



Corporate Entrepreneurship as Resource Capital Configuration in Emerging Market Firms

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Network-based resource capital such as political capital, social capital, and reputational capital are critical in providing firms with special access to various resources and legitimacy in emerging markets. However, how these generic nonmarket forms of capital are transformed into value-adding, industry-specific, and firm-specific uses, which subsequently enhance firm competitiveness, remained unanswered. Adopting a dynamic capability approach, this paper posits that corporate entrepreneurship performs a unique role of resource capital configuration and transformation in emerging market firms by continuously renewing firm competences so that congruence with the changing environment can be achieved. Building on this conceptualization, we argue that the positive effects of network-based resource capital on firm performance are channeled through the resource configuration process given by various corporate entrepreneurial activities such as product and organizational innovations as well as new venturing. Empirical evidence of the proposed mediation model is obtained from a survey of established firms in China.

In emerging markets, the need for the acquisition and configuration of resources in established firms may be similar to those in matured markets. However, the sources of such resource acquisition and the subsequent resource configuration process may be different. The importance of networks has been highlighted in extant literatures, and it has been argued that networks provide the needed resource capital for firms in emerging markets (Peng & Zhou, 2005). Oliver (1997) defines resource capital as "*the value-enhancing assets and competencies of the firm*" (p. 709). One critical way of enhancing resource capital is to develop interfirm linkages in order to maximize the potential for accessing specialized resources. Nevertheless, how resource capital is reconfigured and transformed has not been closely examined.

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There are two primary motivations in this study. First, this study attempts to specify exactly what type of resource capital firms can derive from their network ties in emerging markets. Building on the institutional embeddedness perspective, three different types of resource capital obtained from informal institutions and network ties, namely political, social, and reputational capital, are proposed. It is argued that the extent of a firm's embeddedness in informal institutions in the emerging market context allows firms to derive nonmarket forms of capital including political, social, and reputational capital from either institutional or business networks, or both (Peng, Lee, & Wang, 2005).

Second, how resource capital derived from different types of networks are employed and transformed to realize firm performance has not been widely studied. Particularly in an emerging market context, established firms often face strategic issues related not just to the development of new products and markets, but also to the transformation of current organizational structure and management systems. Due to continuous marketization and market liberalization policies in these countries, this is the appropriate path for many firms to take in order to sustain their competitiveness in the increasingly competitive domestic market. Emerging market firms share some similarities with new start-ups in the market economies in terms of market opportunity seeking, but they often differ from the developed market counterparts in terms of size, age, as well as the portfolio of resource capital possessed. Thus, it is important to understand how the values of network resource capital are realized in order to sustain competitiveness in the market.

We aim to fill this research gap by examining how firms in emerging markets configure and transform different types of network resource capital for the realization of firm performance via carrying out different corporate entrepreneurial actions. Building on the institutional embeddedness and resource dependence perspectives, we affirm the importance of a firm's external network ties in emerging markets by suggesting that they are the primary sources of resource capital that firms have to acquire in such institutional contexts. Following the dynamic capabilities approach that focuses on how assets are deployed and redeployed in a changing environment (Teece, Pisano, & Shuen, 1997), we emphasize that corporate entrepreneurship performs a unique role in configuring and transforming the generic, nonmarket form of capital obtained from external network ties into firm-specific and industry-specific uses such as product and organizational innovations as well as venturing activities. Such a resource configuration and organizational transformation mechanism is critical in helping emerging market firms to add strategic values to firm performance and continuously renew firm competences so that congruence with the changing environment can be achieved.

To summarize, this paper proposes corporate entrepreneurship as a resource capital configuration mechanism in emerging markets. We propose a mediation model in which the positive effects of resource capital obtained from external networks on firm performance are channeled through the internal transformation mechanism of various corporate entrepreneurial activities. The paper begins with a review of literature on corporate entrepreneurship with special attention given to those studies conducted in the emerging market context. Then, a theoretical model on the role of corporate entrepreneurship in mediating the relationship between a firm's network resource capital and relative performance is developed. The model is then tested with survey data collected in China. Results and discussions are then presented, together with suggestions on future research in this area. The results of our study provide theoretical support that although organizations have the need to rely on resources provided by the external environment (Pfeffer & Salancik, 1978), they can, however, perform different corporate entrepreneurial

activities to configure these resource capital so as to improve their dynamic capabilities and react to the dominant institutions facing them in emerging markets (Oliver, 1997; Teece et al., 1997).

Corporate Entrepreneurship in Emerging Markets

Corporate entrepreneurship is defined as encompassing several types of phenomena and processes: innovation, venturing, and strategic renewal (Guth & Ginsberg, 1990; Zahra, 1996). Innovation generally refers to the firm's commitment to introducing new products, production processes, and organizational systems, while venturing refers to the creation of new businesses (Covin & Slevin, 1991; Lumpkin & Dess, 1996). Strategic renewal refers to the creation of new wealth through new combinations of resources within an organization (Guth & Ginsberg, 1990). Renewal involves revitalizing a firm's operations by changing the scope of business, competitive approach, and building and acquiring new capabilities (Zahra, 1996). Thus, Zahra, Neubaum, and Huse (2000) treated strategic renewal as one kind of organizational innovation. At any rate, corporate entrepreneurship allows an incumbent firm to make full utilization of its resources and capture new opportunities. Innovation and venturing are the two major dimensions of corporate entrepreneurship, and thus the focus of the present study.

The focus on the aspects of corporate entrepreneurship mentioned earlier has led researchers to conceptualize corporate entrepreneurship as an internal organizational process. Zahra, Nielsen, and Bogner (1999) suggested that corporate entrepreneurship is in fact a knowledge-creation process. Similarly, Borch, Huse, and Senneseth (1999) argued that corporate entrepreneurship is a resource configuration process in small firms. Dess et al. (2003) also supported this view by suggesting organizational learning as a consequence of corporate entrepreneurship. Zahra, Ireland, Gutierrez, and Hitt (2000) highlighted that corporate entrepreneurship is the key for emerging economy firms to revitalize, reconfigure resources, and transform into market-oriented firms that are ready to compete in the global economy. For instance, in transition economies such as China, the socialist bureaucracy has become imprinted with the dominant logic in most established firms. Their old ways of doing business are no longer applicable in today's volatile and uncertain environment. A distinguishing characteristic of entrepreneurial firms is their ability to recognize and pursue opportunities well ahead of their competitors, and doing so in spite of the limited resources (Shane & Venkataraman, 2000; Zahra & Dess, 2001). The development of entrepreneurial mind-set and organizational transformation, therefore, are particularly needed by Chinese firms.

Nonetheless, thus far, there has not been much work on corporate entrepreneurship in transition economies and emerging markets, as contrasted to entrepreneurship studies at the individual level (Zahra, Ireland et al., 2000). Despite the advocate of Dess et al. (2003) in studying internationalization and corporate entrepreneurship, not much progress has been made. Zahra and Garvis (2000) examined the international corporate entrepreneurship of established firms, but not in the context of emerging economies. Recently, Luo, Zhou, and Liu (2005) have adopted the framework of Zahra and colleagues and examined the innovation, venturing, and proactiveness of firms in China. They found that joint ventures engaged in more entrepreneurial activities than traditional state-owned enterprises (SOEs). From a different angle, Yiu, Lau, and Bruton (2007) found that corporate entrepreneurial activities are necessary conditions for Chinese firms to go international. Although not many empirical studies have been conducted, it is important to note that large, established firms in emerging economies such as China are engaging in corporate entrepreneurial activities.

Theoretical Model

The model proposed in this study highlights the importance of corporate entrepreneurship as a mechanism to configure and transform resource capital derived from a firm's network in emerging markets. It is postulated that only through corporate entrepreneurship that resource capital could lead to better firm performance.

In emerging markets, networks based largely on informal institutions are formed in response to imperfections in the formal capital, labor, and product markets (Khanna & Palepu, 1997). Network studies are mainly concerned with network ties, although there is a structuralist versus connectionist distinction (Borgatti & Foster, 2003). The structuralist stream is represented by the works of Coleman (1990) and Burt (1992) and focuses on the configuration of network ties and patterns of interconnection, while the connectionist stream, as represented by Lin (2001), views network ties as conduits through which information and resources flow. From either view, the network ties of firms in emerging markets nevertheless are important to provide firms with access to resources, information and knowledge, markets, and technologies. These benefits of network membership are attributable to the social capital that is created through network affiliation and is defined as the sum of actual and potential resources embedded within, available through, and derived from a network of relationships (Nahapiet & Ghoshal, 1998). In addition to these benefits, in emerging markets there are also patronage networks between the state and the firms that provide firms unique advantages such as transaction cost and uncertainty reduction, as well as access to nontradable political resources and protection from the government (Boisot & Child, 1996). Thus, different types of network-based resource capital will be generated by forming different network ties.

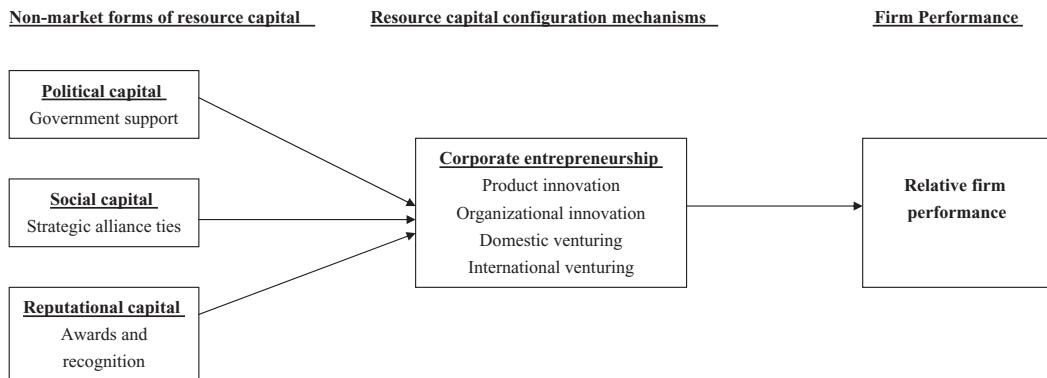
Our model posits that the positive effects of network-based resource capital on a firm's performance are channeled through an internal resource capital configuration and transformation process. Network resource capital, in itself, has some positive effects on firm performance, but if the firms are not yet transformed, then those effects may be minimal. This is because the strategic value of those generic resource capital obtained from the external networks could not be realized without going through a transformation process that turn these resource capital into specific industry or firm uses. Thus, the model suggests that corporate entrepreneurship serves as the intervening mechanism between network resource capital and firm performance. In this sense, network can be conceptualized as a resource capital acquisition means, while corporate entrepreneurial activities can be regarded as a resource capital configuration process (Borch et al., 1999). This is also consistent with the dynamic capability approach (Teece et al., 1997) that this process facilitates firms to fully utilize resource capital in a more effective manner that is congruent with the changing external environment during institutional transition. Figure 1 depicts the proposed relationships.

Network-Based Resource Capital and Firm Performance

Khanna and Palepu (2000) specify several types of market substitution roles that networks played in emerging economies. They are filling the "institutional voids" in the capital market (creating an internal capital market for transferring funds and underwriting security issues), market for managerial talents (rotating talent to member firms in need), input and product market (investing in an umbrella brand name and a reputation for fair dealing), and market for technology transfer (assimilating foreign technology through cooperative arrangements). In our model, we highlight two types of networks that are of critical importance for firms in an emerging market context in order to play those roles.

Figure 1

Theoretical Model



The first is ties with the government and institutions, often referred as institutional networks. The second is the relationship with buyers and suppliers, grouped under business networks. Each of these types of networks provides firms with access to different types of resource capital that are discussed next.

Peng et al. (2005) categorized the types of network resource capital in a more formal manner when they proposed the idea of institutional embeddedness in the context of emerging markets. They defined institutional embeddedness as “the degree of informal embeddedness or interconnectedness with dominant institutions” (p. 623). They highlighted three kinds of capital that are critical for firms in emerging markets: political capital, social capital, and reputational capital. Political capital refers to benefits from cultivating continuous relationships with governments such as social legitimacy and political effectiveness. Social capital is defined as the sum of actual and potential resources embedded within, available through, and derived from a network of relationships (Nahapiet & Ghoshal, 1998). Reputational capital points to the benefits resulted from reduced information asymmetry and information search. In this study, we propose that political capital is mainly derived from ties with institutional networks, social capital from ties with business networks, and reputational capital from ties with both institutional and business networks. In the following, we will first discuss the role of these three forms of network resource capital in the emerging market context and develop hypotheses on how the extent to which a firm engages in various corporate entrepreneurial activities mediate the relationship between network resource capital and firm performance.

Political Capital: Government Support. Political connections are extremely important in emerging economies where an open market for political favors does not exist (Khanna & Rivkin, 2001). In a survey of Chinese firms, Peng and Luo (2000) found that managerial ties with other firms and government officials are important in improving firm performance. Connections with agencies and institutes can be beneficial to emerging market firms as they rely on these contacts to get access to information and facilitate business dealings. In most emerging markets, government plays a key role in supplying funds, information, and support services to firms so that they can be more effective in the

economy. These types of networking activities with government thus provides political capital to these firms.

In addition, relational network with government, for instance, outlines the government and stakeholders' expectation on firms, as well as rules and norms of society that firms are expected to follow (Oliver, 1997). This kind of information helps firms to seek approval and support from key constituents in the institutional environment. In emerging economies such as China, firms have to seek government approval when they plan to engage in new ventures, be they domestic or international. Network linkages with trade associations and professional bodies provide firms information about different markets. In some cases, it is difficult for firms to secure financial support due to the lack of credit history and the unique financing problems in China. Park and Luo (2001) suggest various links to government and regulatory agencies of managers in China as essential connections, which help firms to better manage external dependency and uncertainty. Consequently, these firms would be able to develop innovative products and create new ventures. Thus, networking with government provides a platform for firms to obtain political capital needed for successful business performance.

Social Capital: Alliance Ties. Social capital is derived from a firm's connection with its business partners. The connections with business partners provide information about their business and more so in forming the basis of trust with buyers and suppliers. Business networks in the form of interlocking directorates, for example, provide firms with inexpensive, trustworthy, and credible business information that could affect their strategic actions, particularly when other sources of information are not available (Butler, Brown, & Chamornmarn, 2003; Mizruchi, 1996).

A tighter form of networking with business partners is setting up strategic alliances. These alliances may be in the areas of R&D, marketing, and logistics that are critical know-how for firms in emerging markets. Strategic alliances allow firms to procure assets, competencies, or capabilities that are not readily available in competitive factor markets, as well as tap into time compression diseconomies and history-dependent competencies that are difficult to trade in strategic factor markets (Oliver, 1997). Not only do strategic alliances provide firms with access to complementary assets, but they also allow firms to gain resource capital quicker, thus enhancing the chance of capturing first-mover advantages (Mitchell & Singh, 1992). Extensive evidence has been found on the positive link between strategic alliances and a firm's level of innovativeness and innovations (Kotabe & Swan, 1995; Powell, Koput, & Smith-Doerr, 1996; Shan, Walker, & Kogut, 1994). Using the exploration-exploitation approach, Rothaermel and Deeds (2004) further specified that exploration alliances lead to product development, which in turn leads to the formation of exploitation alliances and subsequent new products on markets. When firms are facing an uncertain market, alliances would be able to reduce uncertainty. As such, social capital derived from alliances would enhance firms' competitiveness.

There are a number of empirical studies that relate social capital derived from business networks to firm performance and other strategic outcomes. Liao and Welsch (2003) compared technology and nontechnology nascent entrepreneurs and found the critical role of social capital technology-based entrepreneurial growth aspirations. The same is confirmed in another study of nascent entrepreneurs (Davidson & Honing, 2003). At the organizational level, Ahlstrom and Bruton (2006) suggested that these networks can substitute formal institutions and influence the behaviors of venture capitalists in China. Batjargal (2003) also found that social capital of entrepreneurs have a great impact on firm performance in post-Soviet Russia. Therefore, it can be conceptualized that social

capital obtained through alliances with business partners are valuable resource capital and they are conducive to firm performance.

Reputational Capital: Recognitions and Awards. Reputational capital is particularly important in emerging markets due to information asymmetry that results from underdeveloped market institutions, as reputation confers legitimacy and helps fill the information needs of stakeholders (Khanna & Palepu, 1997). In situations where objective measures of quality are not easily available as in the emerging market context, awards and recognitions granted by institutional parties can signal organizational legitimacy (Certo, 2002). Similarly, Hoang and Antoncic (2003) also suggested that in uncertain and dynamic conditions, entrepreneurial firms can gain legitimacy and reduce risks by seeking explicit certification from well-regarded individuals or organizations.

In emerging markets, reputations and recognitions are usually granted by different institutional parties. Obtaining contracts with research centers and government and engaging in R&D and technology exchange programs with universities and research institutes may lead to tangible outcomes such as patents, and more importantly, intangible ones like reputations and recognitions. The intangible outcome is relatively more important as it gives firms the legitimacy needed to pursue new products or new ventures. A substantial stream of research has highlighted the benefits to firms of endorsement by powerful intermediaries (e.g., Higgins & Gulati, 2003; Rao, 1994). Receiving endorsement by a prestigious party embeds an organization in a status hierarchy that can enable the firm to build a favorable reputation and, in turn, to survive and grow (Baum & Oliver, 1992; Scott, 1995). Therefore, receiving awards from government authorities, institutions, and business associations is also a recognition that leads to intangible reputation.

Reputational capital is found to influence a firm's incentives to conduct corporate entrepreneurial activities. Soh, Mahmood, and Mitchell (2004) argued that new product awards may indicate market acceptance of a firm's product and the quality of a firm's research activities. This will then reduce a firm's risk tolerance for its subsequent R&D investment. Therefore, reputational capital will reinforce a firm's pursuit of product innovations and other corporate entrepreneurial activities, which will result in enhanced firm performance and strategic competitiveness.

The Mediating Role of Corporate Entrepreneurship

One major characteristic of firms in emerging markets is that established firms are being transformed into market-oriented enterprises. As the economy is becoming more market-based, it is necessary for these reformed enterprises to undergo an entrepreneurial transformation at the organizational level in order to adapt to the transitioning institutional environment and maintain competitiveness in both local and global markets.

The current development in the study of corporate entrepreneurship is relevant to the understanding of organizational transformation in these firms. In the case of China, under the enterprise reform policies, most firms have to be transformed into more market-oriented operations. Smaller and inefficient operations are left to the test of market forces. Larger firms may have government support to continue the operations, but soon they have to find ways to sustain their survival in view of the more competitive landscape. Thus, streamlining operations, reorganizing, strategic repositioning, and developing new products are all possible measures. These activities, by and large, are consistent with what the construct of corporate entrepreneurship encompasses. In addition, firms during institutional transition must possess certain historical resources to form the basis of performance, but they also need certain new capabilities to create new resources and take

advantage of new market opportunities (Uhlenbruck, Meyer, & Hitt, 2003). Taken together, these capabilities are reflected in the concept of dynamic capabilities that refer to the capacity of a firm to renew competences by adapting, integrating, and reconfiguring internal and external resources so as to achieve congruence with the changing environment (Teece et al., 1997). We propose that corporate entrepreneurial activities reflect, exactly, such dynamic capabilities of firms in the emerging market context.

Building on a dynamic capability perspective (Teece et al., 1997), we conceptualize corporate entrepreneurship as an organizational transformation mechanism that assists emerging market firms to adapt to changes in the transitioning institutional environment. The different types of resource capital obtained from the ties with different types of networks mentioned earlier are regarded as generic and nonindustry specific (Peng et al., 2005). In this regard, relying on generic external resource capital would not necessarily lead a firm to a sustainable competitive position. We suggest that it is important for firms to transform the generic political, social, and reputational capital obtained from networks into difficult-to-replicate capabilities that fit with industry-specific and firm-specific requirements. Therefore, we propose that the positive effects of network resource capital are channeled through an internal transformation mechanism given by various corporate entrepreneurial activities.

The relationship between network resource capital and corporate entrepreneurship has been examined in the literature. In a study of entrepreneurial high-technology ventures, Yli-Renko, Autio, and Sapienza (2001) found that social interactions in networks facilitate knowledge acquisition and subsequent knowledge exploitation for new product development. Tsai and Ghoshal (1998) found that trust cultivated in network relationships had a positive effect on interunit resource exchange of a network, which in turn stimulated product innovations. In addition, Larson (1992) empirically showed that norms of reciprocity facilitated knowledge acquisition, risk taking, and innovation in networks of entrepreneurial firms. Simsek, Lubatkin, and Floyd (2003) also argued that firm-level networks can influence incremental and radical entrepreneurial behaviors individually and collectively. Butler et al. (2003) found that business networks provide entrepreneurial firms with information needed to recognize opportunity in an empirical study of Thai manufacturing firms. Moreover, the skills and information necessary to make strategic decisions in emerging economies are often unavailable in codified form and cannot be easily gathered in real time. Firms with more resource capital from the business networks, therefore, are more likely to have the needed information for entrepreneurial behaviors.

In emerging markets, as discussed earlier, government is instrumental in supplying funds and important information and services to firms. Networking with government is therefore helpful in developing innovative products and creating new ventures more effectively. In some instances, synergies arising from complementary resources are particularly useful in inducing corporate entrepreneurship. When more resources are accessible through different types of networks, firms are more likely to invest in new ventures. Firms can also expand their range of possible actions by learning from what their partner firms are doing through business networks. Thus, it can be expected that a firm would be more innovative if they have tighter network ties with their business partners. Venturing is also facilitated as resources are pooled to create a critical mass through different network ties. Moreover, reputation and legitimacy would signify the competency of a firm, which will then facilitate the pursuit of product innovations and other corporate entrepreneurial activities such as international venturing.

Taking the arguments together, we expect that relative to other firms without corporate entrepreneurial behaviors, firms undertaking more corporate entrepreneurial activities can accumulate more difficult-to-replicate dynamic capabilities that are sources of firms'

sustainable competitive advantages, which are then reflected in enhanced relative firm performance. The positive relationship between corporate entrepreneurship and firm performance, particularly in a hostile environment, is also supported in the literature (Zahra & Covin, 1995). We therefore hypothesize that the extent to which firms take part in various corporate entrepreneurial activities will mediate the positive relationship between the three types of network resource capital and firm performance in the emerging market context.

Hypothesis 1: The intensity of firms' engagement in corporate entrepreneurial activities mediates the relationship between political capital and firms' relative performance.

Hypothesis 2: The intensity of firms' engagement in corporate entrepreneurial activities mediates the relationship between social capital and firms' relative performance.

Hypothesis 3: The intensity of firms' engagement in corporate entrepreneurial activities mediates the relationship between reputational capital and firms' relative performance.

Method

Sample

Data were collected through two waves of questionnaire survey of firms in China that are located in Beijing, Shanghai, Sichuan, and Guangdong in the years of 2003 and 2004. The surveys were conducted as part of a large-scale investigation with the cooperation of the National Bureau of Statistics of China. 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. The sample included firms from all types of ownership: SOEs, shareholding enterprises, private firms, joint ventures, etc. Our original sample consisted of 600 firms, of which 35 were closed or could not be tracked in the second-wave survey, resulting in 565 usable cases. In order to have a more focused analysis, we further dropped firms in the service sector. The final sample includes 458 firms, representing 76.3% of the original 600 sampled firms. Table 1 presents a summary of the demographic characteristics of the sample firms.

The respondents of the questionnaire surveys were CEOs or their deputies of the sample firms. In the first wave of the survey that was conducted in 2003, the CEOs were contacted and asked to provide information about different types of networks. In the second wave of the survey conducted in the following year, the same CEOs were contacted, but they or their deputies were asked to provide information on corporate entrepreneurial activities. In both waves of survey, the respondents were asked to provide demographic and financial information of their firms regarding their size, performance, ownership structure, and industry conditions. The use of two waves of survey to the same firm sample allows the tests of causal relationships between variables since the data used are taken from two time periods. Moreover, as the questionnaires were possibly filled by two different informants at different time periods, the potential common method bias problem resulting from single informant was controlled.

Measures

The measurement items of the network resource capital and corporate entrepreneurship variables, together with the validity and reliability of the other measurement scales, are listed and reported in the Appendix.

Table 1

Demographic Summary of Sample Firms

Size (3-year average of total assets)	Ranging from 0.84 million to 11.7 billion CNY ^a (~ = US\$0.11 million to US\$1.52 billion) Mean: 448.6 billion CNY (~ = US\$58.3 billion) Median: 95.7 CNY (~ = US\$12.4 billion)
Age	Ranging from 2 to 103 years old Mean: 17.9 years Median: 10.0 years
Ownership types	State-owned enterprises (SOEs): 97 firms Reformed SOE: 188 firms Private and foreign enterprises: 173 firms
Geographical region	Beijing: 114 firms Shanghai: 112 firms Guangdong: 118 firms Sichuan: 114 firms
Industry types (manufacturing sector)	Heavy industries: 214 firms Light industries: 244 firms

^a CNY, Chinese Yuan

Political Capital—Government Support. We developed a perceptual measurement scale that asked executives to describe the extent they received help from government in the areas of loans and tax relief, technical training, management knowledge, information service, and human resource service along a 5-point scale (1 = not much, 5 = a lot). The Cronbach's alpha of this scale is 0.84.

Social Capital—Alliance Ties. This is a continuous measure by counting the number of strategic alliances a firm has formed with its business partners in marketing and technology development over the last 5 years. We expect that the number of alliances formed represents the amount of resources and social capital derived from such alliances. We sum up the number of the two types of strategic alliances and a natural logarithm transformation was taken.

Reputational Capital—Recognitions and Awards. We used three count measures for the amount of reputational capital accumulated, including the number of collaborative R&D and technology exchange programs with universities and research institutes, the number of government contracts and government-sponsored research grants obtained, and the number of awards they received for innovations. The sum of these numbers with natural logarithm transformation was used to proxy the recognitions received.

Corporate Entrepreneurship. Zahra, Neubaum, et al. (2000) developed a 22-item scale of corporate entrepreneurship to measure innovation and venturing. In this study, the scale was factor analyzed in an exploratory factor analysis. Three items were deleted due to cross loadings. The final factor structure has four factors, two on innovation and two on venturing. They are product and process innovation, organizational innovation, domestic venturing, and international venturing. Their Cronbach's alphas are 0.93, 0.85, 0.84, and 0.91, respectively. We conducted a confirmatory factor analysis of the 19 items and confirmed the four-factor structure.

Firm Performance. A five-item perceptual measure was used to gauge the firms' performance in the second survey. The respondents were asked to rate their own firm's performance as compared to the industry's average in the last year (that is, 2003), including sales growth, market share, return on investment, return on assets, and return on sales. In addition to accounting-based performance measures such as ROA, ROS, and ROI, sales growth and market shares were included because past studies found that managers in emerging markets are more sensitive to long-term growth strategies and market expansion and growth (Hitt, Tyler, Hardee, & Park, 1995). The Cronbach's alpha of this scale is 0.89.

Control Variables. *Firm size* is controlled for, as it is found to have negative effects on corporate entrepreneurial intensity (Zahra, 1996). We measured firm size by the natural logarithm of the 3-year average (2001–2003) of the number of employees. Firms' *debt-to-equity ratio*, as a proxy for potential slack (Cheng & Kesner, 1997), is also controlled because firms with more slack resources are more likely to be more entrepreneurial. *Firm age* is important in a transition economy as older firms that have been embedded in the prereformed period are more risk averse and inertial for corporate entrepreneurship. Firm age is calculated as a firm's founding year subtracted from 2003. Although the sample firms were taken from manufacturing firms, we further controlled for whether they are in the heavy industry sector or light industry sector. A dummy variable with a value of "1" indicates that the firm belongs to the *light industry* sector, and a value of "0" indicates otherwise. The *geographical location* of the firms is also controlled by three dummies representing firms from Shanghai, Guangdong, and Sichuan, with Beijing firms as reference. *Ownership type* also matters in a transition economy. As such, we created two dummy variables to control for different firm types—reformed SOEs and private and foreign-invested firms (coded "1" when the firms belong to a specific firm type and "0" otherwise). The reference firm type is SOEs.

Analysis

We tested the model using structural equation modeling according to LISREL 8.5 (Jöreskog & Sörbom, 2001). A common method to test mediating relationships is through multiple regression analysis (Baron & Kenny, 1986). However, structural equation modeling offers a more powerful way to test the mediation model by allowing the testing of the relationships simultaneously and with control for all other effects of the variables (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). Following Anderson and Gerbing (1988), we adopted a two-step approach by first obtaining a nice-fit measurement model that is followed by testing the hypothesized relationships in a structural model. The results of the measurement model showed that all the items are cleanly loaded in their specified constructs. The factor loadings are reported in the descriptions of the measurement scale in the Appendix. The model obtained a good measurement fit ($\chi^2 = 614.48$; CFI = 0.99; IFI = 0.99; GFI = 0.94; Standardized RMR = 0.03), as a value of 0.90 and above of the fit indices and a value of less than 0.05 of SRMR indicate a good model fit (Bentler, 1990; Bentler & Bonett, 1980; Bollen, 1989; Jöreskog & Sörbom, 1981).

Results

Table 2 reports the descriptive statistics and intercorrelations of the key variables, and Figure 2 illustrates the results of the structural model. As shown in Table 2, there are

Table 2

Descriptive Statistics and Correlations

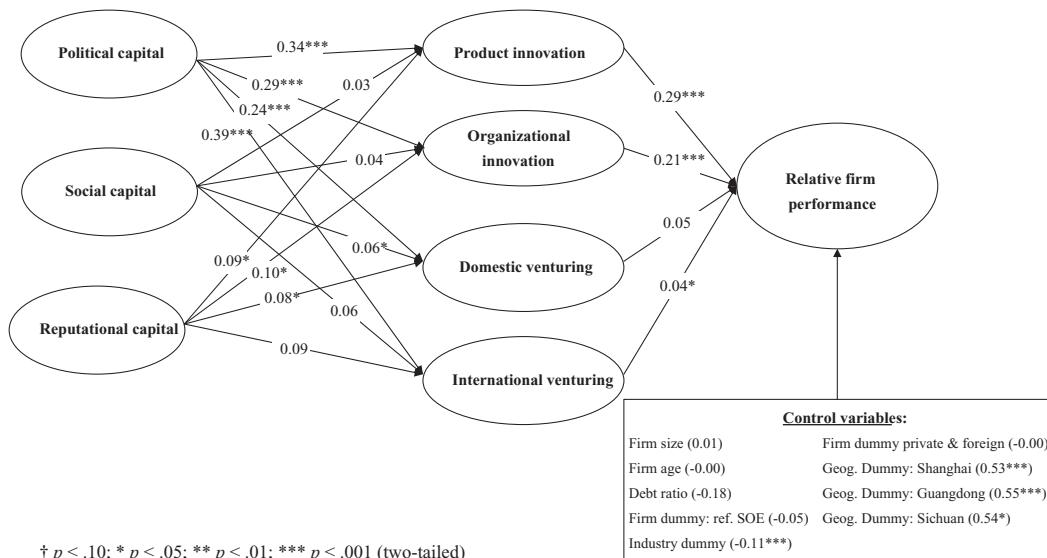
	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 Relative performance	2.96	.79																
2 Political capital	2.19	.86	.21**															
3 Social capital (ln)	1.26	1.55	.10*															
4 Reputational capital (ln)	1.10	1.33	.23**	.34**														
5 Product innovation	2.68	1.04	.52**	.19**	.13**													
6 Organizational innovation	3.02	.93	.53**	.18**	.13**	.28**												
7 Domestic venturing	.96	.38**	.12*															
8 International venturing	2.22	1.10	.34**	.12*	.13**	.20**	.54**											
9 Firm size (ln)	9.31	1.63	.23**	.26**	.06	.42**	.22**	.24**										
10 Firm age	17.94	17.88	-.14**	.02	-.08	-.01	-.08	-.09	-.10*									
11 Debt equity ratio	.58	.38	-.07	.04	.02	.02	-.06	-.07	-.06	-.05								
12 Firm type dummy: reformed SOE	.41	.49	.05	.06	.09*	.26**	.04	.06	.02	.01	.18**							
13 Firm type dummy: private and foreign	.38	.49	.07	-.06	.00	-.21**	.04	.02	.05	.10*	-.22**	-.39**						
14 Geog dummy: Shanghai	.24	.43	-.07	.01	-.08	-.17**	-.09	-.11*	-.09	-.01	.00	-.01	.02	.03	-.01			
15 Geog dummy: Guangdong	.26	.44	.09*	.10*	-.07	.06	.08	.02	.09*	.10*	-.08	-.07	-.07	-.07	.10*	-.34**		
16 Geog dummy: Sichuan	.25	.43	.02	-.02	.12*	.22**	-.02	.05	.05	-.06	.03	.00	.09*	.15**	-.04	-.33**		
17 Light industries	.53	.50	-.05	.04	.01	-.06	.05	.04	.02	.08	-.06	-.04	-.11*	-.01	.04	.17**	.02	-.10*

* Correlation is significant at the .05 level (two-tailed).

** Correlation is significant at the .01 level (two-tailed).

Figure 2

Results of Structural Model



high correlations among the four dimensions of corporate entrepreneurial activities, with correlation coefficients ranging from 0.40 to 0.67. We checked the variance inflation factors (VIFs) of the independent and control variables in the empirical model and found that they all fell below 10 that is the most commonly adopted rule of thumb (e.g., Cohen, Cohen, West, & Aiken, 2003; Neter, Wasserman, & Kutner, 1990) and the average VIF is 1.66. Moreover, with the use of structural equations modeling, multicollinearity should not pose a serious problem to our results.

We followed Baron and Kenny's (1986) three conditions to assess our mediation hypotheses as applied to path analysis by Brown (1997), which includes: (1) the independent variables have a significant effect on the mediator (i.e., the paths from the three resource capital to the four dimensions of corporate entrepreneurial activities); (2) variations in the mediator significantly account for variations in the dependent variable (i.e., the paths from the four corporate entrepreneurship factors to firm performance); and (3) a previously significant relationship between the independent and dependent variables is no longer significant, or becomes weaker, when the paths in (1) and (2) are controlled.

The results of the structural equation modeling analysis in general supported our mediation model that the effects of two out of three types of network resource capital on firms' relative performance are channeled through various corporate entrepreneurial activities, including product innovation, organizational innovation, and international venturing. The goodness of fit indices show a good model fit ($\chi^2 = 1182.78$; $CFI = 0.94$; $IFI = 0.94$; $GFI = 0.89$; $RMSEA = 0.04$; Standardized RMR = 0.08). Specifically, as shown in Figure 2, political capital is found to be positively related to all four types of corporate entrepreneurial activities ($\gamma = 0.34$ for product innovation, $\gamma = 0.29$ for organizational innovation, $\gamma = 0.24$ for domestic venturing, and $\gamma = 0.34$ for international venturing, all significant at the 0.001 level). Social capital is found to have a positive

relationship with domestic venturing only ($\gamma = 0.06$; $p < 0.05$). Reputational capital is found to be positively related to product innovation ($\gamma = 0.09$; $p < 0.05$), organizational innovation ($\gamma = 0.10$; $p < 0.05$), and domestic venturing ($\gamma = 0.08$; $p < 0.05$), while its relationship with international venturing is not significant.

In regard to the paths from corporate entrepreneurial activities to the firm's relative performance, significant positive effects are found between all corporate entrepreneurial activities and firm performance, with the exception of domestic venturing ($\gamma = 0.29$; $p < 0.001$ for product innovation, $\gamma = 0.21$; $p < 0.001$ for organizational innovation, and $\gamma = 0.24$; $p < 0.05$ for domestic venturing). Finally, the significant effects of resource capital on firm performance turn out to be either insignificant or weaker when the other indirect paths are controlled in the total effects model. Therefore, we conclude that corporate entrepreneurial activities (product innovation, organizational innovation, and international venturing) mediate the relationship between political capital and firms' relative performance, supporting hypothesis 1. Similarly, moderate support is found for hypothesis 3 in that corporate entrepreneurial activities in terms of product innovation and organizational innovation mediate the positive relationship between reputational capital and firms' relative performance. However, social capital is only found to be positively related to domestic venturing, which has no significant effect on the firm's relative performance. As such, hypothesis 2 is not supported.

Discussion

This study examines the relationship between resource capital derived from different network ties and firm performance in an emerging market context. In general our empirical evidence supports that rather than a direct relationship, the link between network resource capital and firm performance is an indirect one. In particular, we found that corporate entrepreneurship, as an internal organizational transformation and resource configuration mechanism, is a very important mediator that determines whether firms can realize the benefits derived from different network resource capital.

Although not all types of network resource capital have to be channeled through corporate entrepreneurship in order to affect firm performance, there are several interesting results that have insights into future research. First, our findings demonstrate the relative strong effects of corporate entrepreneurship on firm performance. This challenges the conventional wisdom in emerging market studies that overemphasizes the role of institutional or social embeddedness. Our study suggests that firms' internal organizational capabilities derived from innovations and venturing play a very important role in realizing firm performance. Nonetheless, our results do not find a significant relationship between domestic venturing and relative firm performance. The strategic implication of such findings is that emerging market firms now rely more on sustainable product innovativeness, innovative management systems, and international expansion as ways to enhance their strategic competitiveness, while domestic venturing may not provide a competitive edge for firms.

Second, our empirical evidence shows that political capital has the strongest positive relationship with corporate entrepreneurship, followed by reputational capital. This suggests that political capital is the most generic type of network capital that can be applied in all types of corporate entrepreneurial activities including product and organizational innovations as well as domestic and international venturing activities. The performance effects given by reputational capital, on the other hand, are found to be realized through product and organizational innovations instead of through international venturing

activities. This may be because of the fact that reputational capital is contextually bound. The legitimacy and signaling effects from recognitions and awards granted by domestic institutional and business parties would not be carried forward to overseas markets. Finally, strategic alliances with business partners, however, are not as influential as expected, although they do have positive effects on domestic venturing activities. This implies that social capital derived from technological and marketing alliance ties is more relevant for assisting firms for industry-specific or location-specific activities such as domestic start-ups and new market development. Since these activities require more local knowledge and support from business partners, social capital embedded in these locally dense networks will be helpful for more industry- and location-specific venturing activities. In other words, social capital may lead to specific objectives rather than the overall firm performance as measured in this study. Given the findings in this study, we may need to further examine the role of social capital in the emerging market context.

Finally, what is most important in this study is that we are able to confirm the mediation role played by corporate entrepreneurship in the relationship between network resource capital and firm performance. It has been argued that firms in emerging markets are different from those in developed countries. We argue in this study that they are different in the sense that established firms in the emerging markets have to put much more emphases on corporate entrepreneurship in order to transform themselves from the pre-reform conditions and stay competitive in the new competitive landscape both domestically and globally. It is interesting to note that corporate entrepreneurship is very significant in determining a firm's performance, and is much more influential than their network as argued by some researchers (Peng & Zhou, 2005). This implies that network can, at most, provide a platform for firms to acquire political, social, and reputational capital; however, a resource transformation and configuration mechanism is needed in order for these different types of resource capital to make contributions to firm-specific strategic outcomes.

The organizational transformation and resource configuration role played by corporate entrepreneurship has two theoretical implications. First, it highlights the relevance of taking a dynamic capability perspective in studying firms in emerging markets. Firms that take the lead in committing to continuous entrepreneurial transformation are likely to sustain competitiveness in the emerging markets. Second, our study draws attention to the evolutionary perspective that institutional transition is a gradual process that requires making use of old and existing elements for new uses. Campbell (1997) suggested that the evolutionary institutional change process, as happening in emerging markets, is like the process of "crossing and grafting trees" where one combines familiar elements from existing forms with new materials. This also echoes with the arguments on the recombinant property of organizations in transition economies by Stark (1996).

The empirical evidence of the present study, however, should be interpreted with cautions. First, our performance measure is a subjective and relative measure instead of an objective or accounting-based one. This is due to the fact that reliable objective performance measures are not widely available in China, especially that some of our sample firms are not listed companies. Second, the data collection method is based on survey only. Future studies should explore alternative data collection methods such as archival data study or case study.

Future research may extend the present study to other emerging markets where the institutional contexts are also characterized by strong network relationships. It would be interesting to take a closer look at the corporate entrepreneurial transformation process by examining specifically how the three types of generic network capital are transformed into specific resources for each type of corporate entrepreneurial activities. In addition, the current study selected relative firm performance as the strategic outcome of corporate

entrepreneurial transformation in established firms in an emerging market. Future studies may explore other strategic outcomes such as initial public offering and private equity investment of these reforming state-owned firms as many of them are considering restructuring, selling, or privatizing portions of their assets (Ahlstrom, Bruton, & Yeh, 2007). A comparison of the role played by venture capitalists and the state in introducing corporate entrepreneurial activities in privatizing firms versus those in state-owned firms is also an avenue for future studies. Findings from a transition economy context will add a lot of contributions to the existing entrepreneurship literature.

In conclusion, this study provides a new conceptualization of corporate entrepreneurship as an internal organizational transformation and resource configuration mechanism that assist firms to transform generic, externally acquired political, social, and reputational capital into realized firm-specific outcomes. Our study offers a new perspective in studying corporate entrepreneurship by highlighting the special role of corporate entrepreneurship in facilitating firms to continuously renew firm competences in order to be congruent with the changing institutional environment in the emerging market context.

Appendix: Measurement scales used in the study

Relative Firm Performance: ($\alpha = 0.89$)

- Sales growth (.57)¹
- Market share (.53)
- Return on investment (.62)
- Return on sales (.62)
- Return on assets (.62)

Network-based Resource Capital Measures

Political Capital (Government Support): ($\alpha = 0.84$)

To what extent do you receive help from government in the following 5 areas? (1–5 scale):

- Tax relief (.34)
- Technical training (.62)
- Management knowledge (.61)
- Information service (.64)
- Human resource service (.61)

Social Capital (Alliance Ties):

Number of other firms that your firm has formed strategic alliance with over last five years for marketing.

Number of other firms that your firm has formed strategic alliance with over last five years for technology development.

Reputational Capital (Recognition and Awards):

Number of collaborating R&D and technology exchange programs with universities and/or research institutes.

Number of government contracts and government sponsored research grants obtained.

Number of times named or awarded government award for innovativeness.

1. Factor loadings in confirmatory factor analysis.

Corporate Entrepreneurship:

Product innovation ($\alpha = 0.93$)

1. Being the first company in your industry to introduce new products to the market (.62)
2. Creating radically new products for sale in new markets (.62)
3. Creating radically new products for sale in the company's existing markets (.62)
4. Commercializing new products (.59)
5. Investing heavily in cutting edge product-oriented R&D (.60)
6. Investing heavily in cutting edge process technology-oriented R&D (.60)
7. Being the first company in the industry to develop and introduce radically new technologies (.57)

Organizational innovation ($\alpha = 0.85$)

1. Being the first in the industry to develop innovative management systems (.63)
2. Being the first in the industry to introduce new business concepts and practices (.61)
3. Changing the organizational structure in significant ways to promote innovation (.55)
4. Introducing innovative human resource programs to spur creativity and innovation (.52)

Domestic venturing ($\alpha = 0.91$)

1. Promoting new domestic business creation (.57)
2. Diversify into new industries in the mainland (.53)
3. Supporting domestic new venture activities (.59)
4. Financing domestic start-up business activities (.58)

International venturing ($\alpha = 0.84$)

1. Entering new foreign markets (.39)
2. Expanding your international operations (.58)
3. Supporting start-up business activities dedicated to international operations (.63)
4. Financing start-up business activities dedicated to international operations (.65)

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