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Daphne W. YIU
Singapore Management University, daphneyiu@smu.edu.sg

ChungMing LAU

Garry D. BRUTON

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International venturing by emerging economy firms: the effects of firm capabilities, home country networks, and corporate entrepreneurship

Daphne W Yiu[1], ChungMing Lau[1] and Garry D Bruton[2]

[1]*Department of Management, Chinese University of Hong Kong, Shatin, NT, Hong Kong;* [2]*The Neeley School of Business, Texas Christian University, Fort Worth, USA*

Correspondence:
Daphne W Yiu, Department of Management, Chinese University of Hong Kong, Room 424, Leung Kau Kui Building, Shatin, NT, Hong Kong.
Tel: +852 2609 7789;
Fax: +852 2603 6840;
E-mail: dyiu@cuhk.edu.hk

Abstract
Past literature on foreign direct investment generally supports an economics perspective that there is a direct relationship between firm-specific ownership advantages and international expansion. However, in emerging economies, with their institutional environment context characterized by low resource munificence and continuous economic liberalization, a theoretical extension of the current perspective is needed. This paper introduces new parameters by focusing on specific ownership advantages and strategic actions that firms have to develop in response to the institutional characteristics of the emerging economies when they decide to pursue outward FDI. The focus here is on international venturing that requires a firm to engage in activities for new business creation in a foreign country rather than simply seek to distribute a product in another nation. It is shown empirically that the relationship between firm-specific ownership advantages and international venturing is moderated by the degree of home industry competition and export intensity. In addition, such a relationship is mediated by the intensity of corporate entrepreneurial transformation in the form of innovation, new business creation, and strategic renewal.
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Introduction

Foreign direct investment (FDI)-based development strategies are now increasingly adopted by many emerging economies, most notably Brazil, Russia, India, and China – the BRIC nations (Narula and Dunning, 2000). This resulted in the fact that emerging economies accounted for about 12% of the world's outward FDI in 2002. China, in particular, plays an increasing role in shaping the phenomenon. Its outward FDI amounted to US$5.53 billion in 2004 (*China Outward FDI Report*, 2004), and China is predicted to be one of the five largest sources of outward FDI in the world for the years 2004–2007 (UNCTAD, 2003).

Despite the growth of outward FDI by firms from emerging economies such as China, theoretical explanations of such actions remain limited (Mathews, 2006). The predominant theoretical

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view of FDI in the literature is an asset-exploitation perspective that conceptualizes international expansion as occurring when firms seek to leverage their firm-specific ownership advantages in new settings, which in turn allows them to obtain a competitive advantage over indigenous firms in the host country (Hymer, 1976; Caves, 1971). This perspective led Dunning (1980) to identify ownership, location, and internalization (OLI) advantages as the drivers of firms' international expansion. The asset-exploitation perspective envisions a reasonably direct relationship between firms' ownership advantages and their ability to pursue FDI successfully.

However, literatures from other perspectives suggest that firms also move across geographic boundaries for resource and knowledge acquisition as well as capability enhancement (Bartlett and Ghoshal, 1988; Madhok, 1997; Luo, 2000). Particularly with the rise of Asian multinationals, an asset-augmenting or asset-seeking perspective has been advocated to explain how these latecomers are employing international expansion as a way to seek resources and overcome their competitive disadvantages (Makino *et al*., 2002; Mathews, 2002, 2006; Child and Rodrigues, 2005). This view indicates that there may not be a direct relationship between firm-specific ownership advantages and the pursuit of FDI. Instead, firms engage in FDI for enhancing their competitiveness rather than exploiting their existing set of advantages.

We posit that there does not necessarily have to be an 'either–or' view of the drivers of FDI in emerging economies. Dunning (2006: 140) acknowledges that the asset-augmenting perspective does not conflict with the OLI framework with the assertion that 'the investing firm has to possess certain unique and at least some sustainable advantages.' For example, he argues that ownership advantages can include both internally generated capabilities and competence to seek assets with other institutions with which the firm has ongoing cooperative relationships (Dunning, 1995, 2006). Therefore, instead of exploring whether the exploitative view or the augmenting view is more suitable to explain outward FDI by emerging economy firms, we examine whether there are country-specific factors in the emerging economies on which the relationship between the possession of firm-specific ownership advantages and outward FDI is contingent.

Specifically, past literature has highlighted the fact that firms in emerging economies are constrained by an institutional environment with lower environmental munificence (La Porta *et al*., 1998; Makino *et al*., 2002), in addition to continuous economic liberalization and gradual institutional transition (Peng, 2003). These institutional components, however, have not been addressed in conventional FDI frameworks thus far. According to Dunning (2006), the institutional content should be included in analyzing internationalization activities. To respond to this call, we propose that there may be either specific ownership advantages that firms have to develop, or specific strategic actions that firms have to undertake, in response to the institutional characteristics of the emerging economies when firms decide to pursue outward FDI.

The outcome of this view of outward FDI is a model that incorporates specific institutional and organizational factors that affect the relationship between firms' ownership advantages and outward FDI relationships in the context of emerging economies. We first highlight the fact that the firm-specific ownership advantages of emerging-market firms should extend beyond firm capabilities to include relational assets derived from home country network ties. Second, we propose that the possession of these ownership advantages alone is not sufficient to explain emerging-market firms' pursuit of international venturing. Instead, such relationships are moderated by the degree of home industry competition and firms' export intensity. In addition, these relationships are channeled by firms' strategic actions undertaken in response to the institutional environment of the emerging economies, namely an entrepreneurial organizational transformation process that is necessary to transform firms in emerging economies into competitive players in the global market. In this model we focus on higher levels of outward FDI commitment that requires the creation of a new business in a foreign country. To avoid confusion with other types of outward FDI, we refer to this as international venturing.

The present study contributes to the understanding of FDI undertaken by firms from emerging economies in several ways. First, by incorporating institutional factors and firms' strategic actions in response to the unique institutional characteristics of emerging economies, this study helps to provide a logical extension of the general internationalization theory to a specific context in a manner suggested by Buckley and Lessard (2005). This approach also supports the recent recognition and call for the investigation of the fact that 'the

interaction between the institutional legacies of developing economies and the dynamic capabilities of their corporate entrepreneurs will be crucial for understanding the internationalization strategies that the latter pursue' (Child and Rodrigues, 2005: 405). In addition, this study supplements the internalization view of FDI by examining the effects of corporate entrepreneurial experiences for reforming firms in transition economies. Thus the research here offers a more comprehensive view of the pursuit of FDI and extends corporate entrepreneurship theories to the international business research context (Buckley and Lessard, 2005).

International expansion of firms from emerging economies

Rooted in a transaction cost perspective, traditional FDI theory draws on the assumption that firms pursuing international expansion should possess an internally transferable advantage to be successful. It is through the possession of such proprietary resources and capabilities that the multinational enterprise (MNE) can generate a monopolistic or competitive advantage over indigenous firms in the host countries and, at the same time, offset the disadvantages of operating in a foreign country (Hymer, 1976; Caves, 1971; Buckley and Casson, 1976). Dunning (1993) refined these two types of advantage into asset-based ownership advantages, which are realized from structural market imperfections, and transaction-based ownership advantages, which are realized from transaction imperfections. There has been wide empirical support for Dunning's OLI paradigm, particularly from firms in mature markets (e.g., Dunning, 1980; Morck and Yeung, 1991, 1992). In light of the emergence of alliance capitalism and technological advancement, Dunning (1995) re-specified the ownership advantages to include both internally generated capabilities and competence to seek assets with other institutions with which they have ongoing cooperative relationships. Recently, Dunning (2006) incorporated a dynamic perspective in the OLI paradigm by acknowledging that location advantages at time t may affect ownership and internalization advantages at time $t+1$, and the accumulated ownership advantages will subsequently influence the location choice.

Nonetheless, the assumption that firms have to possess ownership advantages in order to operate in a foreign country can be theoretically challenged along several dimensions when considering firms from emerging economies. First, owing to different resource endowments and cultures of the emerging economies, the ownership advantages possessed by emerging economies' firms can be somewhat different from those of mature economies (Wells, 1983). For instance, in a study of outward FDI by firms from Argentina, Brazil, Hong Kong, and India, Lall (1983) found that firms from these emerging markets outperformed counterparts from developed markets when entering other emerging markets owing to their resource endowments of lower-cost inputs, affiliation with a business group, ethnic connections in the host country, and technology and management that are adapted to the host country conditions. Thomas *et al*. (2002) similarly found, when examining emerging-market firms entering developed markets, that there were also unique resources involved. Using data from Latin American firms, they identified the unique resources of firms from emerging markets as including technological capabilities, 'groupo' membership, and previous state ownership, plus international and alliance experience.

Second, since firms from emerging economies are often latecomers in global competition, the possession of firm-specific ownership advantages at home still may not be sufficient for them to have a competitive advantage over domestic firms as they enter foreign countries. So firms from emerging markets enter developed markets for reasons other than asset exploitation. The recognition of this has led to the formulation of an asset-augmentation perspective on FDI (Wesson, 1999; Mathews, 2002; Li, 2003). For example, employing a strategic linkage theory and network approach, Chen and Chen (1998) proposed that FDI is used as a strategic means for small and weak firms to access resources that the investors do not possess. Similarly, Pananond and Zeithaml (1998) emphasized the necessity for Third World multinationals to maintain a balance between exploiting existing resources and accumulating new competences. Makino *et al*. (2002) adopted organizational learning and asset-seeking perspectives to argue that firms from newly industrialized countries engage in FDI not only when they possess firm-specific advantages for asset exploitation but also when they intend to seek technology-based resources and skills that are not available in their home country environments. They empirically found that firms in Asia pursue strategic asset-seeking and market-seeking strategies in developed countries and resource-seeking strategies in less developed countries. Consistent with Makino *et al*. (2002), Mathews (2006)

developed a framework that argues that Asian firms have linkage, leverage,! and learning motives when entering developed countries. The consistent theme in these different views of asset augmentation is that there are contingency variables, such as the ability or desire to learn, that drive the firm's efforts for FDI. Thus there may be different motives for firms from emerging economies to pursue outward FDI. Which of these different motives is acted on may in turn depend on which particular contingencies are present.

Despite a few notable articles highlighted above, overall the literature to date on FDI of firms from emerging economies is at an infant stage. The focus is on either a direct application of the asset exploitation and internalization view of FDI, or efforts that seek to refute the mainstream FDI theory and explore asset augmentation. However, the two views do not have to be mutually exclusive, and can be viewed as complementary. For example, firms typically possess some initial firm-specific advantages that they expect to exploit via internationalization (Cantwell and Narula, 2001; Dunning, 2006). Firms from emerging countries are no different, and normally need unique, non-replicable assets in order to gain access to new resources in the developed markets (Thomas *et al*., 2002). However, firms in this context will also have contingencies present that drive them to seek out FDI or discourage them from such activities. Thus it may not be an 'either–or' situation of asset-exploitation or asset-augmentation views of FDI, but instead how concepts can be integrated that will offer the greatest insight.

Theory and hypotheses development

There is a wide variety of actions that are considered to be FDI. Here we are interested in those substantive forms of outward FDI associated with entering into new foreign markets in which new ventures are established. These actions require a greater commitment than traditional 'exports' or 'sales' operations (Zahra and Covin, 1995; McDougall and Oviatt, 2000). For example, financing and supporting the new entity in foreign markets, learning about the new foreign markets, and expanding foreign operations all take considerable efforts. This is the clearest setting to examine the role of firm-specific assets and the potential for understanding the impact of moderating and mediating variables, and consequently is the focus of the model developed here. We label these outward FDI activities as *international venturing*.

Internally generated firm capabilities, such as technological and management capabilities, are widely established in the current literature as critical firm-specific ownership advantages for firms that go international (Lall and Siddharthan, 1982; Clegg, 1987). In addition, we propose that a unique ownership advantage of firms in emerging economies is the related asset derived from domestic networks, which is critical for successful international venturing. The central premise of our model is that there are factors that mediate and moderate the relationship between firms' ownership advantages and international venturing for firms in emerging economies. Therefore we will initially theoretically examine two contingent moderating factors of the relationship between firms' ownership advantages and international venturing: home industry competition, and a firm's export intensity. We also develop the theoretical rationale for how the effects of firms' ownership advantages on international venturing are mediated by the extent to which firms undertake corporate entrepreneurial activities. All these proposed relationships are summarized and presented in Figure 1, and are next discussed in detail.

Firm-specific ownership advantages and international venturing

Firm capabilities

In our conceptual model, we will not focus on all potential firm-specific assets that impact on international venturing. According to the resource-based view (Barney, 1991), the proprietary resources and capabilities that generate competitive advantages are usually intangible assets, particularly firm-specific knowledge including technological know-how, marketing knowledge, management expertise and human capital, and even organizational climate. Therefore we focus on two types of intangible capability that are proven to be critical to international new ventures – technological and management capabilities (Lall and Siddharthan, 1982; Clegg, 1987; Lau and Ngo, 2004).

The focus on technological capabilities is encouraged because they are widely viewed as the basis for generating competitive advantages and market power in traditional FDI literatures (Hymer, 1976). There is extensive empirical support that firms with higher levels of technological capability are more likely to internationalize (Swedenborg, 1979; Grubaugh, 1987; Dunning, 1993; Hennart and Park, 1993). Also, technological capabilities can

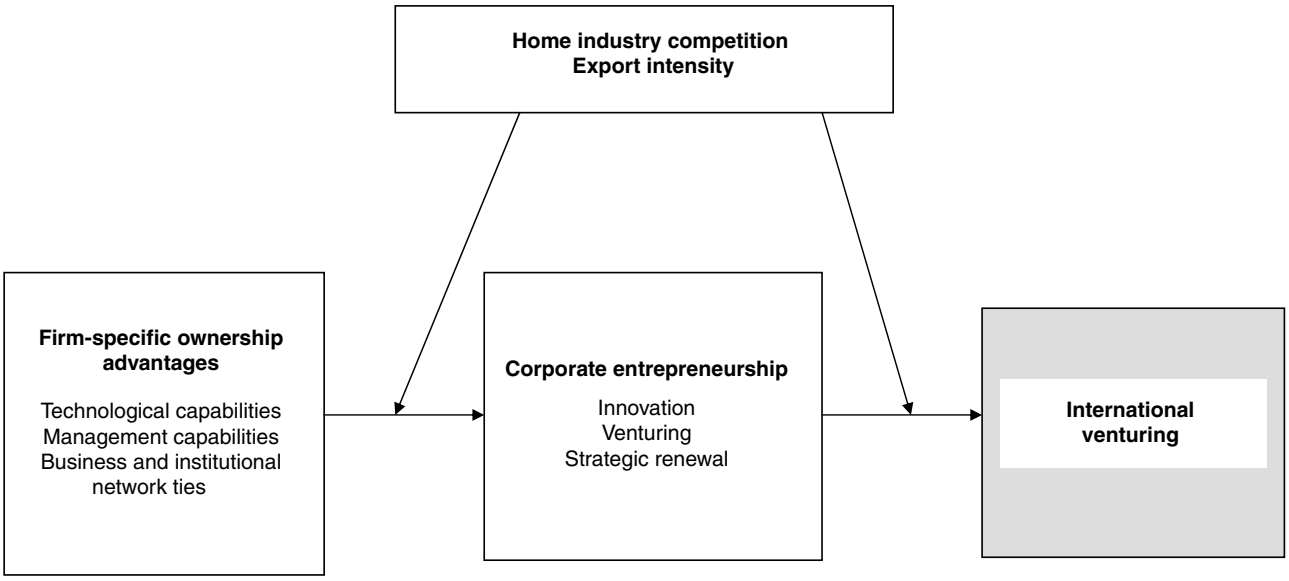

Figure 1 Conceptual framework.

help the knowledge integration of firms operating in multiple nations (Frost and Zhou, 2005). Studies have shown that emerging-market MNEs are good at appropriating, adapting, and transforming secondary technologies, which enables them to position themselves in global market niches (Tolentino, 1993; Oh *et al*., 1998; Pananond and Zeithaml, 1998). There is also evidence that Asian firms with higher levels of technological advantage are more likely to enter developed markets based on those advantages (Chen and Chen, 1998; Makino *et al*., 2004).

Another major firm-specific asset of concern here is management capabilities, especially in managing human resources. Past literature has supported the view that a firm's capability in managing human resources is a key factor in enhancing firm performance (Delery and Doty, 1996; Pfeffer, 1998) and innovation (O'Reilly, 1989; Lau and Ngo, 2004). By managing human resources more effectively, a firm can develop its human capital, which has been shown to play a critical role, specifically in the efforts of firms to engage in outward FDI (Lall and Siddharthan, 1982). A group of dedicated staff who have the necessary job skills, good communication and workmanship, and high expectation about task achievements can facilitate the acquisition of new knowledge, which in turn enhances a firm's competitiveness in the global arena (Chan *et al*., 2004; Wei and Lau, 2005). Empirical findings have also shown that good management of a firm's human resources can result in better international joint venture outcomes (As-Saber *et al*., 1998). Accordingly, those firms that have higher levels of technological and management capabilities should have a higher chance of success in their internationalization efforts.

Home country network ties

It is important to include an institutional dimension that is specific to the context of emerging economies in understanding internationalization activities. In emerging economies, ties with home country networks provide important advantages for the firm as it pursues international venturing. Dunning (1995) recognized the value of such items when he incorporated relational assets as one type of ownership advantage in his paradigm. Child and Rodrigues (2005: 405) also highlighted these ties when they said: 'A degree of networking between firms and the external bodies which can materially affect the process of their internationalization is undoubtedly present in all societies, but its prominence in China serves to draw particular attention to it.' While the potential impact of networking is well recognized in emerging economies (Hitt *et al*., 2002), Wright *et al*. (2005) emphasized the need to understand the role played by social capital and networks in the strategies of firms from emerging economies. These networks can be either with entities or people in the host country or with entities and people at home. The focus here is on

home country networks, not networks with host country partners, as our concern is with how the institutional environment of emerging economies affects firms in the pursuit of international venturing.

According to the institutional economics perspective, the most significant role of networks in emerging economies is the substitution for external markets (Caves, 1989; Khanna and Palepu, 1997). The lack of an adequate legal framework and a stable political structure in emerging economies has resulted in the underdevelopment of strategic factor markets (Barney, 1986), which leads to difficulties in creating the competitive advantages necessary for international expansion. Networks substitute for the undeveloped external markets for product development, financial capital, and entrepreneurial and management know-how in emerging economies (Khanna and Palepu, 1997). We specify two types of network that can work to substitute for such underdeveloped external markets: business and institutional.

Business network ties are referred to as linkages among parties involved in a business transaction, for example, suppliers and buyers, in formal or informal ways. Establishing business network ties at home helps foster international venturing, because emerging-market firms undertaking outward FDI are often vertically integrated with their home country partners such as suppliers. Guillén (2002) explained that firms belonging to the same business network can gain precious information and experience from peer members who have undertaken international expansion, thereby overcoming the liability of foreignness. His empirical findings demonstrated that imitation among member firms in the Korean *chaebols* increased the rate of foreign expansion. Thus emerging-market firms may enter the same country locations as their suppliers and clients because this kind of herding FDI helps not only to enhance the bargaining power of the entire business network over the host country government but also to establish market legitimacy in the local markets. Hence the possession of network ties with business parties in the home country facilitates emerging-market firms in engaging in international venturing activities.

Besides business networks ties, institutional network ties also provide critical advantages for firms in emerging economies. Institutional network ties refer to linkages with various domestic institutions such as government officials and agencies, banks and financial institutions, universities, and trade associations. From the resource dependence perspective (Pfeffer and Salancik, 1978), institutional networks are the resources that firms depend on in order to be able to operate in a market. In some emerging economies, such as China, firms have to seek for government approval when they plan to establish foreign ventures. Thus institutional links are especially critical in China, where there remains heavy involvement of the central and local governments in directing outward FDI (Cai, 1999). In addition to getting permission from the government, links with domestic trade associations and professional bodies can provide intelligence on different markets and access to those markets for international operations. Also, owing to the lack of credit history and the liability of foreignness, it is difficult or costly for emerging-market firms to secure financial support in the host countries. On the other hand, the banking systems in most emerging economies are relational in nature, and banks are willing to provide long-term loans. Hence links with domestic financial institutions are another valuable tie that firms need to obtain for successful international venturing.

Moderators

As noted before, for firms in emerging economies, the decision to pursue international venturing may not be based purely on the possession of firm-specific ownership advantages, but instead is also impacted by the institutional environment. Many emerging economies are now undergoing continuous market liberalization as well as adopting export-led economic growth policies (Guillén, 2000). Accordingly, we propose two moderating variables that are of particular relevance for emerging economy firms in their decisions to venture abroad: the intensity of industry competition in the home country, and a firm's export intensity.

Home industry competition

According to UNCTAD (1997), there are over 80 emerging countries that have liberalized their economic policies from inward-looking, import-substituting ones to outward-looking, export-substituting policies. As a part of these changes the governments typically soften their attitudes towards, and reduce restrictions on, inward FDI. This has opened up their domestic markets for foreign MNEs, who can now access the generic location-specific advantages in the emerging markets (Narula and Dunning, 2000). These changes have resulted in higher competition in the home markets of these emerging economies. As a result,

firms with asset-based ownership advantages are encouraged to go abroad and exploit new markets. Moreover, in the case of China, Chinese firms pursue outward FDI to avoid a number of competitive disadvantages incurred by operating exclusively in the domestic market (Child and Rodrigues, 2005). These disadvantages include: regional protectionism, which limits the opportunities to exploit scale economies; underdeveloped institutions, such as capital market and legal systems; and fierce competition from leading international competitors. Therefore economic liberalization gives a massive stimulus to firms in emerging economies to pursue outward FDI (Liu *et al*., 2005). Hence home market competition can propel firms to seek market opportunities overseas, but this FDI can also help augment these firms' competitive advantages. For example, through competing abroad, firms can accumulate knowledge about their strategic needs and about which kinds of asset in other countries could provide a benefit in obtaining a competitive advantage. These firms can then take that information and assets, which in turn may enhance their competitiveness at home. The stronger the competition at home, the greater the driving force for firms to learn about strategic shortcomings and investigate how to fill those strategic needs internationally. Therefore we expect the degree of home country industry competition to moderate the relationship between firms' ownership advantages and international venturing.

Hypothesis 1: Home industry competition will moderate the positive relationship between a firm's ownership advantages (technological and management capabilities, business and institutional network ties) and international venturing, such that firms with higher levels of ownership advantages will pursue more international venturing when home industry competition is stronger.

Export intensity

With the export-led growth strategies pursued by the governments in emerging economies, export-seeking FDI is undertaken by emerging-economy MNEs to promote their exports in the host markets. In his study of Indonesian MNEs, Lecraw (1993) found that the advantages of export-enhancing MNEs come from their FDI in export markets, where they gain access to foreign product and process technology, management expertise, and distribution channels. Empirical evidence from the Korean MNEs showed that outward FDI has a positive effect on exports at home, and this is especially the case for MNEs going to less developed countries (Lim and Moon, 2001). Alternatively, firms with export experience in foreign markets can also benefit from accumulating local market knowledge and legitimacy, developing local networks, and establishing brand and reputation in the host countries. Thus the established connectivity and integration with the foreign markets via exports will strengthen the positive relationship between ownership advantages and international venturing activities. We therefore hypothesize that the positive relationship between ownership advantages and international venturing will be stronger for the export-intensive firms.

Hypothesis 2: Export intensity will moderate the positive relationship between a firm's ownership advantages (technological and management capabilities, business and institutional network ties) and international venturing, such that firms with higher levels of ownership advantages will pursue more international venturing when export intensity is higher.

Mediator

As introduced earlier, we expect that the possession of firm-specific ownership advantages is not sufficient in inducing firms in emerging economies to pursue international venturing. Instead, these firms have to augment ownership advantages that are particularly important in the context of emerging economies. We propose that organizational transformation via corporate entrepreneurship not only helps emerging economy firms respond to their unique external institutional environment and internal firm environment, but can also facilitate firms' success in international venturing.

Corporate entrepreneurship

The proposed model suggests that, in order to successfully undertake international venturing, firms possessing ownership advantages need to engage in certain strategic actions before they go for international venturing. One characteristic of the institutional context of emerging economy is the gradual institutional transition in which firms are being reformed into market-oriented enterprises. As the economy continues to move towards a market-based system, it is necessary for these reformed enterprises to undergo an entrepreneurial transformation in order to compete locally and

globally. Hence we argue that, in addition to firm-specific ownership advantages, firms in emerging economies have to undertake corporate entrepreneurial activities so that they can accumulate venturing capabilities, knowledge, and experience for successful international venturing.

Corporate entrepreneurship is defined as encompassing three types of process: innovation, venturing, and strategic renewal (Guth and Ginsberg, 1990; Zahra, 1996). Innovation refers to the firm's commitment to introducing new products, production processes, and organizational systems, and venturing refers to new business creation (Covin and Slevin, 1991; Lumpkin and Dess, 1996). Strategic renewal refers to the creation of new wealth through new combinations of resources (Guth and Ginsberg, 1990). It involves changing a firm's scope of business, competitive approach, or both (Stopford and Baden-Fuller, 1994), and building and acquiring new capabilities and creatively leveraging them to add shareholder value (Zahra, 1996). All three processes are relevant to the transformation of firms from emerging economies to become competitive players in the global market.

The adoption of corporate entrepreneurship represents a fundamental change in firms' strategic behaviors in response to institutional changes (Spenner *et al*, 1998). For firms that have been embedded in the former planned economy for a long period of time, the presence of corporate entrepreneurship cannot be assumed. It is commonly believed in mature markets that a firm without the ability to have some levels of corporate entrepreneurship will fail. However, this is not necessarily the case in an emerging economy, where the role of the government and the operation of the economy are significantly different from those in mature economies. As the firm moves internationally, an entrepreneurial transformation of these firms is necessary for achieving efficiency, improving productivity, and creating wealth (Baumol, 1996).

The foremost importance of the role of corporate entrepreneurship is to cultivate an entrepreneurial spirit in firms that are undergoing institutional transition, as new strategic initiatives and mindsets are induced through corporate entrepreneurial activities. A distinguishing characteristic of entrepreneurial firms is their ability to recognize and pursue opportunities well ahead of their competitors, and to do so in spite of the limitations of their resources (Shane and Venkataraman, 2000; Zahra and Dess, 2001). This ability is particularly important for firms from emerging markets as they expand internationally. In the case of China, the socialist bureaucracy has become imprinted with the dominant logic in most Chinese organizations. Prahalad and Bettis (1986) argue that mental maps developed through experience in one business (i.e., 'dominant logic') may not be appropriate in other settings (international competitive settings). Thus, without the ability to develop a new mental map through corporate entrepreneurship, managers are likely 'to fall back on well-rehearsed fragments to cope with current problems even though these problems don't exactly match those present at the time of the earlier rehearsal' (Weick, 1998: 551). Hence a change in the strategic mindset through the pursuit of corporate entrepreneurship is necessary so that the firms can then leverage their assets for the best strategic use when they diversify internationally.

Corporate entrepreneurship, with its emphasis on innovation, venturing, and strategic renewal, is key for transition economy firms to revitalize and transform into market-oriented firms that are ready to compete in the global economy (Zahra *et al*., 2000a). Relative to other firms without corporate entrepreneurial experiences, firms that undertake more corporate entrepreneurial activities are in a better position to leverage ownership advantages so that they become more competitive when expanding internationally. Therefore we expect that firms possessing proprietary resources and capabilities necessary for international venturing must undertake organizational transformation via corporate entrepreneurship. The three specific aspects of corporate entrepreneurship that are of concern here – innovation, venturing, and strategic renewal – therefore lead to the following hypotheses:

Hypothesis 3a: The extent to which a firm engages in innovations will mediate the positive relationship between its ownership advantages (technological and management capabilities, business and institutional network ties) and international venturing.

Hypothesis 3b: The extent to which a firm engages in venturing will mediate the positive relationship between its ownership advantages (technological and management capabilities, business and institutional network ties) and international venturing.

Hypothesis 3c: The extent to which a firm engages in strategic renewals will mediate the

positive relationship between its ownership advantages (technological and management capabilities, business and institutional network ties) and international venturing.

Methods

Research setting

China is the world's fifth largest outward direct investor, and is predicted to eventually become one of the world's largest sources of outward FDI (UNCTAD, 2003). In 2004, China's outward FDI amounted to US$5.53 billion (*China Outward FDI Report*, 2004). This position has been achieved in part because the Chinese economy has grown at over 9% per year for the last 20 years. According to the report, by 2004 Chinese firms had set up 5163 foreign subsidiaries covering 149 foreign countries, 43% of which are located in Hong Kong, America, Russia, Japan, Germany, and Australia. The rapid growth of outward FDI has made China become a model for most emerging economies on how to approach economic reform and modernization. Therefore an examination of Chinese firms is appropriate both to better understand international venturing activities of the Chinese firms and also to gain insight into how other emerging economies will be affected as they follow the Chinese model.

Sample and data collection

The data for this study were collected through two waves of questionnaire survey conducted in 2003 and 2004. Through cooperation with the State Statistics Bureau of China, the surveys were conducted as part of a large-scale investigation into business competitiveness. The sample firms were randomly selected from all firms registered with the local government, based on a stratified sample according to industries in the city or province. Our original sample consisted of 600 firms, of which 35 were closed or could not be tracked in the second-wave survey. This resulted in 565 usable cases. We further dropped foreign-invested enterprises from the sample, as such firms would not be consistent with the focus on businesses from emerging economies, and foreign-invested enterprises could pursue such investments in a less entrepreneurial fashion than discussed here. Also, we focused only on firms located in Beijing, Shanghai, and Guangdong, as they are ranked as the top three cities for Chinese outward FDI (*China Outward FDI Report*, 2004). Finally, since we are focusing on the technological capabilities of the firms in this study, only firms in the manufacturing industry sector were included in the analyses. Firms in the service sector were dropped. After deleting these cases, the final sample includes 274 firms, representing 45.7% of the original sampled firms.[1]

We compared our sample with the national statistics reported in the *China Outward FDI Report* (2004) and found that our final sample is representative in several dimensions. First, the sampled firms are located in Beijing, Shanghai, and Guangdong. These three provinces are consistently ranked as the top three, and accounted for 67% of Chinese outward FDI sources made by all local provinces in China. Second, we ensured that the sampled firms were consistent with national characteristics. The percentages of outward FDI by state-owned enterprises, limited liability and shareholding firms, and private firms are 35, 40 and 12% respectively. In our final sample we have similar weightings in the first two types of firm but a slightly higher percentage of private firms, because we increased the proportion of private firms in the original sample for more meaningful comparisons. Third, 59% of China's outward FDI is concentrated in the manufacturing sector. Similarly, our sample focuses on this industrial sector, and firms are distributed across all the 28 industries within this sector, including food processing, textiles, pharmaceuticals, and transportation vehicle manufacturing.

The respondents to the questionnaire survey were CEOs and/or their deputies. In the first wave of the survey, conducted in 2003, the CEOs were contacted and they were asked to provide information about their firms' capabilities and personal links with different types of network. In the second wave of the survey, which was conducted in the following year, the same CEOs were contacted, but they or their deputies were asked to provide information on international venturing and corporate entrepreneurial activities. In both waves of surveys, the respondents were also asked to provide demographic and financial information regarding their firm's size, performance, ownership structure, exports, and industry conditions. The use of two waves of surveys to the same firms allows tests of the causal relationships between variables. Moreover, as the questionnaires were possibly completed by two different informants at different time periods, the potential common method bias problem resulting from using a single informant was controlled.

Measures

Dependent variable

International venturing Zahra *et al*. (2000b) developed a measurement scale on corporate venturing that consists of nine items. We selected four items that specifically asked executives to evaluate the extent of their firms' *actual* international venturing activities over the past two years along a five-point scale (1=very small extent, 5=very large extent). Thus the scale indicates the intensity of international venturing activities that a firm has undertaken. Exploratory factor analysis showed that the four items were loaded on a single factor, with high factor loadings and eigenvalue exceeding 1.0. The cumulative variance explained is 79.37%. The internal consistency (Cronbach's alpha) of the measurement scale is 0.91.

Independent variables

Technological capabilities We used two indicators to measure a firm's technological capabilities. First, a firm's technological capability has often been measured by research and development (R&D) spending (Schoenecker and Swanson, 2002). So *R&D intensity* is used, which is calculated as the three-year (2001–2003) average of R&D expenditures to capital investment. Although number of patents and new product introduction are also common indicators of technological capabilities, they are not widely available in the context of countries such as China. Also, past research has demonstrated a consistently strong correlation of R&D expenditures with patent count and new product introduction. So the use of R&D expenditures would be a sufficient indicator of a firm's technological capability. Second, a key indicator of R&D effectiveness is awards and achievements received by the firm's R&D efforts (Soh *et al*., 2004). These recognized achievements are particularly useful indicators of firms' technological competence in the context of an emerging economy, as technological resources are controlled by government and institutional parties. We counted the number of times the firm has been rewarded for innovativeness by government or trade associations, the number of government contracts and government-sponsored research grants obtained, and the number of R&D and technological collaboration programs with universities or research institutes over the past five-year period. We aggregated the three items and labeled it as a firm's *technological achievements*. The two indicators here represent both the input and output aspects of a firm's technological competence.

Management capabilities We measured a firm's management capabilities by six items drawn from Schuster (1982) and Zhao (2001). The items are related to how well a firm's human resources are managed. We asked chief executives about their agreement along a five-point response scale on the skills, knowledge, aspirations, and working climate of their employees. The items were cleanly loaded on a single factor, with a variance explained of 63.8%. The Cronbach's alpha of the measurement scale is 0.89.

Home country network ties We developed a perceptual measurement scale that asked executives to describe how close the links the top management team with nine different parties were along a five-point scale (1=no relationship, 5=very close relationship). We then conducted a factor analysis, and two factors resulted. The first factor, labeled *business network ties*, consists of relationships with key customers and suppliers. The second factor, labeled as *institutional network ties*, consists of seven parties that represent ties to different institutions such as government, financial institutions, and trade associations. The total variance explained by the two factors is 60.0%. The inter-item correlation of the two items of the business network ties sub-scale is 0.70, and the Cronbach's alpha of the institutional network ties sub-scale is 0.85.

Moderating variables

Home industry competition We asked chief executives to evaluate the extent of industry competition in the domestic market in the past year, along a five-point scale (1=totally disagree, 5=totally agree). The scale consists of three items:

(1) This industry is expanding at a rapid pace.
(2) Competition is very fierce in the industry.
(3) The main competitive force in the industry is from MNEs and international joint ventures.

The factor analysis showed that the three items converged into a single factor with a variance explained of 56.4%. The Cronbach's alpha of the scale is 0.58.

Export intensity This is calculated as a firm's exports relative to its total sales. We took an average of the firm's export-to-sales ratios in the past three years.

Mediating variable

Corporate entrepreneurship Zahra (1996) developed a 14-item measurement scale of corporate entrepreneurship that was factored into the innovation, venturing, and strategic renewal dimensions. Later, Zahra *et al*. (2000b) developed a similar scale with more items to measure innovation and venturing. In this study, we adopted the major items used in these two scales but with minor modifications. First, we used two items (product-oriented R&D and process technology-oriented R&D) from Zahra *et al*. (2000b) to supplement the single item of R&D in Zahra's (1996). Second, we focused on those venturing items in regard to domestic markets only. So, the final scale has 14 items in total: six items on innovations, four items on venturing, and four items on strategic renewal. The scale was factor-analyzed, and the items were cleanly loaded on the respective dimensions. The three factors explained 64.1% of variance. The Cronbach's alphas of the innovation, venturing, and strategic renewal sub-scales are 0.89, 0.78, and 0.80.

Table 1 lists the measurement items of the above perceptual scales, and summarizes the factor analysis results and internal consistency of the scales.

Control variables

In this study, we included seven control variables that are believed to have effects on international venturing, as well as on networks and corporate entrepreneurship.

(1) Firm size is controlled for because, typically, larger firms are more likely to have slack resources for international venturing, especially in an emerging economy context. We measured firm size by the three-year average (2001–2003) of the number of employees, and a natural logarithm transformation was taken.
(2) Firm's debt-to-equity ratio, as a proxy for potential slack (Bromiley, 1991; Cheng and Kesner, 1997), is controlled, because firms with more slack resources are more likely to undertake corporate entrepreneurship and international venturing.
(3) Firm age is important in a transition economy, because older firms that have been embedded in the pre-reformed period are more risk-averse and inertial for corporate entrepreneurship and international venturing. Firm age is calculated as a firm's founding year subtracted from 2003.
(4) Ownership type also matters in a transition economy. We therefore created two dummy variables to control for different firm types – state-owned enterprises and shareholding firms (coded 1 when the firm belongs to a specific owner type and 0 otherwise). The reference group is private firms.
(5) We controlled for a firm's past performance, which is indicated by return on assets and sales growth in 2003.
(6) Although the sample firms were taken from the manufacturing sector, we further controlled for whether the firms were in the heavy or light industries. A dummy variable with a value of 1 indicates that the firm belongs to the light industries, and a value of 0 indicates otherwise.
(7) Finally, past research suggests that firms that pursue asset-augmentation FDI strategies will locate R&D operations in knowledge-intensive countries so that they can tap into resources and knowledge that would otherwise not be available at home (Mathews, 2006). We therefore asked respondents to indicate, along a five-point response scale, the extent to which they engaged in setting up R&D centers or laboratories in foreign countries. In this regard, the strategic motive of FDI, if any, is also controlled.

Analysis and results

The means, standard deviations, and correlations of the variables included in our analysis are presented in Table 2. The variance inflation factors for the regression models do not exceed 10, indicating no serious problems with multicollinearity (Neter *et al*., 1990). To mitigate the potential threat of heterokesdascity, we estimated the OLS regressions using Huber–White's robust standard error (White, 1980).

Results of the hypothesis tests

We first tested the hypotheses on the moderating effects of home industry competition and export intensity on the relationship between firm's ownership advantages and international venturing. Table 3 presents the results. Model 1 is the baseline model with the control variables inserted. In Model 2 it is found that three of the five ownership advantage variables have positive effects on

Table 1 Measurement scales and factor loadings

Constructs	*Measurement items*	*Factor loadings*	*Variance explained (%)*	*Cronbach's alphas*
International venturing (Zahra *et al*., 2000b)			79.37	α=0.91
	Entering new foreign markets	0.90		
	Expanding your international operations	0.91		
	Supporting start-up business activities dedicated to international operations	0.89		
	Financing start-up business activities dedicated to international operations	0.86		
Corporate entrepreneurship (Zahra, 1996; Zahra *et al*., 2000b)			64.34	
Innovation	Investing heavily in cutting-edge product-oriented R&D	0.76		α=0.89
	Investing heavily in cutting-edge process technology-oriented R&D	0.80		
	Has maintained world-class research and development (R&D) facilities	0.79		
	Our company has introduced many new products or services	0.60		
	Has pioneered the development of breakthrough innovations in its industry	0.84		
	Has acquired significantly more patents than its major competitors	0.83		
Venturing	Diversify into new industries in the mainland	0.70		α=0.78
	Has acquired many companies in very different industries	0.78		
	Has focused on improving the performance of its current business rather than entering new industries (*Reverse item*)	0.81		
	Supporting domestic new venture activities	0.52		
Renewal	Has divested several unprofitable business units	0.59		α=0.80
	Has changed the competitive approach for each business unit	0.80		
	Has initiated several programs to improve the productivity of business units	0.78		
	Has reorganized operations to endure increased coordination and communication among business units	0.79		
Network ties			60.01	
Business	Key customers	0.93		Inter-item corr.
	Key suppliers	0.89		=0.70
Institutional	Government officials	0.78		α=0.85
	University professors, scientist, engineers	0.65		
	Bankers and financial institution people	0.72		
	Individuals who sit on the board of directors of other key firms	0.65		
	Individuals who sit on government committees related to this industry	0.76		
	Key member in trade associations and the like	0.69		
	Key member in industry policy committee	0.79		
Management capabilities	Employees' skills and knowledge can be fully and effectively utilized	0.75	63.75	α=0.89
	Employees have a strong organizational commitment and sense of belonging	0.83		
	Employees are able to discuss operational issues in an open, sincere and constructive manner	0.77		
	Employees are encouraged and supported to innovate	0.81		
	Managers will seek for, and accept, ideas relating to organizational transformation	0.82		
	Achievement of high performance goals and standards is sought by employees at all levels	0.81		
Home industry competition	This industry is expanding at a rapid pace	0.81	56.40	α=0.58
	Competition is very fierce in the industry	0.82		
	The main competitive force in the industry is from multinational enterprises and international joint ventures	0.62		

international venturing: technological achievements ($P<0.001$), business network ties ($P<0.10$), and institutional network ties ($P<0.05$). Interaction terms with home country industry competition and export intensity are added in Model 3 and Model 4 respectively. Our findings show that home industry competition moderates the relationship between R&D intensity and international

Table 2 Descriptive statistics and correlations

	Mean	*s.d.*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*
1. International venturing	2.25	1.06																			
2. R&D intensity	2.54	5.17	0.06																		
3. Tech. Achievement	8.25	26.20	0.21	0.13																	
4. Mgt. capabilities	3.67	0.72	0.13	0.14	0.25																
5. Business networks	4.13	0.76	0.17	0.10	0.08	0.31															
6. Institutional networks	2.93	0.76	0.24	0.19	0.27	0.31	0.28														
7. Innovation	2.56	0.96	0.58	0.16	0.26	0.28	0.20	0.29													
8. Venturing	2.13	0.84	0.43	0.07	0.22	0.16	0.12	0.24	0.49												
9. Renewal	2.96	0.92	0.43	0.02	0.18	0.18	0.22	0.26	0.50	0.49											
10. Industry competition	3.57	0.83	0.32	0.02	0.09	0.14	0.17	0.09	0.36	0.14	0.21										
11. Export intensity	0.16	0.28	0.29	−0.09	0.09	−0.02	0.06	−0.04	0.00	−0.04	−0.01	0.09									
12. No. of employees (ln)	5.99	1.05	0.24	−0.04	0.29	0.11	0.12	0.31	0.29	0.08	0.20	0.07	0.17								
13. Debt_equity ratio	0.58	0.30	−0.06	−0.11	0.04	0.05	0.10	0.00	−0.14	−0.11	−0.07	−0.01	0.06	0.02							
14. Firm age	19.89	20.09	−0.17	0.08	−0.03	−0.06	−0.13	−0.08	−0.18	−0.06	−0.05	−0.14	−0.11	0.02	0.08						
15. Firm type_SOE	0.33	0.47	−0.21	0.02	−0.04	−0.11	−0.14	−0.08	−0.19	−0.08	−0.06	−0.08	−0.19	0.00	0.07	0.49					
16. Firm type_shareholding	0.18	0.38	0.13	0.04	0.12	0.08	−0.02	0.21	0.19	0.08	0.15	0.03	0.00	0.21	−0.10	−0.11	−0.32				
17. Return on assets	0.04	0.16	0.00	0.08	0.04	0.13	0.00	0.04	0.06	−0.08	−0.05	0.03	0.05	0.01	−0.09	−0.14	−0.18	0.19			
18. Sales growth	0.31	1.69	−0.03	−0.03	0.00	−0.05	−0.05	0.03	0.05	0.12	−0.02	0.06	−0.02	−0.07	−0.03	−0.13	−0.13	0.16	0.03		
19. Industry dummy	0.55	0.50	0.11	−0.03	−0.07	0.00	0.00	−0.02	0.07	0.08	−0.03	0.03	0.27	0.07	−0.10	−0.02	−0.07	0.02	0.03	−0.07	
20. Foreign R&D unit	1.30	0.76	0.17	0.01	0.01	−0.07	−0.14	0.11	0.06	0.03	−0.02	0.04	0.16	0.10	−0.02	−0.09	−0.19	0.10	0.08	0.12	0.09

N=278. All correlations $\geqslant|0.12|$ are significant at the 0.05 level (two-tailed) and $\geqslant|0.16|$ are significant at the 0.01 level (two-tailed).

Table 3 Moderating effects of home country industry competition and export intensity

Dependent variable: International venturing	*Model 1*	*Model 2*	*Model 3*	*Model 4*
Control variables				
No. of employees (ln)	0.234***	0.137†	0.132†	0.097
Debt_equity ratio	−0.040	−0.061	−0.039	−0.081
Firm age	−0.085	−0.058	−0.027	−0.072
Firm type_SOE	−0.146*	−0.116†	−0.146*	−0.081
Firm type_shareholding	0.005	0.011	−0.028	0.004
Return on assets	−0.055	−0.076†	−0.072†	−0.073†
Sales growth	−0.045	−0.056*	−0.073***	−0.065**
Industry dummy	0.080*	0.096	0.090	0.046
Foreign R&D unit	0.120†	0.135*	0.124†	0.151*
Capabilities				
R&D intensity		0.018	0.065	0.052
Technological achievement		0.123***	0.112*	0.127*
Management capabilities		0.055	0.030	0.088
Network ties				
Business network ties		0.100†	0.052	0.112†
Institutional network ties		0.138*	0.129*	0.137*
Moderators				
Industry competition			0.272***	
Export intensity				0.164*
Interactions				
R&D × Competition			0.120**	
Tech. ach. × Competition			−0.038	
Mgt. capabilities × Competition			0.065	
Bus. network × Competition			0.086	
Ins. network × Competition			0.071	
R&D × Exports				0.030
Tech. achievement × Exports				−0.033
Mgt. capabilities × Exports				0.067
Bus. network × Exports				0.182***
Ins. network × Exports				−0.064
N	252	252	252	252
Model *F* statistics	4.35***	4.39***	5.29***	4.31***
Model R^2	0.14	0.21	0.31	0.27
Adjusted R^2	0.11	0.16	0.26	0.21
ΔR^2	0.14	0.07	0.17	0.13

Regression with robust standard errors. Entries represent standardized regression coefficients.
***$P<0.001$,**$P<0.01$,*$P<0.05$,†$P<0.10$ (two-tailed).

venturing, as shown by the positive interaction term between R&D intensity and competition ($P<0.01$). This gives partial support to Hypothesis 1. In addition, there is a positive interaction effect between business network ties and export intensity on international venturing ($P<0.001$). Thus Hypothesis 2 is partially supported. Overall, we do not find strong support for the moderating effects of home country competition and firm's export intensity on the relationship between firm's ownership advantages and international venturing.

To test our hypotheses on the mediating relationships, we followed Baron and Kenny's (1986) three criteria for testing mediation effects, which, in our case, are:

(1) Ownership advantages have significant relationships with corporate entrepreneurship (Models 2–4 in Table 4).

(2) Corporate entrepreneurship has significant relationships with international venturing (Model 5).
(3) A previously significant relationship between ownership advantages and international venturing is no longer significant in the presence of corporate entrepreneurship (Model 1 *vs* Model 6).

In Table 4, Model 1 shows that the coefficients of technological achievement, business network ties, and institutional network ties are positively related with international venturing ($P<0.001$, $P<0.10$, and $P<0.05$ respectively). In Models 2–4, technological achievement is found to have positive and significant effects on all three dimensions of corporate entrepreneurship ($P<0.10$ for innovation, $P<0.001$ for venturing, and $P<0.05$ for strategic renewal). A positive relationship is found between business network ties and strategic renewal ($P<0.05$), while institutional network ties are found to be positively related to venturing and strategic renewal ($P<0.05$ for both). Management capabilities, though not having a direct effect on international venturing, are positively related to innovation ($P<0.01$). In Model 5, all three aspects of corporate entrepreneurship are found to have positive effects on international venturing ($P<0.001$ for innovation and $P<0.05$ for venturing and strategic renewal). In the full model (Model 6), after controlling for the three dimensions of corporate entrepreneurship, the coefficients of technological achievement, business and institutional network ties are no longer statistically significant, as compared with Model 1. Therefore we can conclude that Hypotheses 3a–3c received

Table 4 Mediation model: main effects

Dependent variable:	*Model 1 International venturing*	*Model 2 Innovation*	*Model 3 Venturing*	*Model 4 Strategic renewal*	*Model 5 International venturing*	*Model 6 International venturing*
Control variables						
No. of employees (ln)	0.137†	0.208**	−0.026	0.102	0.079	0.049
Debt_equity ratio	−0.061	−0.137*	−0.124*	−0.106	0.050	0.041
Firm age	−0.058	−0.108	0.012	0.008	−0.034	−0.017
Firm type_SOE	−0.116†	−0.044	−0.016	0.012	−0.115*	−0.112
Firm type_shareholding	0.011	0.063	0.019	0.091	−0.053	−0.097
Return on assets	−0.076†	−0.025	−0.131***	−0.076*	−0.030	−0.027
Sales growth	−0.056*	0.050*	0.118***	0.041	−0.079†	−0.097***
Industry dummy	0.096	0.070	0.127*	−0.017	0.061	0.054
Foreign R&D unit	0.135*	0.004	0.008	−0.012	0.129*	0.134*
Capabilities						
R&D intensity	0.018	0.111	0.012	−0.041		−0.020
Tech. achievement	0.123***	0.115†	0.190***	0.091*		0.034
Management capabilities	0.055	0.180**	0.083	0.069		−0.041
Network ties						
Business	0.100†	0.058	0.017	0.133*		0.056
Institutional	0.138*	0.068	0.148*	0.141*		0.060
Mediator						
Corporate entrepreneurship						
Innovation					0.406***	0.403***
Venturing					0.152*	0.145*
Renewal					0.147*	0.138*
N	252	259	254	254	252	249
Model *F* statistics	4.39***	6.16***	2.82***	2.70***	15.96***	11.18***
Model R^2	0.21	0.26	0.14	0.14	0.44	0.45
Adjusted R^2	0.16	0.22	0.09	0.09	0.42	0.41

Regression with robust standard errors. Entries represent standardized regression coefficients.
***$P<0.001$, **$P<0.01$, *$P<0.05$, $^{\dagger}P<0.10$ (two-tailed).

support in the sense that the relationship between technological achievement and international venturing is mediated by all three corporate entrepreneurship dimensions, while the positive effects of business and institutional network ties on international venturing are mediated by either one or two of the corporate entrepreneurship dimensions.

Sub-analysis: simultaneous effects of moderation and mediation

Muller *et al*. (2005) proposed three more models to specifically test the simultaneous existence of mediation and moderation effects. To demonstrate a mediated moderation model, a significant moderation of the overall treatment effect should be present. In addition, either the effect of the interaction between independent variable and moderator on the mediator and the effect of the mediator on the outcome variable in the final model are significant, or the effect of independent variable on the mediator and the effect of the interaction between mediator and moderator on the outcome variable in the final model are significant. Finally, the moderation of the residual treatment effect should be reduced in magnitude, as compared with the moderation of the overall treatment effect. (See Muller *et al*., 2005, for the details of the analytical models for mediated moderation.) The results of the mediated moderation model are reported in Table 5 (for the moderating effects of home industry competition) and Table 6 (for the moderating effects of export intensity) respectively.

Table 5 presents the results of the moderating effects of home industry competition mediated by corporate entrepreneurship. In Model 1, it is found that there are significant positive interaction effects between R&D intensity and competition ($P<0.01$). In Models 2–4, we find that the interaction between R&D intensity and competition is positively related to innovation ($P<0.001$). As shown in Model 5, innovation, venturing, and strategic renewal are all positively related to international venturing ($P<0.001$, $P<0.05$, and $P<0.05$ respectively). These effects remain significant in the full model (Model 6). In addition, the interaction effect between R&D intensity and competition that was significant in Model 1 become insignificant in the full model. Hence we can conclude that innovation mediates the interaction between R&D intensity and home country competition. Additionally, since the interactions between the mediator and moderator are not statistically significant in the full model, we can further specify that it is the moderating effect of home industry competition affecting the magnitudes of R&D intensity on the innovation dimension of corporate entrepreneurship, but not the magnitude of the partial effects of innovation on international venturing.

Finally, Table 6 reports the results of the moderating effects of export intensity mediated by corporate entrepreneurship. In Model 1, only the interaction effect between business network ties and export intensity is found to have a positive effect on international venturing ($P<0.001$). Then it is found that business network has a positive but marginal effect on innovation ($P<0.10$) in Model 2. No significant relationships are found between business network ties and the other two dimensions of corporate entrepreneurship. In the full model, the interaction effect between business network ties and export intensity that was significant in Model 1 becomes weaker (beta coefficients reduced from 0.18 to 0.12) when the effects of corporate entrepreneurship are controlled. As such, innovation has a marginal mediating effect on the interactions between business network ties and export intensity.

In summary, we find that corporate entrepreneurship mediates the main effects of technological achievements and home country network ties on international venturing. In addition, we find that the effects of R&D intensity and business network ties on the innovation orientation of corporate entrepreneurship are moderated by home country competition and export intensity respectively, which then exert positive effects on international venturing.

Discussion and conclusion

This research has focused on international venturing – firms' commitment to create new businesses in a foreign location – by firms from emerging economies. The results provide support that emerging economies are a setting where the conceptualization of international expansion as a direct outcome of the competitive advantages resulting from leveraging firm-specific ownership advantages in new settings needs to be refined.

First, our findings highlight the importance of the role of home country network ties in facilitating firms in emerging economies to pursue international venturing, whereas past studies on FDI have focused mainly on strategic network linkages (and those usually referring to business networks only) with other domestic and foreign firms in the

Table 5 Mediated moderation model: home industry competition

Dependent variable:	*Model 1 International venturing*	*Model 2 Innovation*	*Model 3 Venturing*	*Model 4 Strategic renewal*	*Model 5 International venturing*	*Model 6 International venturing*
Control variables						
No. of employees (ln)	0.132†	0.202***	−0.029	0.087	0.079	0.063
Debt_equity ratio	−0.039	−0.124*	−0.118†	−0.105	0.050	0.041
Firm age	−0.027	−0.069	0.008	0.008	−0.034	−0.010
Firm type_SOE	−0.146*	−0.075	−0.033	−0.003	−0.115*	−0.126*
Firm type_shareholding	−0.028	0.040	0.005	0.068	−0.053	−0.055
Return on assets	−0.072†	−0.022	−0.126***	−0.070†	−0.030	−0.027
Sales growth	−0.073***	0.031†	0.114***	0.027	−0.079†	−0.100***
Industry dummy	0.090	0.063	0.120†	−0.026	0.061	0.048
Foreign R&D unit	0.124†	−0.003	0.013	−0.016	0.129*	0.130*
Independent variables (IV)						
R&D intensity	0.065	0.165***	0.032	−0.037		0.011
Tech. achievement	0.112*	0.118	0.176*	0.183**		0.027
Mgt. capabilities	0.030	0.163*	0.096	0.068		−0.064
Business networks	0.052	0.015	−0.001	0.096		0.033
Institutional networks	0.129*	0.053	0.134†	0.135*		0.067
Moderator						
Industry competition	0.272***	0.273***	0.053	0.157*		0.158*
IV × Moderator						
RD × comp.	0.120**	0.166***	0.054	0.025		0.053
Tech. ach. × comp.	−0.038	−0.071	−0.027	−0.171**		0.016
Mgt. cap. × comp.	0.065	0.057	0.031	0.135*		0.027
Bnet × comp.	0.086	−0.011	−0.028	0.050		0.096†
Inet × comp.	0.071	0.138**	0.168*	0.056		−0.024
Mediators						
Innovation					0.406***	0.344***
Venturing					0.152*	0.157**
Renewal					0.147*	0.125†
Mediators × Moderator						
Innov × comp.						−0.038
Venture × comp.						−0.061
Renew × comp.						0.100
N	252	259	254	254	252	248
Model *F* statistics	5.29***	7.33***	2.49***	2.78***	15.96***	8.18***
Model R^2	0.31	0.38	0.18	0.19	0.44	0.49
Adjusted R^2	0.26	0.33	0.11	0.12	0.42	0.43

Regression with robust standard errors. Entries represent standardized regression coefficients.
***$P<0.001$, **$P<0.01$, *$P<0.05$, $^{\dagger}P<0.10$ (two-tailed).

host countries (e.g., Chen and Chen, 1998). Additionally, the findings on network effects also call for the need to differentiate network resources or relational capital in the context of emerging economies. The results show that the roles of business networks, for example, in sharing market information and securing control over a supply chain, constitute a weaker direct effect on international venturing, as compared with institutional networks. The findings show that institutional networks play a more important role at this stage of economic development of the country under study. This indicates that institutional networks may help firms in emerging economies such as

Table 6 Mediated moderation model: export intensity

Dependent variable:	*Model 1 International venturing*	*Model 2 Innovation*	*Model 3 Venturing*	*Model 4 Strategic renewal*	*Model 5 International venturing*	*Model 6 International venturing*
Control variables						
No. of employees (ln)	0.097	0.207**	−0.021	0.103	0.079	0.008
Debt_equity ratio	−0.081	−0.137*	−0.122†	−0.109	0.050	0.024
Firm age	−0.072	−0.113†	0.014	0.000	−0.034	−0.024
Firm type_SOE	−0.081	−0.043	−0.009	0.021	−0.115*	−0.073
Firm type_shareholding	0.004	0.053	0.009	0.082	−0.053	−0.033
Return on assets	−0.073†	−0.039	−0.141***	−0.080*	−0.030	−0.015
Sales growth	−0.065**	0.046†	0.116***	0.035	−0.079†	−0.117***
Industry dummy	0.046	0.095	0.141*	−0.009	0.061	−0.018
Foreign R&D unit	0.151*	0.041	0.035	0.023	0.129*	0.123*
Independent variables (IV)						
R&D intensity	0.052	0.139	0.041	−0.011		−0.001
Tech. achievement	0.127*	0.158†	0.275***	0.175*		−0.011
Mgt. capabilities	0.088	0.177**	0.070	0.069		−0.014
Business networks	0.112†	0.083	0.033	0.156*		0.052
Institutional networks	0.137*	0.060	0.129†	0.121†		0.054
Moderator						
Export intensity	0.164*	−0.095	−0.092	−0.072		0.222***
IV × Moderator						
RD × exports	0.030	0.079	0.091	0.078		−0.011
Tech. ach. × exports	−0.033	−0.036	−0.080	−0.096		0.028
Mgt. cap. × exports	0.067	0.040	−0.023	0.036		0.061
Bnet × exports	0.182***	0.090†	0.037	0.104		0.120*
Inet × exports	−0.064	−0.140*	−0.103	−0.100		−0.015
Mediators						
Innovation					0.406***	0.429***
Venturing					0.152*	0.163**
Renewal					0.147*	0.128*
Mediators × Moderator						
Innov × exports						−0.030
Venture × exports						−0.097†
Renew × exports						0.029
N	252	259	254	254	252	248
Model *F* statistics	4.31***	4.93***	2.38***	2.27**	15.96***	9.93***
Model R^2	0.27	0.29	0.17	0.16	0.44	0.54
Adjusted R^2	0.21	0.23	0.10	0.09	0.42	0.48

Regression with robust standard errors. Entries represent standardized regression coefficients.
***$P<0.001$, **$P<0.01$, *$P<0.05$, $^{\dagger}P<0.10$ (two-tailed).

China to cope with the transitioning institutional environment better. This kind of institutional relatedness, defined as 'firms' informal linkages with dominant institutions in the environment that confer resources and legitimacy' (Peng *et al.*, 2005: 622), is an essential asset for firms to mitigate information asymmetry in emerging economies. The ties with administrative and regulatory agencies, banks and financial institutions provide firms that seek to pursue international venturing with access to critical information such as regulations and policies regarding outward FDI opportunities, information about the foreign markets, and financial backup. So networking with domestic institutions

in the home country provides additional ownership advantages for firms in emerging economies to successfully engage in international venturing.

Second, our empirical findings on the moderating relationships have demonstrated that the effects of a firm's technological capabilities in terms of R&D intensity on international venturing are contingent on the intensity of industry competition in the home country. This shows that, instead of relying on the intrinsic cost advantages, Chinese MNEs, particularly R&D-intensive ones, are moving towards a higher level of internationalization, which aims to overcome competitive disadvantages at home (Child and Rodrigues, 2005). In addition, our findings also support the view that firms with stronger ties with business networks at home and higher export intensity are associated with higher levels of international venturing. Lecraw (1993) has pointed out that export-enhancing MNEs from less developed countries such as Indonesia are relatively small. Thus, when entering export markets that incur high fixed costs and require functional and local knowledge, the benefits resulting from domestic business networks are stronger for such smaller MNEs to pursue export-enhancing FDI.

Third, the results on the mediating relationships are more promising as compared with the moderating effects. We find that corporate entrepreneurship mediates the main effects of technological achievements and home country network ties on international venturing. We also find that the innovation orientation of a firm's corporate entrepreneurship mediates the interaction effect between R&D intensity and home country competition, as well as the interaction effect between business network ties and export intensity, on international venturing. This shows the importance of corporate entrepreneurship in facilitating the pursuit of international venturing activities by emerging-market firms. Ireland and his colleagues (Ireland *et al*., 2001) have argued that international entrepreneurial ventures need to adapt quickly to the competitive pressures brought about by the global economy's complexity and dynamism. Specific to the context of China, such adaptation involves strategic adaptation from a formerly planned economy to the global market, which is founded on market capitalism. In China, the economic reform has focused on improving firms' innovation efforts as a significant dimension of the institutional transition (Jefferson *et al*., 1997). Therefore the pursuit of innovation, venturing, and strategic renewal is critical in 'marketizing' firms in an emerging economy. The aim is not to preempt, but to stay competitive with, incumbent firms in the global competitive landscape.

Future research should expand the understanding developed here by examining those ownership advantages that are specific to the context of emerging economies, such as domestic network ties, across different time periods. For example, it has been suggested that many aspects that make emerging economies unique will gradually fade away as the markets mature. The importance of informal network relationships will gradually decline as formal market institutions continue to develop (Peng, 2003). This may indicate that the effects of home country network ties on international venturing are transitional. Future studies with longitudinal data are called for in this regard.

Additionally, our study has highlighted the importance of incorporating the institutional component into existing FDI theories (Dunning, 2006). The importance of networking with domestic institutions and entrepreneurial organizational transformation demonstrates that some kinds of firm capabilities in coping with the institutional environment, in addition to asset-based or transaction-based firm assets, are necessary in the pursuit of international venturing, particularly for firms in the emerging economies. In addition to the role of entrepreneurship, Child and Rodrigues (2005) have emphasized that institutional analysis with reference to the role of government, the interplay between government and entrepreneurship, and the liability of foreignness may provide new insights for theory extension on the internationalization of Chinese firms. Moreover, the institutional components examined here all concern the environment of the home country only. Future studies could expand the theoretical understanding of the model developed here by identifying institutional components in the host countries as well.

The study, however, has some limitations. First, although we included home country competition to capture market-seeking and strategic-asset-seeking outward FDI motives in the model, we did not directly measure such investment motives, and our data did not differentiate the various destinations of the FDI. Second, we used self-reported surveys in measuring the intensity of international venturing actions. It would be more meaningful to have objective data to triangulate their assessments. However, owing to the unavailability of reliable data for the current sample, we expect that future studies can overcome this limitation when such data are

available publicly. Third, the current study measured management capabilities in regard to human resources management only. Future studies may expand the scope to other dimensions of management capabilities, use hard measures of human capital, or develop measures on the particular management qualities or capabilities that are particularly critical for MNEs from emerging economies.

Another possible concern is the potential endogeneity between the independent and dependent variables as typically found in strategic management studies. For instance, the relationship between innovation and international venturing may be triangular. To check whether the effect of innovation on international venturing is overly estimated in our models, we conducted an instrumental variables regression analysis. We found that the coefficient of innovation remained robust, and there is no significant difference between the coefficients of innovation in the instrumental variables regression and the OLS regression models. We further conducted a Hausman test to see whether there is a systematic difference in the coefficient estimates obtained from the two models (Davidson and MacKinnon, 1993; Wooldridge, 2003). The Hausman test showed that there is no statistically significant difference in the coefficient estimates obtained from the OLS regression model and those obtained from the instrumental variables regression model. To better mitigate the endogeneity concern, future studies with longitudinal data should be conducted.

In conclusion, the current proposition provides a logical extension of the general internationalization theory to a specific context by examining how firms undertake strategic actions in response to the unique institutional characteristics of emerging economies. The foundation developed here demonstrates that there are intervening variables that impact on the effort of emerging-market firms to successfully engage in international venturing. Such an understanding is critical as these firms continue to enlarge their presence in the world economy.

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About the authors

Daphne Yiu is an assistant professor in the Department of Management, the Chinese University of Hong Kong. She received her PhD in management from the Michael F Price College of Business, University of Oklahoma. Her research interests lie in international diversification strategy, business groups, corporate entrepreneurship, and corporate governance.

Chung-Ming Lau (PhD, Texas A&M University) is Professor and Chairman of the Department of Management at the Chinese University of Hong Kong, and the founding President of the Asia Academy of Management. His teaching and research interests include strategic change, organization culture, and management of Chinese organizations. He has published in *Journal of International Business Studies*, *Academy of Management Journal*, *Journal of Applied Psychology*, *Management International Review*, *Asia Pacific Journal of Management* and other major journals.

Garry Bruton is a professor of entrepreneurship at the Neeley School of Business at Texas Christian University. His research focuses on entrepreneurship in emerging markets. He has published over 50 academic articles in leading journals such as the *Academy of Management Journal*, *Strategic Management Journal*, *Journal of Business Venturing*, and *Entrepreneurship Theory and Practice*. He is currently associate editor of the *Academy of Management Perspectives* and is senior editor of the *Asia Pacific Journal of Management*. In addition, he serves on four other editorial boards for leading academic journals. He has co-authored two textbooks published by Thomson-Southwestern – one on small business management and the other on technology and innovation management. In the spring of 2005 Professor Bruton was the first holder of the Hall Chair for Entrepreneurship offered by the Fulbright Commission in Warsaw Poland. In the academic year 2005/2006 he was a visiting scholar at the Chinese University of Hong Kong. He is currently the President of the Asia Academy of Management.

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