Sourindra Banerjee, Jaideep C. Prabhu, & Rajesh K. Chandy

Indirect Learning: How Emerging-Market Firms Grow in Developed Markets

Some emerging-market firms have recently achieved substantial growth in developed markets despite having had little prior experience in these markets. What explains the performance of these firms? Building on the organizational learning literature, the authors argue that indirect learning (i.e., learning from the experience of others) plays a crucial role in explaining this phenomenon. Specifically, they propose that emerging-market firms that grow in developed markets overcome their lack of direct experience in such markets by learning indirectly through their leaders, competitors, and interfirm networks. The authors test their thesis by comparing the international growth in developed markets of a sample of emerging-market firms (116 Indian firms) with a sample of developed-market firms (160 U.K. firms). The results support the authors' thesis about the importance of indirect learning in explaining the international growth of emerging-market (relative to developed-market) firms in developed markets. The authors discuss the implications of these findings for policy makers in the areas of higher education, competition policy, and international trade as well as for managers in the areas of middle-management recruitment, competitor analysis and tracking, and managing interfirm networks.

Keywords: international growth, emerging markets, developed markets, indirect learning, leaders

Consider the case of Ranbaxy Laboratories, the Indian pharmaceutical firm. Like many of its peers from emerging markets, Ranbaxy did not generate any revenues from developed markets until 1989. By 2006, however, the firm earned 60% of its revenues from developed markets and had completed nine cross-border acquisitions in such markets. Ranbaxy's international growth in developed markets is hardly an isolated case; rather, it is part of a more widespread phenomenon. Taking note of the phenomenal growth of emerging-market firms in developed markets, *The Economist* (2010, p. 7) observes that "many of the developing world's champions have risen from *zero to hero* in just a couple of decades."

Only a few firms, however, account for a significant proportion of the international growth of emerging markets in developed markets. For example, between 1999 and 2008, only 7.82% of publicly traded firms from major emerging markets were involved in cross-border acquisitions in developed markets (Rabbiosi, Elia, and Bertoni 2012). The overall revenues from developed markets among emerging-market firms are similarly lopsided, with only a few firms showing significant international growth in developed markets. These figures raise the following research question: Why do some emerging-market firms achieve more revenue growth in developed markets than others?

The question of how firms grow is arguably one of the most important issues facing the marketing discipline (Bharadwaj, Varadarajan, and Fahy 1993; Srivastava, Shervani, and Fahey 1998). With the globalization of markets, the international aspects of such growth are of increasing importance to academics and managers alike (Steenkamp 2005). Although substantial work examines the international growth of firms from developed countries into emerging markets, little research investigates the international growth of firms from *emerging* countries into *developed* markets (Burgess and Steenkamp 2006; Gielens and Dekimpe 2007). The Marketing Science Institute has observed this gap and, in establishing its research priorities for 2010–2012, stressed the need to understand the opportunities and threats posed by the international growth of emerging-market firms.

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The existing literature on the international growth of firms has suggested that a major driver of such growth is firms' knowledge about how to compete in foreign markets (Barkema and Drogendijk 2007; Johanson and Vahlne 1977). An influential stream of research based on the international growth of developed-market firms has argued that these firms learn how to compete in foreign markets incrementally through direct experience of foreign markets, which they accumulate over time (Barkema and Drogendijk 2007; Johanson and Vahlne 1977). However, this argument is unlikely to hold for the international growth of emerging-market firms in developed markets, because the context that emerging-market firms faced when they internationalized was very different from that which developed market firms encountered during internationalization. In general, internationalization occurred much later and in a more compressed time period in emerging than in developed markets. As a result, the opportunity for emerging-market firms to learn directly from their own experience and incrementally was lacking relative to developed-market firms. How, then, did some emerging-market firms learn how to compete in developed markets in harsher competitive conditions and in a much shorter time frame? We argue that, in contrast to their developed-market counterparts, which learned directly from their own experience, emerging-market firms learned *indirectly* about how to compete in developed markets by acquiring this knowledge from three types of entities: leaders, competitors, and other firms in their networks.

By studying the international growth of emerging market firms in developed markets, we aim to make three contributions. First, we respond to recent calls by eminent marketing scholars for more research on emerging markets (Gu, Hung, and Tse 2008; Sheth 2011). As Sheth (2011, p. 180) states, "Research on emerging markets is not just a 'nice thing to do'; it is increasingly becoming a necessity." Within the context of emerging markets, we shed light on an understudied phenomenon that is important in scale and potential: the international growth of firms from these markets in developed markets (Burgess and Steenkamp 2006). To date, most research on the international growth of firms has only examined the expansion of firms from developed markets. Yet, as we argue, theories based on the international expansion of firms from developed markets are unlikely to directly apply to firms from emerging markets given the very different nature of emerging markets and emerging-market firms. Thus, our article is much in the spirit of Burgess and Steenkamp (2006, p. 338), who state that "emerging markets' institutional contexts present significant socioeconomic, demographic, cultural, and regulative departures from the assumptions of theories developed in the Western world and challenge our conventional understanding of constructs and their relations."

Second, we contribute to the organizational learning and international marketing literature streams by applying the former to the latter to offer new substantive insights. To the best of our knowledge, we are the first to argue and demonstrate that indirect learning is more important than direct learning for the international growth of emerging-market firms in developed markets. Conversely, we show that direct learning is more important than indirect learning for the international growth of developed-market firms in other developed markets. Prior research (which has focused on the growth of developed-market firms) has emphasized the importance of direct learning while neglecting the role of indirect learning (Barkema and Drogendijk 2007; Johanson and Vahlne 1977). Our article is an attempt to correct this imbalance.

We also advance the international marketing literature by making two methodological contributions. First, we exploit an exogenous change in outward foreign direct investment (OFDI) policy in the emerging country we consider (India) to address the problem of endogeneity that hampers much research in the field of international marketing (Herrmann and Datta 2005; Reeb, Sakakibara, and Mahmood 2012). As far as we are aware, this is the first time such an exogenous policy shift has been used to address endogeneity in the context of international growth of emerging-market firms. The exogenous shift that India experienced was sudden, dramatic, and unanticipated and allowed for the internationalization of Indian firms. It therefore enables us to (1) study the internationalization of Indian firms practically from the birth of the phenomenon and (2) prevent an unobserved variable (e.g., the firm's intention to internationalize in developed markets) from influencing both our key independent variables (e.g., choosing leaders with developed market experience) and the dependent variable of interest (international growth in developed markets). Second, we compare our results for Indian firms with data on firms from a developed country (the United Kingdom). Doing so demonstrates that indirect learning is uniquely important for the international growth of firms from emerging markets, as opposed to being a generic driver of international growth. Such a comparative counterfactual analysis is novel in the international marketing literature and, more specifically, in the context of international growth.

Theory and Hypotheses

In this section, we develop theory and hypotheses that address the question of why some emerging-market firms achieve more international growth in developed markets than others do. We begin by describing the context in which emerging-market firms internationalized and how this differed from the context for developed-market firms. Next, we develop our theoretical anchor around the concept of organizational learning and argue that such learning can be either direct or indirect. We then develop our thesis that indirect learning provides an important means for emerging-market firms to gain knowledge of how to compete in developed markets, in contrast to developed-market firms, which typically do so through a process of direct learning. We define indirect versus direct learning and describe the various sources of indirect learning for emerging-market firms. We conclude with hypotheses about the impact of the different sources of indirect learning on the international growth of emerging-market firms in developed markets.

The Context of Internationalization: Emerging-Market Versus Developed-Market Firms

The world that emerging-market firms faced when they internationalized into developed markets was very different from the one that developed-market firms faced when they did so. First, when emerging market-firms began to internationalize into developed markets (in the 1980s and 1990s), they confronted a world that had already witnessed dramatic improvements in communications and transportation technology and offered unprecedented access to developed markets through the dismantling of trade barriers (Ghemawat 2011). Emerging-market firms therefore faced far more intense competition from firms that were already proficient in operating across developed markets (Luo and Tung 2007). Specifically, emerging-market firms were under time pressure to catch up with their developed- and emerging-market counterparts in growing internationally in developed markets. In contrast, when developed-market firms first internationalized (decades earlier), they faced much less international competition in the markets they entered (Dunning 1981; Wan and Hoskisson 2003).

Second, when emerging-market firms began to internationalize, in general, they were coming out of closed economies that had been shielded from global competition (Hitt et al. 2000). Emerging-market firms were therefore at a disadvantage in competitiveness relative to developed-market firms. In contrast, when developed-market firms internationalized, they had already been operating in fairly open and competitive markets and did not have the same relative disadvantage. Specifically, when emerging-market firms internationalized, they had far less direct experience of open and competitive markets compared with their developed-market counterparts (Burgess and Steenkamp 2006; Sheth 2011; Wan and Hoskisson 2003).

Third, when emerging-market firms began to internationalize, they came out of economies with institutional weaknesses, in terms of poorly functioning capital, labor, and information markets (Khanna and Palepu 2000). In contrast, when developed-market firms internationalized, they typically did so from more developed institutional contexts. As a result, emerging-market firms faced two disadvantages in developed markets relative to developed-market firms. They faced higher transaction costs of exchange within their home economies, which in turn made them less competitive globally. Moreover, they had relatively little direct knowledge of how to compete in foreign markets, especially markets with more developed institutions, and they did not have the luxury of time to acquire this knowledge incrementally through their own experience (Gu, Hung, and Tse 2009; Kumar, Mohapatra, and Chandrasekhar 2009).

Direct Versus Indirect Organizational Learning

How, then, did some emerging-market firms overcome these limitations and learn how to compete in developed markets in much harsher competitive conditions and in a much shorter period of time? We frame our answer to this question around the theoretical anchor of organizational learning. There are two types of organizational learning: direct and indirect (Argote and Miron-Skeptor 2011). Direct learning in organizations occurs from the organization's own experience. In contrast, indirect learning occurs through the observation, incorporation, and sharing of others' experiences.[1]

In the context of this article, a focal firm's indirect learning about developed markets occurs when the firm learns through the observation, incorporation, and sharing of others' experiences of developed markets. We argue that indirect learning, in contrast to direct learning, helps emerging-market firms learn how to compete in developed markets by aiding them in acquiring this knowledge through the experience of other entities. Drawing on existing literature, we argue that indirect learning in firms can occur through individuals, competitors, and networks (Kim and Miner 2007; Manz and Sims 1981; Srinivasan, Haunschild, and Grewal 2007). Specifically, we argue that emerging-market firms gain knowledge of how to compete in developed markets through their indirect learning from (1) individual leaders, specifically chief executive officers (CEOs) with education and work experience from developed markets; (2) industry competitors such as developed market competitors in domestic markets, domestic competitors in developed markets, and global competitors in global markets; and (3) network members operating in developed markets. Next, we develop hypotheses linking indirect learning through leaders, competitors, and networks to the international growth of emerging-market firms in developed markets.

Indirect Learning from Leaders and International Growth in Developed Markets

Leaders with education and work experience from developed markets play a particularly important role in the international growth of emerging-market firms (Herrmann and Datta 2005; Sambharya 1996). First, leaders' managerial discretion (i.e., their ability to make unilateral decisions) is particularly high in emerging-market relative to developed-market firms (Crossland and Hambrick 2011; Guillen 2000). Specifically, the weak enforcement of corporate governance laws in emerging markets makes it easier for leaders to drive decision making within their firms (Guillen 2000). Thus, leaders with education and work experience from developed markets can ensure that their knowledge of developed markets has a substantial influence on decisions related to the international growth of the firms they lead.

Second, relative to their developed-market counterparts, emerging-market firms more likely originate from highly protected economies that constrain the extent to which these firms have direct experience of developed markets. Therefore, the knowledge and experience that their leaders bring from other contexts (through their education and

[1]Our construct of indirect learning is related to other constructs used in the literature such as "vicarious learning." Note, however, that vicarious learning is gained from other entities *outside* the firm (see Kim and Miner 2007; Manz and Sims 1981; Srinivasan, Haunschild, and Grewal 2007). Indirect learning is a more general construct because it includes both vicarious learning and learning through the experience of people or entities (e.g., executives) who become part of the firm and bring their own learning with them.

experience in developed markets) is particularly important for emerging-market firms. Moreover, such education and experience is less common among leaders of emerging-market relative to developed-market firms. Thus, such education and experience is a novel, relatively inimitable resource for some emerging-market firms, giving it greater importance in their international growth. Specifically, education and work experience in developed markets can help leaders of emerging-market firms learn what it takes to enter and compete in developed markets (Hitt et al. 2000). Leaders with such education and experience have a better understanding of the institutions that underpin business in developed markets. They also have firsthand awareness of the quality of products available in developed markets and therefore of the improvements that their emerging-market firm must make to match the expectations of developed-market customers. More generally, through their keener appreciation of the opportunities and challenges of developed markets, such leaders are able to make them salient to other decision makers within the firm (Herrmann and Datta 2005; Sambharya 1996). In light of these arguments, we hypothesize the following:

H_1: Emerging-market firms that have leaders with education and work experience from developed markets exhibit greater international growth in developed markets than other emerging-market firms.

Indirect Learning from Competitors and International Growth in Developed Markets

Emerging-market firms can also learn indirectly about how to compete in developed markets from competitors within their industry. Specifically, they can learn by observing the activities of developed-market competitors in domestic markets, of domestic competitors in developed markets, and of global competitors in global markets.

When the process of liberalization in emerging markets began, the initial contact between developed- and emerging-market firms occurred in the emerging markets themselves. This was because, as industry sectors within emerging markets opened up to international competition, firms from developed economies were more prepared to move across markets due to their superior experience with internationalization (Dunning 1981; Johanson and Vahlne 1977). In the next phase of the liberalization of their economies, as state controls were further lifted, some emerging-market firms from outward-looking industries began to venture into developed markets (Elango and Patnaik 2007; Pradhan 2007). In the final phase, as they grew even more global and ambitious, some emerging-market firms began to benchmark themselves against industry-wide competitors in global markets (Boston Consulting Group 2011). The global competitors of the final phase were typically different from the developed-market competitors of the first phase in that they were far more dominant in major markets of the world and positioned at the cutting edge of their respective industries. For example, whereas competitors in the first phase might have been Dutch firms with a presence in India, those in the final phase would have been U.S. or Japanese firms with dominance in most large markets of the world. In the following hypotheses, we apply insights from these phases of competitive interaction to discuss the impact on the international growth of emerging-market firms in developed markets.

Indirect learning from developed-market competitors. When firms from emerging markets began to internationalize into developed markets, they were typically at a disadvantage relative to developed-market competitors within their industry in terms of technology, marketing and innovation, and general business processes (Wright et al. 2005). They could overcome this disadvantage by learning indirectly from developed-market competitors that operated in their domestic markets. Specifically, they could learn which technologies to invest in, how to manage brands, how to make better product decisions, and how to develop superior business processes from their developed-market competitors with more advanced knowledge on these dimensions. This indirect learning would in turn enable some emerging-market firms to develop the brands, products, technologies, management skills, and business processes they needed to compete in developed markets.

Indirect learning from developed-market competitors was more likely to occur in sectors in which such competitors were more prominent in the domestic market. For example, Chinese telecom equipment companies such as Huawei and ZTE had greater opportunities to learn about brands, products, and technologies and, thus, greater opportunities to compete in developed markets by observing the actions of developed-market competitors such as Nokia-Siemens Networks (operating in China). Drawing on these arguments, we hypothesize the following:

H_{2a}: Emerging-market firms that have greater exposure to developed-market competitors in their domestic market exhibit greater international growth in developed markets than other emerging-market firms.

Indirect learning from domestic competitors. Emerging-market firms aiming to internationalize into developed markets can also learn indirectly from their domestic competitors operating in developed markets. Specifically, some emerging-market firms can observe how their domestic competitors cope in developed markets despite having weaker brands and inferior technology than their developed-market counterparts. Because they interact closely with other domestic competitors in their industry, some emerging-market firms can observe, for example, how their domestic peers overcome these disadvantages through the purchase of developed-market brands and technology.

Indirect learning by observing domestic peers in developed markets is more likely in industries that are further along in their international growth and more closely integrated into developed markets. Such industries provide follower firms more opportunity to indirectly learn about developed markets by observing the activities of their leading domestic peers. For example, the Indian information technology industry (which is closely integrated into developed markets) has a host of companies that have learned how to grow in developed markets by observing and incorporating the approaches of leading domestic competitors

such as Wipro and Infosys (Kumar, Mohapatra, and Chandrasekhar 2009). Thus,

H_{2b}: Emerging-market firms that have domestic competitors with greater developed-market experience exhibit greater international growth in developed markets than other emerging-market firms.

Indirect learning from global competitors. Emerging-market firms can learn indirectly about how to compete in developed markets by observing the activities of a third type of competitor: truly global firms that dominate their industry in global markets. Truly global, dominant firms act as role models for other firms in their industry that aspire to a global presence. Emerging-market firms with global aspirations are particularly likely to look to such firms for inspiration and learning.

In industries in which dominant global firms loom large, the activities of these global behemoths are more salient. Moreover, the gap between emerging-market firms and their leading global competitors is so wide, in terms of brands, products, and technologies, that this provides the emerging-market firms more opportunity to learn what it takes to compete globally. For example, Tata Steel, an Indian steel manufacturer that operates in the concentrated global steel industry, learned indirectly about international expansion by studying the international expansion of Arcelor Mittal, the world's largest steel manufacturer (Kumar, Mohapatra, and Chandrasekhar 2009). Therefore, we propose the following:

H_{2c}: Emerging-market firms in sectors with large global competitors exhibit greater international growth in developed markets than other emerging-market firms.

Indirect Learning from Networks and International Growth in Developed Markets

Finally, emerging-market firms can also learn indirectly about how to compete in developed markets through firms in their networks that operate in developed markets. The most common form of interfirm networks in emerging markets are business groups. A business group is "a set of firms which, though legally independent, are bound together by a constellation of formal and informal ties and are accustomed to taking coordinated action" (Khanna and Rivkin 2001, p. 47). Although business groups can also be found in developed markets, they are particularly common in emerging markets (Elango and Patnaik 2007; Khanna and Palepu 2000; Khanna and Rivkin 2001). The relatively inferior institutions of emerging markets result in poorly functioning capital, labor, and information markets, which in turn increase the transaction costs of doing business in emerging markets. By setting up internal markets for capital, labor, and information, business groups are able to reduce these costs and the overall disadvantage of doing business in an environment with poor home-country institutions (Khanna and Palepu 2000; Khanna and Rivkin 2001).

Three aspects of business groups make them a relevant source of indirect learning for firms that aim to compete in developed markets. First, member firms within business groups are bound by ties such as cross-shareholding, interlocking directorates, and social relationships. These ties provide member firms with privileged access to one another's knowledge about what works in developed markets (Yiu et al. 2007). Moreover, there is a core administrative entity within business groups that provides common administration and managerial coordination (Yiu et al. 2007). This in turn facilitates better learning between member firms. Finally, member firms operate in different industries—some of which have greater exposure in developed markets than others—and this facilitates learning across sectors.

Emerging-market firms in networks can learn indirectly about how to compete in developed markets in at least two ways (Elango and Patnaik 2007). First, the direct experience of other member firms in developed markets provides firsthand knowledge about what it takes to achieve success and avoid failure as firms plan and execute their own growth in developed markets (Elango and Patnaik 2007). For example, firms can learn how to leverage the existing relationships of network members to gain knowledge about developed-market customers and suppliers.

Second, firms in business groups can benefit from the experience of member firms in other industries that may be further along in their international growth and more closely integrated into developed markets. By their very nature, business groups operate in multiple industries (Khanna and Palepu 2000). Some industries encounter the challenges and opportunities of developed-market competition earlier than other industries. Managers of a firm planning to operate in developed markets in a particular industry can learn about best practices from member firms that have achieved greater international growth in more competitive or leading-edge industries. Given these arguments, we hypothesize the following:

H_3: Emerging-market firms that have network members with more developed-market experience exhibit greater international growth in developed markets than other emerging-market firms.

Any empirical approach that aims to test our hypotheses should ideally address two challenges that have been endemic to the study of international growth. First, the empirical approach should permit us to rule out alternative explanations for the international growth of emerging-market firms in developed markets (i.e., explanations other than our indirect learning explanation) and allow us to account for potential sources of bias from endogeneity (see Herrmann and Datta 2005; Reeb, Sakakibara, and Mahmood 2012). Second, the empirical approach should demonstrate that the indirect learning variables we propose are uniquely important to emerging-market firms and are not simply generic variables that also apply to the international growth of developed-market firms.

The empirical approach we describe in the next section addresses each of these challenges. Endogeneity resulting from omitted variables is a concern because it is possible that an unobserved (and difficult-to-measure) factor—intention to internationalize in developed markets—could influence our independent variables (i.e., the indirect learning variables) as well as the dependent variable (international

growth in developed markets). Any empirical approach that does not account for this potential source of endogeneity in indirect learning will likely yield biased estimates. We address the issue of endogeneity by choosing an empirical context that experienced an exogenous and unexpected policy shock. We make use of this exogenous shock to rule out the most obvious sources of endogeneity. Moreover, we account for unobserved variance from firm-specific and time-specific factors by tracking the same firms over time and accounting for unobserved heterogeneity in our model specification.

We show the unique importance of our indirect learning variables to emerging-market firms in two ways. First, we control for several factors prior literature has suggested are important to the international growth of firms in general. We then examine whether the effects of the indirect learning variables that emanate from our theoretical framework persist even after we control for the previously studied factors. Second, we examine the significance of our indirect learning variables for a sample of emerging-market firms as well as for a counterfactual sample of developed-market firms (see Reeb, Sakakibara, and Mahmood 2012). By estimating the effects of these variables in both contexts separately and by pooling both the samples, we are able to assess the relative importance of indirect learning in each context. This approach enables us to examine whether our indirect learning explanation is uniquely important to emerging-market firms or merely a generic explanation for the international growth of firms. The next section describes our empirical approach in more detail.

Method

Empirical Context

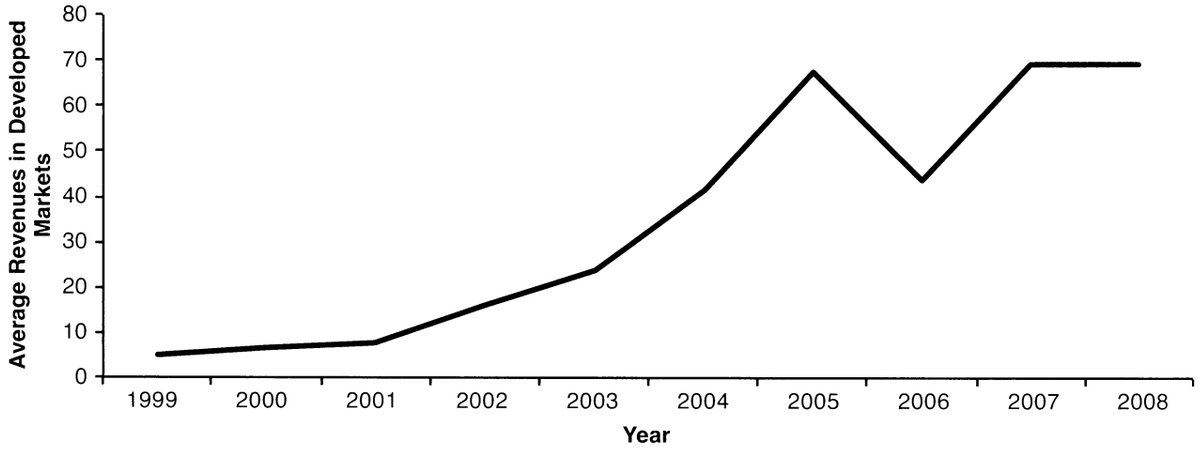
We test our hypotheses on a sample of firms from an important and representative emerging market: India. To contrast our results for India against a counterfactual, we also collect data from a developed economy: the United Kingdom. Next, we discuss our choice of India and then discuss why the United Kingdom provides an appropriate counterfactual to the Indian context.

India. India provides an ideal empirical context in which to test our hypotheses for three reasons. First, in recent years it has been one of the fastest-growing emerging economies in the world, with many Indian firms making their presence known globally. For example, the Boston Consulting Group's (2011) "BCG Global Challengers" report places 20 Indian firms in the top 100 firms from emerging markets with significant international growth.

Second, in the Indian context, international growth has largely been driven by non-state-owned firms, making our data and findings more representative of firm-based drivers of growth (as opposed to growth from state patronage). For example, all 20 Indian firms in the 2011 "BCG Global Challengers" report are publicly traded, non-state-owned firms. This context ensures that the international growth of firms in our sample is more likely to be driven by a profit-maximization motive. International growth by state-owned enterprises, in contrast, might be driven by more nationalistic motives, such as fortifying economic influence regionally and globally, thus representing a different phenomenon from that studied here.

Third, the Indian context provides an institutional setting in which it is easier to make robust inferences. Restrictions on the international growth of domestic firms in India were lifted fairly recently. Specifically, India experienced a well-documented, sudden, and unanticipated OFDI policy shift in May 1999 when Indian firms were first allowed to internationalize without consent from the Indian government, without repatriation of the amount invested abroad, and with an increase in upper limit for foreign investment from $2 million to $15 million (Government of India 1999; Pradhan 2007). This important OFDI policy shift resulted in a steep rise in the developed market revenues of Indian firms (see Figure 1, which presents inflation-adjusted aver-

FIGURE 1
Average Annual Revenues in Developed Markets for the Indian Sample



Notes: Revenues shown in millions of U.S. dollars. These values have been adjusted for inflation with the base year as 1998.

age annual revenues in U.S. dollars for our sample of firms). The OFDI policy shift also provides two advantages. First, because the shift occurred in the recent past, it presents an opportunity to study the international growth of emerging-market firms in developed markets practically from inception (i.e., from the moment that serious internationalization first became possible) (Pradhan 2007). Second, the policy shift enables us to alleviate concerns resulting from endogeneity. Despite other liberalizing reforms that had been put in place since 1991 (when India's economy began to open up), stringent restrictions on OFDIs remained an article of faith within Indian policy circles throughout the 1990s. The presence of these restrictive policies on Indian firms until the late 1990s enables us to prevent an unobserved variable (e.g., the firm's intention to internationalize in developed markets) from influencing two of our key independent variables (choosing leaders with developed-market experience and choosing industries with competitors that have developed market experience) as well as the dependent variable of interest (international growth in developed markets). Specifically, the sudden and unanticipated removal of restrictions in 1999 significantly reduces the likelihood that firms intended to grow in developed markets before 1999 and thus reduces the likelihood that they previously chose leaders or industries that would promote international growth in developed markets.

United Kingdom. An ideal test of our thesis would require us to compare the results for our emerging-market sample with those of a counterfactual developed-market sample (Reeb, Sakakibara, and Mahmood 2012). Specifically, we would need to compare our results for the emerging market (India) with firms from a comparable developed (i.e., nonemerging) market that did not go through the policy shift that the Indian firms experienced.

We chose the United Kingdom to serve as this counterfactual for the following reasons. First, it has been a long time since U.K. firms faced restrictions on internationalization. Indeed, U.K. firms have actively ventured into and grown in international markets since 1600, when the East India Company received its Royal Charter (National Archives 2013). Thus, while India discouraged and even prevented its firms from venturing into international markets until 1999, the United Kingdom has encouraged its firms to venture into international markets for several centuries. Second, the United Kingdom represents a developed economy with well-established institutions such as efficient capital, labor, and information markets, thus providing an effective contrast to India, which, as an emerging market, has relatively poorly functioning institutions. These two differences between India and the United Kingdom capture the disparate circumstances under which emerging-market firms internationalized relative to their developed-market counterparts.

Third, although U.K. firms provide an important contrast to firms from India, these countries also have two important commonalities that provide us with somewhat comparable samples. In both India and the United Kingdom, international growth has largely been driven by publicly traded non-state-owned firms, making our findings more representative of firm-based drivers of growth. Furthermore, India and the United Kingdom have economies of a comparable size: the Indian gross domestic product in 2012 was $1.8 trillion, and the United Kingdom's gross domestic product in 2012 was $2.4 trillion (International Monetary Fund 2013).

Data and Sample

We compiled two archival databases (one for India and one for the United Kingdom) spanning ten years (1999–2008) from multiple sources (see Table 1). The BSE 500 index of the Bombay Stock Exchange served as the population from which we drew our Indian sample, and the FTSE 350 index of the London Stock Exchange served as the population for our U.K. sample. Both indices capture almost the full value of the stock market: the BSE 500 index comprises 93% of the market capitalization of the Bombay Stock Exchange, and the FTSE 350 comprises 90% of the market capitalization of the London Stock Exchange. Data on all the variables for 1999–2008 for the firms on the BSE 500 and FTSE 350 were available for 384 (76.8%) and 313 (89.4 %) firms, respectively.

We applied three filters to this population of 384 Indian and 313 U.K. firms to arrive at our final sample. First, we followed previous studies (e.g., Chittoor et al. 2009) and removed firms that are subsidiaries of foreign multinationals from the populations of Indian and U.K. firms. By doing so, we ensure that we compare a sample in which all firms are from emerging markets with a sample in which all firms are from developed markets. As a result, we dropped 84 and 82 firms from the Indian and U.K. samples, respectively. Second, we omitted state-owned firms from the samples because, as we noted previously, such firms do not always pursue a profit-maximization objective and are therefore not representative of the phenomenon of interest. Thus, we dropped 48 and 0 firms from the Indian and U.K. samples, respectively. Third, we excluded firms classified as financial institutions because such firms are regulated by central banks, making them unique and nonrepresentative of the phenomenon under study. Consequently, we dropped 38 and 71 firms from the Indian and U.K. samples, respectively, giving us a sample of 214 Indian and 160 U.K. firms. From this sample, we excluded an additional 98 Indian firms that were established after 1992 because 1992 was a watershed year in Indian macroeconomic policy, when major changes were implemented that lowered state intervention and boosted private enterprise. Firms established after 1992 operated in a liberal, highly competitive economic environment from inception, whereas firms established before 1992 initially operated in a protected environment. Because the firms established after 1992 are nonrepresentative of the phenomenon under study, we removed them to achieve a final sample of 116 Indian firms.

We collected data on 13 variables from nine sources over the ten years. Table 1 lists the conceptual variables, the measured variables, and our data sources. We describe each of our measures next.

TABLE 1
Summary of Measures and Sources

Conceptual Variable	Measured Variable	Data Source for India	Data Source for United Kingdom
Dependent Variable			
International growth in developed markets	Log (Revenues in Developed Markets$_{it}$) – Log (Revenues in Developed Markets$_{it-1}$)	Prowess database, company annual reports	Thomson One Banker, Fame
Independent Variables			
Indirect learning from leaders	CEO education or work experience from developed markets	Prowess database, Prime Directors	Thomson One Banker
Indirect learning from foreign competitors	Ratio of sum of revenues of developed market competitors to sum of revenues of all competitors in domestic market	Prowess database	Thomson One Banker, Fame
Indirect learning from domestic competitors	Sum of revenues from developed markets for the top three domestic competitors	Prowess database, company annual reports	Thomson One Banker, Fame
Indirect learning from global competitors	Sum of revenues of top three global competitors	Thomson One Banker	Thomson One Banker
Indirect learning from networks	Product of scale and scope of developed market revenues of business group members	Prowess database, company annual reports	Thomson One Banker, Fame
Controls			
Age	Age of the firm	Prowess database	Company history
Size	Revenue of the firm	Osiris, Prowess database	Thomson One Banker
Industry	Industry dummy	National industrial classification	FTSE 350 Sector Classification
R&D expenses	R&D expenses	Prowess database	Thomson One Banker
Domestic industry rivalry	Herfindahl–Hirschman index	Prowess database	Thomson One Banker
Past international growth in developed markets	Log(Revenues in Developed Markets$_{it-2}$) – Log(Revenues in Developed Markets$_{it-3}$)	Prowess database, company annual reports	Thomson One Banker & Fame
Past international growth in emerging markets	Log(Revenues in Emerging Markets$_{it-2}$) – Log(Revenues in Emerging Markets$_{it-3}$)	Prowess database, company annual reports	Thomson One Banker & Fame
Past acquisitions in developed markets	Log (Acquisitions Value from Developed Markets$_{it-2}$) – Log (Acquisitions Value from Developed Markets$_{it-3}$)	Thomson One Banker	Thomson One Banker

Dependent Variables

Following the bulk of prior research, we use revenues in developed markets to calculate our measure of international growth in developed markets (GROWDEVMARK) in both our Indian and U.K. samples (Ramaswamy, Kroeck, and Renforth 1996). We record revenues in developed markets annually from 1999 to 2008. We then convert the data to U.S. dollars (USD) using the relevant exchange rates. We adjust for inflation by dividing revenues by the Consumer Price Index (in India and the United Kingdom) with the base year as 1998. We then apply a logarithmic transformation to this inflation-adjusted value to reduce the difference between extreme values. Because a logarithmic transformation is not possible for revenues with a value of 0, we add a negligible value (.00001) to all revenue figures before we perform the transformation. We then calculate the final measure of international growth in developed markets for both the Indian and the U.K. samples by measuring the first difference of the log-transformed revenues in developed markets. The first difference of a log-transformed series provides a good measure for growth (year-on-year percentage change in revenues) of the original series.[2] In using such a measure to capture growth, we follow extensive prior research in marketing and other disciplines (see Barro and Sala-i-Martin 1992; Fama 1965; Fornell, Rust, and Dekimpe 2010). We also use an alternative measure of international growth—log-transformed revenues in devel-

[2]Growth in variable x between period t and period t – 1 is calculated as Growth (g) = $(x_t - x_{t-1})/x_{t-1}$, which is equivalent to $x_t/x_{t-1} = 1 + g$. Log-transformation of both sides of the expression results in $\log(x_t) - \log(x_{t-1}) = \log(1 + g)$. Using a Taylor series, we rewrite $\log(1 + g)$ as $g - g^2/2 + g^3/3 - g^4/4$, and so on. This expression can be approximated to $\log(1 + g) = g$. Therefore, growth of a variable can be approximately measured as a first difference of the log-transformed variable—that is, $g = (x_t - x_{t-1})/x_{t-1} = \log(x_t) - \log(x_{t-1})$.

oped markets—and repeat our analysis with this measure. Our results hold for this alternative measure, as we report in the "Additional Analyses and Robustness Checks" section.

Independent Variables

Indirect learning from leaders (LEADERIL). Of the firm's leaders, the CEO has a disproportionately large influence on strategic decision making within the firm (Hambrick and Mason 1984). International growth is a major strategic issue and is likely to involve the CEO in a significant way. Moreover, CEOs have particularly high managerial discretion in emerging markets (Crossland and Hambrick 2011; Guillen 2000). For these reasons, we measure indirect learning from leaders by focusing on the background of the CEO.[3]

In the context of the international growth of emerging-market firms, a key aspect of indirect learning from leaders is the developed-market experience of these leaders. Following extensive previous research, we operationalize developed-market experience by measuring CEOs' educational and work experience in developed markets (Hambrick and Mason 1984; Herrmann and Datta 2005; Sambharya 1996). This is an appropriate measure for two reasons. First, education and work experience from developed markets broaden CEOs' cognitive horizon and make them aware of customers, competitors, and regulations in developed markets (Sambharya 1996). Second, demographic measures such as education and work experience provide comprehensiveness, objectivity, parsimony, predictive power, and testability (Hambrick and Mason 1984).

Collecting biographical information on the early lives of CEOs in India and the United Kingdom is a tedious and time-consuming task that requires careful piecemeal investigation across many sources. In an ideal world, we would have accurate and detailed (continuous) data for all the CEOs from all the firms studied. In reality, however, it is virtually impossible to attain such data, and we are faced with a choice between including only continuous variables for a limited set of firms and including slightly coarser measures for a more complete set of firms. To maximize data coverage across firms while minimizing information loss due to coarse measures, we triangulate across four measures. We standardize each of these measures across the focal firm's industry and then consolidate by summing across the four standardized measures to generate our final measure of indirect learning through CEOs' developed market knowledge.[4] The details of the measures are as follows:

1. *Extent of international education*: Score of 1 if number of years of developed-market education is less than one year, score of 2 if number of years of developed-market education is between one and five years, and score of 3 if number of years of developed-market education is greater than five years.
2. *Extent of international experience*: Score of 1 if number of years of developed-market experience is less than one year, score of 2 if number of years of developed-market experience is between one and five years, and score of 3 if number of years of developed-market experience is greater than five years.
3. *Level of international education*: Score of 1 if the CEO had pre-undergraduate-level education in developed markets, score of 2 if the CEO had undergraduate-level education in developed markets, and score of 3 the CEO had postgraduate-level education in developed markets.[5]
4. *Level of work experience*: Score of 1 if a person had operational-level experience in developed markets, score of 2 if a person had tactical-level experience in developed markets, and score of 3 if the person had strategic-level experience in developed markets.[6]

Indirect learning from developed-market competitors in the domestic market (DEVCOMPIL). To measure indirect learning from developed-market competitors, we use the market share of all publicly held developed-market competitors in the domestic market (i.e., a ratio of the sum of revenues of all publicly held developed-market competitors in the domestic market to the sum of revenues of all publicly held competitors in the domestic market). This measure is a proxy for the extent of developed-market competition in the focal firm's home market (Elango and Patnaik 2007). The greater this competition, the greater the knowledge of developed markets that exists in the domestic market, and the greater the extent to which firms can learn from such competitors. We add a small value (.00001) to the revenue figures and perform a log-transformation to reduce the difference between extreme values.

Indirect learning from domestic competitors (DOMCOMPIL). We add the developed market revenues of the top three publicly listed domestic competitors of a firm to measure indirect learning from domestic competitors. This measure is a good proxy for the extent of a firm's domestic competitors' developed-market activity (Chittoor et al. 2009; Elango and Patnaik 2007): the greater this value, the greater the extent to which emerging-market firms can learn indirectly from such competitors. We add a negligible value (.00001) to the relevant revenue figures and perform a log-transformation to reduce the difference between extreme values.

Indirect learning from global competitors (GLOBCOMPIL). We measure indirect learning from global competitors using the sum of the revenues of the top three global competitors of the focal firm: the greater this value, the greater the extent to which emerging-market firms can learn indirectly from such competitors. We identify the top three global competitors by matching the Standard Industrial Classification between the focal firm and the global competitors and then selecting the top three firms. For example, for British Petroleum, a Standard Industrial Classification match for the top three global competitors would include ExxonMobil, Total, and Chevron. The revenues for the top

[3]Our results are robust to replacing the CEO with the chairperson.

[4]Robustness checks show that our results hold for a simple dichotomous measure of whether the CEO had international education or experience; the results also hold for unstandardized measures and a measure standardized across all industries.

[5]Our results also hold if we assign a score of 1 for CEOs with a pre-undergraduate level of education and a score of 2 for CEOs with an undergraduate and beyond level of education.

[6]Nonmanagerial positions are classified as "operational," managerial positions up to general manager are classified as "tactical," and positions above general manager are classified as "strategic."

three global competitors can be in different world currencies, so we transform all revenues into U.S. dollars for each firm from 1999 to 2008. We perform a log-transformation of the sum of revenues for the top three global competitors and use it as our measure of indirect learning from global competitors.

Indirect learning from networks (NETWORKIL). Because the focus of this study is international growth in developed markets, we measure a focal firm's indirect learning from the network by using the developed-market revenues of network members. In this way, we are able to capture how much the focal firm can indirectly learn about developed markets from the scale and scope of the network's developed-market activity.

We operationalize indirect learning from networks as indirect learning through business groups. We construct a measure of scale and scope of a network's developed-market activity by multiplying the total developed-market revenues of a business group (scale) with the most commonly used measure of scope: entropy (see Sorescu, Chandy, and Prabhu 2003).[7] For each firm affiliated with the business group, we calculate the scale and scope of the network's developed-market activity for every year from 1999 to 2008 in the following manner:

(1) Scale and scope of network's developed market activity

$$= A \times E = A \times \left[\sum_{j=1}^{n} \frac{A_j}{A} \ln \frac{A}{A_j} \right] = \sum_{j=1}^{n} A_j \ln \frac{A}{A_j},$$

where A = the business group's total developed-market revenues in each year from 1999 to 2008, A_j = developed-market revenues of the jth member firm within the business group in each year from 1999 to 2008, and E = entropy measure of the business group.

Following previous research (see Khanna and Palepu 2000), we use the Prowess classification of Indian firms and the Fame classification of U.K. firms to identify a firm's business group affiliation. (Prowess and Fame examine the family and ownership ties of firms to classify firms as members of a business group.) First, we record the developed-market revenues of member firms of a business group from Prowess and Fame. We then use the developed-market revenues of member firms (excluding those of the focal firm) to calculate the scale and scope of the network's developed-market expansion from Equation 1. For firms unaffiliated with a business group, the scale and scope of the network's developed-market expansion takes a value of 0. For firms affiliated with business groups, the greater the value of Equation 1, the greater the scale and scope of developed-market expansion and, thus, the greater the focal firm's indirect learning from the business group regarding how to compete in developed markets. We add a negligible value (.00001) to the output of Equation 1 and perform a log-transformation to obtain the final measure of indirect learning from networks.

[7]We use this multiplicative measure because the entropy measure by itself does not differentiate the various scales of business groups. For example, the entropy measure by itself would be identical for a business group with substantial developed-market revenues that are spread equally across five member firms relative to a business group with much smaller developed-market revenues that are also spread equally across five member firms.

Control Variables

Age (AGE). Prior research has suggested that the age of a firm influences its international growth (Elango and Patnaik 2007). We calculate the age of the firm by subtracting the year that the firm was established from every year between 1999 and 2008. We then perform a log-transformation of the firm's age and use this value in our analysis.

Size (SIZE). Prior research has suggested that the size of a firm influences its international growth (Sambharya 1996). We convert the revenues of Indian and U.K. firms to millions of U.S. dollars and then adjust this number for inflation, with the base year as 1998. We then perform a log-transformation of this value. Our use of revenues as a measure of firm size is consistent with prior research on international growth (Sambharya 1996).

Industry (INDUSTRY). Our Indian sample is classified into ten industries using the single-digit National Industrial Classification of India. Our U.K. sample is classified into 26 industries using the FTSE sector classification. Industries represented in both samples include pharmaceuticals, mining and quarrying, automotives, information technology, metals, industrial machinery, chemicals, and health care. We control for industry in the Indian and U.K. samples by developing a set of dummy variables for each industry in the sample.

Research-and-development expenses (R&D). Prior research has suggested that firms with greater R&D expenses are able to achieve greater international growth (Chittoor et al. 2009). We use R&D expenses for firms in our India and U.K. samples for each year from 1999 to 2008. We convert the R&D expenses of Indian and U.K. firms to millions of U.S. dollars and then adjust this number for inflation, with the base year as 1998. We add a negligible value (.00001) to the R&D expenses and perform a log-transformation to obtain the final measure of R&D expenses.

Domestic industry rivalry (HHI). The international marketing literature has argued that domestic industry rivalry forces firms to expand across borders (Gielens and Dekimpe 2007), thus influencing international growth. We measure domestic industry rivalry for each firm in each year between 1999 and 2008 using the logarithm of the Herfindahl–Hirschman index (HHI). Previous literature has used the HHI because it is a comprehensive measure that takes into account the market share of all competitors within a firm's industry. We calculate the HHI as follows:

(2) $$\text{HHI} = \sum_{i=1}^{N} s_i^2,$$

where s_i is the market share of firm i in the domestic market and N is the number of firms in the domestic market.

We calculate the market share s_i for firm i as a ratio of revenues of the firm i in the domestic market and the sum of revenues of all competitor firms in the domestic market. We add a negligible value (.00001) to the HHI and perform

a log-transformation to obtain the final measure of domestic industry rivalry.

Past international growth in developed markets ($GROWDEVMARK_{it-2}$). Research has shown that past international growth is a predictor of future international growth (Dunning 1981; Johanson and Vahlne 1977). Research has also argued that past international growth in developed markets is a source of direct learning about developed markets (Johanson and Vahlne 1977). We measure past international growth in developed markets as the difference between log-transformed revenues in developed markets between years t – 2 and t – 3.

Past international growth in emerging markets ($GROWEMARK_{it-2}$). Previous literature has argued that past international growth in emerging markets is a source of learning about the process of internationalization, which in turn can drive international growth in developed markets (Kumar, Mohapatra, and Chandrasekhar 2009). We therefore control for past international growth in emerging markets using the difference between log-transformed revenues in emerging markets between years t – 2 and t – 3.

Past acquisitions in developed markets (ACQ_{it-2}). Research has suggested that past acquisitions in developed markets can serve as a source of learning that drives international growth in developed markets (Kumar, Mohapatra, and Chandrasekhar 2009). We control for past acquisitions in developed markets using the first difference between log-transformed acquisition values in developed markets between years t – 2 and t – 3.

Model

We test our hypotheses using panel estimation with a two-step sample selection model. Because we have panel data, we correct for sample selection using the Orme method (Arulampalam and Stewart 2009; Orme 1997). The main merit of using the Orme method over the Heckman correction for panel data is that this method does not require separate programming and can be straightforwardly estimated using standard software (Arulampalam and Stewart 2009). We use the Orme method to estimate the selection model (Equation 4) using a pooled probit specification. From this output, we calculate the inverse Mills ratio and use it as a control in the substantive model (Equation 3). Specifically, we estimate the following two equations:

$$\begin{aligned}(3)\ GROWDEVMARK_{it} = {} & \beta_0 + \beta_1 LEADERIL_{it-1} \\ & + \beta_2 DEVCOMPIL_{it-1} \\ & + \beta_3 DOMCOMPIL_{it-1} \\ & + \beta_4 GLOBCOMPIL_{it-1} \\ & + \beta_5 NETWORKIL_{it-1} + \beta_6 AGE_{it-1} \\ & + \beta_7 SIZE_{it-1} + \beta_8 R\&D_{it-1} + \beta_9 HHI_{it-1} \\ & + \beta_{10} GROWDEVMARK_{it-2} \\ & + \beta_{11} GROWEMARK_{it-2} \\ & + \beta_{12} ACQ_{it-2} \\ & + \beta_{12} \text{Inverse Mills Ratio} + \varepsilon_{it} + \gamma_i, \text{ and}\end{aligned}$$

$$\begin{aligned}(4)\ & P(\text{Nonzero Revenues in Developed Markets}_{it} = 1) = \alpha_0 \\ & + \alpha_1 SIZE_{it-1} + \alpha_2 R\&D_{it-1} + \alpha_3 PERFORMANCE_{it-1} + \mu_{it} + \eta_i,\end{aligned}$$

where i is the subscript for a firm; t is the subscript for a year; GROWDEVMARK is international growth in developed markets; LEADERIL is indirect learning from leaders; DEVCOMPIL, DOMCOMPIL, and GLOBCOMPIL are indirect learning from developed market, domestic, and global competitors, respectively; NETWORKIL is indirect learning from networks; HHI is industry rivalry; $GROWDEVMARK_{it-2}$ and $GROWEMARK_{it-2}$ are past international growth in developed markets and emerging markets, respectively; and ACQ_{it-2} is past acquisitions in developed markets.

We estimate these equations on the Indian sample and then repeat the estimation on the U.K. sample. We also perform estimations using the pooled data. Together, these analyses enable us to test our hypotheses for emerging-market firms (the Indian sample) and compare these results with the international growth of developed-market firms (the U.K. sample).

Panel estimation with a sample selection model enables us to do the following. First, the panel estimation helps us use the temporal separation between the dependent and independent variables, which ensures that we test for the effects of learning (independent variables) on international growth in developed markets (dependent variable) rather than the other way around. Second, the panel estimation helps us alleviate the possibility of endogeneity caused by an unobserved variable, which can influence both the dependent and independent variables. This is because we specify a panel estimation model in which both the dependent and independent variables are measured after the removal of restrictive policies in India in 1999. As we have noted, the presence of these restrictive policies until 1999 enables us to prevent an unobserved variable (such as the firm's intention to internationalize in developed markets) from influencing both key independent variables (e.g., choosing leaders with developed market experience, choosing industries with competitors that have developed market experience) and the dependent variable of interest (i.e., international growth in developed markets).

Third, the panel estimation enables us to control for factors other than the ones we hypothesize as drivers of the international growth of firms. For example, our model enables us to control for firm- and time-specific heterogeneity, thus addressing two potential sources of bias from unobserved heterogeneity. The model also controls for time-invariant variables such as industry effects and time-varying variables such as prior revenues and R&D expenses.

Fourth, the panel estimation with the sample selection model enables us to account for sample selection bias in our data. We find that 43 of 116 firms in the Indian sample and 28 of 160 firms in the U.K. sample did not obtain any revenues from developed markets between 1999 and 2008. We correct for self-selection in the choice to pursue revenues in developed markets by choosing the predictors for the selection equation carefully and ensuring that we fulfill exclu-

sion restrictions. We use size, performance, and R&D as predictors and measure them using total revenues, return on sales, and R&D expenses, respectively (Chittoor et al. 2009). We fulfill the exclusion restriction by having at least one variable (i.e., return on sales) in the selection equation (Equation 4) that does not appear in the substantive equation (Equation 3). Doing so facilitates model identification while correcting for sample selection.

Results

We present means, standard deviations, minimum and maximum values, and correlations of our measures in Table 2, Panel A, for Indian firms and Table 2, Panel B, for U.K. firms. The tables show that age, size, R&D expenses, international growth in developed markets, and acquisitions in developed markets are lower for Indian firms relative to U.K. firms. This is consistent with extant literature, which has argued that emerging-market firms are younger, smaller, and less technologically advanced than their developed-market counterparts, with less international growth and fewer developed-market acquisitions (Wright et al. 2005). We perform collinearity diagnostics by computing the variance inflation factors (VIFs) for all independent variables. The VIF values range from 1.01 to 1.79 for India and from 1.00 to 1.63 for the United Kingdom. The correlation matrix and the VIFs together indicate that multicollinearity is likely absent from our data.

Tests of Hypotheses

Table 3 presents the results of the substantive models that test our hypotheses for the Indian and U.K. samples. The models use random-effects panel estimation with robust standard errors. A Hausman test shows that the difference in coefficients between the fixed- and random-effects estimation is not systematic ($p > .05$) (Hausman 1978). A Breusch–Pagan Lagrange Multiplier test shows that a random-effects panel estimation is appropriate for our data ($p < .05$).

We perform a Chow (1960) test to compare the coefficients of the hypothesized variables for the Indian and U.K. samples and determine whether they are different. The Chow statistic is 1.61, which is greater than the critical F-value, confirming that the coefficients of the Indian and U.K. samples are different. We conduct an additional test to show that the coefficients of the hypothesized variables are different for India and the United Kingdom. First, we estimate a model using the pooled Indian and U.K. data with interaction terms. We create a dummy "IND" with a value of 1 for the Indian firms and 0 for the U.K. firms in the pooled data. We then add interaction terms between this dummy and all the hypothesized and control variables to Equation 3 and reestimate the equation. The results of the estimation (see Table 3) show that these interactions are all significant, confirming that the coefficients of the hypothesized variables are significantly greater for India than for the United Kingdom.

Indirect learning from leaders and international growth. H_1 predicts that emerging-market firms that learn indirectly from their leaders' developed-market experience (LEADERIL) exhibit greater international growth than other emerging-market firms. In support of H_1, Table 3 shows that, for our Indian sample, the coefficient of LEADERIL is positive and significant ($\beta_{1,IND} = .04$, $p < .05$). In contrast, for the U.K. sample, the corresponding coefficient is positive and nonsignificant ($\beta_{1,UK} = .04$, $p > .05$). Furthermore, the results from the pooled data show that the interaction variable (IND × LEADERIL) is positive and significant ($\beta = .09$, $p < .05$) (see pooled India–United Kingdom column in Table 3). Taken together, the results of Table 3 suggest that indirect learning from the developed-market experience of leaders plays a more important role in the international growth of emerging-market relative to developed-market firms.

Indirect learning from developed-market competitors and international growth. H_{2a} suggests that emerging-market firms that have greater exposure to developed-market competitors in their domestic market (DEVCOMPIL) will exhibit greater international growth than other emerging-market firms. The results for the Indian sample in Table 3 support H_{2a} ($\beta_{2,IND} = .01, p < .05$). By contrast, for the U.K. sample, the corresponding coefficient is positive and nonsignificant ($\beta_{2,UK} = .04$, $p > .05$). Furthermore, the results from the pooled data show that the interaction variable (IND × DEVCOMPIL) is positive and significant ($\beta = .01$, $p < .05$) (see pooled India–United Kingdom column in Table 3). Taken together, the results of Table 3 support our claim that indirect learning from developed-market competitors plays a more important role in the international growth of emerging-market relative to developed-market firms.

Indirect learning from domestic competitors and international growth. H_{2b} states that emerging-market firms that have domestic competitors with greater developed-market experience (DOMCOMPIL) exhibit greater international growth than other emerging-market firms. The results from the Indian sample in Table 3 support H_{2b} ($\beta_{3,IND} = .01, p < .01$). In contrast, for the U.K. sample, the corresponding coefficient is nonsignificant ($\beta_{3,UK} = -3.93 \times 10^{-3}, p > .05$). Furthermore, the results from the pooled data show that the interaction variable (IND × DOMCOMPIL) is positive and significant ($\beta = .02$, $p < .10$) (see pooled India–United Kingdom column in Table 3). Taken together, the results of Table 3 support our argument that indirect learning from the developed-market experience of domestic competitors plays a more important role in the international growth of emerging-market relative to developed-market firms.

Indirect learning from global competitors and international growth. H_{2c} predicts that emerging-market firms in sectors with large global competitors (GLOBCOMPIL) exhibit greater international growth than other emerging-market firms. In support of H_{2c} (see Table 3), the coefficient of GLOBCOMPIL is positive and significant for the Indian sample ($\beta_{4,IND} = .03$, $p < .05$). In the U.K. sample, however, this coefficient is nonsignificant ($\beta_{4,UK} = -.03$, $p > .05$). Furthermore, the results from the pooled data show that the interaction variable (IND × GLOBCOMPIL) is positive and significant ($\beta = .04, p < .10$) (see pooled India–

TABLE 2
Descriptive Statistics and Correlation Matrix

A: Indian Firms

	M	SD	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13
1. GROWDEVMARK	.09	.56	−2.24	8.76	1.00												
2. LEADERIL	.76	1.06	0	6	.07	1.00											
3. DEVCOMPIL	.10	.17	0	.78	.10*	.07	1.00										
4. DOMCOMPIL[a]	222.52	660.16	0	4,004.06	.11*	−.08*	.03	1.00									
5. GLOBCOMPIL[a]	4,940.37	18,630.5	5.79	233,580	.01	.10*	.11*	−.29*	1.00								
6. NETWORKIL[a]	90.07	386.48	0	2,109.19	.11*	.24*	−.11*	.03	.09*	1.00							
7. AGE (years)	37.90	24.21	10	135	−.07	.26*	−.04	−.25*	.19*	.28*	1.00						
8. SIZE[a]	259.89	854.34	.28	18,802.21	−.03	.21*	.05	−.21*	.54*	.20*	.39*	1.00					
9. R&D[a]	1.99	10.55	0	164.40	−.03	.16*	.34*	.07	.20*	.13*	.29*	.38*	1.00				
10. HHI	.19	.16	.03	1	−.12*	−.04	−.20*	−.30*	.13*	.17*	.32*	.18*	−.11*	1.00			
11. $GROWDEVMARK_{it-2}$	.18	1.18	−1.39	16.81	.12*	.01	.09*	.15*	−.02	6.40 × 10^{-3}	−.05	−.01	−.01	−.13*	1.00		
12. $GROWEMARK_{it-2}$	.09	2.28	−12.47	15.51	−4.50 × 10^{-3}	4.50 × 10^{-3}	−.03	.04	.04	.05	1.9 × 10^{-3}	.02	.04	−.04	−.02	1.00	
13. ACQ_{it-2}	.12	3.56	−15.87	20.60	−.01	−.01	−5.30 × 10^{-3}	4.00 × 10^{-3}	−.01	.01	7.00 × 10^{-4}	−.04	−.04	.01	1.80 × 10^{-3}	.03	1.00

B: U.K. Firms

	M	SD	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13
1. GROWDEVMARK	.11	2.40	−16.84	16.86	1.00												
2. LEADERIL	2.06	2.51	0	7	.02	1.00											
3. DEVCOMPIL	.07	.12	0	.94	−.01	−.11*	1.00										
4. DOMCOMPIL[a]	17,660.72	43,885.84	0	295,347	−2.60 × 10^{-3}	.16*	.11*	1.00									
5. GLOBCOMPIL[a]	27,325.37	83,787.11	0	742,471.1	−.02	.14*	.08*	.02	1.00								
6. NETWORKIL[a]	133.09	1,181.15	0	14,889.76	3.10 × 10^{-3}	.08*	−.05	.09*	.14*	1.00							
7. AGE (years)	62.45	52.09	1	266	−.09*	−.05	−.07	−.02	.20*	−.07	1.00						
8. SIZE[a]	10,148.15	37,527.22	0	458,361	−.01	.11*	.09*	.08	.56*	.12*	.26*	1.00					
9. R&D[a]	119.60	636.09	0	6,369.18	−3.70 × 10^{-3}	.15*	−.15*	.08*	.23*	.14*	−.12*	.28*	1.00				
10. HHI	.28	.19	.08	1	.03	.13*	−.35*	−.13*	.19*	.07	−.06	.02	.18*	1.00			
11. $GROWDEVMARK_{it-2}$	.31	2.55	−16.78	19.14	.14*	3.30 × 10^{-3}	.02	−2.30 × 10^{-3}	.01	−.02	−.02	−1.80 × 10^{-3}	−.02	8.90 × 10^{-3}	1.00		
12. $GROWEMARK_{it-2}$	.26	2.09	−16.95	17.73	−3.70 × 10^{-3}	.04	.02	4.30 × 10^{-3}	−.05	−4.60 × 10^{-3}	−.01	−.07*	−6.6 × 10^{-3}	−1.00 × 10^{-4}	.06	1.00	
13. ACQ_{it-2}	.30	7.38	−20.04	20.42	−.02	.03	−.01	−.01	.02	4.50 × 10^{-3}	−6.20 × 10^{-3}	.02	.02	7.20 × 10^{-3}	−.02	.03	1.00

*$p < .05$.
[a]Values in millions of U.S. dollars.
Notes: Number of Indian firms = 116; number of Indian firm observations = 611. Number of U.K. firms = 160; number of U.K. firm observations = 736.

TABLE 3
The Impact of Indirect Learning from Leaders, Competitors, and Networks on the International Growth of Indian and UK Firms

	Base Model India	Full Model India	Base Model United Kingdom	Full Model United Kingdom	Pooled India–United Kingdom
LEADERIL (H_1)		.04**		.04	−.05
		(.02)		(.13)	(.05)
DEVCOMPIL (H_{2a})		.01**		.04	-4.49×10^{-3}
		(7.93×10^{-3})		(.09)	(9.26×10^{-3})
DOMCOMPIL (H_{2b})		.01***		-3.93×10^{-3}	−.02
		(4.18×10^{-3})		(.01)	(.01)
GLOBCOMIL (H_{2c})		.03**		−.03	−.02
		(.02)		(.04)	(.03)
NETWORKIL (H_3)		.02**		−.02	-8.33×10^{-3}
		(7.58×10^{-3})		(.02)	(7.69×10^{-3})
AGE	-3.07×10^{-3}	−.04	−.29***	−.30***	−.10*
	(.03)	(.03)	(.13)	(.13)	(.07)
SIZE	-2.42×10^{-3}	−.02	.03	.05	.04
	(.02)	(.02)	(.07)	(.06)	(.04)
R&D	-6.57×10^{-3}	-9.46×10^{-3}*	-2.67×10^{-4}**	-2.67×10^{-4}**	8.72×10^{-3}
	(5.90×10^{-3})	(7.01×10^{-3})	(1.46×10^{-4})	(1.56×10^{-4})	(7.90×10^{-3})
HHI	−.08*	−.09*	.86**	1.02**	.02
	(.05)	(.06)	(.45)	(.56)	(.07)
$GROWDEVMARK_{it-2}$	.04	.04	.12**	.12**	.02
	(.05)	(.05)	(.06)	(.06)	(.02)
$GOWREMARK_{it-2}$	-2.26×10^{-4}	-2.44×10^{-3}	−.01	−.01	-2.15×10^{-3}
	(2.21×10^{-3})	(2.78×10^{-3})	(.01)	(.01)	(3.31×10^{-3})
ACQ_{it-2}	-1.57×10^{-3}	-2.41×10^{-3}	-7.13×10^{-3}	-7.01×10^{-3}	2.99×10^{-3}
	(4.53×10^{-3})	(4.45×10^{-3})	(9.53×10^{-3})	(9.63×10^{-3})	(3.60×10^{-3})
IND × LEADERIL					.09**
					(.05)
IND × DEVCOMPIL					.01**
					(.01)
IND × DOMCOMPIL					.02*
					(.01)
IND × GLOBCOMPIL					.04*
					(.03)
IND × NETWORKIL					.02**
					(9.43×10^{-3})
IND					−.22
					(.35)
IND × $GROWDEVMARK_{it-2}$					-4.82×10^{-3}
					(.04)
Inverse Mills ratio	.05	.15	−.10	−.13	.02
	(.12)	(.12)	(.51)	(.54)	(.10)
Intercept	−.17	.04	2.47***	3.96**	.38
	(.24)	(.22)	(.94)	(1.48)	(.34)
Firms	116	116	160	160	276
N	611	611	736	736	1,347
R^2	.09	.13	.05	.05	.05

*$p < .10$.
**$p < .05$.
***$p < .01$.

United Kingdom column in Table 3). Taken together, the results of Table 3 support our argument that indirect learning from global competitors plays a more important role in the international growth of emerging-market relative to developed-market firms.

Indirect learning from networks and international growth. H_3 predicts that emerging-market firms that have network members (NETWORKIL) with greater developed-market experience exhibit greater international growth than other emerging-market firms. In support of H_3, we find that

the coefficient of NETWORKIL for the Indian sample is positive and significant ($\beta_{5,IND} = .02, p < .05$). In our U.K. sample, however, the coefficient of NETWORKIL is nonsignificant ($\beta_{5,UK} = -.02, p > .05$). Furthermore, the results from the pooled data show that the interaction variable (IND × NETWORKIL) is positive and significant ($\beta = .02$, $p < .05$) (see Table 3). Taken together, the results support our argument that indirect learning from network members' developed-market experience plays a more important role in the international growth of emerging-market relative to developed-market firms.

Controls. One of our controls is learning from past international growth in developed markets ($GROWDEVMARK_{it-2}$). In our Indian sample (see Table 3), we do not find a significant effect for this variable on international growth ($\beta_{IND} = .04, p > .05$). In our U.K. sample, however, we find a significant effect of direct learning from past international growth in developed markets ($\beta_{UK} = .12, p < .05$). These results suggest that direct learning (i.e., past international growth in developed markets) is more important for developed-market than for emerging-market firms. Our controls for learning from past international growth in emerging markets ($GROWEMARK_{it-2}$) and learning from cross-border acquisitions in developed markets (ACQ_{it-2}) are not significant for either the Indian or U.K. firms.

Additional Analyses and Robustness Checks

Can we rule out heteroskedasticity and autocorrelation? To rule out heteroskedasticity and autocorrelation, we reestimate the models in Table 3 with Driscoll and Kraay (1998) standard errors estimation. Our results in Table 3 hold for this estimation. We conduct further robustness checks by reestimating our models with feasible generalized least squares. Our results hold for these estimations as well.

Are our results robust to alternate measures of international growth? We reestimate Equations 3 and 4 on the Indian, U.K., and pooled data using log-transformed revenues in developed markets as an alternate dependent variable (rather than *growth*, our primary dependent variable, which uses the first difference of log-transformed revenues in developed markets). For this alternate measure, each of our hypothesized effects holds for the Indian sample but not for the U.K. sample. We also find that the interaction terms between the dummy (India) and hypothesized variables are positive and significant ($p < .10$) in the pooled data.

Are our results robust to alternate estimation methods? It can be argued that our dependent variable in Equation 3 measures *change* (i.e., growth) through a first difference of log-transformed developed-market revenues, whereas our hypothesized variables measure *level* (i.e., they do not measure change in the measures of leaders, competitors, or networks). To alleviate any concerns about this inconsistency between the dependent and hypothesized variables, we conduct a Blundell–Bond (1998) estimation with first-differenced dependent and hypothesized variables. The results of this estimation show that for each of the hypothesized effects, our results hold for the Indian sample but not for the U.K. sample. In addition, the results of this estimation for our interaction model with pooled data also show that our hypothesized variables drive the international growth of emerging-market firms but do not drive the international growth of developed-market firms.

Comparison of hypothesized effects within samples. To compare the hypothesized effects within samples, we standardize all variables in Equation 3 across firms and reestimate our models. We find that the coefficients of the hypothesized variables in the Indian sample are positive and significant ($p < .05$), whereas those in the U.K. sample are nonsignificant ($p > .05$). In the Indian sample, the size of each coefficient represents its relative importance in the regression. Accordingly, we find that the coefficients of the hypothesized indirect learning variables, in decreasing order of importance, are networks (.10), domestic competitors (.09), foreign competitors (.07), global competitors (.05), and leaders (.04).

Marginal effects of hypothesized variables. The results for the Indian sample show that a one-standard-deviation increase in indirect learning from leaders results in a 2.24% (i.e., .04 × standard deviation) increase in growth in developed market revenues. The increase in developed-market revenues is presented as a percentage change because our dependent variable (first difference of log-transformed developed-market revenues) is an approximation for percentage change. Similarly, a one-standard-deviation increase in indirect learning from foreign competitors, domestic competitors, and global competitors results in a 3.92% (.07 × standard deviation), 5.04% (i.e., .09 × standard deviation), and 2.80% (.05 × standard deviation) increase in growth in developed-market revenues, respectively. Finally, our standardized regression results suggest that a one-standard-deviation increase in indirect learning from networks results in a 5.60% (.10 × standard deviation) increase in growth in developed-market revenues.

Summary and Discussion

Many scholars have noted that the question of how firms grow is one of the most important facing the marketing discipline (Bharadwaj, Varadarajan, and Fahy 1993; Srivastava, Shervani, and Fahey 1998). As firms look overseas for new sources of growth, the international aspects of such growth take on critical importance (Steenkamp 2005). We contribute to the marketing literature by proposing and testing an explanation for international growth anchored around organizational learning—specifically, *indirect* learning about markets. We argue that in contrast to developed-market firms, which learn directly from their own experience, emerging-market firms learn indirectly about how to compete in developed markets by acquiring this knowledge from leaders, competitors, and network members. Next, we discuss the implications of these findings for research and practice.

Implications for Research

This article has several implications for research. First, to the best of our knowledge, this is the first article in market-

ing to systematically study the international growth of emerging-market firms. In doing so, it demonstrates the opportunities that exist in studying emerging markets more generally. Despite calls to study the international growth of emerging-market firms from several sources—scholars and journal editors, research organizations such as the Marketing Science Institute, business periodicals such as *The Economist* and *BusinessWeek*, and management consultancies such as Boston Consulting Group—such studies are rare in the marketing literature. By offering new, empirically based insights on well-studied topics such as market growth as well as on understudied topics such as the role of indirect learning, we hope that this article will serve as an initial basis for further research into the dynamic and important yet poorly understood phenomenon of the international growth of emerging-market firms.

Second, this research highlights the notion that theories from developed-market contexts do not easily transfer across the boundaries from developed to emerging markets. This is because the stage and pattern of business evolution is different in emerging markets, as are the institutional contexts that pervade such markets. For example, emerging-market firms often lack knowledge of how to compete in developed markets and do not have the luxury of learning over time from their own direct experience in developed markets. We show that emerging-market firms overcome this lack of knowledge and time by employing alternative, indirect ways of learning that are more suited to their specific contexts than the more direct methods of learning highlighted in the existing literature. This suggests that researchers should use caution when applying existing developed-market frameworks to emerging-market contexts. Therefore, we echo editors of marketing journals who have urged scholars to study the international aspects of marketing topics (Bolton 2003; Steenkamp 2005) and to use emerging markets as laboratories in which to test and modify assumptions and theories developed in and for the Western world (Burgess and Steenkamp 2006). More generally, by exploring alternative ways in which firms learn about new markets, this article contributes to broader marketing research on organizational learning (Sinkula 1994) as well as research regarding how firms gather, disseminate, and respond to information about competitors (Kohli and Jaworski 1990). Given that the study of competitors is an integral part of marketing (Dickson 1992; Lambkin and Day 1989), our focus on how firms learn through and about competitors enables us to contribute to a significant stream of research in marketing.

Third, little existing research has been able to address methodological problems such as endogeneity in testing theories about international growth (Herrmann and Datta 2005; Reeb, Sakakibara, and Mahmood 2012). In contrast, we employ an empirical strategy that takes advantage of the pace and timing with which regulatory restrictions were removed in emerging markets. Specifically, we use a recent regulatory shock to address the problem of endogeneity in our study of the international growth of Indian firms. Future researchers could use similar exogenous shocks to rigorously estimate the effects they aim to study.

Fourth, most research on business groups has emphasized their role in mitigating the downside of operating in emerging markets. The focus is typically on how business groups help emerging-market firms overcome the institutional voids they face by lowering the transaction costs these voids create (Khanna and Palepu 2000). By contrast, we highlight the upside potential of business groups in growing globally. We show that business groups can help increase the competitiveness of member firms in international markets by enabling the sharing of information among member firms, fostering learning from the activities of member firms, and leveraging the scale and scope of the business group for growth.

Implications for Practice

Implications for policy makers. The international growth of emerging-market firms benefits emerging economies by improving their balance of trade, increasing foreign exchange reserves, and strengthening the home currency. These benefits suggest several implications of our findings for policy makers. First, policy makers in emerging economies often believe that allowing citizens to study and work in developed markets results in "brain drain" and is thus to be discouraged. Exit restrictions and emigration controls have been mooted as potential policy instruments. For example, (Sriskandarajah 2005) states, "That something needs to be done about brain drain is not in question. G8 leaders have discussed the issue, the UK's Commission on Africa calls for better responses, and unions, development agencies, and other civil-society groups are demanding action." Our findings, however, suggest that there can be benefits to allowing, and even encouraging, citizens from emerging economies to study and work in developed markets. Specifically, we show that citizens with education and work experience from developed markets offer emerging-market firms access to a pool of leaders with developed-market knowledge from whom these firms can learn and who can drive their growth in developed markets. Accordingly, we argue that policy makers in emerging economies should be careful about placing obstacles in the paths of their citizens who try to study or work in developed markets. Indeed, they might even encourage their citizens to study in developed markets, for example, by providing them with scholarships, increasing the availability of loans, and removing foreign exchange restrictions on spending in developed markets.

Second, policy makers in emerging economies often succumb to the demands of business leaders to raise barriers to protect domestic firms from developed-market competitors. For example, after reforms in 1991 opened up Indian markets to developed-market competitors, several business leaders formed a group (known as the Bombay Club) to lobby policy makers to raise barriers to developed market competition. As Gurcharan Das, a noted Indian business commentator, states, "Reforms have been painfully slow precisely because of arguments ... espoused by the Bombay Club and others" (Singh 2011). Our findings suggest that emerging-market firms have much to gain from opening up to developed-market competition and that policy makers in

emerging markets should not bow to the demands of domestic business leaders to keep protectionist barriers high.

Specifically, our findings suggest that (in addition to other potential benefits) greater developed-market competition helps emerging-market firms learn about developed markets and pursue international growth. Accordingly, we argue that policy makers should encourage the entry of developed-market firms and stimulate ways in which domestic firms can learn from developed-market entrants. They can achieve the latter by encouraging the formation of alliances; by stimulating the formation of trade associations that unite domestic and foreign firms; by organizing international trade shows in which domestic firms interact with developed-market firms; and by creating information repositories that collect, analyze, and disseminate information on the activities of developed-market firms.

Implications for emerging-market firms. Recruitment in emerging-market firms often focuses on (1) hiring large numbers of young graduates from home universities (with no international education or experience) and (2) developing this internal talent pool from which to draw future top managers. As a recent Ernst & Young (2012, p. 11) report states, "Entry-level hiring is characterized by large volumes with a focus on quick turnaround time rather than on quality hiring." Consequently, emerging-market firms are unable to access the talent of outside recruits with education and work experience from developed markets. Our findings suggest that human resource managers in emerging-market firms must develop capabilities in lateral recruitment, which would enable them to gain access to managers with education and experience in developed markets at the middle-management level. Doing so would create an internal pool of managers with developed-market experience who could eventually lead these firms. In this way, emerging-market firms would be better poised to learn how to compete in developed markets, which would, in turn, increase their ability to grow globally.

Second, a widely held belief among managers is that firms in business groups perform better in closed economic regimes but lose out in more liberal ones (Khanna and Palepu 2000). In contrast, our findings from postliberalization India suggest that firms in business groups experience greater global growth, even in liberal economic regimes, than nonaffiliated firms do. This is because firms in business groups can share informational resources with one another and thus can learn how to compete in developed markets from member firms with such experience. Our results suggest that business groups should strengthen the information-sharing mechanisms between member firms as a means to pursue greater international growth. Our results also suggest that firms not affiliated with business groups should become members of industry consortia, which could enable them to share such informational resources and learning to grow globally.

Implications for developed-market firms. At various points in recent history, executives in developed-market firms have believed that emerging-market firms cannot compete with them in international markets (Wright et al. 2005). Even if they are aware of the competitiveness of emerging-market firms, they might not be able to easily identify which emerging-market firms are likely to be the most competitive. By contrast, our findings show that some emerging-market firms are as competitive as developed-market firms and also indicate ways to identify these firms. Specifically, developed-market firms can identify the most competitive emerging-market firms by determining whether they (1) have leaders with developed-market educational or work experience, (2) operate in industries with many developed-market competitors, (3) have domestic competitors with experience in developed markets, and (4) have network members with international experience. This implies that not all emerging-market firms will be as competitive as developed-market firms; however, firms that can learn indirectly about how to compete in international markets are especially likely to pose serious threats to their developed-market counterparts.

Limitations and Further Research

This article has several limitations, some of which offer opportunities for further research. First, although our theorizing is general in scope over emerging markets and provides a comparison with developed markets, our empirical context is limited to a single emerging-market country, India, and a single developed-market country, the United Kingdom. Additional research using data from other emerging and developed markets would be valuable in exploring the generalizability of our findings. Second, we use two measures of international growth: year-on-year change in developed-market revenues and annual developed-market revenues. These measures undoubtedly pick up important aspects of firms' international growth. Nevertheless, future researchers might fruitfully employ additional multi-item measures of international growth. We also restrict ourselves to measuring overall annual revenues (i.e., we estimate a firm-year model) instead of country-specific annual revenues (i.e., estimating a firm–destination country–year model) because the latter would answer a different research question: Why does the revenue growth of an emerging-market firm vary across different developed markets? Because the research question of this article ("Why do some emerging market firms achieve more revenue growth in developed markets than others?") is itself an important one that had not yet been addressed, we restricted our focus to answering this question. Future researchers could provide valuable insights by collecting country-specific annual revenues to implement the firm–destination country–year model and answer the former research question. Third, we examine only some measures of indirect learning (albeit important ones) from leaders, competitors, and networks. More fine-grained measures of these three drivers (and others) might provide additional insights. Further research could therefore examine the effects of, among others, the country of the CEO's international educational or work experience, the board members' educational and professional networks, the education and work experience of local talent from host countries, the extent of international expansion by domestic competitors in developed markets (e.g., the number of international sales personnel or sales offices

in developed markets), the extent of marketing activities in which developed-market competitors engage in domestic markets, the extent of global industry concentration in different regions of the world, and the role of cost-based strategies relative to differentiation strategies for international growth.

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