



# Rapid FDI expansion and firm performance

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## Abstract

Today, more firms are expanding rapidly into foreign markets to reach global scale quickly, and to capture or nullify first-mover advantages. These trends run counter to the conventional theory of gradual internationalization, which suggests that firms maximize the benefits of learning from prior experience, thereby minimizing the hazard of failure. We argue that this conventional wisdom does not consider the risk of being a perennial late mover in the face of increased global competition. This study explores the circumstances under which rapid FDI expansion, a strategy of undertaking FDI expansion at an accelerated speed, can be a viable strategy. Using data on Korean firm expansion, we find that rapid FDI expansion enhances firm performance in industries where globalization pressures are high, and when it is done by firms with superior internal resources and capabilities.

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## INTRODUCTION

In today's rapidly changing business environment, a firm's quick action can be an important source of *time-based competitive advantage* (Cohen, Eliashberg, & Ho, 1996; Riolli-Saltzman & Luthans, 2001; Stalk, 1988). Salomon and Martin (2008) demonstrate firms that build a manufacturing facility quickly can enjoy lasting competitive advantage in fast-changing, competitive industries. Yet the international business literature has paid insufficient attention to time-based competitive advantage. This study seeks to address this gap in the literature by considering how the speed of foreign expansion via foreign direct investments (FDIs) affects firm performance. To this end, we examine contingent factors, including firms' internal resources and capabilities, as well as external competitive environments.

FDIs have received much attention from international business scholars, because they involve high-commitment investments that make firms multinational. International expansion via FDI is risky, however, because it involves a *liability of foreignness* (Hymer, 1960; Zaheer, 1995), in which firms operating beyond their national borders are at a fundamental disadvantage in relation to local firms or other foreign firms already established in a given foreign country. The international business literature has assumed that the liability of foreignness can be best managed by gradual internationalization, which lets firms maximize the benefits of learning from prior experience, thereby minimizing the hazard of

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failure (Barkema, Bell, & Pennings, 1996; Johanson & Wiedersheim-Paul, 1975). This literature suggests that there can be *time-compression diseconomies* in rapid foreign expansion (Dierickx & Cool, 1989).

Under certain circumstances, however, gradual internationalization might not be viable. In the face of increased global competition, some high-technology firms are *born global*, because they internationalize right after they are founded (Shrader, Oviatt, & McDougall, 2000). Other firms, such as those that have recently begun to internationalize, may also be forced to undergo rapid FDI expansion – which we define as undertaking FDI at an accelerated speed – in order to reduce their disadvantage in relation to established multinationals. For these firms, the potential risk associated with rapid FDI expansion could be secondary to the risk of being a perennial late mover. Cockburn, Henderson, and Stern (2000) define these firms as playing *catch-up convergence*. Yet despite its importance, few studies have investigated the speed of FDI expansion. A notable exception is Vermeulen and Barkema (2002), who found that, although the speed of international expansion has no direct effect on firm performance, it has a negative interaction effect with several of the firm's subsidiaries. They did not, however, examine firms' internal and external environments, which might affect whether rapid FDI expansion is a viable strategy.

Specifically, this paper attempts to verify empirically the circumstances under which rapid FDI expansion can improve performance. To do so, we consider internal factors (e.g., firm resources and capabilities) and external factors (e.g., competitive environments) that moderate the relationship between the speed of FDI expansion and firm performance. We posit that strong intangible resources and capabilities, such as technology or brand equity, or tangible resources, such as financial slack, may help firms pursue rapid FDI expansion by allowing them to overcome the difficulties of rapid FDI expansion (George, 2005). In addition, we argue that rapid FDI expansion may be necessary in a competitive environment. Following from Chen (1996), who argues that a firm that responds quickly to competitors' actions is more likely to maintain its competitive position, we explore how firms can achieve competitive advantages through rapid FDI expansion by reaching global scale quickly, and capturing or nullifying first-mover advantages. As global competition intensifies, firms often find it necessary to achieve global scale quickly, in which

case rapid FDI expansion may lead to higher performance.

Because most prior work in this area has focused on firms in advanced economies that have undertaken gradual FDI expansion, the literature has not explored whether firms that began internationalizing recently should take the same approach. In order to address this issue, we assemble data on FDI and performance for publicly listed Korean firms in the manufacturing sector from 1980 to 2003, during which time they quickly grew and internationalized (Cha, Kim, & Perkins, 1997). Korean firms' internationalization experiences vividly parallel those of firms in other emerging markets such as China and India, which have just begun to expand aggressively into foreign markets. As it may be too early to gauge the success of firms from these markets, we believe that Korean firms' experiences can provide useful theoretical insights for international business scholars who wish to develop a comprehensive theory of rapid FDI expansion.

### SPEED OF FDI EXPANSION

Beginning with Hymer (1960), scholars have been interested in finding the factors that lead firms to undertake FDI. For instance, research has shown a positive correlation between FDI and intangible assets (Caves, 1971; Kogut & Chang, 1991).<sup>1</sup> FDI is also understood to be an incremental process, in which initial investments affect the nature and timing of subsequent investments. Johanson and Wiedersheim-Paul (1975) and Davidson (1980) argue that firms should move sequentially from a country of less psychic distance to a country of greater psychic distance. Kogut and Chang (1996) and Chang (1995) showed that firms that invested in a foreign market were more likely to invest subsequently in this market by adding more functionality and more lines of business. This line of study assumes that gradual investment allows firms to learn about foreign markets, and increase commitments to them incrementally. In so doing, they can maximize the benefits of learning and minimize the hazards of failure. The emphasis across these studies is on the sequence, not the speed, of FDI expansion. We argue that speed and sequence are two independent dimensions. For example, rapid FDI expansion also can be sequential if a firm undertakes multiple FDI in a short time, following a certain prescribed sequence. The present study focuses on the issue of speed, which we define as the average number of FDI in new countries



per year since a firm's first FDI, and on the circumstances in which rapid FDI expansion would lead to higher firm performance.<sup>2</sup>

Undertaking multiple FDIs rapidly creates numerous challenges. By definition, firms that undertake FDIs at an accelerated speed may find it difficult to learn from their prior FDI experience, because a firm's absorptive capacity depends largely on its prior related knowledge (Cohen & Levinthal, 1990). Moreover, because of time-compression diseconomies (Dierickx & Cool, 1989), the quality of knowledge a firm can use when it undertakes FDIs over a short period may be inferior to that of a firm that accumulated its stock of relevant knowledge over a longer period. For example, Vermeulen and Barkema (2002) find that speed negatively moderates profits from internationalization. Barkema and Drogendijk (2007) similarly find that incremental expansion in foreign settings may increase local learning and success. Thus, conventional wisdom predicts that rapid FDI expansion will lead to poor performance.

On the other hand, another stream of research focusing on time-based competition provides evidence that rapid FDI expansion may positively affect firm performance. With the concept of *time to market*, Cohen et al. (1996) emphasize the importance of introducing new products quickly, especially when a firm faces a narrow window of opportunity, and when it has a fast development capability. With the concept of *time to build*, Salomon and Martin (2008) demonstrate that the speed of building a manufacturing facility leads to higher performance in the global semiconductor industry. Similarly, Pacheco-de-Almeida, Hawk, and Yeung (2010) find that a firm's values are positively affected by its speed in the execution of large investments in oil and gas facilities worldwide. Taken together, this more recent literature highlights the potential benefits of rapid expansion strategies.

Given these conflicting views on the direct impact of speed on firm performance, this study does not seek to understand *whether* rapid FDI expansion leads to higher performance. Rather, we are interested in *when* – that is, under what circumstances rapid FDI expansion leads to higher performance. To motivate this exploration, we turn to prior work that suggests that speed may have some inherent advantages in certain contexts. As defined above, born-global firms pursue international expansion soon after their founding, which contrasts with the conventional wisdom that only large, mature firms should pursue international

expansion (Knight & Cavusgil, 2004). Many of these born-global firms are in industries where products can be replicated at a low marginal cost on a global scale. As a consequence, new firms in these industries feel it is necessary to internationalize rapidly (Knight, Madsen, & Servais, 2004; Lopez, Kundu, & Ciravegna, 2009; McDougall, 1989; Moen, 2002; Zahra, Ireland, & Hitt, 2000). Nonetheless, these born-global firms face the twin liabilities of newness (Stinchcombe, 1965) and foreignness (Hymer, 1960; Zaheer, 1995). They therefore need strong technological advantages to compensate for such liabilities (Shrader et al., 2000).

Similarly, the first-mover advantage perspective suggests that when a firm acts early relative to its peers, it can gain three main sources of competitive advantage: technological leadership, preemption of assets, and the creation of buyer switching costs (Lieberman & Montgomery, 1988). However, empirical support for this perspective is mixed. Some studies find evidence for first-mover advantages in new product introduction (Lee, Smith, Grimm, & Schomburg, 2000), entry into new markets or industries (Fuentelsaz, Gomez, & Polo, 2002; Lee, 2008; Makadok, 1998; Mascarenhas, 1992; Schoenecker & Cooper, 1998), and acquisitions (Carow, Heron, & Saxton, 2004). Conversely, other research suggests that first movers are at a disadvantage, because late movers can take a free ride on the pioneering firms' investments, and learn from their mistakes (Lambkin, 1988; Lee et al., 2000; Mitchell, 1991; Song, Di Benedetto, & Zhao, 1999). For instance, although General Motors entered the Chinese automobile industry much later than Volkswagen, it tapped into the supplier network that VW had developed over a decade, quickly grabbing the market share from VW. Focusing on firms in the US medical diagnostic imaging equipment industry, Mitchell, Shaver, and Yeung (1992, 1994) also find successful foreign entry to be related to the extent of foreign presence in an industry at the time of entry. Specifically, firms tend to fail when expanding into an industry where several successful early entrants are entrenched. To conclude, first-mover advantage translates into improved performance only when two conditions are met. First, it must be large enough to compensate for first-mover disadvantages. Second, there must be no followers that respond quickly enough to the first mover that they prevent the first mover from preempting assets and creating switching costs.

The phenomena of born-global firms and first-mover advantage depend on two factors: firms' internal resources and capabilities, and firms' external competitive environments. We suggest that these same factors underscore the success or failure of rapid FDI expansion. In the next section, we develop our theoretical arguments, based on these two contingent factors.

### STRATEGIC CONSIDERATIONS FOR RAPID FDI EXPANSION

Internationalizing firms are essentially heterogeneous in their internal resources and capabilities, and their external competitive environments (Melin, 1992). Here we focus on these two types of heterogeneity, which we believe moderate the relationship between the speed of FDI expansion and firm performance.

#### Internal Resources and Capabilities

Strategy research has long argued that certain resources or capabilities accumulated inside a firm can affect the success or failure of its strategic choices. Andrews (1971) defines strategy as matching the resources of the organization with environmental opportunities at an acceptable level of risk. Penrose (1959) defines a firm as a bundle of productive resources that vary significantly by firm and make firms behave differently even if they are exposed to the same business opportunity. On the basis of the assumptions of resource heterogeneity (i.e., resources are heterogeneously distributed across firms) and resource immobility (i.e., resource differences persist over time), the resource-based view emphasizes both tangible and intangible resources as the ultimate sources of competitive advantage (Barney, 1991; Wernerfelt, 1984). Tangible resources such as financial resources function as organizational slack that makes rapid FDI expansion a feasible strategy. Organizational slack denotes resources in excess of the requirement for survival (Cyert & March, 1963). Slack resources function as a buffer against internal and external pressures, and facilitate strategic behavior (Bourgeois, 1981). As the resource constraints literature indicates, firms with fewer slack resources are more likely to act cautiously (Baker, Miner, & Eesley, 2003; Starr & MacMillan, 1990). In contrast, larger amounts of slack resources may allow firms to adapt to complex competitive landscapes (Levinthal, 1997), change strategic behavior (Bourgeois, 1981), and take risks (Singh, 1986). Slack resources can also serve as a buffer against

downside risk or bankruptcy risk, positively affecting performance and ensuring the long-run survival of the firm (Bromiley, 1991; George, 2005; Tan & Peng, 2003). As FDIs are inherently risky strategic investments with long-term payoffs, we expect firms with sufficient tangible slack resources to utilize a rapid FDI expansion strategy more effectively. Our prediction is also consistent with Nohria and Gulati (1996) and Voss, Sirdeshmukh, and Voss (2008), as they consider tangible slack resources as a necessary condition for innovation, product exploration, and product exploitation.

Intangible resources and capabilities, including R&D and marketing know-how, may also make rapid FDI expansion more feasible by offering important sources of competitive advantage (Buckley & Casson, 1976; Caves, 1982; Dunning, 1988; Hennart, 1982). Firms possessing such superior resources and capabilities may generate enough monopolistic competitive advantages to overcome the liabilities of foreignness, which in turn facilitate rapid FDI expansion. Because of the public-good character of knowledge-intensive resources (Arrow, 1962), firms equipped with technology or marketing know-how might be able to develop new products and reach additional customers in multiple country markets at little or no additional cost. In this sense, intangible resources may be another important source for slack resources that facilitate a firm's strategic investment (Bourgeois, 1981). These firms may also benefit more from rapid FDI expansion, because they can spread the fixed cost of technology and new product development over a larger sales base. This logic is especially applicable to high-technology and marketing-intensive industries, where products can be replicated at low marginal cost on a global scale (McDougall, 1989).

Taken together, the previous research outlined above suggests that firms equipped with superior internal resources and capabilities may be able to reap higher profits with rapid FDI expansion than firms that lack such resources and capabilities. We thus propose that:

**Hypothesis 1:** A firm's tangible and intangible resources will positively moderate the relationship between the speed of FDI expansion and firm performance.

#### Competitive Pressures

The strategy field has also focused on intra-industry rivalry as a key determinant of firm performance (Porter, 1980). In intra-industry rivalry, a firm's



incomplete and/or incorrect analysis of available information may result in ineffective response (Boyd & Bresser, 2008). In order to respond effectively to such rivalry, a firm must not only perceive its competitors' behavior correctly but also react quickly (Zajac & Bazerman, 1991). With data on competitive moves by US airlines, Chen and MacMillan (1992) find that firms are more likely to respond faster and decisively when they perceive a competitor's action as a threat to important markets. They also find that:

- (1) both attackers and respondents gained market share at the expense of non-responders;
- (2) responders gained less market share than attackers; and
- (3) quick responders gained more market share than slow responders.

Salomon and Martin (2008) also emphasize the importance of time-based competitive advantage. In the global semiconductor industry, they find that firms build plants faster as the threat of entry by rival firms increases. Pacheco-de-Almeida et al. (2010) also emphasize the importance of time-to-build. Measuring speed as deviations from the industry-average time of executing large investments in oil and gas facilities worldwide from 1996 to 2005, they find that a firm's investment speed positively affects its market value, which averages US\$214.3 million, when accelerating investments by 5% (or 1 month) below the industry norm. Taken together, the literature on competitive rivalry emphasizes that a firm must consider its rivals when formulating and implementing strategies.

Despite early work discussing *follow-the-leader* (Knickerbocker, 1973) and *exchange-of-threat* (Graham, 1978) responses, the FDI literature has paid little attention to how a competitive environment might influence the speed at which a firm should use FDI. In this study, we expect the appropriateness of rapid FDI expansion to be contingent on a firm's *external* competitive environment, as well as the internal resources and capabilities that we examined earlier. On the basis of this prior work on competitive rivalry (Chen, 1996; Chen & MacMillan, 1992), we argue that a firm should deal quickly with competitive pressures that could otherwise leave it disadvantaged. The magnitude of the risks stemming from competitive pressures may moderate the relationship between rapid FDI expansion and firm performance.

In this study, we focus on competitive pressures generated from industry globalization pressures as moderator of the relationship between the speed of FDI expansion and firm performance. International business scholars have devoted scholarly attention to how globalization affects MNCs' strategies, as reduced trade barriers, improved communication technology, and the abolition of capital flow controls have resulted in increasing interdependence among nations, which, in turn, has forced many firms to compete globally (Buckley & Ghauri, 2004). For example, in their respective studies, Ito and Rose (2002) and Wiersema and Bowen (2008) examine how industry globalization affects firms' FDI location strategies and their degree and scope of international diversification.

Economists argue that each industry has unique characteristics that influence the behavior and performance of firms in that industry (Schoenecker & Cooper, 1998; Spanos, Zaralis, & Lioukas, 2004). The degree of globalization varies greatly across industries, depending on the extent to which the possession of global operations confers competitive advantage (Kobrin, 1991). For firms operating in industries with little pressure to globalize, slow foreign expansion may remain valid, given that a firm's competitive position in one country is unlikely to be affected by its position in other nations. In contrast, firms that operate in industries where the pressure to globalize is greater may perceive rapid FDI expansion as imperative, as firms that can source, develop, manufacture, and sell their products and services globally are more likely to have strong competitive advantages over their less internationalized rivals (Kogut, 1985).

For instance, the key driver for consolidation in the automobile industry was the large-scale economies in new product development and manufacturing. Small, domestically oriented firms could not compete with global rivals, because they could not match their rivals' costs. For example, under great pressure to globalize instantly in the automobile industry, Hyundai/Kia Motors rapidly expanded its global reach by building production facilities in Turkey in 1997, China in 1997, 2002, and 2007, India in 1998, the United States in 2005 and 2010, Slovakia in 2007, Russia in 2008, and the Czech Republic in 2009.<sup>3</sup> Similarly, some high-technology industries require firms to exploit their technology globally soon after their founding, creating the born-global phenomenon, although born-globals are often small, entrepreneurial firms, and they often pursue internationalization with

export rather than FDI. Thus, for firms in a highly globalized industry, slow FDI expansion can pose a greater threat than rapid FDI expansion, because it does not allow firms to tap global scale economies. We thus propose that:

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

## RESEARCH METHODS

### Sample

The sample for this study consists of publicly listed Korean firms in the manufacturing sector and their FDIs from 1970 to 2003. When Korean firms invest overseas, they are required by law to report their investments to the government-owned Import-Export Bank of Korea, which maintains a database that includes investor names, dates of establishment, investment amounts, locations, and exit activity. In addition to the availability of data, Korean firms' FDIs provide an interesting empirical setting for our study. Korea was a successful emerging market as it rapidly industrialized from the 1960s onward. Compared with American, European, and Japanese multinationals, Korean firms expanded relatively late into international markets. As Figure 1 illustrates, before the late 1980s, Korean firms' international investments were minuscule, relying mainly on exporting locally manufactured products. In the late

1980s, when domestic labor disputes intensified, and competition from low-wage countries such as China and Indonesia increased, Korean firms began investing abroad. This setting therefore offers the opportunity to evaluate the impact of internal and external contingencies in determining how successful Korean firms were in utilizing a rapid FDI expansion strategy.

Although the Import-Export Bank of Korea database includes the entire population of Korean firms' FDIs, we focus only on publicly listed manufacturing firms. We chose to do so because some financial information is available only for publicly listed companies. Further, manufacturing and non-manufacturing firms require different types of experiences and knowledge to use FDI successfully. We also limit our data to FDIs in new countries, thereby excluding subsequent investments in countries where firms have already made an investment. The Korea Information Service, a leading credit rating agency in Korea equivalent to Standard and Poor's or Moody's in the US, provides corporate profiles and financial information on all listed companies since 1980. Because our unit of analysis is the firm, and financial information is available from 1980 onward, our sample consists of all public manufacturing firms that engaged in FDI at least once between 1980 and 2003. We can, however, incorporate these firms' FDIs before 1980, because our database lists all FDIs from 1970 onward.

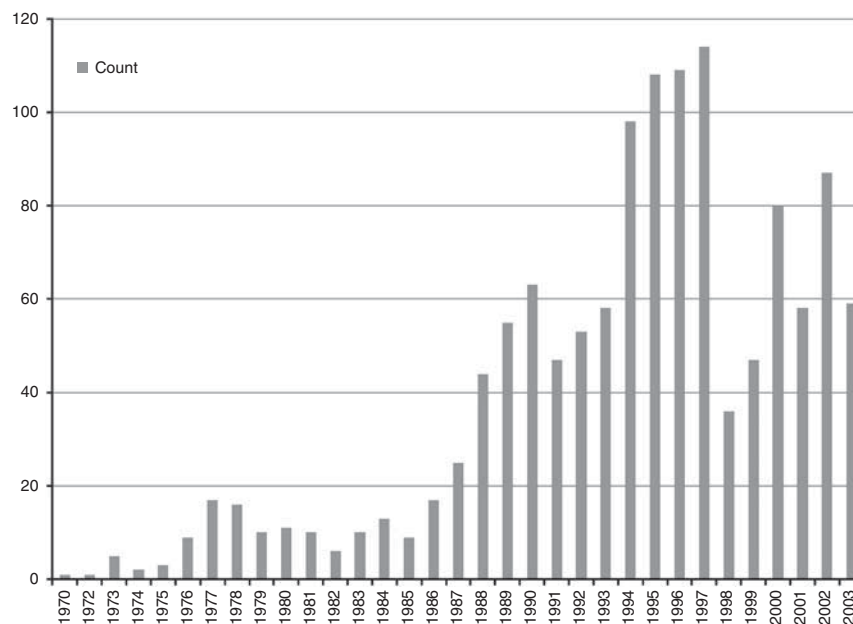


Figure 1 Publicly listed Korean manufacturing firms' FDI for 1970–2003.

Between 1970 and 2003, the Import-Export Bank of Korea database listed 851 FDIs in the manufacturing sector by 276 publicly listed manufacturing firms that represent FDIs in new countries. Several firms in our sample invested repeatedly during our study period. For instance, Samsung Electronics entered 36 countries, and LG Electronics entered 20 countries. The most popular destinations for Korean FDIs were China (207 cases, including Hong Kong), the United States (145 cases), Indonesia (45 cases), Japan (43 cases), Vietnam (30 cases), Germany (26 cases), Thailand (26 cases), and the UK (23 cases). In total, our sample of firms entered 73 countries between 1970 and 2003.

### Measures

In order to study the international performance of publicly listed Korean manufacturing firms and match it with internationalization strategy, we collected data on Korean firms' investments, and aggregated them at the firm level.

#### *Firm performance*

We use profitability to indicate firm performance. Because our data span 24 years, it is reasonable to measure the performance of a firm's FDI expansion strategy by its profitability. Similar to Vermeulen and Barkema (2002), we use firm fixed effects to control for factors, other than international expansion strategy, that can affect firm performance. We measure firm-level performance as the return on invested capital (ROIC), defined as the sum of net income before tax plus interest payments deflated by total assets. This provides a return metric, comparable across firms, that indicates operating efficiency without being biased by the relatively high financial leverage common in Korean firms. We perform robustness tests using the return on assets (ROA), defined as net income divided by assets, as an alternative profitability measure; the results remain consistent. In order to avoid yearly fluctuations, we use the 3-year moving average of ROIC and ROA at time  $t-1$ ,  $t$ , and  $t+1$ .<sup>4</sup>

#### *Speed of FDI expansion*

Following Vermeulen and Barkema (2002), we measure *speed of FDI expansion*, our key variable of interest, as the average number of foreign manufacturing subsidiaries in new countries divided by the number of years since the firm's first foreign expansion. This measure is a time-varying construct, updated at each time  $t$  to reflect a firm's total number of foreign subsidiaries in new countries

from the year of its initial investment onward. The higher the value of the *Speed* variable, the more FDIs a firm initiated in new countries during a given time frame. For instance, a firm that first invested in a foreign country in 1990, made its second investment in another country in 1992, and its third and fourth investments in other countries in 1994 and 1995 creates a *Speed* score of 1.0 in 1991 and 1992, 0.67 in 1993, 0.75 in 1994, and 0.80 in 1995, respectively. We perform robustness tests using several alternative measures for speed. For instance, we also measure speed in terms of how many foreign investments a firm made in the past 3 years, thus heavily weighting recent entries. The results are consistent.

#### *Internal resources and competitive pressures*

We employ several indicators to operationalize a firm's tangible and intangible resources and capabilities, which together constitute our variable for internal firm heterogeneity. Bourgeois and Singh (1983) classify three types of tangible slack resources. Available slack refers to whether a firm meets its immediate obligation with liquid resources. Recoverable slack indicates resources that have been absorbed by the organization, but can be recovered. Potential slack refers to resources that can be generated from the environment by raising additional debt or equity capital. Because FDIs are inherently risky long-term investments, this study focuses on the third type of tangible slack: potential slack resources. We operationalize this with the *Leverage* variable, defined as a firm's total debt divided by its assets. High leverage increases the likelihood of bankruptcy and financial distress, and thus limits a given firm's ability to finance its investment by borrowing (Bromiley, 1991; Froot, Scharfstein, & Stein, 1994; George, 2005; Tan & Peng, 2003). As Korean firms relied on debt financing and were typically heavily leveraged, the leverage ratio serves as an important indicator of a firm's ability to support international expansion via debt financing (Chang, 2003). In fact, several Korean firms that pursued rapid global expansion, such as the Daewoo Group, relying mainly on debt financing, witnessed spectacular collapse in the wake of the Asian Crisis in 1997 (Economist, 1999). On the other hand, available slack or recoverable slack, often measured by the current ratio and the selling and general expenses to sales, essentially reflect short-term cash flow or short-term improvement of operating efficiency, and therefore are less likely to impact on the effectiveness of rapid

FDI expansion strategy. For intangible resources, we measure parent firm *R&D* and *Advertising Intensities*, defined as R&D and advertising expenditures divided by sales at time  $t$ . These variables measure the availability of intangible technological and marketing resources and capabilities that help firms pursue rapid international expansion (Morck & Yeung, 1991, 1992).

We measure industry-level competitive pressures stemming from globalization with *Industry Globalization*, as adopted from Makhija, Kim, and Williamson's (1997) level of international trade (LIT) index. LIT represents trade flows relative to market size, capturing the degree of international linkage. Specifically, it is the proportion of international trade relative to overall consumption within the industry. Following Makhija et al. (1997), we use the World Bank's Bilateral Trade Database (1976–2003) to create a production-weighted composite estimate of LIT as a proxy for the overall globalization level of each industry for each year. In order to ensure uniform definitions of industries across countries, we use the three-digit International Standard Industrial Classification codes.<sup>5</sup>

#### **FDI strategy controls**

We incorporate several control variables to reflect FDI strategy. *Number of foreign countries* measures the total number of countries a firm is operating in at time  $t$ , that is, the total number of foreign entries in new countries less any exits. Because we control for the number of foreign countries, our measure of *Speed* reflects how quickly a firm made FDIs to achieve the same degree of FDI expansion in new countries.<sup>6</sup> For example, Firm 1, which made 10 investments over the course of 10 years, and Firm 2, which made five investments in 5 years, have the same speed score: 1. In and of itself, the *Speed* variable does not indicate the number of entries made by a given firm. Similarly, if Firm 3 makes 10 investments over 5 years and Firm 4 makes 10 investments over 10 years, the number of foreign countries alone will not reflect the speed of the firms' international expansions. Thus, we use both speed and the number of foreign countries to understand how quickly a firm deploys its FDIs.

We also control for several dimensions of FDI strategy. First, we measure the *Geographic dispersion* of FDIs as the average geographic distances between Korea and target countries in thousands of kilometers for all FDIs until time  $t$ , with investment size as a weighing factor.<sup>7</sup> *Cultural distance* uses Kogut

and Singh's (1988) indices to measure the average cultural distance between Korea and target countries for all FDIs until time  $t$ , again weighted by investment size. The greater the geographic and cultural distance, the greater challenges a firm will face in pursuing rapid FDI expansion. We measure *Rhythm* of FDI expansion as the kurtosis of the count of new FDIs made by a firm each year until time  $t$  (Vermeulen & Barkema, 2002). This variable captures how evenly distributed or concentrated the cases of foreign expansion are in terms of timing. If there are peaks and valleys in a firm's international expansion pattern, kurtosis and thus rhythm will take a higher value. If a firm's FDIs are more evenly distributed, kurtosis and thus rhythm will take a lower value. Following Vermeulen and Barkema (2002), we expect that firms that expand more evenly will perform better. We measure the *Proportion of wholly owned subsidiaries* as the average number of wholly owned subsidiaries out of all FDIs until time  $t$ , weighted by investment size. Wholly owned subsidiaries are by definition an international expansion mode entailing a greater commitment and thus a greater challenge than joint ventures. Firms pursuing rapid FDI might reduce market uncertainty and lower risk by incurring joint ventures with local companies, instead of pursuing wholly owned subsidiaries. Finally, we control for the average *investment size* of all FDIs until time  $t$  in billion US\$.

#### **Other firm controls**

We measure *firm size* as the total number of employees at time  $t$ , which we log-transform to control for any firm size factors. *Export* denotes the proportion of export sales to total sales at time  $t$ , reflecting a firm's international exposure through export activities (Yu, 1990). *Firm age* indicates the number of calendar years since a firm was established, thereby allowing us to control for age and experience. Many of the firms in our sample are affiliated with large business groups, known as *chaebols* (Chang, 2003). The Korean government identifies the 30 largest business groups according to asset size in the non-financial sectors each year, and publishes a listing of their affiliates in order to block anti-competitive behavior according to the Act for Monopoly Regulation and Fair Trade Promotion (known as the "Fair Trade Act"). We indicate group membership using a dummy variable, *Business group affiliation*, which takes a value of 1 if a firm is affiliated with a top 30 group and 0 if not. A group affiliate's foreign subsidiary might



benefit from other group affiliates' operations in the same country, and is thus expected to have a higher performance.

### Methods

Our sample consists of 2540 firm-year observations that belong to 276 publicly listed manufacturing firms, excluding firms with missing financial information. Because there could be spurious causal relationships between FDI strategy and firm performance due to unobserved firm heterogeneity, simple OLS regressions with year and industry controls would be inappropriate. Instead, we adopt the panel data technique by including a set of firm and year dummy variables, thus assuming fixed effects (Hsiao, 1986). Our measures of firm FDI strategy controls and other firm controls reflect firms' variations over time, as we include firm fixed effects to control for unobserved firm heterogeneity. The Wooldridge test, the panel data equivalent of the Durbin–Watson statistic, indicates no evidence of first-order autocorrelation (Wooldridge, 2002). We use White's heteroskedasticity consistent standard errors in order to improve the efficiency of estimators and reduce other possible heteroskedasticity problems.

### RESULTS

Tables 1 and 2 present descriptive statistics and correlations for all variables included in the model. Table 3 shows results from the fixed-effects regression models in which the dependent variable is the ROIC at the individual firm level. Model 1 in

Table 3 displays a baseline model in which we include the main effects of various competitive pressures, FDI strategy variables, firm resources, and other control variables. Models 2–4 test the interaction effects of the speed of FDI expansion with a firm's intangible and tangible resources, as well as the competitive pressures from globalization.

We do not propose a hypothesis about the main effect of speed, because there are conflicting predictions for the relationship between speed and firm performance; instead, we focus on interaction effects. In Model 1, where we include only the main effect of the speed and other FDI strategy variables, the coefficient estimate for the speed is insignificant. This result suggests that rapid FDI expansion has no main effect on firm performance. The main effect of the speed variable turns positive and significant in Model 2, suggesting that rapid FDI expansion may positively affect firm performance when we consider contingency factors, related to internal resources and capabilities. The main effect of the industry globalization variable is negatively significant in Models 3 and 4, suggesting that firms' profitability in highly globalized industries is generally lower than in less globalized industries. Among the main effects of a firm's intangible and tangible resources, only financial leverage is negatively signed and significant.

Model 2 tests Hypothesis 1, which predicts a positive interaction between the speed of FDI expansion and a firm's intangible and tangible resources. The interaction between speed and advertising intensity is positive and significant, whereas

**Table 1** Descriptive statistics

Variable	Mean	s.d.	Min	Max
1 ROIC (%)	5.17	5.77	−23.87	21.15
2 Speed	0.42	0.41	0.03	5.00
3 Number of foreign countries	3.00	3.85	1.00	36.00
4 Geographic dispersion (1000 km)	6.54	3.97	0.95	19.42
5 Average cultural distance	1.85	1.06	0.18	3.78
6 Rhythm	5.32	5.71	−3.33	34.00
7 Proportion of wholly owned subsidiaries	0.63	0.43	0.00	1.00
8 Average investment size (US\$billion)	0.01	0.02	0.00	0.64
9 Industry globalization	0.53	0.34	0.01	1.33
10 Firm size	6.83	1.29	2.30	10.92
11 R&D intensity (%)	0.49	1.24	0.00	28.03
12 Advertising intensity (%)	1.02	2.02	0.00	19.25
13 Leverage	0.65	0.26	0.14	1.85
14 Export	0.36	0.29	0.00	1.00
15 Firm age	30.20	12.40	0.00	87.00
16 Business group membership	0.25	0.44	0.00	1.00

Table 2 Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1.00															
2	0.09	1.00														
3	0.03	0.20	1.00													
4	0.11	-0.03	0.06	1.00												
5	0.11	0.01	-0.03	0.70	1.00											
6	0.02	-0.39	-0.33	0.10	0.16	1.00										
7	-0.01	-0.04	0.03	0.19	0.26	0.05	1.00									
8	0.07	0.03	0.09	0.09	0.08	-0.06	0.02	1.00								
9	-0.08	-0.02	-0.03	-0.10	-0.09	0.12	0.01	-0.02	1.00							
10	0.28	0.11	0.33	0.13	0.17	-0.11	0.01	0.27	-0.14	1.00						
11	0.01	0.11	0.06	0.02	0.07	-0.11	-0.06	0.04	0.06	0.07	1.00					
12	0.12	0.02	-0.01	0.05	0.03	-0.10	-0.06	-0.04	-0.11	0.09	0.13	1.00				
13	-0.25	-0.03	0.02	0.08	0.03	0.01	0.05	0.03	-0.16	0.13	-0.07	-0.01	1.00			
14	-0.08	0.06	0.20	-0.14	-0.17	-0.23	0.13	0.11	0.10	-0.03	-0.05	-0.35	-0.07	1.00		
15	-0.10	-0.15	0.11	-0.11	-0.04	0.13	-0.07	-0.08	0.00	0.15	-0.07	0.10	-0.07	-0.11	1.00	
16	0.02	0.10	0.28	0.05	0.12	-0.08	-0.06	0.19	-0.10	0.49	0.04	-0.05	0.20	0.02	0.08	1.00

N=2540. Correlation coefficients greater/lower than ±0.05 are significant at the 5% level.

the interaction term between speed and financial leverage is negative and significant; both results support Hypothesis 1. Specifically, these findings indicate that the speed of FDI expansion positively affects firm performance for a firm that has strong brand equity or marketing know-how, as well as financial slack resources. The interaction effect between speed and R&D intensity is insignificant. Figures 2a and 2b illustrate the combined impact of the main effect of speed and its interaction effects. Impact is measured with three different levels of speed and three different levels of advertising intensity and financial leverage. The levels of speed correspond roughly to the mean ±1 standard deviation (i.e., 0.03, 0.42, and 1.0). The levels of advertising intensity are 0%, 1.02%, and 3.04%, which correspond to a lower bound of advertising intensity, the mean level, and the mean + 1 standard deviation. The levels of financial leverage are 0.39, 0.65, and 0.91, which correspond to the mean and the mean ±1 standard deviation. When a firm's speed is 1.0 and its advertising intensity is 3.04%, its ROIC increases by 2.82 percentage points. For the same speed, but with an advertising intensity of 0%, a firm's ROIC increases by 2.00 percentage points. Similarly, when a firm's speed is 1.0 and its financial leverage is 0.39, its ROIC increases by 0.78 percentage points. For the same speed, but with an financial leverage of 0.91, a firm's ROIC decreases by 0.84 percentage points.

Results for the moderating effects of competitive pressure from globalization are presented

in Model 3. The interaction term of rapid FDI expansion and industry globalization is positive and significant, supporting Hypothesis 2. This result means that rapid FDI expansion is a more favorable strategy for firms in industries that face intensified global competition. Figure 2c shows that a firm with a speed of 1 would increase its ROIC by 1.81 percentage points in an industry of high globalization. In contrast, Figure 2c also shows that a firm with a speed of 1 that competes in an industry with a low level of globalization would increase its ROIC by just 0.39 percentage points. In Model 4, we include all four interaction terms, and the results are consistent with those that added the interaction terms individually.<sup>8,9</sup>

We incorporate several control variables to capture our sample firms' FDI strategy. Average geographic distances and cultural distances for the entries with respect to Korea, the rhythm or the evenness of entries, the proportion of wholly owned subsidiaries, and the average investment size are not significantly related to firm performance. Number of foreign countries is positive and weakly significant in Models 1 and 3. Among other control variables, firm size is positively significant, whereas financial leverage is negatively significant for performance in all models. Firm age turns negatively significant in some models. Export intensity is positive and weakly significant in all four models. R&D and advertising intensity, and business group membership are insignificant in all models.

**Table 3** Fixed-effects regression models of profitability (ROIC) at the firm level

		Model			
		1	2	3	4
Hypotheses	Speed × R&D intensity (Hypothesis 1)	—	0.19 (0.21)	—	0.13 (0.21)
	Speed × advertising intensity (Hypothesis 1)	—	0.27 (0.13)*	—	0.31 (0.13)*
	Speed × leverage (Hypothesis 1)	—	−3.12 (1.34)*	—	−2.73 (1.32)*
	Speed × industry globalization (Hypothesis 2)	—	—	2.09 (0.87)*	1.82 (0.91)*
	Speed	0.23 (0.29)	2.00 (0.99)*	−0.67 (0.44)	0.92 (1.13)
FDI strategy	Number of foreign countries	0.15 (0.07)*	0.11 (0.07)	0.13 (0.07)†	0.10 (0.07)
	Geographic dispersion	−0.01 (0.07)	−0.02 (0.07)	−0.02 (0.07)	−0.02 (0.07)
	Average cultural distance	0.12 (0.24)	0.17 (0.24)	0.13 (0.24)	0.18 (0.24)
	Rhythm	0.02 (0.03)	0.01 (0.03)	0.02 (0.03)	0.01 (0.03)
	Proportion of wholly owned subsidiaries	0.41 (0.41)	0.43 (0.41)	0.46 (0.41)	0.47 (0.41)
	Average investment size	−3.91 (4.25)	−3.50 (4.20)	−4.17 (4.24)	−3.82 (4.21)
	Industry globalization	−0.59 (0.58)	−0.66 (0.58)	−1.36 (0.65)*	−1.36 (0.66)*
Competitive pressures	Firm size	1.77 (0.31)***	1.84 (0.31)***	1.76 (0.31)***	1.82 (0.31)***
	R&D intensity	−0.08 (0.15)	−0.21 (0.22)	−0.09 (0.15)	−0.18 (0.22)
	Advertising intensity	0.19 (0.20)	0.06 (0.17)	0.20 (0.16)	0.04 (0.17)
	Leverage	−5.51 (0.73)***	−4.63 (0.82)***	−5.48 (0.73)***	−4.72 (0.82)***
	Export	1.39 (0.73)†	1.29 (0.78)†	1.47 (0.73)†	1.37 (0.78)†
	Firm age	−0.01 (0.04)	−0.04 (0.04)	−0.08 (0.05)†	−0.10 (0.05)*
	Business group membership	−0.33 (0.53)	−0.38 (0.53)	−0.29 (0.53)	−0.35 (0.52)
	Firm fixed effects	Yes	Yes	Yes	Yes
	Year fixed effects	Yes	Yes	Yes	Yes
	$R^2$	0.62	0.62	0.62	0.62
Obs. (no. of firms)	2540 (276)	2540 (276)	2540 (276)	2540 (276)	

\*\*\* $p < 0.001$ ; \*\* $p < 0.01$ ; \* $p < 0.05$ ; † $p < 0.10$ .

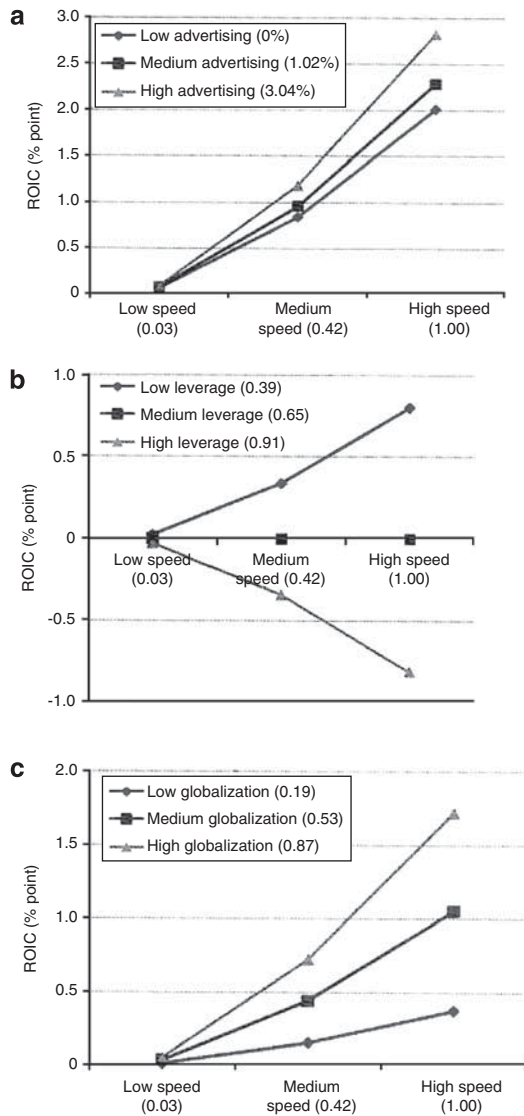
Note: 275 firm dummies and 23 year dummies are not shown.

## DISCUSSION AND CONCLUSION

The present study explores when rapid FDI expansion is a good strategic alternative, an important question largely ignored by the literature. Conventional wisdom argues that gradual FDI is the best way to deal with the liability of foreignness. However, we find that both gradual FDI and rapid

FDI expansion have strengths and weaknesses, which must be evaluated in regard to specific context.

To understand these contingencies, we investigate potential moderators of the relationship between the speed of FDI expansion and firm performance. We predict that the relationship between firm



**Figure 2** Graphical interpretations of the impact of speed on firm performance: (a) with low, medium, and high levels of advertising intensity; (b) with low, medium, and high levels of financial leverage; (c) with low, medium, and high levels of globalization.

performance and the speed of FDI expansion will depend on both the heterogeneity of internal resource capabilities and the competitive pressures that a focal firm faces. We find that rapid FDI expansion positively influences the performance of firms that have strong internal resources and capabilities. In addition, we demonstrate that the effectiveness of rapid FDI expansion depends on the competitive pressures a focal firm faces. Rapid FDI expansion is an effective strategy for firms facing pressures to globalize, indicating that firms in some industries should enter many markets

simultaneously rather than expand gradually into new markets. Coupled with Ito and Rose's (2002) finding that a firm's degree of global presence can affect the strategic behaviors of firms in that industry, our study reconfirms that industry characteristics help determine the speed of a firm's FDI expansion.

What is the right speed of FDI? The gradual approach is intuitively appealing. Yet managers of late internationalizers often believe their businesses will not survive unless they go global immediately. The gradual approach often underestimates the importance of heterogeneity among internationalizing firms. The failure to account for such heterogeneity seems to underlie the recommendation that gradual foreign expansion is always preferable. This bias seems unchallenged until this study, when we explicitly consider external competitive environments leading to a rapid FDI expansion strategy.

Like the gradual approach, the rapid FDI expansion strategy is also characterized by boundary conditions. Rapid FDI may be more appropriate when a firm's industry is globalizing rapidly and the firm is fighting against time. In such industries, the competitive risks of gradual expansion may outweigh any gains from reduced market uncertainty. Thus, industry globalization points to the efficacy of rapid FDI expansion. First- (or early-) mover advantage may also make this strategy more appropriate. Further, it may be more useful for firms that have greater absorptive capacity and can tap knowledge outside their own experience, because such capabilities attenuate the time-compression diseconomies (Dierickx & Cool, 1989) associated with this strategy.

Taken together, our results indicate that there is no simple answer to the question of whether FDI expansion should take place quickly or slowly. Rather, our results underscore the importance of considering both internal and external contingencies in answering this question. Firms that consider this question must assess their internal capabilities and the competitive environment to judge whether rapid FDI expansion is possible or even necessary.

This study has several limitations. First, it does not consider management styles and processes, which might affect the speed of internationalization, as well as how firms handle the higher risks associated with rapid expansion. The effective management of risks and rapid FDI merits further study. Second, future research should expand the scope of the

present sample by including firms from both developing and developed countries, including born-global firms. Third, data limitations prevent us from considering whether foreign entry mode moderates the relationship between speed and performance. Modes of FDI expansion via green-field investments or acquisitions may generate different implications for the speed of FDI. Finally, future studies could consider host-country control variables, such as market concentration or existing entry barriers, which might affect late entrant performance.

This study also has important managerial implications. The results indicate that rapid FDI expansion can be a valuable strategy for firms that internationalize late, especially firms from emerging markets, which must internationalize rapidly to compete in global industries. Yet it also suggests that firms should execute this strategy carefully in order to avoid excessive risk. Managers should balance market uncertainty and competitive pressures when they determine how quickly to expand internationally, when to start, and where to enter.

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#### NOTES

<sup>1</sup>A contrasting approach views multinational firms as efficient agents for transferring resources, thus minimizing transaction costs (Buckley & Casson, 1976; Hennart, 1982, 1991; Rugman, 1981).

<sup>2</sup>Firms often make subsequent investments in countries where they have already invested (Chang, 1995; Kogut, 1983; Kogut & Chang, 1996). We do not include those within-country FDI expansions in this study.

<sup>3</sup>See the home pages of Hyundai and Kia Motors (<http://www.hyundai.com> and <http://www.kia.co.kr>).

<sup>4</sup>As we have financial data for 1980–2003, we use the 2-year average for firms in the year of 1980. We perform a robustness test by using the performance,

measured at time  $t+1$ , to avoid the possibility of reverse causality. The results are consistent with the 3-year average, although the  $R^2$  values are lower, owing to yearly fluctuation. We also perform a robustness test by using the count of exits at the firm level or the exit hazard at the individual subsidiary level as a dependent variable (Shaver, 1998; Shaver, Mitchell, & Yeung, 1997). The results from the negative binomial regressions of exit count at the firm level and the hazard model of exit decision at the individual subsidiary level are consistent with those using firm profitability.

<sup>5</sup>Alternatively, we also measure industry globalization based on the global integration index by Kobrin (1991). The results are consistent with those reported in this study.

<sup>6</sup>As speed is defined by the accumulated FDI count divided by duration of time since its first entry, we can include a combination of speed and the time since a firm's first entry or a combination of the number of foreign subsidiaries and the time since its first entry as independent variables. These results are consistent with those presented in the paper.

<sup>7</sup>Whereas Vermeulen and Barkema (2002) measure geographic scope with a number of different countries, our measure of geographic dispersion reflects physical distance in order to reflect the challenges in managing foreign subsidiaries in distant geographic locations. In fact, we control for the number of foreign countries a firm is operating in at time  $t$ .

<sup>8</sup>We experiment with the interaction effect between speed and investment size. This effect is negatively significant, whereas the main effect of speed is weakly positive and significant. These results suggest that speed's main effect on firm performance can be positive, but it may also lead to poor performance when a firm pursues rapid FDI expansion with large investments. We experiment with other interaction effects of speed with geographic distance, cultural distance, and whether the subsidiary was wholly owned. These effects are generally insignificant. The results are available on request.

<sup>9</sup>We cannot show the  $F$ -statistics in models in Table 3, where we use robust standard errors. When some firms appear only once in the data, the robust covariance matrix does not have a full rank, and an overall model  $F$ -statistic cannot be computed. Thus, we have to run regressions without clustering option, and calculate the improvement of a model fit between Model 1 (without interaction terms) and the rest of models (with interaction terms). The  $F$ -tests confirm improvement of a fit of Models 2–4 over Model 1 at the 5% significance level.

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