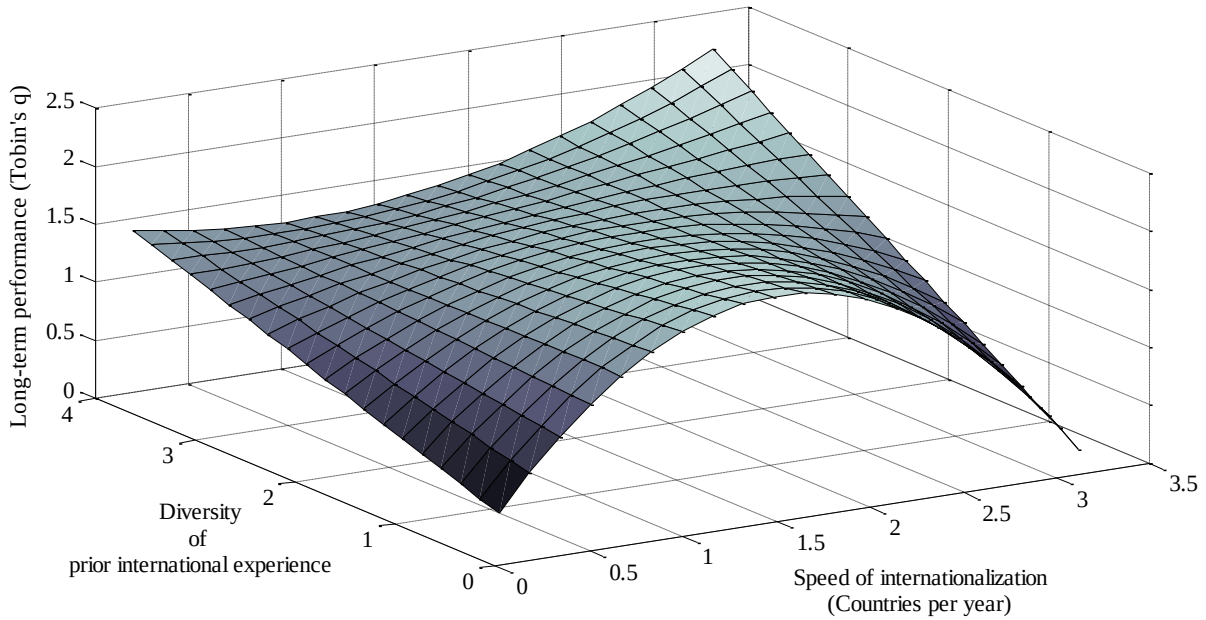


Figure 3. Long-term performance and speed of internationalization by diversity of prior international experience



[9]

Table 1. Summary table of the main quantitative speed of internationalization-performance studies (2002-2016)

Author(s)	Operationalization of performance	Operationalization of speed	Role of speed	Speed outcome
Hilmersson and Johanson (2016)	Return On Total Assets	Number of markets exported to by time; exports and total sales by time; and proportion of the firm's assets held abroad by time	Independent variable	Mixed
Yang, Lu, and Jiang (2016)	Percentage of surviving subsidiaries and Return On Assets	Average number of FDIs per year	Independent variable	Nonlinear (∩)
Jiang, Beamish, and Makino (2014)	Survival and profitability	Time interval between prior and focal entry	Independent variable	Mixed
Mohr, Fastoso, Wang, and Shirodkar (2014)	Return On Sales	Number of new foreign outlets per year since internationalization	Moderating variable	Positive
Zhou and Wu (2014)	Sales growth and Return On Assets	Elapsed time between the year the new venture was established and the year it entered its first international market	Independent variable	Mixed

[9] We chose the publication of the seminal paper by Vermeulen and Barkema (2002) as the starting point of our literature summary because it marks the beginning of the recent research stream focused on the quantitative analysis of the speed of internationalization-performance link. After deciding the timeline of our literature review (i.e., 2002-2016), we searched several academic databases (i.e., Web of Science, Scopus, Google Scholar, Wiley Online Library, and ScienceDirect) using "performance" and "speed of internationalization" as our search keywords. It must be noted that we ran two additional searches where we substituted "speed of internationalization" by "early internationalization" and "born globals" to account as well for those papers analyzing the effect of early internationalization on performance. We looked for papers that contained our chosen keywords in their title and/or body of the text. We then screened them to select those quantitative studies that included in their analyses performance as the dependent variable and speed of internationalization as an independent, moderating, or mediating variable. Finally, to increase the robustness of our search, we looked for additional quantitative speed of internationalization-performance papers among the ones citing the studies that we had already found by using the above criteria.

Hsu, Lien, and Chen (2013)	Return on Invested Capital	Age at which the firm made its first FDI	Moderating variable	Positive
Zeng, Shenkar, Lee, and Song (2013)	Mortality rate of an FDI operation	Average number of FDIs per year	Moderating variable	Negative
Li, Qian, and Qian (2012)	Return On Sales	Degree to which the firms have established foreign operations within three years or less of their founding	Independent variable	Positive
Zhou, Wu, and Barnes (2012)	International sales, profit, and market share growth (5-point Likert scale)	Firm's age when it first ventured into international markets	Independent variable	Mixed
Chang and Rhee (2011)	Return On Invested Capital	Average number of FDIs in new countries per year since first FDI	Independent variable	Mixed
Khavul, Pérez-Nordtvedt, and Wood (2010)	Performance improvement (5-point Likert scale)	Age at which the firm had its first international sale	Independent variable	Not significant
Jantunen, Nummela, Puumalainen, and Saarenketo (2008)	Satisfaction with performance (10-point Likert scale)	Elapsed time until the firm establishes international operations	Moderating variable	Mixed
Chang (2007)	Return On Sales	Average number of FDIs per year	Moderating variable	Negative
Wagner (2004)	Cost efficiency	Change in degree of internationalization	Independent variable	Nonlinear ($\cap$)
Vermeulen and Barkema (2002)	Return On Assets	Average number of FDIs per year	Moderating variable	Negative

Table 2. Description of the speed of internationalization by industry

Industry	Number of observations	Mean	Standard deviation	Low Speed	Moderate speed	High speed
Energy and water	124	0.91	0.52	3.23%	49.19%	47.58%
Transport and telecommunications	33	1.22	0.55	0.00%	39.39%	60.61%
Banking and financial services	167	0.31	0.29	70.06%	20.36%	9.58%
Construction services	68	1.12	0.62	0.00%	30.88%	69.12%
Other soft services	53	0.30	0.21	69.81%	26.42%	3.77%
Other hard services	100	0.50	0.35	37.00%	49.00%	14.00%
Food and drink	80	0.70	0.41	10.00%	58.75%	31.25%
Iron and steel	47	0.34	0.21	53.19%	42.55%	4.26%
Machinery and equipment	56	0.47	0.31	30.36%	58.93%	10.71%
Construction and building materials	39	0.48	0.39	33.34%	46.15%	20.51%
Chemical products and medical equipment	115	0.29	0.19	54.78%	45.22%	0.00%
Paper	31	0.29	0.13	61.29%	38.71%	0.00%
All industries (overall sample)	913	0.56	0.48	37.24%	40.96%	21.80%

Table 3. Heckman's second stage descriptive statistics and correlation matrix

		Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Tobin's q	1.35	0.58	1.00															
2	Speed of internationalization	-0.00	0.47	0.06	1.00														
3	Technological knowledge	0.00	69.18	0.01	0.24	1.00													
4	Diversity of prior international experience	0.00	0.93	0.04	0.59	0.22	1.00												
5	No. FDI operations	22.84	36.43	-0.03	0.55	0.24	0.55	1.00											
6	Wholly-owned subsidiaries	43.37	30.20	0.01	-0.06	0.06	0.10	-0.06	1.00										
7	Host countries' GDP growth	2.92	2.13	0.13	0.10	-0.05	0.21	0.09	0.04	1.00									
8	Prior short-term performance	5.99	7.76	0.25	0.07	0.02	-0.00	-0.02	-0.12	0.15	1.00								
9	Size	4.00	8.82	-0.03	0.31	0.37	0.42	0.81	-0.17	0.07	0.02	1.00							
10	Merged	0.02	0.15	-0.03	0.03	-0.03	-0.00	0.02	-0.01	0.02	-0.05	0.00	1.00						
11	Board ownership	15.29	21.14	-0.00	-0.08	-0.10	-0.05	-0.13	0.18	0.03	-0.02	-0.20	-0.06	1.00					
12	Foreign ownership	6.61	20.39	-0.03	-0.07	-0.02	0.03	-0.07	0.02	0.01	0.10	-0.04	0.07	0.05	1.00				
13	CEO tenure	6.71	6.61	-0.06	0.09	-0.05	0.13	0.01	0.15	0.05	0.09	-0.08	-0.01	0.02	-0.05	1.00			
14	CEO duality	0.27	0.44	-0.09	0.05	0.10	0.12	0.03	0.15	0.01	0.01	-0.02	-0.02	-0.05	-0.02	0.27	1.00		
15	Board international experience	18.07	18.52	-0.03	0.11	0.09	0.25	0.33	-0.03	0.04	-0.06	0.38	0.02	-0.07	0.27	0.07	0.08	1.00	
16	Inverse Mills ratio	0.23	0.78	-0.04	-0.09	-0.13	-0.19	-0.14	0.05	-0.07	-0.04	-0.12	-0.02	-0.04	-0.00	0.02	0.15	-0.18	1.00

Table 4. Product diversification instrument (random-effects regression)

EBIT/Sales	-0.073
	(0.327)
Cash	-0.053
	(0.078)
Family ownership	-0.048
	(0.051)
Ownership concentration	-7.751***
	(1.945)
Year control	0.477***
	(0.055)
Constant	31.924**
	(15.042)
Industry dummies	Included
Wald χ^2	100.28***
Observations	1,657
Number of firms	120

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1

Table 5. Heckman's first stage (probit regression)

Size	2.803***
	(0.411)
Technological knowledge	0.185***
	(0.028)
Leverage	-1.129
	(1.423)
Firm age	0.035**
	(0.014)
Sales growth	-0.024
	(0.063)
Merged	1.647
	(1.379)
Foreign ownership	0.009
	(0.013)
State ownership	0.039
	(0.034)
Board ownership	0.003
	(0.010)
CEO tenure	-0.053
	(0.035)
CEO duality	-0.599
	(0.572)
Board international experience	-0.003
	(0.021)
Product diversification	0.182
	(0.147)
Global mimetic behavior	0.083***
	(0.026)
Year control	0.079
	(0.092)
Constant	-19.183***
	(5.916)
Industry dummies	Included
Wald χ^2	253.99***
Observations	1,434
Number of firms	117

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1

Table 6. Heckman's second stage (random-effects regressions)

	Model I	Model II	Model III	Model IV	Model V	Model VI	Model VII
Speed of internationalization		0.184***	0.507***	0.454***	0.536***	0.686***	0.820***
		(0.070)	(0.146)	(0.162)	(0.161)	(0.209)	(0.208)
Speed of internationalization^2			-0.141**	-0.127**	-0.136**	-0.305**	-0.354***
			(0.056)	(0.059)	(0.059)	(0.124)	(0.123)
Technological knowledge				-0.001	-0.003***	-0.001	-0.003***
				(0.001)	(0.001)	(0.001)	(0.001)
Diversity of prior international experience				0.035	0.033	0.036	0.033
				(0.046)	(0.046)	(0.048)	(0.048)
Speed x Technological knowledge					0.013***		0.014***
					(0.003)		(0.003)
Speed^2 x Technological knowledge					-0.005***		-0.005***
					(0.001)		(0.001)
Speed x Diversity of prior international experience						-0.386**	-0.476***
						(0.152)	(0.151)
Speed^2 x Diversity of prior international experience						0.233**	0.288***
						(0.105)	(0.104)
No. FDI operations	0.000	-0.002	-0.001	-0.001	-0.002	-0.001	-0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Wholly-owned subsidiaries	0.002*	0.002	0.002	0.001	0.001	0.002	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Host countries' GDP growth	-0.004	-0.004	-0.003	-0.003	-0.002	-0.004	-0.003
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.009)
Prior short-term performance	0.006***	0.006***	0.006***	0.006***	0.005**	0.007***	0.006**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Size	-0.000	0.004	0.001	0.003	-0.001	0.003	-0.000
	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)
Merged	-0.055	-0.044	-0.049	-0.047	-0.065	-0.052	-0.073
	(0.094)	(0.093)	(0.093)	(0.093)	(0.091)	(0.093)	(0.091)
Board ownership	0.001	0.001	0.001	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Foreign ownership	0.001	0.001	0.001	0.001	0.002**	0.001	0.003**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
CEO tenure	-0.002	-0.003	-0.003	-0.003	-0.002	-0.003	-0.003
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
CEO duality	0.008	0.015	0.018	0.025	0.020	0.035	0.030
	(0.043)	(0.043)	(0.043)	(0.043)	(0.042)	(0.043)	(0.042)
Board international experience	-0.002	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Inverse Mills ratio	-0.005	-0.007	-0.009	-0.008	0.004	-0.009	0.003
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)
Constant	0.711***	0.773***	0.764***	0.746***	0.706***	0.726***	0.681***
	(0.221)	(0.220)	(0.222)	(0.228)	(0.231)	(0.232)	(0.234)
Industry dummies	Included	Included	Included	Included	Included	Included	Included
Year dummies	Included	Included	Included	Included	Included	Included	Included
Wald χ^2	249.55***	258.08***	266.29***	268.52***	312.01***	276.85***	325.37***
χ^2 change in model		6.93***(1)	6.35**(2)	1.75(3)	33.06***(4)	6.50**(4)	43.53***(4)
							10.08***(5)
							36.62***(6)
Observations	913	913	913	913	913	913	913
Number of firms	73	73	73	73	73	73	73

Standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1

(1) Compared to Model I.

(2) Compared to Model II.

(3) Compared to Model III.

(4) Compared to Model IV.

(5) Compared to Model V.

(6) Compared to Model VI.