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## Resources, Institutional Environments and Firm Scope: Evidence from an Emerging Economy

Nan Zhou

University of Pennsylvania, [zhounan@wharton.upenn.edu](mailto:zhounan@wharton.upenn.edu)

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# Resources, Institutional Environments and Firm Scope: Evidence from an Emerging Economy

## Abstract

This dissertation investigates how institutional environments and firm resources influence firm scope. Building on strategy and international business literatures, I propose that institutional environments influence firm scope through the impacts on both the development of internal resources and the availability of external resources. In Chapter 2, I disaggregate the concept of institutional distance into different dimensions from an institutional perspective and empirically test the validity of the multi-dimensional approach in the sample of U.S. and Chinese firms by exploring the effects of distance on the foreign expansion strategies. The results also show that Chinese firms do have different strategic choices from U.S. firms when they invest abroad. In Chapter 3, I focus on government and international diversification in emerging economies. Compared with partially privatized enterprises (PPEs) and fully privatized enterprises (FPEs), state-owned enterprises (SOEs) are less likely to go abroad as a result of their risk-averse nature. In addition, different types of government corporations rely on different types of resources when they invest abroad: while SOEs rely on external resources such as debts, PPEs rely on internal resources such as intangible assets. An empirical investigation of the FDI activities of Chinese listed firms in high-tech industries between 1991 and 2007 supports the arguments. Finally, in Chapter 4, I focus on firm capability and related product diversification in emerging economies. I propose that seemingly related diversification, a type of diversification focusing on the relatedness of technologies but not of markets, will harm firm performance in emerging economies. Moreover, the lack of implementation capability also makes it difficult for firms to benefit from related diversification. I test these ideas on a population of Chinese firms listed on Hong Kong Stock Exchange from 1993 to 2006. Together, this dissertation shows the choice of firm scope in emerging economies is different from that in developed countries due to the uniqueness of resources and institutional environments. Theoretically, it integrates the resource-based view of firm, resource dependence theory and institutional theory to explain the role of resources and institutional environments in determining firm scope. Empirically, it provides large-sample quantitative evidence in an emerging economy.

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RESOURCES, INSTITUTIONAL ENVIRONMENTS AND FIRM SCOPE:  
EVIDENCE FROM AN EMERGING ECONOMY

**Nan Zhou**

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in

Management

For the Graduate Group in Managerial Science and Applied Economics

Presented to the Faculties of the University of Pennsylvania

in

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Supervisor of Dissertation

*Signature* \_\_\_\_\_

Mauro Guillén, Felix Zandman Endowed Professor of International Management

Graduate Group Chairperson

*Signature* \_\_\_\_\_

Eric Bradlow, Professor of Marketing, Statistics & Education

Dissertation Committee

Mauro Guillén, Felix Zandman Endowed Professor of International Management

Marshall Meyer, Richard A. Sapp Professor of Management

L. Felipe Monteiro, Assistant Professor of Management

RESOURCES, INSTITUTIONAL ENVIRONMENTS AND FIRM SCOPE:  
EVIDENCE FROM AN EMERGING ECONOMY

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2010

Nan Zhou

**To my parents Yawei Wang and Shuiqing Zhou  
and my friends**

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## ABSTRACT

### RESOURCES, INSTITUTIONAL ENVIRONMENTS AND FIRM SCOPE: EVIDENCE FROM AN EMERGING ECONOMY

Nan Zhou

Supervisor: Mauro Guillén

This dissertation investigates how institutional environments and firm resources influence firm scope. Building on strategy and international business literatures, I propose that institutional environments influence firm scope through the impacts on both the development of internal resources and the availability of external resources. In Chapter 2, I disaggregate the concept of institutional distance into different dimensions from an institutional perspective and empirically test the validity of the multi-dimensional approach in the sample of U.S. and Chinese firms by exploring the effects of distance on the foreign expansion strategies. The results also show that Chinese firms do have different strategic choices from U.S. firms when they invest abroad. In Chapter 3, I focus on government and international diversification in emerging economies. Compared with partially privatized enterprises (PPEs) and fully privatized enterprises (FPEs), state-owned enterprises (SOEs) are less likely to go abroad as a result of their risk-averse nature. In addition, different types of government corporations rely on different types of resources when they invest abroad: while SOEs rely on external resources such as debts, PPEs rely on internal resources such as intangible assets. An empirical investigation of the FDI activities of Chinese listed firms in high-tech industries between 1991 and 2007 supports the arguments. Finally, in Chapter 4, I focus on firm capability and related

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## CHAPTER 1 INTRODUCTION

### 1.1 Research Question and Key Constructs

What is the role of firm resources and institutional environments in determining firm scope? It is an important question since both strategy scholars and international business scholars are interested in understanding how firms expand their scope by entering new business or geographic areas (Buckley & Casson, 1976; Rumelt, 1974). Scholars from the resource-based view and institutional theory have approached this question separately. It is evident that both resources and institutional environments directly influence firm scope (Leff, 1978; Montgomery & Wernerfelt, 1988). However, resources are not exogenous but they are influenced by the institutional environment in which a firm is embedded. Thus, this dissertation tries to explain *how institutional environments influence firm scope indirectly through the impacts on resources*, as shown in figure 1-1.

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Insert Figure 1-1 about here  
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This dissertation seeks to make a contribution by showing that *institutional environments can influence both the development of internal resources and the availability of external resources*. Besides *directly* influencing firm scope, institutional environment can influence firm scope *indirectly* through their impacts on resources as well. In investigating the direct and indirect effects, I also explore factors that have been largely overlooked in previous studies, such as state ownership (chapter 3 and 4), different types of firm resources including both internal resources (chapter 2 to 4) and

external resources (chapter 3), and different dimensions of institutional distances (chapter 2).

Before I review the relevant literature and develop my theoretical framework, I will first define the three key constructs in my dissertation: resources, institutional environments and firm scope.

### *1.1.1 Resources*

Resources are “all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc., controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness” (Barney, 1991: 101). Resource is a broad concept and there are many types of resources, such as physical capital, human capital, organizational capital, social capital, and financial capital.

According to the sources of resources, we can classify resources into two categories: internal resources and external resources. Internal resources are resources developed within a firm, such as business experience (Prahalad & Bettis, 1986), intangible assets (Delios & Beamish, 2001), and dynamic capability (Teece, Pisano & Shuen, 1997). External resources are resources acquired from external environments. Many resources that are crucial to a firm’s survival are acquired externally, such as land and capital (Hursti & Maula, 2007). In this dissertation, I focus on both internal and external resources. More specifically, I examine the impact of internal resources such as intangible assets (chapter 2 and 3) and firm experience (chapter 2 and 4), and external resources such as financial capital (chapter 3), on the choice of firm scope.

### *1.1.2 Institutional Environments*

Institutions are “the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interactions” (North, 1990: 3). Institutional environment is “the set of fundamental political, social and legal ground rules that establishes the basis for production, exchange and distribution” (Davis & North, 1971). The content and quality of formal (such as laws, regulations, and procedures) and informal institutions (such as conventions, customs and norms) and their respective enforcement mechanisms determine the strength of an institutional environment (North, 1990).

Similar to resources, institutional environment is also a broad term that includes multiple dimensions. In this dissertation, I consider two aspects of institutional environments: first, the institutional distances among different countries. Institutional distance is the extent of similarity or difference between two countries in terms of the regulatory, cognitive, and normative institutions (Kostova, 1996). I disaggregate it into eight dimensions and examine its impact on foreign entry strategies (chapter 2). Second, I investigate how the unique characteristics of institutional environments in emerging economies influence resources and thus firm scope. I focus mainly on government because government is an important part of institutional environments that influences firm strategy and survival. The influence of government is manifested in many ways: antitrust regulation, economic regulation, social regulation, as well as government purchases (Hillman, Zardkoohi & Biernabm, 1999). More specifically, I examine how state ownership (chapter 3 and 4) and government policy (chapter 3) influence firm scope.

### *1.1.3 Firm Scope*

Firms are characterized by the scope of their activities (Hart & Holmstrom, 2010). Firm scope is defined as the number of markets in which a firm operates (Shipilov, 2009). In general, there are two dimensions of firm scope: product dimension and geography dimension. Product scope is the set of products and services provided by a firm (Chatain & Zemsky, 2007) while geographic scope is the set of locations of a firm's business activities (Goerzen & Beamish, 2003).

These two dimensions of firm scope are of particular interests to management scholars. On the product side, the question of what determines firm scope has attracted the attention of many strategy scholars (Palich, Cardinal & Miller, 2000; Rumelt, 1974). On the geography side, internationalization is the prime focus of studies in international business (Buckley & Casson, 1976).

Both product diversification and geographic diversification are influenced by firm resources (Montgomery & Wernerfelt, 1988; Tallman, 1991) and the institutional environments in which the firm is embedded (Peng & Delios, 2006). Likewise, firm scope also can influence firm resources and institutional environments (Sadrieh & Annavarjula, 2005; Zardkoohi, 1985). This dissertation examines both product and geographic diversification: chapter 2 and 3 focus on geographic diversification while chapter 4 focuses on product diversification.

The relationship between product diversification and geographic diversification is not the focus of this dissertation. However, it is worthwhile to note that the literature has not provided a conclusive finding about the relationship between the two. Some scholars argue that product and geographic diversification are complementary to each other

(Doukas & Lang, 2003; Kim, Hwang & Burgers, 1989), the rationale behind is that product and geographic diversification can create synergies that enable firm to differentiate their products in different markets with low costs (Hitt, Hoskisson & Kim, 1997). Others believe that they compete with each other because the great coordination and control costs will lead to a substitution between the two strategies (Wiersema & Bowen, 2008). There are also studies that found no relationship between product and geographic diversification (Tallman & Li, 1996).

The inconclusive findings regarding the relationship between product and geographic diversification are largely due to the contingency nature of the relationship. More specifically, firm resources and institutional environments can influence the relationship. The type of resources that drives geographic and product diversification is an important factor to consider. If it is the same type of firm resources that drive both types of diversification and there is no constraint on the supply of the resources, then, we could view them as complementary strategies that enable a firm to maximize its utilization of resources (Davies, Rondi & Sembenelli, 2001). If the supply of such resources is limited, then, we could view these two types of diversification as substitutes. Moreover, if product and geographic diversification indeed require different types of resources and capabilities, we could expect these two types of diversification to be substitute due to the difficulty of replicating and transferring different tacit and intacit knowledge, routines and competences (Kumar, 2009). If this is the case, the choice of the type of diversification is likely to be endogenously decided taking into consideration of the availability of different resources and capabilities of a firm.

The relationship between product and geographic diversification is also influenced by the institutional environment in which a firm is embedded. If institutional environment favors both types of diversification, then, we would expect a positive relationship between the two. However, if the institutional environment favors one type of diversification over the other, then, one type of diversification will dominate the other. For example, the institutional environments in emerging economies generally favors unrelated product diversification (Khanna & Palepu, 1997), but not necessarily internationalization (Gaur & Kumar, 2009). As a result, we observe more firms with high level of product diversification (Li & Wong, 2003; Zhou & Delios, Forthcoming) and relatively low level of geographic diversification in emerging economies (Delios, Zhou & Xu, 2008b; Gaur & Kumar, 2009).

To summarize, considering the role of resources and institutional environments help us better understand the complicated relationship between product and geographic diversification. I will further explain the implications of the findings in this dissertation on the relationship between product and geographic diversification in chapter 5 when I discuss the implications and future research areas.

## 1.2 Theoretical Framework

This section provides a complete framework explaining the relationships among resources, institutional environments and firm scope, as shown in Figure 1-2. These three constructs are related and influence with each other. To develop the theoretical framework to explain these complicated relationships, I choose three theories as the theoretical underpinnings of my dissertation: resource-based view (RBV), resource-dependence theory (RDT) and institutional theory (IT). All three theories are closely

related to the key constructs: resources and institutional environments. And all of them have been applied to explain the relationship among resources, institutional environments and firm scope. I will first review and compare these theories, and then illustrate how they explain the relationships shown in Figure 1-2.

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Insert Figure 1-2 about here  
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### *1.2.1 RBV, RDT and IT: Review and Comparison*

RBV views firms as bundles of resources (Barney, 1991). Although all resources are desirable for a firm's survival and success, RBV focuses more on the resources that could become the sustained competitive advantages of a firm. These resources must be rare, valuable, imperfectly imitable, and non-substitutable (Barney, 1991). Such resources include routines (Nelson & Winter, 1982), organizational culture (Fiol, 1991), dynamic capability (Teece et al., 1997), innovation capability (Henderson & Cockburn, 1994), and many others.

Similar to RBV, resource dependence theory (RDT) also recognize the importance of resources in firm survival. The basic assumption of RDT is that the key to organizational survival is the ability to acquire and maintain resources (Pfeffer & Salancik, 1978). Since organizations are open systems, they rely on external environments for resources and the possession of resources creates power (Thompson, 1967). Although RDT does not provide a clear definition of resources, it does make the distinction between organizational effectiveness and organizational efficiency. Organizational effectiveness is the "ability to create acceptable outcomes and actions" (Pfeffer & Salancik, 1978: 11); it is an external standard of how well an organization is

meeting the demands of the various groups and organizations that are concerned with its activities. Organizational efficiency is an internal standard of performance; it is about how well the tasks are being done. RDT focuses more on organizational effectiveness rather than efficiency. The resources in RDT apply to all resources that help firms to survive, not just those that can create sustained competitive advantages.

The key difference between RBV and RDT is the source of resources: while RBV is an internally-focused perspective of how organizations specify resource needs and RDT is an externally-focused perspective of how organizations obtain these valuable resources (Hillman, Withers & Collins, 2009). RBV posits that resources that can create sustained competitive advantages have to be internally accumulated by the firm (Dierickx & Cool, 1989). The strategic factor market<sup>1</sup> is largely incomplete when it comes to resources that can create sustained competitive advantages because these resources are imperfectly imitable. Imitability is related to the characteristics of asset accumulation process: time compression diseconomies, asset mass efficiencies, inter-connectedness, asset erosion and causal ambiguity (Dierickx & Cool, 1989). It usually takes a long time and a mass amount of interconnected and erosive assets input to develop a valuable resource. Moreover, the process of asset stock accumulation is often stochastic and discontinuous, described as “jackpot model”. There is causal ambiguity in the process. All these characteristics make it hard to decide market prices for the resources. Therefore, these resources cannot be acquired from strategic factor markets; they have to be generated internally. On the contrary, RDT argues that no organization is self-contained; therefore, they depend on other organizations for resources. RDT focuses on how organizations

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<sup>1</sup> Strategic factor market is a market where the resources necessary to implement a strategy are acquired.

manage interdependence with other organizations in the external environment (Pfeffer & Salancik, 1978).

Both institutional theory (IT) and RDT recognize that external environments have ample influence on firm behavior. One of the key arguments in institutional theory is that institutional environment provides guidelines for personal as well as organizational behavior (Meyer & Rowan, 1977) and therefore, organizations are social as well as technical phenomena, and their structures and processes are not shaped purely by technical rationality (Ghoshal & Westney, 1993). One of the key differences between RDT and IT is that firms are assumed to be more actively coping with external environment by changing the power relationship in RDT; while in IT, firms are more passively submissive by complying to institutional pressures (Oliver, 1991).

Although these three theories have different focuses, they share common theoretical underpinnings with each other, as shown in Figure 1-3. Both RBV and RDT view resources as the key construct; and both RDT and IT recognize the importance of external environments. In terms of the internal-external orientation, RBV is internally-focused while IT is externally-focused, RDT lies somewhere between RBV and IT.

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Insert Figure 1-3 about here  
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### *1.2.2 Resources and firm scope: RBV and RDT*

RBV and RDT explain relationships #1 and #2 in Figure 1-2. Strategy scholars well recognize the importance of firm resources in determining the type of product diversification and its performance implication (Montgomery & Singh, 1984; Montgomery & Wernerfelt, 1988). Firms diversify to utilize their productive resources

that are surplus to their current operations (Chatterjee & Wernerfelt, 1991). Since the resources that can create competitive advantages usually face market failure, it is hard to transfer them through market mechanisms (Dierickx & Cool, 1989). The best way to utilize them is to apply them in another business within the same firm. Diversification, especially related diversification, is the exploitation of a firm's internal resources and the benefits of diversification come from such resource exploitation (Montgomery & Wernerfelt, 1988). In order to conduct effective diversification, firms should have relevant capabilities. Firm capability is the ability to perform a task in at least a minimally acceptable manner (Helfat, 2007), including the ability of a firm to extend its resource base either in a different product market or in a different geographic market. Although scholars have found that unrelated diversification harms firm performance in developed countries, there is a consensus that related diversification is beneficial to firm performance (Palich et al., 2000).

Similarly, in the area of international business, one of the dominant theories to explain globalization is the internalization theory, which views globalization as the attempt to protect assets that are subject to market failure, such as intangible assets (Buckley & Casson, 1976; Dunning, 1993; Tallman, 1991). Firms will invest abroad to harvest from the possession of these resources and the internalization of resources across national borders creates multinational enterprises (MNEs). Various studies have shown that the possession of resources such as intangible assets lead to higher probability of foreign entry (Berry & Sakakibara, 2008; Caves, 1996; Kogut & Zander, 1992) and successful internationalization (Delios & Beamish, 1999; Morck & Yeung, 1992).

Existing studies in RBV on firm scope rely largely on the following two assumptions:

*Assumption 1: The exploitation of internal firm resources drives diversification.*

*Assumption 2: Firm have the capability to benefit from such resource exploitation.*

Both RBV and RDT can explain how firm scope influences firm resources. Firms can acquire complementary resources from external environments to better exploit their existing resources. Teece (1986) highlighted the importance of complementary assets to the successful exploitation of key resources. He argued that “[i]n almost all cases, the successful commercialization of an innovation requires that the [core] know-how in question be utilized in conjunction with other capabilities or assets” (Teece, 1986: 288). Complementary resources include assets such as specialized manufacturing, distributional channels, or even complementary technologies (Teece, 1986). The possession of complementary resources is crucial for firms to benefit from the exploitation of their existing resources (Helfat & Lieberman, 2002; Wernerfelt, 1984). Research has shown that firms can acquire complementary resources both internally or externally. The acquisition of complementary resources from external resources through means such as acquiring existing firms is one reason that motivates firms to increase their scope. For example, Jones and Miskell (2007) found that Unilever successfully acquired other firms to gain local knowledge as the complementary resources for their future growth.

RDT has also been applied to explain firm scope. The majority of the work in RDT focus on the actions firms take to minimize environmental dependence, such as mergers and integration, JVs and other inter-organizational relationships and political

actions (Hillman et al., 2009). Therefore, changing firm scope is viewed as one way through which firms manage their external dependence. Rather than diversifying to utilize their key resources as predicted by RBV, the lack of resources is the driver for diversification in RDT. Firms acquire external resources as a result of diversification. Pfeffer (1976) provided three reasons that firms engage in M&As: to reduce competition, to manage interdependence with either suppliers or buyers; and to diversify and reduce dependence on the present organizations which they rely on. Empirically, scholars have found evidence supporting these arguments. Pfeffer (1972) found that firms often acquire their transaction partners to reduce interdependency. Similarly, Barney (1990) observed that one important goal of M&A is to reduce a firm's dependence on other firms.

In the area of international business, resource-seeking is one of the primary goals that firms invest abroad (Dunning, 1993). According to Nachum and Zaheer (2005), in resource-seeking FDIs, firms invest abroad to achieve cost-minimization motives by obtaining resources that are either too costly or unavailable in their home country. The most common resources firms are seeking in foreign markets are raw materials and cheap labors. Because of the international immobility of labor, wage differentials between home and host countries are often considered as a major determinant of FDI (Kimino, Saal & Driffield, 2007). Various empirical results have supported the view that lower wage attracts FDI. For example, Taylor (2000) found that the wage rates of 39 host countries are negatively associated with changes in assets of US-owned subsidiaries. Besides cheap labor, raw material is also important driver for resource-seeking FDI. For example, Japanese firms have invested abroad to acquire natural resources for their production (Park, 2003).

In both product diversification and geographic diversification, firms diversify to acquire external resources to maintain independence. An important assumption in RDT is:

*Assumption 3: Firms diversify to minimize their dependence on other parties.*

To summarize, in RBV, internal resources serve as the antecedents that predict increasing in firm scope; while in RDT, external resources serve as the consequences of the increase in firm scope.

### *1.2.3 The impacts of institutional environments and firm scope: IT*

IT explains relationship #3 in Figure 1-2. Compared to RBV and RDT, the application of IT to explain diversification is more recent. Recent research around the world and especially from emerging economies (Delios, Xu & Beamish, 2008a) has started to develop an institution-based view on diversification, which complements the existing resource-based view on diversification (Peng, 2006). Strategies such as product and geographic diversification will be influenced by the institutional environments in which firms are embedded (Wright, Filatotchev, Hoskisson & Peng, 2005).

Two important aspects of institutional environments have been examined to explain firm scope: institutional distance and the unique characteristics of institutional environments in emerging economies. The existence of institutional distance increases the costs of operating abroad by creating liability of foreignness. The liability of foreignness is “the costs of doing business abroad that result in a competitive disadvantage for an MNE subunit . . . broadly defined as all additional costs a firm operating in a market overseas incurs that a local firm would not incur” (Zaheer, 1995: 342-3). In other words, institutional distance increases the barrier of foreign entry. Accordingly, scholars have long recognized the role of institutional distance, especially

cultural distance, in deterring foreign expansion (Benito & Gripsrud, 1992; Grosse & Trevino, 1996).

Other scholars examine how the unique characteristics of emerging economies influence firm scope. Many scholars have adopted an institutional theory approach and focused on the notion of institutional voids (Khanna & Palepu, 1997, 2000b), i.e. the institutional weakness of emerging economies (Chakrabarti, Singh & Mahmood, 2007; Hoskisson, Eden, Lau & Wright, 2000; Khanna & Palepu, 1997). This stream of literature views unrelated product diversification as an efficient extension of firm boundaries to overcome institutional weaknesses. Accordingly, firms pursue unrelated diversification as an efficient means of gaining self-generated institutional support. Peng, Lee and Wang (2005) proposed that institutional relatedness considerations may motivate firms to diversify into conglomerates in emerging economies, while Li and Wong (2003) found that firms in China conduct unrelated diversification to better manage institutional environment. Similarly, scholars also recognized the unique characteristics of home institutional environments in driving geographic diversification. For example, Meyer and Boisot (2008) argued that local protectionism and inefficient domestic logistics in China prevent firms expanding domestically; as a result, firms invest abroad at an early stage to escape from their home institutional environments.

All of these studies build their conception of the influences on a firm's diversification strategy from the viewpoint that a firm's social context – its institutional environments – can exert an important influence on its strategy formulation and implementation.

#### *1.2.4 The impacts of resources and firm scope on institutional environments*

The effects of institutional environments on organizations are not one-way. Since institutional environments are not static, firms can also influence institutional environments. As noted by North (1990:5), “both what organizations come into existence and how they evolve are fundamentally influenced by the institutional framework. In turn, they influence how the institutional framework evolves”. RBV and RDT collectively explain relationships #4 and #5 in Figure 1-2.

##### *1.2.4.1 RDT and the motivation to influence institutional environments*

Why would firms try to influence institutional environments? RDT provides the answer: it is one way that firms exert power over external environments, thus adapting to environmental uncertainty (Pfeffer & Salancik, 1978; Thompson, 1967). Since firms seek stability and predictability, the most efficient way to reduce uncertainty in institutional environments is to try to influence it in a favorable way (Oliver, 1991). The reduction of uncertainty will then increase a firm’s chance of survival (Hillman et al., 1999).

Resource dependence theorists focused on various active behaviors that firms seek to manipulate external dependence or exert power to influence the allocation of resources (Pfeffer & Salancik, 1978; Thompson, 1967). Theoretically, Oliver (1991) provided a framework to classify firms’ strategic responses to institutional processes. Combining IT and RDT, she identified five different strategic responses: acquiesce, compromise, avoid, defy and manipulate. These five responses differ in the active agency by the organizations from passivity to active persistence. Manipulation is the most active

response because it intends to change or exert power over the sources of institutional pressures. It is the attempts of firms to influence institutional environments.

Within the manipulation tactic, firms can *co-opt* the sources of the pressure by importing influential constituents, *influence* the institutional values and beliefs and criteria of acceptable practices or performance, or *control* by establishing power and dominance over the external constituents that are applying pressures (Oliver, 1991). For example, Selznick (1949) showed that outside interests were co-opted by the Tennessee Valley Authority and persuaded to support its projects. DiMaggio (1983) showed how various art organizations formed lobbying coalitions to influence the funding and support allocated to them.

Perhaps the most commonly used way to influence institutional environments is through a firm's political activities. One of the primary goals of a firm to engage in political actions is to change its institutional environment (Sadrieh & Annavarjula, 2005). Scholars have examined a wide variety of corporate political tactics (Aplin & Hegarty, 1980; Baysinger, Keim & Zeithaml, 1985; Keim & Baysinger, 1988). Getz (1993) classified firm political activities into seven categories: lobbying, reporting research results, reporting survey results, testifying at government hearings, legal actions, personal service, and constituency building. Through these political activities, firms hope to participate in the public policy process, trying to shape public policy in a way that is favorable to them (Hillman et al., 1999). Favorable public policies can provide many benefits, such as subsidies, reduced price, and permitted entry into certain industries (Marcus, Kaufman & Beam, 1987).

#### *1.2.4.2 RBV and the resources of influencing institutional environments*

The benefits of influencing institutional environments, however, do not come without costs. Political activities, especially high-track lobbying are uncertain and costly (Sadrieh & Annavarjula, 2005). As a result, not every firm has the ability to influence institutional environments. To influence institutional environments, it takes a long time and a mass amount of interconnected and erosive assets such as human and social capital. Moreover, this process is often stochastic and discontinuous and involves causal ambiguity. Therefore, the ability to influence institutional environments is a value, rare, non-substitutable, and non-imitable resource (Barney, 1991). In fact, the ability to influence institutional environments through political intervention is a key resource that can be used to gain sustainable competitive advantages (Boddewyn & Brewer, 1994; Hillman et al., 1999).

To create these political resources, many firms develop relationships with the government, thus building valuable resources such as human and social capital or capability such as access to key decision makers (Lester, Hillman, Zardkoohi & Cannella, 2008). Tian, Hafsi and Wu (2009) found that Guanxi with government officials help Chinese firms effectively implement political strategies. Lester and his colleagues (2008) showed that the depth, breadth, and deterioration of former government officials' human and social capital influence the benefits of having them as board members in the sample of U.S. firms.

Firms with larger scope are more likely to influence institutional environments for two reasons. First, they have more resources. The resources required to influence institutional environments, such as the human and social capital of managers, and the

financial capital of the firm, mostly reside in larger firms. RDT posits that power comes from the possession of resources (Pfeffer & Salancik, 1978). As a result, firms with larger scope have more power and resources to influence institutional environments. Moreover, the larger the firm scope, the easier it is to absorb the costs of influencing institutional environments, such as the costs of maintaining government relationships (Khanna & Palepu, 1997). Second, the stakes of influencing institutional environments are higher for them. The more firms are affected by government, the more likely firms will try to influence the political process in their favor (Hillman et al., 1999). Zardkoohi (1985) found a portfolio effect: a diversified firm have greater opportunity to receive favors in at least one of the industries it enters. Likewise, a diversified firm has greater opportunity to be harmed by government in at least of one of the industries it enters. The rationale is similar for large MNEs, which are sometimes actively participating in lobbying as a crucial element of the international diplomacy (Sadrieh & Annavarjula, 2005). Given the large stakes, large diversified firms are more motivated to engage in activities to influence institutional environments.

Empirically, scholars have shown that large diversified firms are more likely to actively conduct political strategy such as lobbying (Sadrieh & Annavarjula, 2005). For example, Korean conglomerates generously financed political campaigns (Kraar, 2005). The efforts of diversified firms to influence institutional environments are more salient in emerging economies because emerging economies are going through changes in their institutional environments (He, 2009; Tan, 2005), providing more room for firms to act. Intricate relationships between large diversified firms and government are normal in emerging economies (Khanna & Palepu, 1997).

1.2.5 *The impacts of institutional environments on resources: the focus of this dissertation*

This dissertation focuses on the impacts of institutional environments on firm resources and thus firm scope. It shows that the differences in institutional environments make the assumptions described earlier questionable (I will describe it in detail later in this section). The relaxation of these assumptions may alter the strategies of firms. As a result, it is important to investigate strategic choices such as diversification in different institutional environments. In section 1.3, I will describe the research context of emerging economies in detail and show how the institutional environments of emerging economies differ from those in the developed countries, but before that, I will first introduce the theoretical framework of this dissertation.

The most fundamental proposition that I explore in this dissertation is:

*Proposition 1: Variation in national institutional environments enables and constrains different strategic choices.*

As noted by North (1990: 110), “the economic (and political) models are specific to particular constellations of institutional constraints that vary radically both through time and cross sectionally in different economies ... The models are institution-specific and in many cases highly sensitive to altered institutional constraints”. This proposition shows the importance and necessity of studying firm strategy in different institutional environments.

Chapter 2 focuses on the construct of distance from the institutional perspective, and disaggregates institutional distance into eight different dimensions. I focus on distance for two reasons. First, distance creates extra costs in doing business abroad, thus

deters foreign entry (Zaheer, 1995). The effects of distance illustrate how differences in institutional environments influence firm scope directly. Second, institutional distance reflects the variations in institutional environments. The variations provide the grounds to examine how institutional environments influence firm scope indirectly by comparing the choice of firm scope in different institutional environments. Regarding the first reason, chapter 2 investigates the negative impact of distance on international diversification strategy. Regarding the second reason, chapter 2 shows that the same distance dimensions have different effects on the foreign entry strategy of firms in two different institutional environments: China and the U.S. It provides the foundation for further analyses of firm strategy in emerging economies in Chapter 3 and 4. Additionally, chapter 2 shows that the negative impact of institutional distance on international diversification can be mitigated by various firm resources such as R&D intensity and prior foreign entry experience.

After establishing and showing the direct impact of institutional environments on firm scope, I further explore how institutional environments influence resources. I then explore the following propositions:

*Proposition 2: Firm diversification is driven by resources.*

*Proposition 3: Both internal resources and external resources drive firm diversification.*

*Proposition 4: Institutional environment influences the development of internal resources and the availability of external resources.*

These three propositions guide the analyses in Chapter 3 and 4. Chapter 3 investigates the impact of institutional environments, especially state ownership and government policy, on the globalization of Chinese firms. This chapter shows that firms

can rely on either internal resources or external resources to invest abroad, depending on their different levels of state ownership. Moreover, it shows that instead of trying to reduce their dependence on the government for various resources, managers in state-owned enterprises (SOEs) increase their dependence on the government by relying on external resources provided by the government to invest abroad. In this chapter, I show that institutional environments, more specifically government, influence the choice of firm scope by influencing the availability of external resources. Chapter 3 relaxes assumption 1 and 3 by showing that firms can invest abroad relying solely on external resources; and they increase their dependency on the government by investing abroad.

Besides influencing the availability of external resources, institutional environment can also constrain the development of internal resources. A firm's growth is constrained by the resources and capabilities of the firm. As noted by Peng and Heath (1996: 498), "the growth of firm is limited by two constraints: (a) its capability to articulate and codify its organizational routines and transmit this information to its members and (b) its ability to overcome transaction cost and bureaucratic cost problems incurred in the course of growth".

Chapter 4, then, shows the development of capability to benefit from related diversification – one important type of internal resources, is largely missing in firms from emerging economies due to the constraints of institutional environments. To benefit from related diversification, firms should have two types of capabilities: search and selection, and implementation (Helfat, 2007). Search and selection is the capability to recognize truly related businesses; and implementation is the capability to exploit resources in related businesses. I argue that these capabilities are unusual in firms based in emerging

economies, due to inexperience and weak investor oversight. The lack of capabilities of search and selection will contribute to what I call seemingly related diversification, a type of diversification focusing on the relatedness of technologies but not of markets. Seemingly related diversification will harm firm performance, especially in emerging economies because unlike developed countries where markets are usually assumed to be large and homogeneous, markets in emerging economies are small and constrained by relationships with customers, government officials, and so forth (Peng & Luo, 2000). In such circumstances, markets for technologically similar products may be dissimilar and require fundamentally different capabilities. These differences may result in the inability of firms to benefit from related diversification in emerging economies. Chapter 4 relaxes assumption 2: unlike firms from developed countries, firms in emerging economies lack such capabilities to benefit from related diversification, largely due to the institutional environment, especially the market conditions and the existence of state ownership.

The theoretical framework and the connection of different chapters of this dissertation are summarized in Figure 1-2. Chapter 2 examines the direct impact of institutional distance on firm scope and compares firm strategies in the U.S. and China. It lays out the foundation for further investigation. The most important theoretical arguments that I make in this dissertation is that institutional environments can influence both the internal development of firm resources and the availability of external resources. These arguments are examined in chapter 3 and chapter 4.

Figure 1-4 gives a more concrete illustration of the relationships investigated in different chapters. Chapter 2 examines the direct relationship between institutional environments and firm scope. It also shows that the existence of firm resources can

mitigate the negative impact of institutional distance on firm scope. Chapter 3 examines how internal and external resources influence the international diversification of firms. It shows that government can influence the availability of external resources, and thus firm scope. Chapter 4 investigates how the development of internal resources – the capability of benefit from related diversification is constrained by the institutional environments, thus harming firm performance. Together, my dissertation shows how institutional environments and firm resources jointly determine firm scope.

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Insert Figure 1-4 about here  
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### 1.3 Research Context

I choose emerging economies as my empirical setting for several reasons. First, the institutional environments in emerging economies are sufficiently different from those in developed countries (Peng, Wang & Yi, 2008; Wright et al., 2005), giving me a large enough variation in institutional environments. The sharp difference makes the comparison of the choice of firm scope meaningful. Second, emerging economies are developing very fast in the past few years; the investigation of diversification strategy of firms from emerging economies itself is an important question (Guillen & Garcia-Canal, 2009). Third, the unique institutional environments in emerging economies have ample impacts on a firm's diversification strategy. For example, diversification could be viewed as one way to overcome the institutional voids in emerging economies (Khanna & Palepu, 1997). Therefore, emerging economies is a good research setting to test the effects of institutional environment on firm scope. Fourth, within the broad construct of institutional environments, I focus primarily on government in chapter 3 and 4. The

impacts of government in business is more prevalent in emerging economies, since many emerging economies are transforming from planned economy in which government owned almost all firms and controlled many aspects of business (Peng & Heath, 1996). Although government in these countries have gradually released the tight control through market liberalization and privatization (Cuervo & Villalonga, 2000; Ramamurti, 2000), it still remain to be a powerful player in business, through various means such as state ownership and government policy. Fifth, the institutional environments in emerging economies make the assumptions described earlier questionable. For example, SOEs' reluctance to reduce dependency on the government may be the result of the long-stand influence of government on economy in emerging economies (Wang, Zhao, Ning & Yu, 2009).

Next, I will describe the research context in more detail.

### *1.3.1 Emerging Economies*

The term “emerging economies” was first introduced by International Finance Corporation (IFC) in the early 1980s to label the middle-income countries in which foreign financial institutions can buy securities (Hoskisson, Johnson, Laszlo & White, 2005). Over the past decades, the term has been used to include countries that are previously labeled as developing countries but with social or business activities in the process of rapid growth and industrialization. The scholarly literature has provided many different definitions of emerging economies (Hoskisson et al., 2000; Meyer, 2004). For instance, Hoskisson and colleagues (2000) define emerging economies as “low-income, rapid-growth countries using economic liberalization as their primary engine of growth” (Hoskisson et al., 2000: 249). Meyer (2004) defines emerging economies as “mid- or

low-income economies with growth potential that makes them attractive for foreign investors” (Meyer, 2004: 260). Despite the differences in the definition, almost all definitions recognize one characteristic of emerging economies: fast growth.

The rapid growth of emerging economies has become a global phenomenon in the past two decades. GDP from emerging economies grows from \$3,573 billion in 1980 to \$17,881 billion in 2009. In the year of 2009, while the GDP growth rate of advanced economies is -3.16%, the GDP growth rate in emerging economies is 2.39% (IMF, 2010). Along with the national economic growth, firms from emerging economies are also growing rapidly. There have been many large corporations rising from emerging economies, such as Tata from India and CITIC group from China. These firms are actively involved in both product and geographic diversification. For example, Tata group has grown to a conglomerate that conducting business in areas such as information technology, engineering, energy, chemical and consumer product.

### *1.3.2 Institutional Environments in Emerging Economies*

Although emerging economies are developing fast economically, another defining characteristic of emerging economies is their unique institutional environments. In emerging economies, many formal institutions, such as laws and regulations that are common in developed economies, are absent or do not function well (Khanna & Palepu, 1997). Khanna and Palepu (1997) identify five factors in institutional environments: product market, capital market, labor market, laws and regulations, and contract enforcement. They argue that although emerging economies are hardly uniform, they all fall short to varying degrees in providing the institutions necessary to support basic business operations.

In product market, the lack of communication infrastructure, certification agency, regulatory authority and extrajudicial arbitration service make it hard for consumers to gather product information and also protect their rights. In capital market, information asymmetry also occurs because investors refrain from putting money into unfamiliar ventures without access to information. The capital market in developed economies minimizes problems through various institutional mechanisms such as reliable financial reporting and independent financial press. For example, the Securities and Exchange Commission and other watchdog bodies make it difficult for unscrupulous entrepreneurs to mislead unsophisticated investors. However, in emerging economies, almost all the institutional mechanisms that make advanced capital market works so well are either lacking or ineffective (Ferguson, Lam & Lee, 2002). In labor market, the lack of high quality business schools and management institutes creates a shortage of managers. Moreover, missing head-hunting firms and relocation services limit the mobility of managers (Qu, 2003). The lack of laws and regulations, along with weak contract enforcement, makes informal institutions, such as traditions, convention and codes of conduct, important as a complement to formal means of regulating transactions (North, 1990). As a result, relation-based contracting is prominent in emerging economies (Peng & Luo, 2000).

### *1.3.3 The impacts of institutional environments on growth strategy*

In general, the lack of well-established product market, capital market and labor market in emerging economies, and the lack of government laws and regulations and inconsistent enforcement of contracts highlight the uniqueness of institutional environments in emerging economies. Many aspects of the institutional environments

described above have implications on firms' growth strategy. Information asymmetry in product market where consumers have no redress mechanisms if a product does not deliver on its promise creates incentives for firms to diversify, because a diversified firm with a reputation for quality products can use its group name to enter new businesses (Khanna & Palepu, 1997). The inefficient capital market limits the ability of firms to raise capital from stock markets and thus firms will have to rely on other sources of capital such as bank loans when they diversify (Xiao, 2005). The shortage of high quality managers and their limited mobility constrains the ability of a firm to grow since firm growth needs the vision and inputs from senior managers (Penrose, 1959). Because emerging economies lack effective mechanisms to enforce contracts, firms may internalize some of the transactions, thus extending firm boundaries. All these unique characteristics of institutional environments in emerging economies suggest the importance of investigating growth strategy of firms from emerging economies, which is the primary focus of this dissertation.

#### *1.3.4 China as the research context*

##### *1.3.4.1 Common characteristics*

As the largest emerging economy in the world, China shares with other emerging economies some characteristics, such as fast growth and weak institutions. In terms of growth, China is one of the leading drivers of economic growth. China surpassed Japan as the world's second-largest economy in the second quarter of 2010 (Hamlin & Li, 2010), and it is predicted that China will overtake the U.S. as the biggest economy in the world as early as 2027 (O'Neill & Stupnytska, 2009). Chinese firms are also growing very fast in both product and geographic dimension. Chinese firms has experienced fast

growth in term of product diversification: 37% of Chinese listed firms are conglomerates in 2002, compared with 14% in 1995 (Zhou & Delios, Forthcoming). China has also become the largest outward FDI investor from emerging economies with a total of \$61.6 billion by the end of 2006 (Ministry of Commerce, 2007).

The institutional environment in China is weak, like most of the other emerging economies (Child & Lu, 1996; Tian et al., 2009). Many of the institutions are simply missing or not functioning efficiently. For example, the capital market in China has been found to be inefficient with inaccurate accounting data and insider trading (Ferguson et al., 2002). Similarly, the labor market is not efficient given the lack of markets for managers (Qu, 2003). The prevalence of Guanxi in the Chinese community (Peng & Luo, 2000) shows that informal institutions have been an important substitute to formal institutions due to the weakness of formal institutions (Yeung & Tung, 1996).

#### *1.3.4.2 Unique characteristics*

China, however, has some unique characteristics not shared with other emerging economies. In this section, I will discuss the characteristics that are relevant to this dissertation, namely the powerful role of the Chinese government. The role of government is manifested in mainly two ways, government ownership and government policies and regulations.

Chinese economy from 1950s to 1970s are characterized by central planning and economic autarky (Tong, 2009). In such economy, state owned enterprises (SOEs) dominate. Inheriting the historic imprints, the continuing prominence of SOEs has become a symbol of the Chinese socialist market economy (Tong, 2009). Since the 1990s, the Chinese government has begun to privatize a large number of SOEs in Chinese

economy. This process, however, is slow and gradual, compared to the privatization process in Central and Eastern Europe (Fernandez-Stembridge & Huchet, 2006). There are still many SOEs operating in Chinese economy in various sectors. The government can influence the operation of these firms through a variety of means, such as the appointment and removal of managers, and restructuring and reorganization of SOEs (Ji, Lam & Moy, 2005). The prevalence of SOEs and the controlling role of government in SOEs is one unique characteristics of China. Chapter 3 of this dissertation shows how government influences the globalization strategy of SOEs through state ownership; while chapter 4 shows how state ownership exaggerates the negative relationship between related diversification and firm performance.

Another defining factor of the Chinese economy is that “the rule of the game” is different in terms of government policies and regulations (Abrami & Zhang, 2007; Zhang, 1997). Here I consider the policies and regulations that are relevant to the primary focus of this dissertation: expansion of firm scope. The Chinese government has strict regulations on business scope of a firm. A firm can only operate within the business scope specified in its business license; otherwise, it will be viewed as operating without licenses. According to “Measures to investigate and revoke business operating without licenses” issued by the State Council on Jan 6<sup>th</sup>, 2003, the punishment could be the revoke of business license and fines as high as half a million RMB. Therefore, whenever a firm want to change its product or geographic scope, it has to apply and register with the corresponding government agencies within 30 days after the decision has be made, according to the “Administration of registration of the scope of business of enterprises provisions” promulgated by the State Administration for Industry and Commerce on Jun

14<sup>th</sup>, 2004. The same restrictions apply to changes in the geographic location of firms. A firm has to change its license if it wants to operate in a location different from the one on its current business license. These registration and application processes usually take considerable time and involve multiple government agencies (Chen, 2007; Walton, 2008).

Besides the strict regulations on changes in product and geographic scope, certain industries are classified with “authorized business”, according to the “Regulations of the People’s Republic of China on the Administration of Company Registration”. To enter these industries, a firm needs to get certain licenses before applying for business licenses. For example, to start a hotel, a firm needs to get the “license for special industries” from the police station, the “Sanitation permit of public places” from the Department of Health, and the “public security permit” from the Public Security Bureau. There are also industries that the government does not allow firms to operate, such as the historical relic business.

These regulations create barriers of entry. These barriers do not exist or are much lower in other countries (Nee & Opper, 2010; Yau, Lee, Chow, Sin & Tse, 2000). As a result, Chinese firms face many difficulties when they try to expand. This, however, does not prevent Chinese firms from expanding (Delios et al., 2008b; Zhou & Delios, Forthcoming). Firms can overcome these entry barriers through various means. For example, the government involvement in these processes highlights the importance of Guanxi in business (Peng & Luo, 2000). A firm that maintains good relationships with the government will face lower entry barriers than firms without such relationships (Nee & Opper, 2010; Xin & Pearce, 1996; Yau et al., 2000).

Meanwhile, there are government policies encouraging firms to go abroad, as I described in chapter 3. The incentives provided by the government may encourage firms to internationalize. Overall, either by encouraging or constraining, government has ample influence on business operations of all types of firms through policies and regulations.

#### *1.3.4.3 Applicability of the findings in this dissertation*

Given the unique characteristics of China, it is important to discuss the applicability of the results in this dissertation. I will start from the findings that I believe are applicable to other emerging economies and then discuss the ones that are less applicable.

First, fast growth economy is one common characteristic of emerging economies. Firms within the fast-growth economy face the pressure to grow. Such pressure will push firms to grow, but firms are inexperienced in such expansion, especially in the former Soviet countries where firms are used to operate in planned economy (Brown, 1995; Pomfret, 2003). The findings in chapter 4 shows that inexperience in firm growth may lead to the difficulty of benefiting from related diversification. This finding, I believe, is applicable to other emerging economies that are transiting from planned economy to market economy, such as the Central and Eastern Europe countries.

Second, it is well recognized that emerging economies are characterized by institutional voids (Khanna & Palepu, 1997). My arguments in chapter 3 suggest that the lack of markets for managers make the risk of losing their job extremely high since it is hard for them to find another job in the absence of such markets (Brouthers, Gelderman & Arens, 2007; Qu, 2003). In chapter 4, I argue that the difficulty of acquiring complementary assets is partly due to the lack or inefficiency of such markets. These

arguments, I believe, are applicable to most emerging economies with institutional voids in various aspects in their economies.

Third, privatization is an important way through which the government vitalizes the state sector (Megginson & Netter, 2001; Zahra, Ireland, Gutierrez & Hitt, 2000). It is happening in both emerging economies and developed countries. The findings in chapter 3 show that partially privatized firms are indeed becoming market-oriented and performance sensitive. This finding is largely consistent with the vast literature on privatization in both emerging economies and developed countries (Andrews & Dowling, 1998; de Castro & Uhlenbruck, 1997; Koppell, 2007).

Fourth, various studies have shown that SOEs suffer from severe agency problem (Cauley & Sandler, 2001; Jensen & Meckling, 1976; Xia, Li & Long, 2009), because the public as the owners does not have the capability to monitor the operations of a firm (Cuervo & Villalonga, 2000; Xu, 1996). Chapter 4 shows that SOEs do suffer from agency problem and the problem exaggerates the negative impact of related diversification on firm performance. Meanwhile, scholars have shown that SOEs are risk-averse in different empirical settings, such as Central and Eastern Europe (Carlin & Landesmann, 1997; Estrin, 1994). The findings in chapter 3 imply that SOEs are risk-averse, consistent with the existing literature.

Fifth, chapter 3 argues market fragmentation within the country makes it difficult to expand domestically. In chapter 4, I also argue that market fragmentation contributes to the negative impact of seemingly related diversification on firm performance. It is important to consider whether market fragmentation is common in emerging economies. A close examination shows that large emerging economies would face fragmented

domestic market. For example, Russia faces fragmented markets due to its broad geographic area (Berkowitz & DeJong, 2001) while India faces fragmented markets due to the different language and culture within the same country (Studer, 2008). However, smaller emerging economies may have homogeneous domestic markets, thus, the findings described above may not be applicable to these countries.

We should note that China does have several unique characteristics as described in section 1.3.4.2. The Chinese government is powerful, as exemplified by the large number of SOEs and various government policies and regulations that influence business transactions. The question is then, whether it is a difference of a kind or degree. I believe it is the latter. If we think the level of government influence as a continuous variable from minimum to maximum, China resides on the right hand close to the maximum while western countries reside on the left hand close to minimum (OECD, 2007; Randall & Telesio, 1995). Indeed, China is unique; however, it does not mean that the findings in China have no meanings to other countries. If a country wants to increase its level of government involvement in business, it may look at China first as an example and learn from China's experience. Of course, the evolvement of government is path-dependent (Caselli & Morelli, 2004; Reid, 2006), and it is unclear whether any country could reach a point that is similar to China. But we should also note that every country, especially every emerging economy, is unique (Bruton, Ahlstrom & Puky, 2009; Wright, 1997). We cannot expect an emerging economy to be representative of all other emerging economies in every aspect.

## 1.4 Dissertation Overview

### *1.4.1 An Institutional Approach to Cross-National Distance*

To explore the strategic differences between firms from emerging economies and developed countries, this dissertation first focuses on their sources: distance. Distance is an important construct and international business scholars have been interested in understanding the impact of cross-national differences on various variables such as foreign entry mode and performance (Barkema, Bell & Pennings, 1996; Kogut & Singh, 1988; Park & Ungson, 1997). However, these studies yield conflicting results (Slangen & Hennart, 2007), possibly due to scholars' over reliance on Hofstede's one dimensional cultural distance.

Distance is indeed a multi-dimensional concept; therefore, chapter 2 disaggregates the construct of distance from an institutional perspective by proposing a set of multidimensional measures, including economic, financial, political, administrative, cultural, demographic, knowledge, and global connectedness. It grounds the analysis and choice of empirical dimensions on institutional theories of national business, governance, and innovation systems. In order to overcome the limitations of the Euclidean approach, Chapter 2 calculates dyadic distances using the Mahalanobis method, which is scale-invariant and takes into consideration the variance-covariance matrix. Moreover, it conducts two empirical illustrations. The first illustration empirically analyzes four different foreign expansion choices of US companies to illustrate the importance of disaggregating the distance construct and the usefulness of the distance calculations. It also examines how the choice of foreign entry is influenced by both internal firm resources and external national distance. Factors such as R&D intensity and firm

experience mitigate the negative impact of national distance on the probability of foreign entry. The second illustration examines the effects of distance on the foreign entry strategies of Chinese firms. It shows that the same distance dimensions have different effects for firms from China and U.S. This result highlights the importance to study firm strategy in emerging economies since firm from emerging economies are indeed different in their strategic choices.

After showing the importance of difference in institutional environments, I focus on the product and geographic diversification strategy of Chinese listed firms.

#### *1.4.2 Government Corporation and Globalization*

Scholars in international business have long been interested in answering the question of why firms invest abroad even though they face higher costs in entering foreign countries (Hymer, 1976). Various theories have been developed to explain foreign expansions, such as internalization theory (Buckley & Casson, 1976), product life cycle theory (Vernon, 1979), oligopolistic reaction theory (Knickerbocker, 1973), knowledge-based view (Kogut & Zander, 1992) and OLI paradigm (Dunning, 1993). One common feature of many theories is that firms must have some proprietary advantages to overcome the extra costs of going abroad (Caves, 1996; Hymer, 1976). For example, Dunning's OLI paradigm posits that firms should possess ownership-specific advantages and internalization advantages that could be exploited in foreign markets to go abroad (Dunning, 1993).

Empirically, scholars have validated this argument. Many studies have shown that the possession of valuable internal resources leads to successful foreign expansions (Berry & Sakakibara, 2008; Feinberg & Gupta, 2004; Morck & Yeung, 1992; Tallman &

Li, 1996). Most of these studies, however, examine MNEs from developed countries, such as US (Morck & Yeung, 1992; Tallman & Li, 1996) and Japan (Berry & Sakakibara, 2008; Delios & Beamish, 1999).

MNEs from emerging economies are developing rapidly in the last two decades. Large firms from emerging economies such as Brazil, Russia, India and China have become active players in global markets. Although the rise of MNEs from emerging economies has become an important phenomenon in the world economy, the scholarly literature has not paid much attention to it (Child & Rodrigues, 2005). Many studies in this area are either theoretical pieces (Child & Rodrigues, 2005; Morck, Yeung & Zhao, 2008) or investigate the role of country-level rather than firm-level factors in determining outward FDI from emerging economies (Buckley, Clegg, Cross, Liu, Voss & Zheng, 2007). Empirical studies have documented that many MNEs from emerging economies invest abroad either to acquire strategic assets (Chen & Chen, 1998; Makino, Lau & Yeh, 2002) or to exploit ownership advantages that are not the same as those in MNEs from developed countries (Lall, 1983). MNEs from emerging economies are different from MNEs in developed countries in many aspects such as the motivation and patterns of international expansion, thus calling for new theories to explain the rise of MNEs from emerging economies (Guillen & Garcia-Canal, 2009).

To better understand the internationalization of firms from emerging economies, Chapter 3 examines the role of government in the globalization process. I argue that government influences both the motivation and resources of firms when they go abroad. More specifically, I show that compared to partially privatized enterprises (PPEs) and fully privatized enterprises (FPEs), state-owned enterprises (SOEs) are less likely to go

abroad as a result of their risk-averse nature. They also differ in terms of the resources they rely on when they go abroad. SOEs rely on external resource from the government rather than internal resources; while PPEs reply on internal firm-specific ownership advantages rather than external government resources to invest abroad. In addition, because external resources are largely controlled by the government in China, a government policy that encourages firms to go abroad changes the availability of external resources, but not internal resources. As a result, SOEs are more willing to invest abroad after the policy while the decision of PPEs and FPEs remain unchanged. An empirical investigation of the FDI activities of Chinese-listed firms in high-tech industries between 1991 and 2007 supports the arguments.

#### *1.4.3 Related Product Diversification and Firm Performance*

Product diversification, or diversification across business lines, is a common corporate strategy (Rumelt, 1974). The extent of product diversification has important implications for both the competitiveness of a firm and its overall performance. Researchers have studied the relationship between diversification and performance widely and generally found an inverted U-shape relationship between diversification and performance in developed economies: performance improves as firms move from specialization to related diversification but deteriorates as firms move from related to unrelated diversification (Palich et al., 2000). Their main argument is that related diversification adds value because capabilities existing in the firm can be applied across several businesses while unrelated diversification imposes heavy organizational costs, offsetting the benefits of diversification.

In emerging economies, however, unrelated diversification may be beneficial. The existing literature offers essentially two explanations for the success of unrelated diversification: transaction costs and capabilities. The transaction cost approach views unrelated diversification as an efficient extension of firm boundaries to solve the problem of market imperfection (Khanna & Palepu, 1997; Leff, 1978); the capability approach makes the argument that capability to leverage local and foreign contacts enables firms in emerging economies to enter unrelated businesses successfully (Guillen, 2000; Kock & Guillen, 2001) and this capability is rare, valuable, non-imitable and non-substitutable; and can be used repeated without losing value (Guillen, 2000).

One notable gap in the literature on the relationship between product diversification and firm performance in emerging economies is that scholars largely focus on the benefits of unrelated diversification, neglecting to address the difficulties of related diversification. They assume that firms have the capability to benefit from related diversification. This assumption, I believe, does not always hold, especially in emerging economies where the development of such capability is constrained by the institutional environments.

As an attempt to fill in this gap, Chapter 4 focuses on the failure of related diversification in emerging economies through a capability perspective. This chapter investigates the relationship between related diversification and firm performance in the context of emerging economies. Although related diversification is believed to be beneficial to firm performance for various reasons such as resource exploitation, this chapter shows that seemingly related diversification, a type of diversification focusing on the relatedness of technologies but not of markets, will harm firm performance.

Moreover, even though a firm is able to identify a truly related business, the lack of implementation capability still makes it difficult for firms to benefit from related diversification. As a result, both seemingly related diversification and related diversification are negatively associated with firm performance in emerging economies. Additionally, the negative impact of related diversification on firm performance is moderated by firm experience and state ownership. The empirical tests on a population of Chinese firms listed on Hong Kong Stock Exchange from 1993 to 2006 support the arguments.

### 1.5 Intended Contributions

The intended contribution of this dissertation is three-fold. First, this dissertation examines how institutional environments influence resources by constraining the development of internal resources and influencing the availability of external resources. Although previous studies on RBV, RDT and IT have applied these theories to explain firm scope, they remain largely isolated. More research is needed to integrate research in different theoretical perspectives<sup>2</sup>. Linking these theories together and examining their interactions remain a largely unexplored area. This dissertation helps us understand the impact of institutional environments on firm scope from another perspective: institutional environments can influence firm scope through their influence on firm resources. Chapter 2 examines how internal resources and capabilities can mitigate the negative impact of external national distance on the internationalization process. Chapter 3 examines the motivation and the source of resources when firms go abroad. PPEs rely on internal resources and capabilities, as predicted by RBV while SOEs rely on external government

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<sup>2</sup> For example, Hillman, Withers and Collins (2009) suggest that the integration of RDT with other theoretical perspectives such as RBV and IT provides a promising future for the development of RDT.

resources to conduct FDI. Government provides resources that firms can utilize when they go abroad. By providing these resources, government influences the availability of resources in external environments. Chapter 4 shows institutional environment constrains the development of resources and capabilities, especially the capabilities to benefit from related diversification.

Second, this dissertation advances our understanding of both product diversification and internationalization in emerging economies. Emerging economies are characterized by various unique features, such as institutional voids, a large number of government corporations, and young private sectors (Peng & Delios, 2006). All of these characteristics render the applicability of theories and findings in the western context to emerging economies. Therefore, scholars interested in emerging economies should be cautious in applying existing theories and should try to develop new theories to explain firm strategy in emerging economies (Barney & Zhang, 2009; Whetten, 2009). This dissertation aims to develop theories and provide empirical evidence to better understand firm strategy in emerging economies. Chapter 4 shows that the relationship between related product diversification and firm performance is different in emerging economies. This chapter contributes to the literature by showing that related diversification is not always beneficial and firms may actually need to learn how to benefit from it. It is a good supplement to existing theories on the benefits of unrelated diversification (Guillen, 2000; Khanna & Palepu, 2000a). Together, they provide a complete picture of the relationship between product diversification and firm performance for firms in emerging economies. Similarly, the findings of Chapter 3 also show the applicability of existing theories to emerging economies is limited. The internalization theory, a dominant theory

in explaining globalization, is only applicable to PPEs that seek to exploit their key resources in foreign markets. It is not applicable to SOEs which invest abroad to gain legitimacy. SOEs will rely on external government resources to go abroad rather than internal firm resources.

This dissertation also contributes to the international business literature empirically by providing a set of multi-dimensional measures of cross-national distances. Instead of relying on the widely-used Hofstede approach and measures of cultural distance, chapter 2 uses institutional theories of national business, governance and innovation systems to ground the conceptual definitions, analysis, and choice of empirical dimensions and indicators. The new measures are made publicly available to all researchers, with the intent to help them use distance measures that match their research questions. Perhaps this new approach can help resolve some of the inconsistencies reported in the literature concerning the effects of national distance on various strategies such as foreign entry mode choice and human resource practices, given that each of these questions may possibly require the use of different dimensions and measures of distance.

The remainder of the dissertation is organized as follows. Chapter 2 develops a new set of measures for institutional distance, including eight dimensions. It also empirically tests the impact of distance on the choice of foreign entry decisions of U.S. and Chinese firms; and how these impacts are influenced by various factors such as firm resources and capabilities. Chapter 3 investigates how government influences the motivation and resources of Chinese firms when they go abroad. Chapter 4 explores the

relationship between related diversification and firm performance in the context of China.

Chapter 5 summarizes the dissertation and discusses its contribution and implication.

1.6 Figures

*Figure 1-1 Research Question*

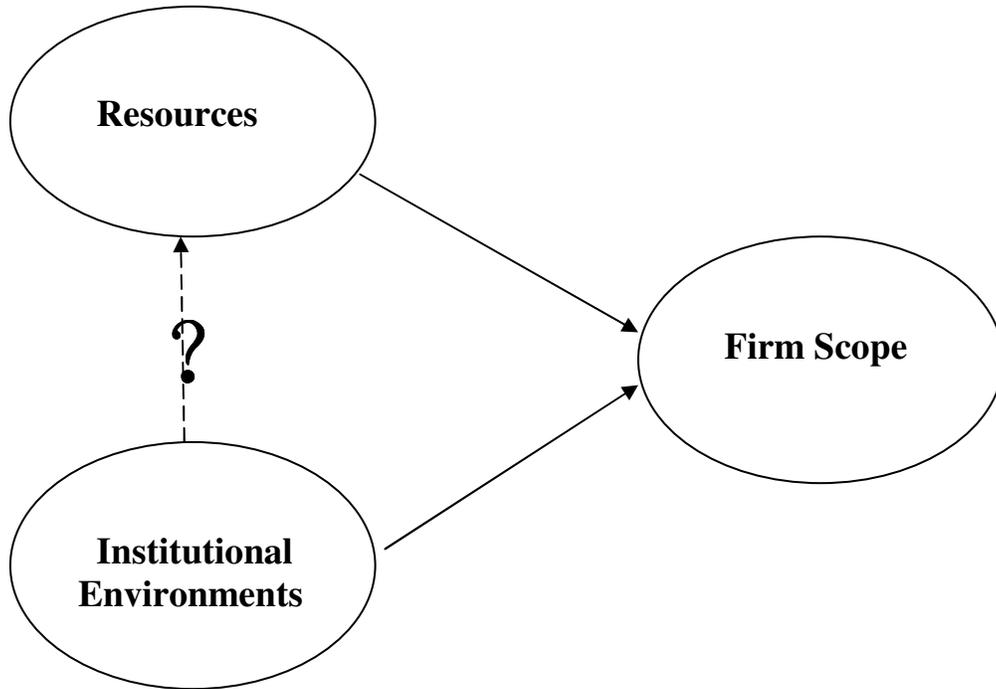
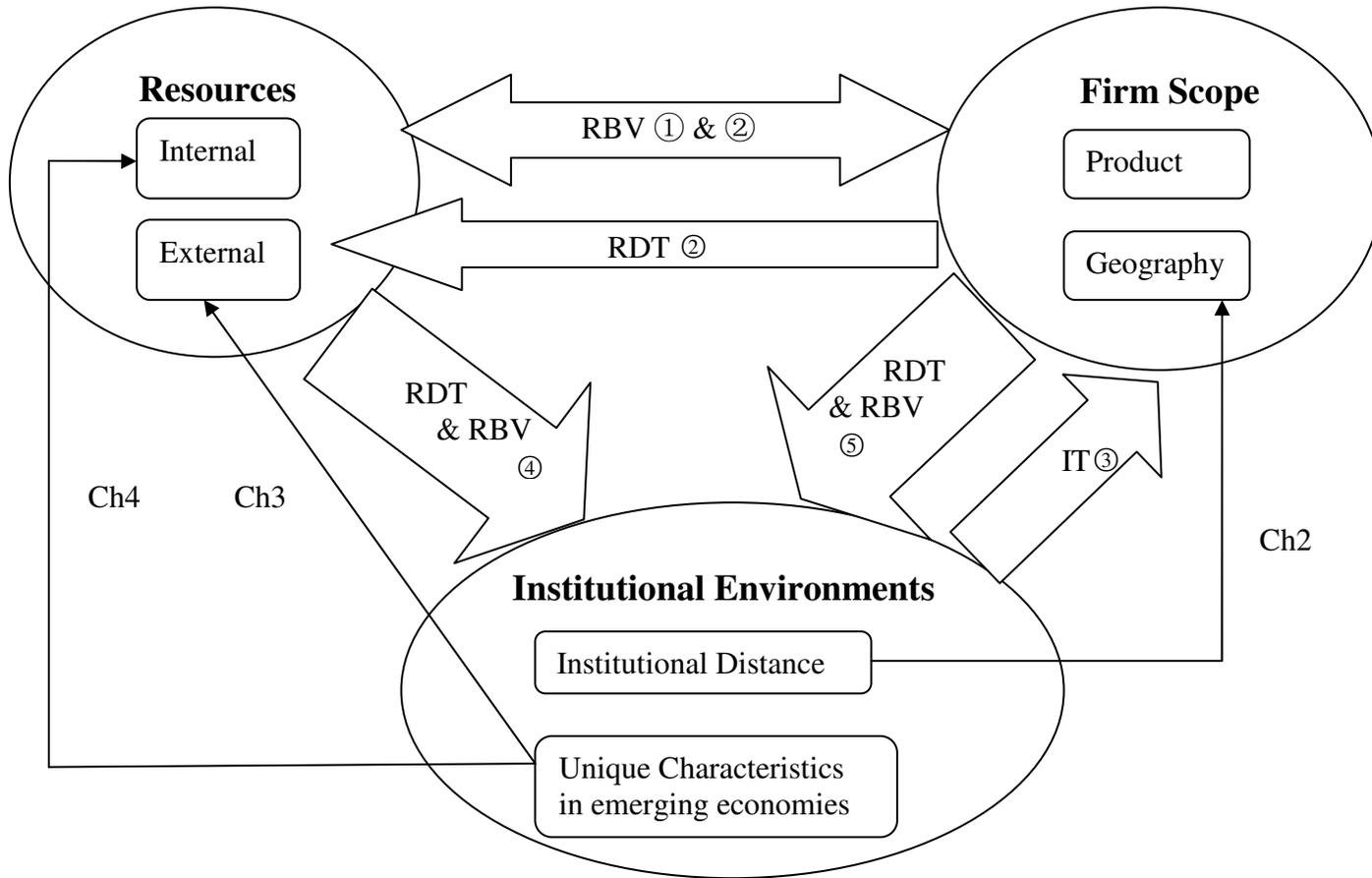
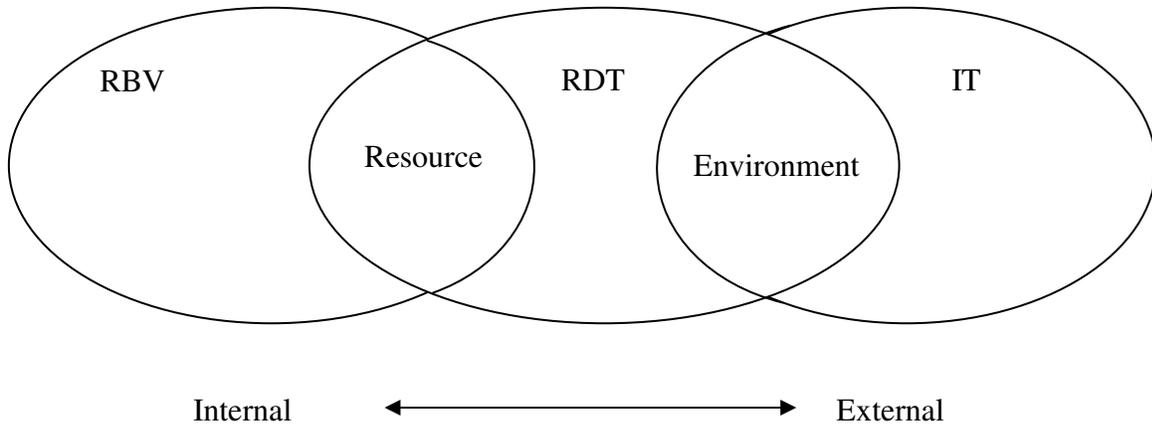


Figure 1-2 Resources, Institutional Environments and Firm Scope<sup>3</sup>



<sup>3</sup> RBV stands for Resource-Based View, RDT stands for Resource Dependence Theory, and IT stands for Institutional Theory.

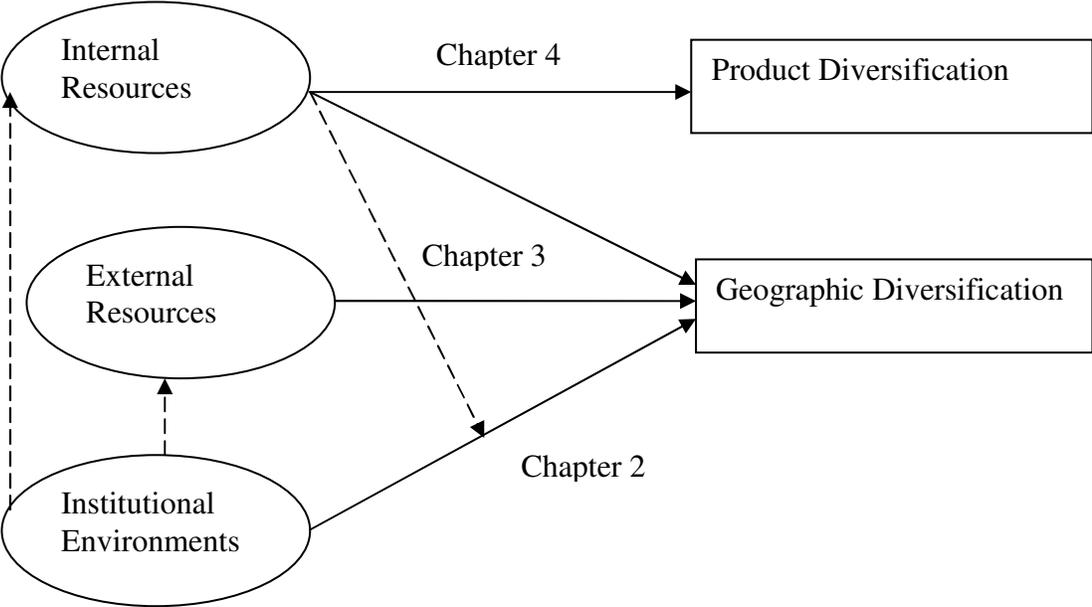
*Figure 1-3 RBV, RDT and IT<sup>4</sup>*



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<sup>4</sup> RBV stands for Resource-Based View, RDT stands for Resource Dependence Theory, and IT stands for Institutional Theory.

Figure 1-4 Dissertation Overview



## CHAPTER 2 AN INSTITUTIONAL APPROACH TO CROSS-NATIONAL DISTANCE<sup>5</sup>

### 2.1 Introduction

The field of international business has paid much attention to the impact of cross-national distance on the decision to enter specific countries, the sequence of market entry, and the choice of entry mode, among others. These research questions lie at the core of the field of international business, and researchers have for decades used cross-national distance as a main explanatory variable (for a review of the literature, see Werner, 2002). These fundamental decisions have been explored by scholars ever since the founder of the field, Stephen Hymer (1960), noted that a key factor shaping the a firm's internationalization was the so-called "liability of foreignness," which increases with the distance between home and host countries. The eclectic paradigm (Dunning, 1993) also calls the attention to cross-national distance, and distinctively proposed to look at ownership, location, and internalization factors from a multi-dimensional perspective. In this view, countries may be "distant" from each other not only in the geographic sense, but also in other dimensions. Economic, social, cultural or political differences make it harder for firms to operate across them.

In spite of decades of research, the field has not yet provided a comprehensive analysis of the fact that countries differ from one another on a number of dimensions. Table 2-1 summarizes the definition, dimensions, and consequences of cross-national distance as articulated in the four most influential articles on cross-national distance. From a conceptual point of view, international business scholars have tended to define

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<sup>5</sup> This chapter builds on a forthcoming JIBS paper coauthored with Heather Berry and Mauro Guillen. I add additional analyses using Chinese data.

distance in broad terms, but measured it rather narrowly. For instance, Johanson & Vahlne (1977:24) alluded to “differences in language, education, business practices, culture, and industrial development” as relevant dimensions. Similarly, Kogut & Singh (1988:413), referred generically to the “characteristics of a foreign market,” and proceeded to calculate dyadic distances between pairs of countries using Hofstede’s (1980) cultural constructs, namely, uncertainty avoidance, power distance, individualism, and masculinity. For their part, Barkema, Bell and Pennings (1996:153) mentioned “linguistic, institutional, cultural, and political factors,” but measured the construct in terms of cultural distance and cultural blocs of countries. Lastly, Hennart & Larimo (1998:517), who approached distance from a transaction-cost perspective, restricted their definition to “national cultural characteristics of the home and host countries,” measuring it using Hofstede’s data.

As noted in the last column of Table 2-1, international business scholars have argued that cross-national differences of a psychic or cultural nature increase uncertainty by preventing information or knowledge to flow between countries, thus increasing the cost of doing business across borders, i.e. the transaction costs associated with international business. Though conceptually recognizing the multi-dimensional nature of distance, most international business scholars have undertaken empirical work on cross-national distance effectively paying attention to one single dimension. And, as noted above, most researchers have used Hofstede’s (1980) data to empirically measure distance.

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Insert Table 2-1 about here  
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This paper proposes to conceptualize distance and its effects in terms of the differences between two objects. I approach cross-national distance from an institutional perspective so as to capture the rich diversity of ways in which countries differ, thus following recent institutional theorizing in the field of international business (Jackson & Deeg, 2008; Pajunen, 2008). I define distance in dyadic terms: two countries are distant from each other to the extent that they are institutionally different along a number of dimensions. I justify the choice of a comprehensive set of eight dimensions of distance by reference to established and widely used institutional theories of cross-national business, governance, and innovation systems (Henisz & Williamson, 1999; la Porta, Lopez-de-Silanes, Shleifer & Vishny, 1998; Nelson & Rosenberg, 1993; Whitley, 1992). Taken together, these theories propose eight dimensions of distance, namely, economic, financial, political, administrative, cultural, demographic, knowledge, and global connectedness. I use these theories and the massive body of empirical work they have inspired to select empirical indicators for each of these eight dimensions. Although not based on institutional differences, I also propose to include sheer geographic distance as a relevant dimension, thus bringing the total of distance dimensions to nine.

Defining and measuring cross-national distance along multiple dimensions is important because different types of distance can impact firm, managerial or individual decisions in different ways, depending on the dimension of distance under examination. For instance, while geographic distance may create higher barriers for managers contemplating entry, less economic distance may help to diminish the impact of geography because the demand for a firm's products across countries with more similar buying habits may offset the higher difficulties associated with larger geographic

distance. While political distance may dissuade firms from setting up a distribution subsidiary, it may encourage setting up a manufacturing subsidiary that produces products for the host country. Armed with a multi-dimensional definition and empirical operationalization of distance, I argue that we can better understand when and why different types of distance have either a positive or negative impact on managerial decisions, country trade patterns, or even political relationships across countries.

Given the multidimensional nature of distance, I propose to use the Mahalanobis method of calculating dyadic distances, which surmounts key limitations of previous research based on the Euclidean approach because it is scale-invariant and takes into consideration the variance-covariance matrix, a feature that facilitates approaching distance as a construct made of multiple, partially overlapping dimensions. The distance calculations are made freely available to managers and scholars in the hope that the multidimensional dataset can be used to test how different dimensions of distance affect decisions and outcomes at the individual, firm, and country levels of analysis. To illustrate the potential application of the multidimensional approach, I examine several choices of foreign entry by U.S. and Chinese companies. In the US setting, I explore how the different distance dimensions are likely to influence the initial and sequential entry decisions of firms, the choice of manufacturing versus distribution subsidiaries, the choice between high and low income countries in which to invest, and the choices of high versus low R&D intensive firms. Considering improved model fit, higher explained variance and the differential effects of the distance measures, the empirical illustrations demonstrate the importance of disaggregating the distance construct and the usefulness of the distance calculations. The tests using the Chinese sample further confirm the findings

in the U.S. sample and also show the different effects of distance dimensions in different settings. I conclude by suggesting several other research questions that may be amenable to a more multidimensional approach to cross-national distance.

## 2.2 Existing Approaches to Cross-National Distance

The most widely used approach to cross-national distance is based on Geert Hofstede's four measures of culture, made originally available in his 1980 book, Culture's Consequences: International Differences in Work-Related Values (for a review of its impact, see Kirkman, Lowe and Gibson, 2006). Hofstede's cultural distance has been used in various studies investigating different research questions, summarized in Table 2-2.

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Insert Table 2-2 about here  
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International business scholars found his approach appealing for two reasons. First, the emphasis on flows of information between the home and host countries lends itself to a conceptualization based on cultural and psychic differences, which raise the uncertainty and hence the costs of foreign expansion (Barkema et al., 1996; Hennart & Larimo, 1998; Johanson & Vahlne, 1977; Kogut & Singh, 1988). Second, Hofstede offered a set of cultural indicators for a large sample of countries. He collected the data through a questionnaire-based survey among managers of IBM subsidiaries around the world conducted between 1967 and 1973 (the firm is referred to as "Hermes" in the book). Hofstede performed a factor analysis of the survey responses and proposed power distance, uncertainty avoidance, individualism, and masculinity as the key distinguishing aspects of national culture. He then used a few selected questions in the survey to

measure each dimension. Originally, only forty countries were covered. In subsequent additions, the data were made available for a total of 53 countries, less than one third of the total number of countries in the world (Hofstede, 2001: 491-502).

While many management scholars have embraced Hofstede's cultural scores as the basis of measures of cross-national distance, criticisms of this approach abound, especially in the fields of international business (Guillén & Suárez, 2001; Shenkar, 2001) marketing (Ng, Lee & Soutar, 2007), and accounting (Baskerville, 2003). First, Hofstede reduced all cross-national differences to the dimension of culture, thus failing to capture the rich array of dimensions along which countries differ from one another (Ghemawat, 2001). Recent scholarship has pointed out that several of Hofstede's cultural variables have their roots in economic, language, religion, and legal factors (Tang & Koveos, 2008). Second, Hofstede assumed that cross-national distances do not change over time. This assumption has been undermined by recent sociological research, which demonstrates that cultural distance, let alone economic or political distance, can change over time quite rapidly (Inglehart & Baker, 2000; Shenkar, 2001; Webber, 1969). Third, when researchers use Hofstede's cultural measures to study the behavior of individual manager, they may infer an error in interpretation if they assume that individual members of a group have the average characteristics of the population at large. This type of error is called an ecological fallacy and results when one deduces conclusions about individuals based on aggregate or population-level data. Fourth and related to the third criticism, Hofstede assumed that the managers of a single corporation (i.e. IBM) are representative of the overall population in a given country (Lu, 2006; Smith, 1996). Moreover, it is possible that the cultural distance perceived by employees in a cross-

cultural organization like IBM is smaller than the actual cultural distance between the two countries due to interactions between employees of the same company (Lu, 2006). Because of these shortcomings, Hofstede's cultural distance scores are not widely used in other social sciences like sociology and anthropology (Baskerville, 2003), although they continue to be popular in international management research.

Given these issues, it should not be surprising that the empirical findings based on Hofstede's cultural scores can be ambiguous and contradictory. In Table 2-3, I summarize conflicting results that have been found by scholars in the international business, human resource and entrepreneurship literatures. For example, in the subfield of international strategy, researchers have reported different results regarding the effects of cultural distance on subsidiary performance or foreign entry mode. Padmanabhan and Cho (1996) found that larger cultural distance encourages full ownership, Brouthers and Brouthers (2001) concluded that larger cultural distance encourages joint ownership, and Erramilli (1996) found larger cultural distance to have no significant effect on majority versus minority ownership. In the entrepreneurship literature, different dimensions of cultural distance have been found to be associated with entrepreneurial orientation. For example, Mueller and Thomas (2001) found that lower uncertainty avoidance increased entrepreneurial orientation while Mitchell, Smith, Seawright and Morse (2000) found that power distance and individualism entrepreneurial behavior. And in human resource management, the influence of cultural distance on the similarity between the parent's and the subsidiary's HRM systems has also yielded different results depending on the study. For example, Gong (2003) found that larger cultural distance increases the proportion of

expats while Rosenzweig and Nohria (1994) examined how cultural distance can result in very different human resource management systems across parents and subsidiaries.

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Insert Table 2-3 about here  
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From both a macro and a micro perspective, studies using Hofstede's cultural dimensions have yielded not only conflicting results, but also evidence suggesting that additional dimensions of distance beyond cultural need to be incorporated if one is to understand how different aspects of distance affect decisions and outcomes at the individual, firm, and country levels. These studies show not only the limitations of using a distance variable that is based exclusively on a cultural dimension, but also the importance of articulating and exploring how different dimensions of distance can impact the research question under consideration. While cultural distance can impact entry mode choice, so too can geographic, economic or knowledge dimensions of distance. If a firm is trying to use a joint venture to access knowledge, this needs to be incorporated into the model before one can gauge the impact of cultural distance as a separate construct. Similarly, the use of expatriate managers can be affected not only by the cultural distance between countries, but also the economic and knowledge distance across countries. Expats can play a different role in countries with different levels of economic development, and the cost of expatriation can also be much lower in some countries than others. As I will explore in more detail below, the choice of country to enter is driven by a different dimension of cross-national distance depending on whether the foreign subsidiary is engaged in distribution or in manufacturing. Trade barriers and policies are likely to play very different roles depending on whether a firm is trying to sell products in

a local market that have been produced elsewhere or tap into lower costs of production to serve other markets. Similarly, the choices of firms with high and low R&D intensive products are likely to be impacted in different ways across countries with different demographic profiles or cultural values. Thus, the conceptual and empirical analysis will show that reducing cross-national differences to cultural distance is a generalization that obscures rather than illuminates.

Over the last few years, scholars have developed measures of cultural distance that represent a conceptual and empirical improvement over Hofstede's. One of them is Schwartz's (1992, 1994) cultural values framework, which has the advantages of deriving the values from theory, offering a more comprehensive set of dimensions, being based on two matched samples of more diverse and representative populations (students and teachers), and having collected the data more recently, from 1988 to 1992 (Ng et al., 2007). Some empirical studies have shown the validity of Schwartz's cultural values. For example, Drogendijk & Slangen (2006) found that Schwartz's framework is better than Hofstede's distance when it comes to explaining foreign entry mode choice by multinational enterprises.

Another alternative to Hofstede's cultural distance is the Global Leadership and Organizational Behavior Effectiveness (GLOBE) study, conducted during the late 1990s by a research team comprised of more than one hundred scholars from all over the world. GLOBE focuses on nine constructs, namely, performance orientation, future orientation, gender egalitarianism, assertiveness, institutional collectivism, in-group collectivism, power distance, humane orientation, and uncertainty avoidance (House et al., 2004: 16). In this sense, GLOBE is more comprehensive and recent than Hofstede's study, but it

suffers from the same problems of uni-dimensionality (i.e. only cultural aspects are considered), ecological fallacy, time-invariance, and representativeness mentioned above. Scholars studying leadership have used the GLOBE data to measure cultural distance. For example, Hytter (2007) adopted the GLOBE framework and data to study leader retention strategies in France and Sweden. Hofstede (2006) compared the similarities and differences between GLOBE and his approach. The dimensions in GLOBE are derived from Hofstede, though for conceptual reasons they were expanded to nine dimensions. Hofstede re-factor analyzed the country scores and found five meta-factors to emerge. The strongest was highly correlated with GNP per capita and the next with Hofstede's power distance. Three factors significantly correlated with Hofstede's uncertainty avoidance, individualism and long-term orientation. Hofstede's conclusion from this analysis is that in spite of a very different approach, the GLOBE study still reflects the structure of his original model.

Yet another recent line of research has focused on extending the concept of psychic distance. Dow and Karunaratna (2006) and Brewer (2007) have argued that a broader set of psychic distance scales is needed to understand both entry mode choices and psychic distance between countries more generally. Dow and Karanuaratna (2006) propose that language, religion, development level, education and political systems need to be examined when considering firm entry mode choices. Brewer (2007) has also expanded the measurement of psychic distance and focused on trade, political and social ties across nations. I share these authors' concerns about the way psychic distance has typically been measured.

Perhaps the most comprehensive attempt to broaden the study of cross-national distance is Ghemawat's (2001) four-dimensional approach: cultural, administrative, geographic and economic distance (CAGE). Beyond the specific dimensions, this paper changed the way in which strategy and international business researchers see the issue of cross-national distance by focusing the attention on its multidimensional nature. Still, Ghemawat's approach does not go far enough in recognizing the complexities of distance given that it does not take into consideration important dimensions I will discuss below, including variables related to finance, politics, demography, knowledge, and global connectedness. In addition, Ghemawat does not offer guidance as to the specific empirical indicators to be used to capture each of the four dimensions that he discusses.

In sum, previous scholarship on cross-national distance has tended to be one-dimensional and time-invariant in nature. It has also based its measures on data that are not entirely representative of the rich and diverse characteristics of countries. At most, less than one third of the total number of countries in the world is included. Moreover, the method of calculation used does not generally take into consideration differences in measurement scales or correlations between the underlying variables. As I argue below, this limited characterization of cross-national distance is not sufficient to capture the manifold ways in which countries differ from one another.

### 2.3 A New Approach to Cross-National Distance

The key problem with previous research on cross-national distance and its impact is the lack of a theoretical framework that accommodates the different dimensions along which countries differ from one another. I provide such a framework by grounding the analysis and choice of distance dimensions and empirical indicators in institutional

theories of cross-national differences. Following recent institutional theorizing in the field of international business (Jackson & Deeg, 2008; Pajunen, 2008), I base the approach on three conceptualizations of cross-national institutions that have attracted enormous attention and induced a large empirical literature. The first theoretical perspective on cross-national distance was pioneered by management scholar Richard Whitley (1992) and is focused on the concept of “national business systems” (Whitley, 1992). The second was formulated by management scholar Witold Henisz and economist Oliver Williamson (1999), and by economists Rafael La Porta, Florencio López-de-Silanes, Andrei Shleifer, and Robert Vishny (1998). It emphasizes the implications of differences in national systems of governance. The third was proposed by economist Richard Nelson and economic historian Nathan Rosenberg (1993). Each of these conceptualizations of cross-national institutional differences has encouraged hundreds of empirical studies. Let us analyze theoretical tradition to cross-national institutions in turn, identifying the different dimension of distance discussed in them.

National business systems are “particular arrangements of hierarchy-market relations becoming institutionalized and relatively successful in particular contexts” (Whitley, 1992:10). Countries differ to varying degrees in terms of the characteristics of their business systems, specifically their economic, financial, and administrative practices. Whitley (1992: 231) argued that such differences originate in demographic, geographic, cultural, and political institutions, which make some countries more different, or distant, than others from a given focal country, a characteristic that affects managerial decisions.

A second important thrust in the literature on cross-national institutions deals with governance. National governance systems refer to the “set of incentives, safeguards, and dispute-resolution processes used to order the activities of various corporate stakeholders” such as owners (i.e. shareholders), managers, workers, creditors, suppliers and customers (Kester, 1996:109). They originate in administrative (including legal) and political institutions that historically make certain stakeholders more powerful in certain countries than others (Glendon, Gordon & Osakwe, 1994; Henisz & Williamson, 1999; Henisz, 2000; la Porta et al., 1998). While this theoretical tradition emphasizes a smaller set of institutional dimensions than the theory of business systems, the underlying logic is also one of institutional variation that produces longer distances between countries. Governance dimensions are also relevant to managerial decisions because firms need to establish relationships with stakeholders in order to operate in a given country.

Finally, national innovation systems refer to configurations of institutions that foster the development of technology and innovation (Nelson & Rosenberg, 1993). A central tenet documented by this literature is that countries differ in their ability to produce knowledge and in the extent to which they can leverage that knowledge by being connected to other countries (Furman, Porter & Stern, 2002; Porter, 1990). Once again, while the theory of national innovation systems focuses the attention on another set of dimensions of cross-national variation, the argument is that such differences generate varying distances between pairs of countries.

Following these institutional theories of national business, governance, and innovation systems, I argue that distance between countries is eminently multi-dimensional, including the eight dimensions discussed by institutional approaches:

economic (Whitley, 1992), financial (la Porta et al., 1998; Whitley, 1992), political (Henisz, 2000; Whitley, 1992), administrative (Henisz & Williamson, 1999; Henisz, 2000; la Porta et al., 1998; Whitley, 1992), cultural (Hofstede, 1980; Inglehart, 2004; Whitley, 1992), demographic (Whitley, 1992), knowledge (Furman et al., 2002; Nelson & Rosenberg, 1993), and connectedness (Nelson & Rosenberg, 1993). These eight dimensions of distance represent specific ways in which countries differ from one another. In addition to them, I also consider sheer geographic distance as a ninth dimension.

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Insert Tables 2-4, 2-5 and 2-6 about here  
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Tables 2-4, 2-5 and 2-6 provide summary information on each of the nine dimensions, including definitions, theoretical sources, empirical examples from the international business literature, data sources, and country and time coverage. I start by considering economic distance (Whitley, 1992). The international business literature has tended to focus on three specific indicators of economic differences across countries (for a review, see Caves, 1996). Countries differ in terms of their income level (GDP per capita), prevailing inflation rates, and intensity of trade with the rest of the world (exports plus imports as a proportion of GDP). These indicators are important because they are correlated with consumer purchasing power and preferences, macroeconomic stability, and the openness of the economy to external influences. These factors have been found to influence, for instance, foreign market entry mode, firm survival and performance, among other variables (for a review of the evidence, see Caves, 1996). Numerous studies in international business have examined the impact of economic distance on the choice of

foreign market and of entry mode (Iyer, 1997; Yeung, 1997; Zaheer & Zaheer, 1997). Researchers have also developed ad hoc measures of economic distance, like Campa and Guillén's (1999) competitor development index, based on the income per capita of the country in which the focal firm's most important competitors are located.

The institutional literature on cross-national differences also emphasizes the financial dimension. Countries at varying levels of economic development have evolved over time quite different financial systems, with manifold implications for the way in which companies and their competitors fund their operations (la Porta et al., 1998; Whitley, 1992). Scholars of financial differences across countries have mainly considered indicators related to the equity and credit markets. I included in the analysis the market capitalization of listed companies (as a percent of GDP), the number of listed companies, and the amount of private credit available (as a percent of GDP). These indicators have been proposed and used by the literature on cross-national financial systems (Berglof, 1988; la Porta et al., 1998; Steinherr & Huvneers, 1994). Researchers in the field of international businesses have used this approach to examine corporate governance, foreign investment, and corporate acquisitions (Capron & Guillen, 2009; Rueda-Sabater, 2000).

In addition to different levels of economic and financial market development, the institutional literature has also underscored that countries differ in terms of the nature of their political systems (Henisz & Williamson, 1999; Henisz, 2000; Whitley, 1992). Scholars have looked at political differences among countries mostly in dichotomous terms, e.g. emphasizing the differences between democratic and autocratic regimes. My approach follows the extant literature in characterizing countries along continuous

political dimensions such as institutional checks and balances (Demirbag, Glaister & Tatoglu, 2007; Dow & Karunaratna, 2006; Henisz, 2000), democratic character, the size of the state relative to the economy, and external trade associations (Brewer, 2007; Hirschberg, Sheldon & Dayton, 1994). These variables have been found to correlate with the choice of foreign markets to enter, the choice of entry mode, and foreign direct investment flows (Delios & Henisz, 2000, 2003; Garcia-Canal & Guillen, 2008; Gastanaga, Nugent & Pashamova, 1998; Henisz & Delios, 2001).

The next key dimension emphasized in the institutional literature, administrative distance, refers to differences in bureaucratic patterns owing to colonial ties, language, religion, and the legal system (Ghemawat, 2001; Henisz, 2000; la Porta et al., 1998; Whitley, 1992). Researchers have measured administrative distance by determining if countries share a common language (Wolf & Weinschrott, 1973) or a common legal system (la Porta et al., 1998), and whether they have or have had a colonial relationship (Brocker & Rohweder, 1990). Research on linguistic distance, defined as how ‘distant’ from English a particular language is, in the sense of how difficult it is for an English speaker to learn it (Hutchinson, 2005), has examined the ability of an immigrant to realize the potential benefits from networking and to effectively use knowledge of her home country tastes and markets to promote trade and commerce between their host country and their country of origin (Chiswick & Miller, 1998). I included colonizer-colonized links as well as common language, legal and religious institutions as part of this measure. While one could argue that administrative distance is related to both cultural and political distance, I believe that it is distinct because it goes beyond national political systems to include both formal and informal institutional arrangements that

transcend the purely political nature of the nation-state. Research has found that these measures correlate with the occurrence of cross-border mergers and acquisitions, and with the choice of foreign markets to enter (Guler & Guillen, 2010; Lubatkin, Calori, Very & Veiga, 1998).

The next dimension noted in Table 2-4 is cultural distance. As noted above, Hofstede (1980) and many other researchers have long demonstrated the importance of differences in cultural values and norms across countries, and their impact on foreign market entry, entry mode choice, and other important research questions (Werner, 2002). The institutional theory of business systems also highlights culture as a relevant dimension (Whitley, 1992), as do strategy scholars (Ghemawat, 2001). The international business literature includes a number of influential studies of the impact of cultural distance on the foreign expansion of the firm (Barkema et al., 1996; Hennart & Larimo, 1998; Johanson & Vahlne, 1977; Kogut & Singh, 1988). Recent studies have considered additional cultural aspects across countries (Brewer, 2007; Dow & Karunaratna, 2006; House et al., 2004; Schwartz, 1992, 1994). To create the measure of cultural distance I used public opinion data from four waves of the World Values Survey (WVS) (Inglehart, 2004). Given the popularity of Hofstede's dimensions of cultural distance, I constructed the measures to mimic Hofstede's uncertainty avoidance, power distance, individualism, and masculinity (see Appendix 1). Scholars using the WVS have found that cultural values evolve rather quickly over time (Inglehart & Baker, 2000). The WVS allows us to capture such changes because it is conducted around the world every three or four years. I interpolated the data for years in between waves of the survey.

Institutional theory identifies demography as a key dimension of cross-national difference as well (Whitley, 1992). Countries differ in terms of the size, growth, age structure, and qualities of their populations. These dimensions have direct implications for market attractiveness and growth potential. I focused the analysis on differences in life expectancy rates, birth rates, and the age structure of the population, which attest to fundamental characteristics of the population of countries that may affect consumer behavior and other market-related processes of interest to firms. I interpolate the demographic distance because birth and life expectancy rates are available for most countries only every few years, especially when a population census is conducted (UN, 2006). Researchers in the international business area have used demographic variables to study patterns of international corporate expansion and share prices (Caves, 1996; Huynh, Mallik & Hettihewa, 2006).

The institutional literature also proposes that countries differ in terms of their capacity to create knowledge and innovate, with important implications for their role in the global economy (Furman et al., 2002; Nelson & Rosenberg, 1993). Proximity to knowledge has been argued to influence the location choice of multinational firms (Anand & Kogut, 1997; Berry, 2006; Guler & Guillen, 2010; Nachum, Zaheer & Gross, 2008; Shaver & Flyer, 2000) because of the potential for spillovers. Talent, innovation and creativity are not distributed evenly across locations (Florida, 2002) and this affects the distance between countries. Following the literature on national innovation systems, I measured knowledge distance using the number of patents and of scientific articles per capita (Furman et al., 2002; Nelson & Rosenberg, 1993).

The last dimension of cross-national distance identified in the institutional literature focuses on the connectedness of a country with the rest of the world. Global connectedness captures the ability of resident individuals and companies to interact with other parts of the world, obtain information, and diffuse their own activities (Oxley & Yeung, 2001). Following the literature in this area (for a review, see Guillén & Suárez, 2005), I captured this dimension using measures of international tourism expenditures as a percent of GDP, international tourism receipts as a percent of GDP, and Internet users as a percent of the population.

In addition to the eight dimensions of distance based on institutional differences across countries, I also included in the dataset and analyses geographic distance because it has long been recognized as having an impact on trade, foreign investment, and other types of economic activity taking place between countries (Anderson, 1979; Deardorff, 1998). Geographic distance increases the costs of transportation and communication. Scholars that use gravity models in the international business and international trade literatures have long recognized the important role of geographic distance (Fратиanni & Oh, 2009; Hamilton & Winters, 1992; Wolf & Weinschrott, 1973). Different methods have been used to examine geographic distance between pairs of countries. For example, Chen (2004) calculated geographic distance according to the latitudes and longitudes of the main city in each region or country, and found that geographic distance decreased international trade between pairs of countries. Krishna (2003) used the direct line distance to measure geographic distance. I calculate geographic distance using the great circle method.<sup>6</sup> Gravity models in the international economics literature have considered

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<sup>6</sup> Because the great circle distance is already a dyadic distance, I do not convert it into Mahalanobis distance.

how geographical distance between two countries impacts bilateral trade flows. In these models, trade between two countries is directly related to size (i.e. GDP) and inversely related to geographic distance (Anderson, 1979; Deadorff, 1998).

An important feature of the approach is that I compute distance separately for each dimension based on the empirical indicators mentioned above, thus allowing researchers to utilize the one that theoretically fits their research question best. For example, although Kogut and Singh (1988) considered how Hofstede's cultural distance measures may impact a firm's choice among joint ventures, acquisitions and greenfield entry modes, I believe that there are several other dimensions of distance that can affect those choices (see Lopez-Duarte and García-Canal, 2002). For joint venture decisions in particular, the administrative distance provides information about common language and legal systems. In more "distant" countries across the administrative measure, firms may be less willing to enter into joint ventures. Furthermore, economic distance may impact the decision of firms to enter particular countries before an entry mode decision becomes relevant. By only including culture, it is likely that some of the variance that may come from other omitted distance dimensions is included in the measure of cultural distance. Similarly, the longevity of foreign ventures could be influenced not only by cultural distance (Barkema et al., 1996), but also by economic and geographic distance between the firm's home country and the host environment of the foreign venture. By including only one dimension of distance in the analysis, it is difficult to determine whether the impact of cultural distance would be significant above and beyond other relevant aspects of distance. While I agree that cultural distance is an important measure to consider when examining multiple research issues, it is likely that culture is one of many distance

dimensions that influence managerial decisions regarding entry, entry mode choice, performance, consumer choice, and knowledge transfer, for example.

## 2.4 Calculation Method

There is no agreement in the literature as to what is the best way to measure the distance between two points or objects. There are, however, five desirable properties that distance measures ought to exhibit, including symmetry, nonnegativity, identification, definiteness, and triangle inequality (see Table 2-7). Perhaps the most widely used measure is the Euclidean method, which is defined as the geometrically shortest possible distance between two points. The traditional Euclidean distance measure meets all five of the desirable characteristics listed above (see Appendix 2). Another commonly used measure is the Euclidean squared distance, which meets all of the criteria except triangle inequality. A measure that displays all five properties is referred to as a metric.

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Insert Table 2-7 about here  
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A key problem with the Euclidean method for calculating distance is that, while it is a metric, it does not take into consideration the correlation between the variable indicators used to computing it. When two or more variables are highly correlated with each other, they are capturing the same characteristic. Therefore, a distance measure that ignores correlation would be giving more importance or weight to the characteristic measured by the correlated variables. A second problem with Euclidean distance is that it does not take into account the variance of the variables. A third, related, shortcoming is that it is sensitive to the scale of measurement.

An alternative method, the one I favor in this paper given the multi-dimensional definition, is the Mahalanobis distance, originally formulated in 1936 (see Appendix 2). Scholars in chemistry (De Maesschalck, Jouan-Rimbaud & Massart, 2000), climatology (Mimmack, Mason & Galpin, 2001), and other fields use it when it comes to solving problems related to clustering, multivariate calibration, pattern recognition, outlier detection, and process control (Cohen, 1969; Rouseeuw & Leroy, 2003; Seber, 1984). The Mahalanobis distance meets the five desirable criteria listed above, and it also surmounts the three key problems associated with the Euclidean distance because it takes into account the information contained in the variance-covariance matrix and is scale-invariant. Scholars familiar with principal-component analysis would realize that Mahalanobis distance is equivalent to the Euclidean distance calculated with the standardized values of the principal components (De Maesschalck et al., 2000). The main disadvantages of the Mahalanobis method when compared to the Euclidean is that none of the variables can be perfectly collinear, and that there have to be more points than variables in the data so that one can calculate the inverse of the variance-covariance matrix (see Table 2-7).

When measuring distances between pairs of countries, the Mahalanobis distance is a better alternative than the Euclidean method, for several reasons. First, the variables that characterize countries tend to be very highly correlated with one another. For instance, the various dimensions of culture (e.g. power distance, individualism, and so on) or economic development (e.g. GDP per capita, inflation, etc.) are highly correlated with each other. Second, the variance of the variables differs massively both cross-sectionally and over time. For example, while there has been very little cross-national

convergence in terms of GDP per capita over the last few decades (Pritchett, 1997), infant mortality rates have dropped quite rapidly across the world (UN, 2006). And third, variables that characterize countries are typically measured on different scales. For instance, GDP per capita and inflation are each measured using different units. The Euclidean approach does not allow for multiple scales. Because I propose multi-dimensional distance measures, the higher correlations, the unequal variances and the varying scales across the components for each of the distance dimensions renders the Mahalanobis approach superior to the Euclidean one.

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Insert Table 2-8 about here  
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Table 2-8 shows the correlations between pairs of the nine dimensions of distance, each calculated with the greatest number of observations available. The coefficients are generally low, indicating that distances between pairs of countries can be very different depending on the dimension chosen. The correlation between the Euclidean distance measure based on Hofstede's scores and the culture distance measure based on the world values surveys is quite low. This correlation may be affected by the fact that the new measure varies over time while the one based on Hofstede's scores is the same for each year in the sample. Moreover, the source of the data, the World Values Survey, is representative of the adult population of the country, while the sample used by Hofstede, based on the employees of one large multinational, was not. As shown in the empirical illustration below, the correlation between the cultural distance variable and Hofstede's measures is much higher when I restrict the time period.

In sum, the theoretical and methodological approach to cross-cultural distance offers many improvements over previous approaches. First, it is theoretically grounded on very influential conceptualizations of cross-national differences and distance (Henisz, 2000; la Porta et al., 1998; Nelson & Rosenberg, 1993; Whitley, 1992) and builds on recent institutional theorizing in international business (Jackson & Deeg, 2008; Pajunen, 2008). Second, it takes into consideration each of the dimensions proposed in the institutional literature as being relevant. Third, it covers more than twice as many countries as in previously available datasets. Fourth, it offers the indicators for each of the dimensions of distance over time. And fifth, it is calculated using the Mahalanobis method, which takes into consideration the variance-covariance matrix and is scale-invariant.

## 2.5 Empirical Illustrations

To illustrate the value of the multi-dimensional approach to cross-national distance, I conduct empirical illustrations in two different settings. First, I examine the choice of foreign market entry by U.S. companies in four different contexts. The purpose of this illustration is to show how different dimensions of distances have different impacts under different contexts. Second, I examine the impact of distance measures in another empirical setting: China, to confirm the findings in the U.S. sample and to show that different distance dimensions have different impacts for firms from different countries.

### 2.5.1 *US firms*

I examine four different research questions using the U.S. sample. The first illustrative research question is to assess the extent to which prior international

experience may lessen the impact of distance between pairs of countries on subsequent entry decisions. I consider foreign entry by firms with and without prior experience in a host country. In the second example, I consider how distance dimensions differentially affect firm choices to set up manufacturing and distribution subsidiaries. In the third example, I consider how the new distance dimensions impact the choice to enter high or low income host countries. And finally, in the fourth example, I consider how distance dimensions affect the decisions of firms pursuing different product market strategies. As stated above, I would expect the distance measures to exert different effects on firm decisions depending on the research question under examination. I offer these four different foreign expansion choices by firms to illustrate how the disaggregated distance dimensions differentially impact these four foreign expansion choices by firms.

Across the empirical examples, I use the same random sample of 871 U.S. publicly-traded manufacturing firms from 1993 to 2005. This sample is representative of all firms that report data to Compustat in terms of mean sales and assets. The starting point for the time period was determined by the availability of electronic data from the Directory of Corporate Affiliates (the source for foreign subsidiary entry information). I searched the Directory of Corporate Affiliates for all matching information for the sample of firms. Of the total 871 firms, 412 were found to have foreign subsidiaries.

The unit of analysis is the firm-country-year. I considered firms to be at risk of entering a country if any other U.S. firm in the sample had invested in that country by the end of 2005. The 412 firms invested in 128 foreign countries. After matching the U.S. panel of firms with the distance measures described above, I ended up with a sample size of 265,691 firm-country-year observations. It is important to note that the final sample

size is constrained by the number of countries included in the World Values Survey, the source of data for the cultural distance measure. This final set reflects risk of entry into 41 countries.

Across the models, the dependent variable, foreign market entry, is dichotomous. The predictor variables of interest include the economic, financial, political, administrative, cultural, demographic, knowledge, and global connectedness distance dimensions described above. For the purposes of illustration, I included in the regression models as many distance dimensions as possible while ensuring that the correlations across these measures would not cause multicollinearity problems. In the sample for analysis, economic distance is correlated with financial and demographic distance and political distance is correlated with geographic distance (see Tables 2-8 and 2-9). Therefore, I excluded the economic and political distances from the final models.

I also included several firm-level control variables in each regression: firm size, measured as the total sales of the parent firm; and R&D expenditures over assets. I measured firm host country experience with the cumulative number of investments made by the parent firm in a particular country during previous years. All control variables are lagged by one year.

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Insert Table 2-9 about here  
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I also included year dummies and industry dummies to control for potential year and industry heterogeneity. I estimated the models using logistic regression with robust standard errors. I clustered by parent firm in all models reported in Table 2-10 below. Table 2-9 shows the descriptive statistics and correlations for all of the distance and

control variables. I excluded global connectedness from the analysis because its limited availability over time reduces the sample size by about one third.

Table 2-10 presents the regression results. Model 1 is the baseline model that includes only parent firm controls, industry dummies and year dummies. Model 2 includes parent firm controls and the Hofstede Euclidean distance measure, which has a negative and significant impact on firm entry decisions, consistent with Kogut and Singh's (1988) classic findings. This finding suggests that U.S. firms are less likely to invest in countries that are more culturally distant from their home country. In Model 3 I replace Hofstede's Euclidean distance with the Hofstede Mahalanobis distance measure, which behaves in a similar way. In Model 4, I use the time-varying cultural distance measure based on the WVS data, which also negatively and significantly influences firm entry decisions. In Model 5, I include several of the distance measures at once. As can be seen in this column, each of the distance variables negatively and significantly influences firm entry decisions when considering all entries by all firms.

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Insert Table 2-10 about here  
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In Models 6 through 21 of Table 2-10, I show how both Hofstede's cultural distance measure and the cross-national distance dimensions impact the choice of foreign market entry by U.S. companies in four different contexts. Through these results, I explore how the inclusion of a broader set of distance dimensions can increase our understanding of the influence of cross-national distance on firm foreign entry decisions. Models 6 through 9 present evidence pertaining to the first illustrative research question. I predicted that the distance dimensions may have less impact on subsequent foreign

entry by firms. First, I show how Hofstede's cultural distance impacts firms with and without host country experience. In Models 6 and 8, we can see that Hofstede significantly negatively influences firm foreign entry decisions for firms with and without experiences in host country markets. In contrast, when we consider the disaggregated measures of cross-national distance (in Models 7 and 9), we can see different impacts across the disaggregated dimensions of distance. For firms with prior host country experience, the cultural, demographic, knowledge and geographic distance dimensions do not significantly affect subsequent entry decisions, while these dimensions of distance are significant in the case of firms without such experience. To assess the validity and usefulness of the new approach, I consider three comparisons. First, I used Wald tests to examine for significantly different across the coefficients for the subgroups. The coefficients for financial distance (chi-squared=12.31,  $p<.01$ ), knowledge distance (chi-squared=9.45,  $p<.01$ ), administrative distance (chi-squared=3.93,  $p<.05$ ) and geographic distance (chi-squared=6.02,  $p<.05$ ) are significantly different across model 7 and model 9. Then, given concerns about comparing coefficients directly in non-linear logit models (Allison, 1999; Hoetker, 2007), I consider improvements in fit across the models, considering both the improvement in r-square values and log-likelihood improvements across the models. In models that incorporate Hofstede's cultural distance versus the new dimensions of distance for firms without host country experience (Models 8 and 9 respectively), there is an improvement in r-square from .28 to .32. In addition, there is a significant improvement in the log-likelihood ratio from Model 8 to Model 9. These three comparisons suggest that as firms accumulate experience in host countries, the new measures of distance between the home and host countries have varying degrees of

constraining influences on managerial decision making. Because managers can learn about different dimensions of cross-national distance as they operate in host countries, subsequent expansion into that country is influenced by a different set of factors than the initial entry choice. Taken together, these results and comparisons across the models in Table 2-10 suggest that when I incorporate the multi-dimensional measures of cross-national distance, I can consider how several different aspects of distance influence managerial decisions to enter foreign countries.

In Models 10 through 13 of Table 2-10, I show the results for the second illustrative example. Here, I consider how the distance dimensions can differentially impact the choice of manufacturing versus distribution subsidiaries. In Models 10 and 12, we can see that Hofstede's cultural distance measure significantly negatively influences firm foreign entry decisions for both manufacturing and distribution subsidiaries. In contrast, when we consider the disaggregated measures of cross-national distance, we again can see differential impacts across our disaggregated dimensions of distance on distribution and manufacturing subsidiaries. In Models 11 and 13, the demographic and political distance measures behave differently for manufacturing versus distribution choices by firms. Political distance has the opposite effect across the manufacturing and distribution choices by firms while demographic distance is only significant for distribution subsidiary choices. Further, though they have the same sign and significance, the cultural and geographic distance dimensions have a significantly larger impact in one model than the other (cultural distance has a larger negative impact on distribution than manufacturing subsidiaries while geographic distance has a larger negative impact on manufacturing than distribution subsidiaries). There is no significant

difference across the Hofstede cultural distance measure in Models 10 and 12. Using Wald tests, the coefficients demographic distance (chi-squared=4.19,  $p<.05$ ), political distance (chi-squared=3.86,  $p<.05$ ) and geographic distance (chi-squared=4.52,  $p<.05$ ) are statistically significantly different across the manufacturing and distribution subgroups in Models 11 and 13. Comparing the r-square values across these models shows an increase from .28 to .32 in the manufacturing decisions of firms considering only Hofstede's measure (Model 10) versus our multi-dimensional distance measures (Model 12) and an increase from .28 to .31 in the distribution subsidiary decisions of firms considering only Hofstede's measure (Model 11) versus our multi-dimensional distance measures (Model 13). In addition, there is a significant improvement in the log-likelihood from model 10 to model 12 and from model 11 to model 13. Overall, these results show how the new distance dimensions can differentially impact firm choices for producing when compared to selling firm products. For example, the results suggest that the greater the political distance between the host and home country of a firm, the less likely a firm is to set up a manufacturing subsidiary and the more likely a firm is to set up a distribution subsidiary. By only including Hofstede's measure of cultural distance (in Models 10 and 12), we cannot capture how managers respond to several difference dimensions of distance and the more nuanced distance results revealed in Models 11 and 13.

In Models 14 through 17 in Table 2-10, I consider how distance impacts the choice of high and low income country locations by firms. In Models 14 and 16, Hofstede's cultural distance measure significantly negatively influences firm entry decision for both high and low income countries. In contrast, the disaggregated measures

of cross-national distance differentially impact firm entry decisions across high and low income countries. Models 15 and 17 show that cultural, administrative and demographic distances positively and significantly influence firm decisions to enter low income countries while these same distance dimensions negatively influences firm decisions to enter high income countries. Wald tests show that the coefficients for cultural distance (chi-squared=4.01,  $p < .05$ ) and administrative distance (chi-squared=5.07,  $p < .01$ ) are significantly different from each other. Comparing the r-square values across these models shows an increase from .33 to .39 in the low income country choices of firms considering only Hofstede's measure (Model 14) versus the multi-dimensional distance measures (Model 15) and an increase from .31 to .35 in the high income country choices of firms considering only Hofstede's measure (Model 16) versus the multi-dimensional distance measures (Model 17). In addition, there is a significant improvement in the log-likelihood of model 15 over model 14 and of model 17 over Model 16.

Finally, in the fourth example, I consider how distance dimensions affect the decisions of firms pursuing different product market strategies. In Models 18 through 21, I distinguish between firms with high and low R&D intensities. In Models 18 and 20, Hofstede's cultural distance measure continues to negatively and significantly influence both high and low R&D intensive firm decisions to enter foreign markets. However, when I include the multi-dimension distance measures in models 19 and 21, we see that demographic distance is not significant for low R&D intensive firms though it is for high R&D intensive firms. Wald tests reveal that the coefficients for demographic distance are significantly different (chi-squared=7.02,  $p < .01$ ). Though some of the other distance coefficients are negative and significant in both Models 19 and 21, Wald tests reveal

significant differences across these negative and significant dimensions. For example, though the WVS cultural distance measure is negative and significant across both subsamples, there is a significant difference across the coefficients for this dimension (chi-squared=8.10,  $p < .01$ ). Comparing the r-square values across these models shows an increase from .25 to .30 for firms with low R&D intensity considering only Hofstede's measure (model 18) versus the multi-dimensional distance measures (Model 19) and an increase from .43 to .47 for firms with high R&D intensity considering only Hofstede's measure (Model 20) versus the multi-dimensional distance measures (Model 21). In addition, there is a significant improvement in the log-likelihood of Model 19 over Model 18 and Model 21 over Model 20. While both the Hofstede distance dimension and the WVS cultural distance measures suggest that cultural distance has a significant negative impact on the foreign expansion decisions of firms with high and low R&D intensive products, the distance dimension results show that demographic distance negatively influences high R&D intensive firm decisions to enter foreign countries though it does not significantly influence low R&D intensive firm decisions.

One could argue that I need to concern about unobserved host country affects in the empirical analysis. However, I believe that inserting country dummies forces the distance measures to make a contribution to explanatory power in terms of longitudinal changes as opposed to cross-sectional levels. This is not what I am trying to show in the empirical example. If I used country dummies, that would effectively bundle all cross-sectional variation, thus undermining the goal of the paper, which is precisely to accomplish the opposite, i.e. unpack the dimensions of distance, both cross-sectionally and longitudinally.

These four empirical illustrations show statistically significant differences across several of the distance dimensions. Some of the distance dimensions positively and significantly impact firm foreign entry choices while others negatively and significantly influence these choices. By exploring different levels of firm foreign experience, business functions, location choices and product market strategies, the empirical illustrations show that the distance dimensions matter in different ways to firms making different firm expansion choices. These results demonstrate the importance of disaggregating the distance construct into its different dimensions because they show statistically significant differences across the coefficients for the WVS cultural distance, demographic distance, knowledge distance, administrative distance, financial distance, geographic distance and political distance dimensions. In addition, models with the distance dimensions represent an improvement over models that incorporate Hofstede's distance measures considering the explained variance and in improvements in model fit. Instead of exploring whether distance matters to firm foreign expansion decisions by using an aggregate measure of distance, the results that use multi-dimensional measures of cross-national distance, consider how and why disaggregated dimensions of distance that derive from different country business, governance and innovation systems can differentially impact firm foreign expansion decisions.

### *2.5.2 Chinese firms*

I then explore the effects of national distances on foreign entry in a sample of Chinese firms. The sample consists of Chinese listed firms in high-tech industries. High-tech industries include communications and related equipment manufacturing, computer and related equipment manufacturing, computer application service, computer software

development and consultation, consumer electronics manufacturing, electrical machinery and equipment manufacturing, and electronic components and appliances.

I identified high-tech firms according to the industry description in their annual reports. Then, I went through the annual reports to identify the foreign subsidiaries. Listed firms usually disclose subsidiary information (including destination country, the amount of capital invested, the percentage of ownership, and primary business activities of subsidiaries) in the appendix. After gathering this information, I next determined the establishment year of the subsidiaries. If this information was not disclosed in the annual report, I consulted the company's website and also searched the Internet to determine the exact year of establishment. I collected other financial data from CSMAR, a database that is part of Wharton Research Data Services.

In all, there are 259 firms investing in 49 countries from 1990 to 2008. Across the models, the dependent variable, foreign market entry, is dichotomous. The predictor variables of interest include the economic, financial, political, administrative, cultural, demographic, and demographic distance. Similar to the US illustration, I included in the regression models as many distance dimensions as possible while ensuring that the correlations across these measures would not cause multicollinearity problems. I excluded the global connectedness distance and knowledge distance from the final models due to lack of observations.

I also included several firm-level control variables in each regression: firm size, measured as the log of total assets of the parent firm; and firm foreign country experience with the cumulative number of investments made by the parent firm in any foreign countries during previous years. I also included year dummies to control for potential

year heterogeneity. I estimated the models using logistic regression with robust standard errors. Table 2-11 summarizes the mean, standard deviation, and correlations of variables in the regressions for Chinese firms.

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Insert Table 2-11 & 2-12 about here  
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Table 2-12 presents the regression results. I clustered by parent firm in all models. Model 1 is the baseline model that includes only parent firm controls and year dummies. Model 2 includes parent firm controls and the Hofstede Euclidean distance measure, which is not significant. In Model 3 I replace Hofstede's Euclidean distance with the Hofstede Mahalanobis distance measure. Hofstede Mahalanobis distance is negatively significant, suggesting that Chinese firms, like their US counterparts, are less likely to invest in countries that are more culturally distant from their home country. The significance of Mahalanobis measure but not Euclidean measure suggests that Mahalanobis may be a better way for distance calculation. In Model 4, I use the time-varying cultural distance measure based on the WVS data, which is not significant. In Model 5, I include several of the distance measures at once. The r square value increases from 0.28 in model 3 to 0.35 in model 5, the model fit improves using the multi-dimensional distance measures. As can be seen in this column, some of the distances are negatively significant while others are positively significant. Geographic, cultural and administrative is negatively significant. These results are the same as those for US firms. Chinese firms are less likely to invest in countries that are remote, culturally and administratively distant. However, unlike US firms, Chinese firms are willing to invest in economically and politically remote countries, as shown by the positive sign of economic

and political distance. The reason for the positively economic distance is that Chinese firms may either invest in technological advanced countries such as US or Japan to acquire the technology or invest in lower income countries such as Vietnam and the Philippines to reduce production costs (Luo & Tung, 2007). Both types of countries are economically remote from China. The political system in China is different from most of the countries in the world (Abrami & Zhang, 2007); therefore, the sign of political distance is positive. Financial and demographic distance is not significant, suggesting that for Chinese firms, financial and demographic factors are not their primary concerns when they choose a country to invest in.

From model 6 to model 9 in Table 2-12, I split the sample according to whether the firm invests in a high-income or low-income country. This is one of the four comparisons I made using the U.S. sample. For the Chinese sample, I do not have enough data to conduct the other three comparisons. Model 6 and 7 are the results for low-income countries and model 8 and 9 are the results for high-income countries. We can see an improvement in model fit by using the multi-dimensional distance measures. The r-square value increase from 0.68 to 0.75 in model 6 and 7; and increases from 0.18 to 0.27 in model 8 and 9. Moreover, similar to the results using U.S. sample, the distance dimensions behave differently in high-income and low-income countries. The Chi-square test for differences in coefficients show that cultural, administrative, political, demographic, economic and geographic distance are significantly different (P-value <.01) in model 7 and model 9. Overall, the impacts of distance are smaller when firms invest in high-income countries than in low-income countries – consistent with the U.S. sample. While administrative, demographic, and geographic distances are negatively significant

in model 7, they are not significant in model 9. The difference between U.S. and China sample is that while political distance is positively significant in low-income countries, it is not significant in high-income countries; and while economic distance is not significant in low-income countries, it is positively significant in high-income countries. These results show that when Chinese firms invest in low-income countries, they can invest in politically distant countries because these areas may have been overlooked by developed countries, such as Africa (Laschinger, 2005). Chinese firms may invest to take advantages of this opportunity. In terms of economic distance, Chinese firms may choose to invest in economically advanced countries to sell their products at a low price or to acquire the advanced technology in these countries (Child & Rodrigues, 2005; Deng, 2007). These benefits are generally not available in low income countries. Thus, economic distance is positively significant in high-income countries but not significant in low-income countries.

Overall, the empirical illustration using Chinese firms further provide evidence of the superiority of the multi-dimensional approach, evident in the increased pseudo R-square and Chi-square value. More importantly, it shows that the same distance dimensions have different effects on the probability of foreign entry for Chinese and U.S. firms. It highlights the importance to investigate firm strategies in emerging economies.

## 2.6 Discussion and Conclusion

In this paper I proposed a new approach to conceptualizing, measuring, and examining the influence of cross-national distance. Instead of relying on the widely-used Hofstede approach and measures of cultural distance, I used institutional theories of national business, governance and innovation systems to ground the conceptual

definitions, analysis, and choice of empirical dimensions and indicators. Based on these theories and on recent institutional theorizing in international business (Jackson & Deeg, 2008; Pajunen, 2008), I identified eight dimensions of distance: economic, financial, political, administrative, cultural, demographic, knowledge, and connectedness. Moreover, I developed empirical indicators for each distance dimension based on the literature. Instead of using the Euclidean method to calculate dyadic distances between pairs of countries, I used the Mahalanobis approach to handle the relatively high correlations between the indicator variables in all cross-national research, and the different scales on which they are measured. Finally, I calculated all measures over time and for twice as many countries as previous research.

In order to assess the empirical validity and usefulness of the new approach, I offered two empirical illustrations. In the first illustration, I used the sample of US firms. I conducted four separate empirical tests, including the initial and sequential entry decisions of firms, the choice of manufacturing versus distribution subsidiaries, the choice between high and low income host countries, and the choices of high and low R&D intensive firms as they expand into foreign countries. Through these examples that consider several different foreign entry choices by U.S. companies, I illustrated how the inclusion of a broader set of distance dimensions increases our understanding of the influence of cross-national distance on firm foreign entry decisions. When I considered cultural distance alone (based either on the time-varying measure using the World Values Surveys data or Hofstede's cultural distance measures), I found that cultural distance significantly dissuades firms from investing in foreign countries. However, when I considered culture as one of many distance dimensions that can influence different types

of foreign investment decisions by firms, I found both culture and the other distance dimensions to have differential effects. These results show not only the limitations of using a distance variable that is based exclusively on a cultural dimension, but also the importance of considering multiple dimensions of distance when analyzing the influence of cross-national distance across a range of research questions. I have shown opposite effects for the culture, political, administrative, demographic and geographic distance dimensions across the four empirical examples. These results illustrate how distance can differentially impact firm foreign investment decisions. In the second empirical illustration, I use the sample of Chinese firms. This illustration further confirms the validity of the multi-dimensional approach. Moreover, it shows the importance of investigating firm strategy in emerging economies, because the same distance dimensions have different impacts on firms from China and firms from U.S. These strategic differences warrant further investigation.

While prior research has shown that distance matters, the example shows how different distance dimensions can be used to examine how, why and when cross-national distances influence managerial decisions. Our illustration of this more nuanced approach to considering distance can allow researchers to consider how several different aspects of cross-national distance influence managerial decisions. I believe that there is an important contribution in the new approach and that using different dimensions of distance adds value and detail.

The multidimensional approach and data offered in this paper will hopefully spur more fine-grained studies of the impact of distance on various managerial, organizational, and business variables. Moreover, I hope that the multidimensional approach will help

researchers use distance measures that match their research questions. For instance, students of venture capital may prefer to use administrative and financial distance when it comes to understanding cross-national patterns of investment in ventures, while questions regarding human resource management or consumer choice may be more readily answered using economic, cultural and demographic distance measures. Perhaps the approach can help resolve some of the inconsistencies reported in the literature concerning the effects of distance on foreign entry mode choice, firm performance, and human resource practices, given that each of these questions may possibly require the use of different dimensions and measures of distance.

After showing the direct effects of institutional distance on international diversification and the differences of strategic behaviors of firms from U.S. and China, the next two chapters will investigate how the unique characteristics of emerging economies influence resources and thus firm scope.

## 2.7 Tables

*Table 2-1 Distance Definitions and Consequences*

<b>Article</b>	<b>Definition of Distance</b>	<b>Empirical Dimensions of Distance Used</b>	<b>Consequences of Distance</b>
Johanson & Vahlne (1977)	"The psychic distance is defined as the sum of factors preventing the flow of information from and to the market. Examples are differences in language, education, business practices, culture, and industrial development." (p. 24)	Uncertainty avoidance (in terms of market knowledge)	Uncertainty: Firms should gradually increase their commitments to a foreign country as experience accumulates.
Kogut & Singh (1988)	"By psychic distance, it is meant the degree to which a firm is uncertain of the characteristics of a foreign market." (p. 413)	Cultural distance (uncertainty avoidance, power distance, individualism, masculinity)	Costs and uncertainty: Firms must choose among entry modes to improve their chances of success
Barkema, Bell & Pennings (1996)	"Psychic distance is defined in terms of factors preventing the flow of information between the firm and target nations, including linguistic, institutional, cultural, and political factors." (p. 153)	Cultural distance and cultural blocs	Uncertainty: Adjustment process, and difficulty of learning determine the longevity of foreign ventures
Hennart & Larimo (1998)	Culture distance is "defined as the difference between the national cultural characteristics of the home and of the host countries." (p. 517)	Cultural distance	Higher transaction costs related to the acquisition of knowledge about the foreign market

Table 2-2 Summary of Studies using Hofstede's Cultural Distance

Authors	Journal	Dependent Variable	Citation Numbers
<b>1. Dependent variable=Entry Mode</b>			
Kogut & Singh (1988)	Journal of International Business Studies	Joint venture vs. Greenfield vs. Acquisition	426
Erramilli (1996)	Journal of International Business Studies	Majority vs. Joint vs. Minority Ownership	36
Barkema & Vermeulen (1997)	Journal of International Business Studies	Entry mode; Survival	57
Hennart & Larimo (1998)	Journal of International Business Studies	Full vs. Shared Ownership	37
Brouthers & Brouthers (2001)	Journal of International Business Studies	Full vs. Shared Ownership	36
<b>2. Dependent variable= JV Performance</b>			
Barkema, Bell & Pennings (1996)	Strategic Management Journal	Longevity of foreign venture	150
Newman & Nollen (1996)	Journal of International Business Studies	Work unit financial performance	74
Weber & Shenkar (1996)	Management Science	Effective integration between merger partners	30
Gomez-Mejia & Palich (1997)	Journal of International Business Studies	Performance	35
Park & Ungson (1997)	Academy of Management Journal	Dissolution rate	97
Morosini, Shane & Singh (1998)	Journal of International Business Studies	Post-merger performance	53
<b>3. Dependent variable= Human Resource Management</b>			
Shenkar & Zeira (1992)	Journal of International Business Studies	CEO role conflict and role ambiguity	46
Rosenzweig & Nohria (1994)	Journal of International Business Studies	Degree of HRM similarity	86
Geletkanycz (1997)	Strategic Management Journal	Top management executives' commitment to the status quo	31
Luo (2001)	Administrative Science Quarterly	Personal attachment between boundary spanners in joint ventures	86
<b>4. Dependent variable= Others (Entrepreneurship; knowledge transfer; marketing)</b>			
Shane (1992)	Journal of Business Venturing	Per capita number of trademarks	39
Steenkamp, Hofstede & Wedel (1999)	Journal of Marketing	Consumer innovativeness	101
Simonin (1999)	Strategic Management Journal	Ambiguity of knowledge transfer	113
Steensma, Marino, Weaver & Dickson (2000)	Academy of Management Journal	Use of technology alliances	31

Table 2-3 Conflicting Findings using Hofstede's Cultural Distance in Different Research Areas

Authors	Journal	Dependent Variable	Industry	Home/Host Country	Findings
<b>1a. International Business –Entry Mode</b>					
Weber & Shenkar (1996)	Management Science	M&As	Various	Various/US acquisition	National culture impacts post-merger integration in international M&As
Padmanabhan & Cho (1996)	Management International Review	Full vs. Shared Ownership	Manufacturing	Japan/45 countries	Larger cultural distance encourages full ownership
Brouthers & Brouthers (2001)	Journal of International Business Studies	Full vs. Shared Ownership	Manufacturing	Britain, Germany, Netherland, US/ Hungary, Poland, The Czech Republic, Russia, and Rumania	Larger cultural distance encourages shared ownership
Erramilli (1996)	Journal of International Business Studies	Majority vs. Joint vs. Minority Ownership	Advertising	Europe, US/Europe	Cultural distance has no effects
Kogut & Singh (1988)	Journal of International Business Studies	Joint venture vs. Greenfield vs. Acquisition	Various	Various/US	Larger cultural distance encourages JV or greenfield over acquisition
<b>1b. International Business –Performance</b>					
Barkema, Bell & Pennings (1996)	Strategic Management Journal	Longevity of foreign venture	Non-financial firms	The Netherland/Various	Larger cultural distance produces shorter longevity of JVs
Park & Ungson (1997)	Academy of Management Journal	Dissolution rate	Electronic firms	JVs with US partners	Larger cultural distance produces a lower dissolution rate of JVs
Glaister & Buckley (1999)	Management International Review	Subjective satisfaction and performance	Manufacturing and tertiary sector	JVs with UK partners	Cultural distance has no effect on IJV performance

Table 2.3 (continued)

Authors	Journal	Dependent Variable	Industry	Home/Host Country	Findings
<b>2. Human Resource Management – Similarity Between Parent and Subsidiary HRM System</b>					
Gong (2003)	Academy of Management Journal	proportion of expatriate parent country nationals in a subsidiary's workforce	Various	Japan/Various	Larger cultural distance increases the proportion of parent country nationals
Rosenzweig & Nohria (1994)	Journal of International Business Studies	Degree of HRM similarity	Various	Various/US	Larger cultural distance reduces the similarity of HRM system
<b>3. Entrepreneurship – Characteristics</b>					
Mueller & Thomas (2000)	Journal of Business Venturing	Internal control and entrepreneurial orientation	University students	9 countries	Higher individualism increases internal control; Higher individualism, low uncertainty avoidance increase entrepreneurial orientation
Mitchell, Smith, Seawright & Morse (2000)	Academy of Management Journal	Willingness and ability script; venture creation decision	Entrepreneurs and non-entrepreneurs	7 countries	Higher individualism, high power distance increases willingness and ability script; and venture creation

Table 2-4 Dimensions of Cross-National Distance

<b>Dimension of Distance</b>	<b>Definition</b>	<b>Theoretical Sources in the Institutional Literature</b>	<b>Examples of Empirical Studies in the International Business Literature</b>
Economic	Differences in economic development and macroeconomic characteristics	Whitley, 1992; Caves, 1996	Iyer, 1997; Campa & Guillén, 1999; Yeung, 1997; Zaheer & Zaheer, 1997
Financial	Differences in financial sector development	Whitley, 1992; La Porta et al., 1998	Rueda-Sabater, 2000; Capron & Guillén, 2009
Political	Differences in political stability, democracy, and trade bloc membership	Whitley, 1992; Henisz, 2000; Henisz & Williamson, 1999;	Gastanaga et al., 1998; Delios & Henisz, 2000, 2003; Henisz & Delios, 2001; García-Canal and Guillén, 2008
Administrative	Differences in colonial ties, language, religion, and legal system	Whitley, 1992; Henisz, 2000; Ghemawat, 2001; La Porta et al., 1998	Lubatkin et al., 1998; Guler & Guillén, 2009
Cultural	Differences in attitudes toward authority, trust, individuality, and importance of work and family	Whitley, 1992; Hofstede, 1980; Inglehart, 2004	Johanson & Vahlne, 1977; Kogut & Singh, 1988; Barkema et al., 1996; Hennart & Larimo, 1998
Demographic	Differences in demographic characteristics	Whitley, 1992	Huynh et al., 2006
Knowledge	Differences in patents and scientific production	Nelson & Rosenberg, 1993; Furman et al., 2002	Anand & Kogut, 1997; Shaver & Flyer, 2000; Berry, 2006; Nachum, Zaheer & Gross, 2008; Guler & Guillén, 2009
Connectedness	Differences in tourism and Internet use	Nelson & Rosenberg, 1993; Guillén & Suárez, 2005	Oxley & Yeung, 2001
Geographic	Great circle distance between geographic center of countries	Anderson, 1979; Deadorff, 1998	Wolf & Weinschrott, 1973; Hamilton & Winters, 1992; Frattiani & Oh, 2009

*Table 2-5 Indicator Component Variables Used in the Calculation of Distance Dimensions*

Dimension:	Component Variables:
1. <u>Economic Distance</u>	
Income	GDP per capita, 2000 USD
Inflation	GDP deflator (% GDP)
Exports	Exports of goods and services (% GDP)
Imports	Imports of goods and services (% GDP)
2. <u>Financial Distance</u>	
Private Credit	Domestic credit to private sector (% GDP)
Stock Market Cap	Market capitalization of listed companies (% GDP)
Listed Companies	Number of listed companies (per one million population)
3. <u>Political Distance</u>	
Policy Making Uncertainty	Political stability measured by considering independent institutional actors with veto power
Democratic character	Democracy Score
Size of the state	Government consumption (% GDP)
WTO member	Membership in WTO (GATT before 1993)
Regional Trade Agreement	Dyadic membership in the same trade bloc
4. <u>Administrative Distance</u>	
Colonizer-colonized link	Whether dyad shares a colonial tie
Common language	% population that speak the same language in the dyad
Common religion	% population that share the same religion in the dyad
Legal system	Whether dyad shares the same legal system
5. <u>Cultural Distance</u>	
Power distance	WVS question on obedience and respect for authority
Uncertainty avoidance	WVS questions on trusting people and job security
Individualism	WVS questions on independence and the role of government in providing for its citizens
Masculinity	WVS questions on the importance of family and work
6. <u>Demographic Distance</u>	
Life expectancy	Life expectancy at birth, total (years)
Birth rate	Birth rate, crude (per 1,000 people)
Population under 14	Population ages 0-14 (% of total)
Population under 65	Population ages 65 and above (% of total)
7. <u>Knowledge Distance</u>	
Patents	Number of patents per one million population
Scientific Articles	Number of scientific articles per one million population
8. <u>Global Connectedness Distance</u>	
International Tourism Expend	International tourism, expenditures (% GDP)
International Tourism Receipts	International tourism, receipts (% GDP)
Internet use	Internet users per 1,000 people
9. <u>Geographic Distance</u>	
Great circle distance	Great circle distance between two countries according to the coordinates of the geographic center of the countries

*Table 2-6 Distance Dimensions, Sources, Year Availability, and Country Coverage*

<b>Dimension:</b>	<b>Source</b>	<b>Years Available</b>	<b># of Countries (2004)</b>
1. Economic Distance			
Income	WDI	1960-2005	179
Inflation	WDI	1960-2005	157
Exports	WDI	1960-2005	165
Imports	WDI	1960-2005	165
2. Financial Distance			
Private credit	WDI	1960-2005	122
Stock market Cap	WDI	1988-2005	122
Listed companies	WDI	1988-2005	122
3. Political Distance			
Policymaking uncertainty	POLCONV	1960-2005	155
Democracy score	Freedom House	1960-2003	151
Size of the state	WDI	1960-2005	155
World trade agreements	WTO	1960-2005	133
Regional trade agreements	WTO	1960-2005	133
4. Administrative Distance			
Colonizer-colonized Link	CIA Factbook	constant	198
Common language	CIA Factbook	constant	198
Common religion	CIA Factbook	constant	198
Legal system	La Porta et al.	constant	198
5. Cultural Distance			
Power distance	WVS	1980-2004	68
Uncertainty avoidance	WVS	1980-2004	66
Individualism	WVS	1980-2004	69
Masculinity	WVS	1980-2004	69
6. Demographic Distance			
Life expectancy	WDI	1960-2004	202
Birth rate	WDI	1960-2004	202
Population under 14	WDI	1960-2005	203
Population under 65	WDI	1960-2005	203
7. Knowledge Distance			
Patents	USPTO	1977-2005	166
Scientific articles	WDI & ISI	1960-2003	110
8. Global Connectedness Distance			
International tourism Expend	WDI	1995-2004	119
International tourism Receipts	WDI	1995-2004	115
Internet users	WDI	1995-2004	209
9. Geographic Distance			
Great circle distance	CIA Factbook	constant	196

Table 2-7 Properties of Different Methods for Calculating Dyadic Distance

Property	Explanation	Euclidean	Euclidean Squared	Mahalanobis
1. Symmetry	$d_{ij} = d_{ji}$ for all $i$ and $j$	Yes	Yes	Yes
2. Nonnegativity	$d_{ij} \geq 0$ for all $i$ and $j$	Yes	Yes	Yes
3. Identification	$d_{ii} = 0$ for all $i$	Yes	Yes	Yes
4. Definiteness	$d_{ii} = 0$ only if $x_i = x_j$	Yes	Yes	Yes
5. Triangle inequality	$d_{ij} \leq d_{ik} + d_{jk}$ for all $i, j$ and $k$	Yes	No	Yes
6. Sensitive to correlation	Variables are not assumed to be orthogonal to each other.	No	No	Yes
7. Sensitive to variance	Variables are not assumed to have equal variance.	No	No	Yes
8. Scale invariant	Measure is not sensitive to the scale of the variables.	No	No	Yes
9. Ability to handle over-determination	The number of points can be smaller than the number of variables.	Yes	Yes	No

Sources: Mimmack et al. (2001); Seber (1984).

Table 2-8 Correlation Matrix for Distance Dimensions<sup>7</sup>

	1	2	3	4	5	6	7	8	9	10
1 Hofstede Euclidean Distance	1 (85792)									
2 Hofstede Mahalanobis Distance	0.87 (85792)	1 (85792)								
3 Economic Distance	0.07 (66378)	0.02 (66378)	1 (460000)							
4 Financial Distance	0.07 (25404)	0.07 (25404)	0.22 (78914)	1 (83238)						
5 Political Distance	-0.04 (55094)	-0.08 (55094)	-0.02 (240000)	-0.05 (47811)	1 (250000)					
6 Administrative Distance	0.19 (77903)	0.17 (77903)	0.08 (330000)	0.21 (56027)	-0.01 (230000)	1 (630000)				
7 WVS Cultural Distance	-0.05 (30894)	-0.07 (30894)	-0.08 (35006)	0.17 (13832)	-0.21 (25165)	0.07 (49101)	1 (54845)			
8 Demographic Distance	0.22 (85792)	0.2 (85792)	0.13 (460000)	0.02 (83238)	0.16 (250000)	0.04 (630000)	-0.03 (54845)	1 (870000)		
9 Knowledge Distance	0.18 (32899)	0.11 (32899)	0.17 (100000)	0.2 (43688)	0.06 (80490)	0.18 (110000)	0.09 (20484)	0.09 (130000)	1 (130000)	
10 Global Connectedness Distance	0.15 (12158)	0.08 (12158)	0.23 (68621)	0.13 (41058)	0.13 (40366)	0.09 (52397)	0.11 (8861)	0.13 (73629)	0.11 (28100)	1 (73629)
11 Geographic Distance	0.07 (85792)	0.02 (85792)	0.03 (360000)	-0.02 (62202)	0.1 (250000)	-0.07 (620000)	-0.06 (52649)	0.01 (700000)	0.02 (120000)	0.01 (58472)

<sup>7</sup> Number of observations is in parentheses. Unless otherwise noted, all distances calculated using the Mahalanobis method; Correlations greater than 0.006 are significant at  $p < .05$ .

Table 2-9 US Sample Descriptive Statistics and Correlations (N=252,040, without Global Connectedness Distance)<sup>8</sup>

Variable	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Entry	0.06	0.23	1.00												
2 Hofstede Euclidean Distance	2.71	0.94	-0.16	1.00											
3 Hofstede Distance	7.15	3.78	-0.13	0.85	1.00										
4 Economic Distance	14.86	9.87	-0.13	0.38	0.13	1.00									
5 Financial Distance	6.94	5.23	-0.11	0.33	0.18	0.52	1.00								
6 Political Distance	175.83	84.64	-0.06	0.18	0.10	0.33	0.39	1.00							
7 Administrative Distance	134.50	64.78	-0.06	-0.01	0.10	-0.19	-0.02	0.10	1.00						
8 WVS Cultural Distance	2.49	1.52	-0.07	0.44	0.34	0.26	0.20	0.17	0.11	1.00					
9 Demographic Distance	3.82	2.98	-0.07	0.52	0.29	0.51	0.24	0.31	-0.17	0.34	1.00				
10 Knowledge Distance	67.96	40.47	-0.02	0.00	-0.06	0.35	0.34	0.40	-0.03	-0.05	0.03	1.00			
11 Geographic Distance	8.23	2.49	-0.10	0.22	0.15	0.23	0.17	0.42	0.15	0.23	0.35	-0.02	1.00		
12 Log of Sales	4.48	2.49	0.31	0.00	0.00	0.01	0.01	0.02	0.00	0.00	0.00	0.03	0.00	1.00	
13 R & D Intensity	0.14	0.42	-0.05	0.00	0.00	0.01	0.02	0.03	0.00	0.00	0.00	0.02	0.00	-0.28	1.00
14 Firm Host Country Experience	0.03	0.31	0.14	0.00	0.00	0.01	0.02	0.02	0.01	0.00	0.00	0.02	0.00	0.15	-0.02

<sup>8</sup> Correlations greater than 0.005 are significant at  $p < .05$ . Unless otherwise noted, all distances calculated using the Mahalanobis method.

Table 2-10 Logistic Regressions Estimating the Effects of Distance on Foreign Market Entry by U.S. Manufacturing Firms, 1993-2005<sup>9</sup>

Variables	1	2	3	4	5
Hofstede Euclidean Distance		-0.87*** (0.03)			
Hofstede Mahalanobis Distance			-0.21*** (0.01)		
WVS Cultural Distance <sup>b</sup>				-0.33*** (0.02)	-0.07*** (0.02)
Financial Distance					-0.17*** (0.01)
Administrative Distance					-0.00*** (0.00)
Demographic Distance					-0.03** (0.01)
Knowledge Distance					-0.02*** (0.00)
Geographic Distance					-0.14*** (0.01)
Log of Sales	0.71*** (0.03)	0.77*** (0.04)	0.75*** (0.04)	0.72*** (0.04)	0.79*** (0.04)
R & D Intensity	-0.56 (0.65)	-0.41 (0.69)	-0.44 (0.67)	-0.52 (0.66)	-0.36 (0.70)
Firm Experience	0.19*** (0.05)	0.23*** (0.06)	0.23*** (0.06)	0.21*** (0.06)	0.26*** (0.06)
Year Dummies	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes
Number of observations	252040	252040	252040	252040	252040
Pseudo R <sup>2</sup>	0.26	0.33	0.31	0.28	0.36
Chi-Square	1103.90** *	2323.11***	1936.67***	1494.53***	2478.38***
Log pseudo- likelihood	-41979.00	-37971.88	-39099.56	-40866.35	-36571.14
Compare model					(3) and (5)
Additional d.o.f.					5
Difference LogL					5056.82***

<sup>9</sup> Robust standard errors shown in parentheses. Unless otherwise noted, all distances calculated using the Mahalanobis method. \* p<.05; \*\* p<.01; \*\*\* p<.001.

Table 2-10 (Con't)

Variables	6 (with experie nce)	7 (with experie nce)	8 (withou t experie nce)	9 (withou t experie nce)	10 (Manuf acturin g)	11 (Manuf acturin g)	12 (Distrib ution)	13 (Distrib ution)
Hofstede Euclidean Distance								
Hofstede Mahalanobis Distance	-0.05*** (0.02)		-0.19*** (0.01)		-0.19*** (0.01)		-0.17*** (0.01)	
Financial Distance		0.02 (0.04)		-0.06* (0.03)		-0.15*** (0.01)		-0.15*** (0.01)
Political Distance						-0.00* (0.00)		0.00*** (0.00)
Administrati ve Distance		-0.00** (0.00)		-0.00*** (0.00)		-0.01*** (0.00)		-0.01*** (0.00)
WVS Cultural Distance <sup>b</sup>		0.00 (0.03)		-0.04* (0.02)		-0.04* (0.02)		-0.11*** (0.02)
Demographi c Distance		-0.00 (0.00)		-0.02*** (0.00)		-0.00 (0.01)		-0.06*** (0.01)
Knowledge Distance		-0.02 (0.00)		-0.14*** (0.02)		-0.01*** (0.00)		-0.02*** (0.00)
Geographic Distance						-0.11*** (0.02)		-0.09*** (0.01)
Log of Sales	0.24*** (0.06)	0.24*** (0.06)	0.73*** (0.05)	0.78*** (0.05)	0.61*** (0.04)	0.63*** (0.04)	0.71*** (0.04)	0.74*** (0.04)
R & D Intensity	2.46 (1.96)	2.51 (1.93)	0.09 (0.44)	0.15 (0.19)	-4.99*** (1.32)	-5.04*** (1.37)	0.22*** (0.05)	0.23*** (0.05)
Firm Experience Year Dummies	Dropped Yes	Dropped Yes	Dropped Yes	Dropped Yes	0.12*** Yes (0.04)	0.14*** Yes (0.04)	0.15*** Yes (0.05)	0.17*** Yes (0.05)
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	13062	13062	238978	238978	240162	240162	240162	240162
Pseudo R <sup>2</sup>	0.08	0.09	0.28	0.32	0.28	0.32	0.28	0.31
Chi-Square	218.75** *	232.50** *	1253.59* **	1379.06* **	1122.43* **	1425.41* **	1324.18* **	1931.25* **
Log pseudo- likelihood	-5373.21	-5360.11	- 14720.82	- 13988.24	- 21728.72	- 20692.31	- 26010.65	- 24824.91
Compare model		(6) and (7)		(8) and (9)		(10) and (11)		(12) and (13)
Additional d.o.f.		5		5		6		6
Difference LogL		26.2***		1465.16* **		2072.82* **		2371.45* **

Table 2.10 (Con't)

Variables	14 (Low income countries)	15 (Low income countries)	16 (High income countries)	17 (High income countries)	18 (Low R&D intensity firms)	19 (Low R&D intensity firms)	20 (High R&D intensity firms)	21 (High R&D intensity firms)
Hofstede Euclidean Distance								
Hofstede Mahalanobis Distance	-0.18*** (0.02)		-0.16*** (0.01)		-0.21*** (0.01)		-0.19*** (0.02)	
Financial Distance		-0.15*** (0.02)		-0.14*** (0.01)		-0.17*** (0.01)		-0.18*** (0.02)
Political Distance		-0.00*** (0.00)		-0.00*** (0.00)				
Administrative Distance		0.01*** (0.00)		-0.01*** (0.00)		-0.01*** (0.00)		-0.00*** (0.00)
WVS Cultural Distance <sup>b</sup>		0.19*** (0.04)		-0.15*** (0.02)		-0.05* (0.02)		-0.15*** (0.04)
Demographic Distance		0.08** (0.03)		-0.00 (0.01)		-0.02 (0.01)		-0.07*** (0.02)
Knowledge Distance		-0.17*** (0.03)		-0.02*** (0.00)		-0.02*** (0.00)		-0.02*** (0.00)
Geographic Distance		-0.28*** (0.02)		0.02 (0.02)		-0.17*** (0.01)		-0.05* (0.02)
Log of Sales	0.84*** (0.06)	0.90*** (0.07)	0.76*** (0.04)	0.80*** (0.04)	0.68*** (0.04)	0.72*** (0.05)	0.91*** (0.05)	0.98*** (0.05)
R & D Intensity	-2.10 (1.59)	-1.96 (1.71)	-0.18 (0.63)	-0.08 (0.63)	Dropped	Dropped	Dropped	Dropped
Firm Experience Year Dummies	0.23*** (0.06) Yes	0.26*** (0.07) Yes	0.26*** (0.07) Yes	0.31*** (0.07) Yes	0.19*** (0.06) Yes	0.22*** (0.06) Yes	0.26** (0.10) Yes	0.36** (0.13) Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	89253	89253	150909	150909	136541	136541	115268	115268
Pseudo R <sup>2</sup>	0.33	0.39	0.31	0.35	0.25	0.30	0.43	0.47
Chi-Square	1136.50* **	1269.92* **	1497.26* **	2099.58.	1291.72* **	1908.03* **	953.56** *	1154.29* **
Log pseudo- likelihood	-7939.58	-7141.40	- 29313.63	- 27543.33	- 28675.99	- 26755.76	- 10019.41	-9282.88
Compare model		(14) and (15)		(16) and (17)		(18) and (19)		(20) and (21)
Additional d.o.f.		6		6		5		5
Difference LogL		1584.35* **		3540.59* **		3845.31* **		1473.06* **

Table 2-11 China Sample Descriptive Statistics and Correlations<sup>10</sup>

	Me an	Std. Dev	1	2	3	4	5	6	7	8	9	10	11
1 Entry	0.00	0.03	1.00										
2 Hofstede Euclidean Distance	3.22	0.74	-0.01	1.00									
3 Hofstede Distance	11.18	3.98	-0.01	0.91	1.00								
4 Economic Distance	8.57	8.02	0.02	0.50	0.38	1.00							
5 Financial Distance	4.29	3.19	0.00	-0.20	-0.17	-0.01	1.00						
6 Political Distance	88.30	62.68	0.03	-0.39	-0.35	-0.07	0.27	1.00					
7 Administra tive Distance	142.87	57.39	-0.01	0.35	0.32	0.40	0.01	-0.25	1.00				
8 WVS Cultural Distance	3.92	2.38	0.02	-0.13	-0.15	-0.13	0.16	0.35	-0.11	1.00			
9 Demograp hic Distance	12.23	8.19	0.00	0.61	0.54	0.45	-0.29	-0.36	0.19	-0.02	1.00		
10 Geographic Distance	695.107	272.491	0.01	0.16	0.01	0.08	-0.12	0.18	-0.48	0.21	0.20	1.00	
11 Log of Assets	20.88	1.01	0.06	-0.01	0.00	0.00	0.01	0.07	0.00	0.11	0.02	0.00	1.00
12 Firm Host Country Experience	0.14	0.89	0.16	0.00	0.00	-0.01	0.01	0.05	0.00	0.09	0.01	0.00	0.26

<sup>10</sup> Correlations greater than 0.008 are significant at  $p < .05$ . Unless otherwise noted, all distances calculated using the Mahalanobis method.

*Table 2-12 Logistic Regressions Estimating the Effects of Distance on Foreign Market Entry by Chinese High-tech Firms, 1990-2008<sup>11</sup>*

<b>Variables</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Hofstede Euclidean Distance		-0.27 (0.19)			
Hofstede Mahalanobis Distance			-0.07** (0.02)		
WVS Cultural Distance <sup>b</sup>				-0.01 (0.05)	-0.22* (0.09)
Financial Distance					-0.22 (0.15)
Administrative Distance					-0.01* (0.00)
Political Distance					0.01** (0.00)
Demographic Distance					-0.03 (0.05)
Economic Distance					0.11* (0.05)
Geographic Distance					-0.33* (0.17)
Log of Assets	1.54** (0.50)	1.54** (0.50)	1.54** (0.50)	1.54** (0.50)	1.55** (0.51)
Firm Experience	0.19*** (0.06)	0.19*** (0.06)	0.19*** (0.06)	0.19*** (0.06)	0.20*** (0.06)
Year Dummies	Yes	Yes	Yes	Yes	Yes
Number of observations	21243	21243	21243	21243	21243
Pseudo R <sup>2</sup>	0.28	0.28	0.28	0.28	0.35
Chi-Square	191.45***	190.34***	332.73***	191.94***	40975.43* **
Log pseudo-likelihood	-139.88	-139.35	-138.77	-139.87	-125.94
Compare model Additional d.o.f. Difference LogL					(3) and (5) 6 13.93*

<sup>11</sup> Robust standard errors shown in parentheses. Unless otherwise noted, all distances calculated using the Mahalanobis method. \* p<.05, \*\* p<.01, \*\*\* p<.001.

Table 2-12 (Continued)

Variables	6 (Low income countries)	7 (Low income countries)	8 (High income countries)	9 (High income countries)
Hofstede Euclidean Distance				
Hofstede Mahalanobis Distance	-0.08 (0.06)		-0.08* (0.04)	
WVS Cultural Distance <sup>b</sup>		-0.14*** (0.03)		-0.34** (0.13)
Financial Distance		0.31 (0.38)		-0.36* (0.18)
Administrative Distance		-0.09*** (0.02)		-0.01 (0.01)
Political Distance		0.03*** (0.01)		-0.01 (0.01)
Demographic Distance		-0.89*** (0.16)		-0.09 (0.09)
Economic Distance		-1.84 (1.39)		0.19* (0.09)
Geographic Distance		-0.61*** (0.13)		-0.09 (0.28)
Log of Assets	6.60** (2.25)	7.31** (2.67)	1.05** (0.35)	1.06** (0.35)
Firm Experience	0.24*** (0.07)	0.26*** (0.07)	0.20*** (0.05)	0.21*** (0.06)
Year Dummies	Yes	Yes	Yes	Yes
Number of observations	2620	2620	13463	13463
Pseudo R <sup>2</sup>	0.68	0.75	0.18	0.27
Chi-Square	1101.01***	1190.53***	168.94***	12109.55***
Log pseudo-likelihood	-17.27	-13.32	-107.30	-95.36

## CHAPTER 3 GOVERNMENT CORPORATIONS AND GLOBALIZATION: EVIDENCE FROM CHINA

### 3.1 Introduction

Multinational enterprises (MNEs) from emerging economies have grown rapidly during the past two decades. Large firms from emerging economies such as Brazil, Russia, India, and China have become active players in the global market. They not only sell products worldwide, but also set up subsidiaries or acquire companies to conduct foreign direct investment (FDI). By 2008, the annual FDI outflows from emerging economies amounted to \$351 billion (19% of the world's total outward FDI). In 2008, seven companies from emerging economies ranked among the world's top 100 transnational corporations, compared to none in 1993 (UNCTAD, 2009). Cemex S.A. from Mexico, Lenovo from China, and Tata Steel Ltd. from India are among the largest MNEs from emerging economies.

Although the rise of MNEs from emerging economies has become an important phenomenon in the world economy, scholarly literature has not paid much attention to it (Child & Rodrigues, 2005). Many studies in this area are either theoretical (Child & Rodrigues, 2005; Morck et al., 2008) or investigate the role of country-level rather than firm-level factors in determining outward FDI from emerging economies (Buckley et al., 2007). Empirical studies have documented that many MNEs from emerging economies invest abroad either to acquire strategic assets (Chen & Chen, 1998; Makino et al., 2002) or to exploit ownership advantages that are not the same as those for MNEs from developed countries (Lall, 1983). MNEs from emerging economies differ from those in developed countries in such important aspects as motivation for and patterns of

international expansion, thus calling for new theories to explain their rise (Guillen & Garcia-Canal, 2009). One important feature of MNEs from emerging economies is that many of them are or have been government corporations, such as CITIC Group from China, Oil And Natural Gas Corporation from India and Companhia Vale do Rio Doce from Brazil (UNCTAD, 2009). Therefore, it is important to investigate how government influences the globalization of firms from emerging economies.

The rise of MNEs from emerging economies parallels with the vast privatization process worldwide since the 1980s. A stream of literature has focused on the structure, strategy, and performance of government corporations in comparison with private firms (Megginson & Netter, 2001). Because many government corporations face severe agency problems, these corporations are in general believed to be bureaucratic, less efficient, and slow to adapt to changes in the environment (Brouthers et al., 2007; Cuervo & Villalonga, 2000). Privatization — the sale of a state-owned firm to the private sector (Cuervo & Villalonga, 2000) — is a popular way to revitalize state sectors. The strategic behavior of privatized firms has received some attention (de Castro & Uhlenbruck, 1997; Park, Li & Tse, 2006), and this stream of research largely assumes that privatization means 100% private ownership (Vaaler & Schrage, 2009). In many countries, however, partially privatized enterprises (PPEs), defined as firms with non-controlling state ownership,<sup>12</sup> are an important outcome of state divestments (Gupta, 2005; Ramamurti, 2000). Relatively fewer studies have analyzed the strategic behavior of PPEs, especially their FDI decisions.

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<sup>12</sup> A partially privatized enterprise with controlling state ownership is considered a state-owned enterprise because control rights are still in the hands of the state. In this circumstance, which is also called revenue privatization (Boubakri & Cosset, 1998), ownership is sold more to create a source of revenue for the state (Jing & Padgett, 2006) than to improve firm efficiency.

This paper bridges these two streams of literature by studying the globalization of government corporations from emerging economies. The existence of state ownership in MNEs from emerging economies provides scholars an opportunity to understand the role of government in the globalization process of firms. Although several studies have shown that state ownership does influence firm strategy, such as product diversification (Li, Lam & Moy, 2005), only a few studies have examined the role of state ownership in determining FDI (Delios et al., 2008b). It is still unclear *how* state ownership influences a firm's globalization process. Moreover, the vast literature on the study of government corporations mainly compares the strategies of SOEs and private firms (Megginson & Netter, 2001); few studies have compared the strategies of three types of government corporations: SOEs, PPEs and FPEs (fully privatized enterprises).

This paper fills these notable gaps in the literature by arguing that government influences both the *motivation* of firms to go abroad and their *resources* for doing so. First, I examine the role of state ownership in determining the propensity of firms to go abroad. More specifically, I argue that the level of state ownership influences the risk preference of managers, thus creating different motivations for firms to invest abroad. As a result, the likelihood of going abroad is hypothesized to decrease with the level of state ownership.

After investigating how government influences the *motivation* of firms to invest abroad, this paper further examines how government influences the *resources* for firms to go abroad. Both internal resources and external resources can lead to foreign expansion. While SOEs rely on external resources such as total debts to go abroad rather than

internal resources, PPEs rely on internal resources such as intangible assets to invest abroad, as predicted by the internalization theory (Buckley & Casson, 1976).

Finally, I explain how different government corporations react differently to a government policy encouraging firms to go abroad. Such a policy influences both the motivation and resources of going abroad. On the motivation side, the policy creates institutional pressure for firms to comply. On the resource side, it increases the availability of external resources. Since SOEs rely heavily on government resources to survive, the institutional pressure for them to comply is high; meanwhile, as SOEs also rely on external resources to go abroad, such a government policy provides more resources to them. As a result, SOEs are more likely to invest abroad after such a policy is announced. Since PPEs and FPEs rely more on internal resources to invest abroad, the policy will not influence their probability to go abroad.

I test these hypotheses in the setting of Chinese-listed high-tech firms from 1991 to 2007. The empirical evidences generally support the hypotheses. The contributions of this paper are fourfold. First, it brings the role of state ownership into the theory of FDI. Although international business scholars have investigated various factors that determine the globalization of firms, including the role of government (Brewer, 1993), state ownership has been largely ignored. Most studies in this area focus on the role of government policy (Luo, Xue & Han, 2010) rather than state ownership. State ownership, together with government policy, plays an important role in explaining why firms go abroad, influencing both their motivation and resources. Second, the paper enriches the literature on government corporations by analyzing the strategic decision of PPEs, an important type of government corporations in the privatization process that has been

insufficiently studied. Third, this paper distinguishes two different types of resources, internal resources and external resource and show that different types of government corporations rely on different types of resources. It shows that the internalization theory (Buckley & Casson, 1976) – an internal focused theory, cannot fully explain the globalization of firms from emerging economies. External resource also plays an important role in determining FDI. Moreover, ownership identity determines which type of resource firms will rely on when they go abroad. These findings will help us better understand the globalization of firms in general, and especially of MNEs from emerging economies. Fourth, it shows that how the change of government policy influences the probability of firms to go abroad by influencing the motivation and the availability of external resources.

## 3.2 Background

### 3.2.1 *MNEs from emerging economies*

#### 3.2.1.1 *Motivations of FDI*

FDI theorists have long recognized firms invest overseas for different reasons (Behrman, 1969). They first recognized the possession of tangible assets as a major source of value creation. Therefore, they focused on the need to access physical assets and markets, and to cut costs, as the major drivers of FDI (Behrman, 1974; Dunning, 1993). With the growing importance of strategic assets such as knowledge as the fundamental rationale for the existence of MNEs (Kogut & Zander, 1992), the search for strategic assets is also recognized as a major driver for FDI.

Dunning (1993) categorized FDI into different types according to different motivations: market-seeking, natural resource-seeking, efficiency-seeking and strategic

asset-seeking. Market seeking FDI is undertaken to serve the foreign markets by local production and distribution. Natural resource-seeking FDI is driven by a need to gain access to natural resources that are either not available in the home countries or available at higher costs than in the host country. Efficiency-seeking FDI takes place when firms try to spread value-adding activities geographically to take advantage of differences in the availability and cost of factor endowments (Nachum & Zaheer, 2005). Strategic asset-seeking FDI is conducted when firms invest abroad to acquire key strategic assets such as brand and technology (Chung & Alcacer, 2002).

*3.2.1.2 Studies have shown that firms from emerging economies invest abroad for all of the above described reasons (Dunning, 2006; Tsai & Eisingerich, 2010). For instance,, MNEs from emerging economies invest abroad to acquire strategic assets and overcome their competitive disadvantages (Child & Rodrigues, 2005). Lecraw (1993) found that Indonesian firms tend to invest in developed countries to acquire knowledge, technology, management, and marketing expertise. Similarly, Kumar (1998) finds that Asian firms go abroad to strengthen their non-price competitiveness.Firm-specific factors driving FDI*

Scholars also try to discover firm-specific factors driving FDI decisions. Along this line of research, the dominant theory to explain the globalization of firms is the internalization theory (Buckley & Casson, 1976). This theory views internationalization as firms' attempts to exploit their firm-specific ownership advantages in new geographic markets, which in turn allows them to create competitive advantages over firms in foreign countries (Hymer, 1976). According to this theory, firms must possess firm-specific

resources that can be exploited abroad, such as R&D and marketing capabilities (Tallman, 1991).

This theory, however, has been developed and tested in the setting of MNEs from developed countries (Delios & Beamish, 1999; Morck & Yeung, 1992). MNEs from emerging economies, which have captured the attention of scholars since the 1980s (Lall, 1983), differ from MNEs in developed countries in many respects, such as the speed of internationalization, expansion path, and motivations for going abroad (Guillen & Garcia-Canal, 2009). Scholars have been interested in understanding firm-specific factors that contribute to the rise of MNEs from emerging economies. One of the major findings in this line of research is that the ownership advantages possessed by MNEs from emerging economies can be different from those in developed countries (Guillen & Garcia-Canal, 2009; Wells, 1983). For instance, Lall (1983) found that MNEs from Argentina, Brazil, Hong Kong, and India outperform their counterparts from developed countries when they enter other emerging economies because of their resource endowments of low-cost inputs, affiliation to business groups, and ethnic branding in host countries.

Besides understanding the role of firm-specific factors in promoting FDI, scholars also investigate the role of country-level factors. Buckley and his colleagues (2007) found that outward FDI from China is associated with political risk and cultural proximity to host countries, and with host market size, host natural endowments, and geographic proximity. Morck, Yeung and Zhao (2008) claimed that a high savings rate, corporate ownership structure, and capital market distortion all contribute to the rapid growth of Chinese outward FDI.

### 3.2.2 *Government corporations and private firms*

Scholars have long recognized the role of ownership identity in influencing firm strategy (Chaganti & Damanpour, 1991; Palmer, Friedland, Jennings & Powers, 1987). The state is an important type of owner worldwide (Koppell, 2007). In the West, hybrid organizations are owned by the government but operate through market transactions, such as the Overseas Private Investment Corporation in the United States (Koppell, 2007). In emerging economies, the wave of privatization since the late 1980s has created many firms with partial state ownership (Vaaler & Schrage, 2009).

Depending on different stages of privatization, there are three types of government corporations: SOEs, which have controlling state ownership; PPEs, which have non-controlling state ownership; and FPEs, which have no state ownership and resemble private firms the most. Firms with different levels of state ownership are inherently different in their strategic orientation and their ability to adapt to environmental turbulence (Gedajlovic, 1993). In other words, ownership type is a parsimonious and objective way to classify firms into different strategic groups (Peng, Tan & Tong, 2004).

The existing literature on privatization focuses on the comparison between SOEs and FPEs. In general, SOEs and FPEs differ in terms of strategy, structure, and performance (Brouthers et al., 2007; Li & Xia, 2008). Scholars have adopted various theories to explain this difference. The agency theory explanation is that managers in SOEs are not carefully monitored by the state; therefore, managers can pursue their own interests rather than those of the state, resulting in poor SOE performance (Cauley & Sandler, 2001; Qu, 2003). Stakeholder theorists argue that managers respond to pressures

exerted by key stakeholders (Frooman, 1999). The state, as a key stakeholder of SOEs, can influence their strategy through ownership (Arens & Brouthers, 2001). These different theories generate similar predictions that SOEs are associated with defensive strategies (Arens & Brouthers, 2001; Parker, 1995), mechanistic structure (Brouthers et al., 2007), administrative tasks and empire-building strategies (Li & Xia, 2008), low total factor productivity (Jefferson & Rawski, 2000), labor redundancy (Dong & Putterman, 2003), and poor performance (Brouthers et al., 2007; Li & Xia, 2008).

### 3.3 Theory and Hypotheses

#### 3.3.1 *State ownership and the motivation for FDI*

As mentioned earlier, ownership type is a parsimonious and objective way to classify firms into different strategic groups (Peng et al., 2004), and different strategic groups have different strategic orientations (Gedajlovic, 1993). The existing literature, however, largely neglects PPEs in the comparison. In this paper, I will compare the differences among SOEs, PPEs and FPEs in terms of FDI.

To understand the likelihood of these firms to conduct FDI, I focus on their level of risk-tolerance because FDI is inherently risky. FDI involves investing a large amount of money in a foreign country. MNEs have to overcome the liability of foreignness in order to succeed (Hymer, 1976). The liability of foreignness is “the costs of doing business abroad that result in a competitive disadvantage for an MNE subunit . . . broadly defined as all additional costs a firm operating in a market overseas incurs that a local firm would not incur” (Zaheer, 1995: 342-3). It is especially difficult for MNEs from emerging markets to overcome these costs because they lack global experience, managerial competence, and professional expertise (Luo & Tung, 2007). As a result, they

will face substantial learning costs (Makino & Delios, 1996). It is not unusual for even large and prominent firms to fail in their FDI activities. One example is the failure of TCL, a Chinese electronic device manufacturer, in its acquisition of Thomson Electronics in France. The acquisition cost TCL millions of dollars, and the acquired firm lost money every year. High risk, however, also means high potential return. Once an MNE is able to overcome the liability of foreignness, it will benefit from the exploitation of its resources in multiple countries, thus improving firm performance (Delios & Beamish, 1999).

Given the high risk of FDI, the level of risk-taking behavior of a firm largely determines the motivation of the firm to go abroad. The more risk a firm is willing to take; the more likely it is to conduct FDI. Next I consider the risk-taking attitude of SOEs, PPEs and FPEs.

#### *3.3.1.1 SOEs*

According to resource dependency theory, organizations rely on the external environment for scarce and valuable resources. Therefore, organizations will alter and change their structure or pattern of behavior to acquire and maintain needed resources (Pfeffer & Salancik, 1978). If one organization heavily relies on another for resources, the other organization exerts power over the focal organization. Because SOEs count on the state for various resources such as capital, the state has power over SOEs. The power is exemplified in many ways, including the state's dominant role in appointing directors and top management team members in SOEs (Qu, 2003).

Since the government has ample influence on SOEs, an important question to ask is whether managers have discretion to make strategic decisions such as FDI. I argue that firms do have such discretion if the government does not have specific requirements or

policies towards outward FDI. It is well recognized that the severe agency problem in SOEs are due to the government's inability to monitor the strategy and operation of SOEs (Lin, Cai & Li, 1998; Zhang, 1997). As described by Cuervo and Villalonga (2000: 582): "the owner-manager relationship is broken down into two other agency relationships – the public as owners-to-politicians and politicians-to-managers –which effectively reduces the incentives for monitoring managers' behavior". In general, the agency problem leaves room for managers in SOEs to make strategic decisions in areas where there are no clear government requirements or policies (Li & Rwegasira, 2008; Xia et al., 2009). It is also the case for China. The Chinese government has granted managers of SOEs decision-making autonomy by implementing the "contract-responsibility system" as early as the 1980s (Fernandez-Stembridge & Huchet, 2006). One example of the managerial discretion is that managers of SOEs may adopt diversification strategy (Delios et al., 2008b) to stabilize revenues and minimize their employment risks (Hoskisson & Turk, 1990; Tosi & Gomez-Mejia, 1989).

Since managers do have managerial discretion to make strategic decisions, they face the choice of whether to make risky decision. Previous studies have shown that SOEs are reluctant to take risks (Adler, Brahm & Graham, 1992; Tan, 2001). Given the fact that many of the managers in SOEs are political appointees, these managers are 'extra conservative' (De Mente, 1989), as described by Brouthers, Gelderman and Arens (2007):

"Since SOEs have their managers appointed by the government (Whitley and Czaban (1998)), these managers might be less willing to take risks, since risk-taking implies changing or altering the strategies imposed by the State (Luo and Tan (1998); Carlin and Landesmann (1997); Estrin (1994)). Although such risks might be commercially attractive, they are not necessarily congruent with State goals. Since the State is the powerful stakeholder, it can replace managers

that take risks (i.e., those that do not follow State directions) with someone who is more likely to pursue governmental rather than commercial goals.” (Brouthers, Gelderman & Arens, 2007: 227).

The risk-averseness of SOEs towards outward FDI can be explained by the prospect theory (Kahneman & Tversky, 1979). As Kahneman and Tversky (1979: 263) argued “people underweight outcomes that are merely probable in comparison with outcomes that are obtained with certainty”. For SOEs, on the one hand, staying in the home country is gains obtained with certainty while going abroad is an outcome that is merely probable. It is so because SOEs enjoy various advantages over other firms in their domestic markets. It is well recognized that SOEs have been subsidized by the government, either at the central level (Qin, 2004) or at the provincial level (Sternquist, Chen & Huang, 2003). With government subsidy and various other supports, such as orders from the government (Meyer & Boisot, 2008), SOEs are enjoying certain gains by staying within domestic markets. On the other hand, going abroad for SOEs is only probable gains or maybe even losses. The decision of FDI poses additional risks to SOEs: the extra costs of SOEs from emerging economies operating in foreign countries are higher because SOEs from emerging economies are associated with negative images such as poor corporate governance and little transparency. SOEs that become victims of such negative images are likely to perform poorly in foreign countries (Brouthers, O'Donnell & Hadjimarcou, 2005; Gaur & Kumar, 2009). Under this situation, SOEs will favor the choice of certain gain - staying at home - over the choice of possible gain or even losses – going abroad.

### 3.3.1.2 *PPEs*

Unlike SOEs, PPEs are willing to take risks to conduct FDI. PPEs are partially privatized firms that were formerly SOEs. The pressure for them to improve firm performance is high, since such improvement is one of the primary goals of privatization of SOEs (Villalonga, 2000). It is well documented that privatization brings about changes in firms' goals, incentives, control, strategy, structure, and culture (Cuervo & Villalonga, 2000). It is not unusual for managers to be replaced by more proactive, market oriented managers during the privatization process (Andrews & Dowling, 1998). These changes lead to outcomes such as more innovation and risk-taking by these firms (Zahra et al., 2000).

Prospect theory also suggests that people will favor choices risky decision that could result in probable losses rather than choices with certain losses (Kahneman & Tversky, 1979). In the case of PPEs regarding FDI, staying at home may turn out to be a choice with certain loss, because managers in PPEs cannot impress the owners positively by staying at home, which may then result in the loss of their jobs. As argued earlier, if managers of PPEs do not deliver better results, they may be replaced (Cuervo & Villalonga, 2000). Managers want to leave good impressions to enhance their job and career prospects. In an institutional environment where the accounting and stock market performance data is not perfectly reliable (Bai, Yen & Yang, 2008), it is not easy to evaluate the performance of a firm, and also the performance of managers running the firm. An easy point of evaluation, particularly in high growth economies, is the growth of a firm (Winter & Helfat, 2007). When managers of PPEs search for growth options, they face limited choices of growth if they stay at home. The economy in emerging economies

is usually highly fragmented, such as Russia (Berkowitz & DeJong, 2001) and China (Boisot & Child, 1988), and local governments pursue a local economic agenda that protects local firms (Wu, 2005). As a result, firms face high costs, such as capacity costs, operating costs, transaction costs, and administrative costs, when they enter other domestic markets (Meyer & Boisot, 2008). Moreover, they will have to compete with the subsidized SOEs. Without support from the government, it is hard for PPEs to expand domestically, and so going abroad may be a good choice for pursuing growth.

Meanwhile, going abroad becomes a choice of probable gains. With limited growth option in the home market, going abroad becomes an attractive choice. Expanding abroad is an important means through which firms can develop new sources of revenues (Zahra, 1996). When the state is a controlling shareholder, firms are subject to various constraints such as location (Cuervo & Villalonga, 2000). Such constraints disappear if the state becomes a non-controlling shareholder. This point is illustrated by Cuervo and Villalonga (2000: 587): “the host markets a firm enters through merger are less likely to retaliate or to impede entry if the firm is privatized rather than state owned. This clearly affects foreign markets, since the nationalistic sentiments often voiced when local firms (especially large ones) are sold to a foreign company are likely to be magnified if the buyer is a foreign state.” When such constraints disappear as a result of privatization, a PPE can seize the opportunities in the environment and further develop its resources and capabilities.

To summarize the above arguments, managers of PPEs face an important loss – losing their jobs – if they stay in their home country. Under such circumstance, they are willing to take the risk of investing abroad. As indicated by Megginson, Nash and van

Randenborgh (1994), “privatization promotes entrepreneur, former SOEs will have the incentive and the means to invest in growth option” (Megginson et al, 1994: 436). Expanding firm boundaries through internationalization is a growth option welcomed by PPEs.

### 3.3.1.3 FPEs

Compared to SOEs, FPEs are smaller<sup>13</sup> but more nimble, and they resemble private firms of being highly market-oriented (Peng et al., 2004). Emerging economies are characterized with ever-changing environment (He, 2009; Tan, 2005). The environmental turbulence provides ample opportunities for them to make profits (Tan, 1996). They seize the opportunities to fill the unfulfilled market niches. Taking risky and innovative investment decisions is one way through which these firms challenge the status quo and create their own competitive advantages (D'Aveni, 1996). Therefore, compared to SOEs, they are more risk-seeking in making strategic decisions.

To summarize, SOEs, PPEs, and FPEs differ in their level of risk-taking. Since the level of state ownership determines their risk-taking attitudes, I have the following hypothesis:

***H1: The probability of a firm investing abroad is negatively related to the level of the firm's state ownership.***

## 3.3.2 State ownership and the resources for FDI

### 3.3.2.1 Internal vs. External Resources

Strategy and international business scholars have long recognized the important role of resources in firm growth (Penrose, 1959; Tallman, 1991) . There are many types of

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<sup>13</sup> The result of “grasp the large, release the small” policy of the Chinese government (Barnathan & Roberts, 1997). Studies also shown that in other emerging economies, fully privatized firms are generally smaller than SOEs given the ease of privatization of smaller firms (Boubakri, Cosset & Saffar, 2008).

resources, such as physical capital, human capital, organizational capital, social capital, and financial capital. Typical resources include routines (Nelson & Winter, 1982), business experience (Prahalad & Bettis, 1986), organizational culture (Fiol, 1991), dynamic capability (Teece et al., 1997), innovation capability (Henderson & Cockburn, 1994), and many others. Firms can acquire resources both internally and externally.

Internally developed resources are resourced developed within a firm. The resource-based view posits that resources that can create sustained competitive advantages have to be internally accumulated by the firm (Dierickx & Cool, 1989). The strategic factor market is largely incomplete when it comes to resources that can create sustained competitive advantages because these resources are imperfectly imitable. Imitability is related to the characteristics of asset accumulation process: time compression diseconomies, asset mass efficiencies, inter-connectedness, asset erosion and casual ambiguity (Dierickx & Cool, 1989). All these characteristics make it hard to decide market prices for the resources. Therefore, these resources cannot be acquired externally from strategic factor markets; they have to be generated internally. Resources that create competitive advantages also encourage firms to go abroad to benefit from exploitation. Since these resources are subject to market failure, firms will have to internalize them, as described by the internalization theory (Buckley & Casson, 1976). One example of the resources that face market failure is intangible assets, such as knowledge and technology. Empirical evidences in various settings have supported the internalization theory by showing that firms with more intangible assets are more likely to go abroad (Delios & Beamish, 2001; Kogut & Chang, 1991).

Besides internal resources, firms can also seek externally for resources. As resource dependence theory posits, organizations are not self-sustained and they will rely on other organizations for resources (Pfeffer & Salancik, 1978). Many resources that are crucial to a firm's survival are acquired externally, such as land and capital. One important type of resources needed for foreign expansion is capital. FDI is a strategy that requires a large amount of capital inputs since setting up a foreign subsidiary or acquiring a foreign company is a capital-intensive activity. In emerging economies such as China, the availability of external capital is limited since the capital market is largely inefficient (Khanna & Palepu, 1997). Since investors have limited access to information (Ferguson et al., 2002) and the information available is usually not as reliable as that in the developed countries (Bai et al., 2008), investors are reluctant to invest in new projects such as FDI. Firms have to rely heavily on debts as a source of external resources to conduct FDI. In China, the availability of external resources is largely influenced by the government because China is formally a centrally planned economy and government has great influence in all aspects of economic activities (Khan, Griffin & Riskin, 1999). Government controls many of the resources such as the land (physical capital) and money (financial capital). Banks, a large provider of debts, are mostly state-owned. Loans from the state, usually through state-owned banks that act as policy banks rather than commercial lending institutions, are a common type of external resources provided by the government (Qu, 2003).

#### 3.3.2.2 *SOEs*

Previous studies have shown that many SOEs rely heavily on government support to survive, and they thrive in regulated industries such as energy, infrastructure, and

transportation (Wang et al., 2009). SOEs also enjoy many benefits such as access to key resources (Li & Xia, 2008). Under the wing of government protection, SOEs are not motivated to develop internal resources. As a result, they are less likely than other firms to possess competitive advantages to compete successfully in domestic markets, not to mention in the global markets (Wang et al., 2009).

Since they do not have internal resources that can be exploited in foreign markets, it is natural for SOEs to rely on external resources from the government. In the case of China, state-owned banks have been constantly pressed by the state to provide easy credit to SOEs (Li & Xia, 2008), and these loans become the SOEs' debts. It is not unusual for SOEs to end up not paying back these loans (Xiao, 2005). Because of this favorable feature, the loans are welcomed by many SOEs.

To summarize, SOEs are willing to rely on external resources, especially debts, to conduct FDI. Therefore, I have the following hypothesis:

***H2a: Total debts have a greater positive impact than intangible assets on the probability of an SOE going abroad.***

### 3.3.2.3 FPEs

Unlike SOEs which rely on external resources to invest abroad, FPEs will rely on internal resources when they go abroad for two reasons. First, since the government controls many of the external resources, FPEs are disadvantageous when they compete for these resources with SOEs (Brandt & Li, 2003). Second, external resource is not a good choice for FPEs because relying solely on external resources such as debts will not guarantee the success of internationalization. They are unlikely to overcome the liability of foreignness by providing superior products or services (Zaheer, 1995). The failure of internationalization could lead to serious consequences such as take-over or bankruptcy

(Zahra et al., 2000). FPEs will not go abroad unless they believe going abroad will improve firm performance.

As a result, FPEs will rely on internal resources to go abroad. The possession of valuable internal resources that can be exploited abroad will lead to improved firm performance. The next question is whether firms from emerging economies have intangible assets that can be exploited outside their home countries.

I argue that firms from emerging economies do have intangible assets that can be exploited abroad to create competitive advantages in at least two ways. The first way is to enter emerging industries where firms from emerging economies and those from developed countries do not have gaps in technology or experience. For example, Suzlon, an Indian wind turbine manufacturing company, is one of the leading players in the global wind energy industry. Suzlon is able to compete with Western firms through its integrated solutions that provide high-quality products and services to its customers (Viotor & Seminerio, 2008). Alternatively, firms from emerging economies can accumulate resources and compete with Western firms by penetrating market niches that Western firms neglect (Zeng & Williamson, 2007). For example, Haier, a Chinese electronic appliance manufacturer, dominates the worldwide markets for wine-storage refrigerator. Both examples show that firms from emerging economies do have resources that they can exploit abroad.

By exploiting these internal resources in foreign countries, they will benefit from the global expansion of internal resources (Delios & Beamish, 1999). FPEs are willing to go abroad to exploit these resources. Therefore, I have the following hypothesis:

***H2b: Intangible assets have a greater positive impact than total debts on the probability of a FPE going abroad.***

#### 3.3.2.4 PPEs

PPEs lay somewhere between SOEs and FPEs. On the one hand, they have more access to external resources than FPEs because the government still holds some level of ownership; on the other hand, they are performance-oriented since managers are under the pressure to improve firm performance (Megginson & Netter, 2001; Villalonga, 2000; Zahra et al., 2000). Then, which type of resources will PPEs rely on when they invest abroad, internal intangible assets or external total debts or both?

As argued earlier, if PPEs only utilize external government resources to invest abroad without having any intangible assets, the performance is likely to suffer because they do not have competitive advantage to compete with foreign firms and overcome liability of foreignness (Zaheer, 1995). Unlike SOEs, they will have to repay these debts<sup>14</sup>. Various studies have shown that privatized firms may go bankruptcy if they cannot repay their debts (He, 2010; Xu, 1996). In other words, government will not buffer them from losses in globalization. Therefore, PPEs will not rely on external government resources to go abroad. Instead, they are willing to exploit internal intangible assets in foreign markets. By exploiting these resources, they will benefit from globalization (Delios & Beamish, 1999). Since the purpose of privatization is to improve performance, exploiting intangible assets abroad fits the purpose well. I have the following hypothesis:

***H2c: Intangible assets have a greater positive impact than total debts on the probability of a PPE going abroad.***

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<sup>14</sup> Interview with an executive director of a PPE in Beijing, August 2009.

### 3.3.3 *The impact of a policy change*

The Chinese government has promoted outward FDI from Chinese firms since 2001. Overseas investment has been viewed as part of China's overall strategy for joining global competition since China joined the World Trade Organization in 2001. In the Tenth Five-Year Plan announced in 2001, the strategy of enterprises "going out" to invest abroad was described as one of the four key thrusts that would enable China to adjust to the trend of economic globalization. To encourage firms to go abroad, the Chinese government has initiated many incentives, including providing no-interest loans to firms that invest abroad.

The government policy changes both the motivation and the availability of external resources when firms go abroad. On the motivation side, it creates institutional pressures for firms to invest abroad. Oliver (1991) argues that firms respond differently to institutional pressures, from passive conformity to manipulation. One of the determinants of strategic response is the level of resource dependence: "an organization will be less likely to resist external pressures when it is dependent on the sources of these pressures" (Oliver, 1991: 163-164). Since SOEs rely heavily on the state for various resources to survive, they will comply with the request of the state by going abroad. Legitimacy rather than efficiency is the primary concern since the state may replace managers who do not adopt strategies it proposes (Luo & Tan, 1998).

On the resource side, such a policy means that more external resources become available for firms to use when they go abroad. Since SOEs rely on external resources to invest abroad, the increase in the availability of external resources will increase their probability of going abroad. Even if SOEs suffer from internationalization, they will not

be blamed because in following the advocates of the state they are “paying tuition” for future success (Yiu, Lau & Bruton, 2007) and the government will back them up with government resources such as capital (He & Lyles, 2008).

Unlike SOEs, PPEs and FPEs rely less on government for resources. As a result, their strategic response is different from that of SOEs: while SOEs adopts the compliance strategy by going abroad, FPEs and PPEs will choose to dismiss because they are very concerned about efficiency. Since they rely on the capital market for funding, they must be efficient. Otherwise, they will be taken-over or go bankruptcy (Zahra et al., 2000). Therefore, they are unlikely to react favorably to the policy unless they believe firm performance will improve after going abroad. On the resource side, since they rely more on internal resources rather than external resources, the change in government policy will not influence the availability of resources when they go abroad.

To summarize, a government policy encouraging firms to go abroad will promote FDI conducted by SOEs, but not necessarily by PPEs and FPEs. I have the following hypothesis:

***Hypothesis 3: SOEs, not PPEs or FPEs, are more likely to invest abroad after a policy change that favors internationalization.***

### 3.4 Methodology

#### 3.4.1 Empirical setting

The empirical focus of this study is foreign entries by Chinese-listed firms in high- technology industries from 1991 to 2007. China is an appropriate setting because outward FDI from China is increasing rapidly: in 2003, it was only \$2 billion but this number climbed to \$18.7 billion in 2007. China has become the largest outward FDI

investor from an emerging economy, with a total of \$61.6 billion by the end of 2006 (Ministry of Commerce, 2007).

High-tech industries include communications and related equipment manufacturing, computer and related equipment manufacturing, computer application service, computer software development and consultation, consumer electronics manufacturing, electrical machinery and equipment manufacturing, and electronic components and appliances. Among Chinese-listed firms, these firms are active players in globalization. They not only export their products worldwide, but also directly invest abroad. For example, Konka Group, a large manufacturer of consumer electronics including televisions, mobile phones, refrigerators and air conditioning, has set up eight foreign subsidiaries in countries such as Australia, the United States, India, and Indonesia. These Chinese firms invest in the developed world (the United States, Japan, and Europe) as well as in developing countries (for example, Vietnam, Thailand, and Tanzania).

The sample consists of 259 Chinese-listed firms in high-tech industries. This empirical setting provides an excellent opportunity to study the interplay among state ownership, resources, and FDI, for three reasons. First, as mentioned earlier, these firms are active players in FDI. Second, there is a wide range of state ownership in these firms: the level of state ownership ranges from zero to 83.75. Third, I chose to examine high-tech industries, where the role of internal firm resources, namely intangible assets, should be important in promoting FDI. This is a setting where the internalization theory of globalization should apply (Buckley & Casson, 1976). If I can find support for the role of external resources in promoting FDI, I can confidently argue that the other type of

resource, external resources, has explanatory power even in a setting where the role of internal resources is prominent.

### 3.4.2 *Data*

There were a total of 298 foreign subsidiaries owned by 65 Chinese-listed high-tech firms from 1991 to 2007. I identified high-tech firms according to the industry description in their annual reports. Then, I went through the annual reports to identify the foreign subsidiaries. Listed firms usually disclose subsidiary information (including country of entry, the amount of capital invested, the percentage of ownership, and primary business activities of subsidiaries) in the appendix. After gathering this information, I next determined the establishment year of the subsidiaries. If this information was not in the annual report, I consulted the company's website and also searched the Internet to determine the exact year of establishment. I gathered ownership information for listed firms from the ownership database of GTA (a research service center in China). Finally, I collected other financial data from CSMAR, a database that is part of Wharton Research Data Services.

### 3.4.3 *Variables*

#### 3.4.3.1 *Dependent Variable*

*FDI.* The dependent variable is a dummy variable that equals one if a firm owns a foreign subsidiary in a certain year. It is zero otherwise. Therefore, the level of analysis in this paper is firm-year.

#### 3.4.3.2 *Independent Variables*

*State ownership.* State ownership percentage is the sum of the percentage of a firm's top ten shareholders that are classified as "state" by the official Chinese ownership

classification system. Besides “state,” ownership classifications are “legal,” “employee,” “A-share,” “B-share” and “H-share.” This classification distinguishes among three dominant groups of shareholders — state, legal person, and tradable A – each of which holds approximately 30% of the total stock in these listed companies (Sun, Tong & Tong, 2002). One problem of the official scheme is that it fails to identify the identity of legal person. State-owned shares (guoyou gu) consist of two parts: state shares (guojia gu) and state-owned legal person shares (guoyou faren gu), however, these two parts lie in two different categories according to the official classification (Delios, Wu & Zhou, 2006). It is unclear whether the legal entities are state-owned or non-state-owned. To solve this problem, I measure state ownership by the percentage of state shares plus state-owned legal person shares.

To test H2 and H3, I classify firms into three types according to their state ownership: SOEs, PPEs and FPEs. SOEs are defined as firms with a state ownership of over 50%, PPEs are firms with a state ownership of less than 50% but above zero, while FPEs are firms with zero state ownership<sup>15</sup>. I choose 50% of state ownership to classify SOEs because owners with over 50% of total shares are considered the controlling shareholders. They have important rights such as voting and cash flow rights (Claessens, Djankov & Lang, 2000). It is a common way to classify SOEs as firms with above 50% state ownership since many studies have adopted such an approach to identify SOEs (Li & Zhang, 2010; Zhang & Dong, 2008).

Since the classification of SOEs and PPEs is crucial to test the hypotheses, I tried different methods to categorize SOEs and PPEs. One way to distinguish between SOEs

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<sup>15</sup> It should be noted that firms with zero ownership can be either firms founded by private entrepreneurs or firms that have fully privatized. I excluded the former by tracing back the ownership identity of the largest owner of the firms.

and PPEs is by whether a firm is directly controlled by the SASAC (State-owned Assets Supervision and Administration Commission) or not. Another way is to use different levels of state ownership to differentiate SOEs and PPEs. I also tried 40% instead of 50% as the cutting point. The use of continuous variable state ownership to test H1 is another way to avoid the arbitrary of dividing firms into these different categories.

It is also possible that the state controls a firm through a pyramid ownership structure (Wolfenzon, 1999). To avoid this problem, I adopted the ownership classification developed by Delios, Wu and Zhou (2006), which traces the ultimate ownership up to two levels. The coverage of this scheme, however, is only from 1993 to 2002. Since the majority of the FDI in this sample was conducted after 2001, it is hard to replicate the regressions in this chapter using this new classification. Instead, I tested the first hypothesis using this new scheme. The results of the different categorizations are summarized in Models 1 to 5 in Table 3-4 as a robustness check.

*Intangible assets.* This is one of the independent variables to test Hypothesis 2. Caves (1996) defined intangible assets as knowledge, technological or otherwise, that is unique to a firm. Intangible asset might also take the form of a trademark, patent, or brand. In this paper, intangible assets are calculated as the net original cost of patents, trademarks and copyrights proprietary, land use rights and commodity credit, after amortization (GTA, 2006).

*Total debts.* This is the other independent variable to test H2. It is the sum of long-term and short-term debts that the company borrows from banks or other financial institutions. The ability to borrow measures the ability of the firm to acquire resources from the

government, because most of the banks and financial institutions are state-owned. It is a proxy for access to external government resources.

*Year after 2001.* To test Hypothesis 3, I create a dummy variable *Year after 2001* that equals to one for the years after 2001. As mentioned earlier in this paper, Chinese government has promoted outward FDI of Chinese firms purposefully since 2001. Entering into WTO marks a sharp shift in the Chinese economy, especially regarding the outward FDI policy. For example, “measures of capital support for small-and medium enterprises to develop international markets” was issued by Ministry of Finance and Ministry of Foreign Trade and Economic Cooperation in 2001. The “Notice on providing credit support to key OFDI projects encouraged by the state” is issued by the State Development and Reform Commission in 2002. Other studies that review the different stages of Chinese outward FDI has classified the period after 2001 as a distinctive stage (Buckley, Cross, Hui, Liu & Voss, 2008; Luo et al., 2010). I am following this literature to measure the shift in government policy using the year of 2001 is a cutting point. I expect to find more FDI after the year of 2001 conducted by SOEs.

#### *3.4.3.3 Control Variables*

*Firm age.* A firm’s age may have an influence on the pattern of its multinational activity (Swaminathan & Delacroix, 1991). Firm age is an indicator of a firm’s ability to survive; firms with a long history have been able to compete successfully over time. Therefore, older firms are more likely to go abroad because of their competitiveness. Moreover, young firms may lack the knowledge and experience to expand overseas (Guillen, 2002). Therefore, I control for firm age, which is measured by the number of years since the firm’s founding.

*Firm performance.* Better-performing firms are more likely to invest abroad since they have the resource and capability to do so. Therefore, I control for firm performance by measuring return on assets (ROA) of the parent firm. ROA is the ratio of net profit to total assets of the firm. Since no one measure is perfect for firm performance (Meyer, 2002), there is no consensus in the literature regarding the most appropriate measure of firm performance. Unlike stock market returns, accounting-based performance measures are not affected by the divergence between shareholders and managers (Prowse, 1992). ROA has been widely used by others to measure firm performance (Chang & Singh, 1999).

*Prior foreign experience.* It is important to consider the possibility of learning in globalization. Scholars in international business describe the internationalization process as a gradual development taking place in distinct stages and over a relatively long period of time (Melin, 1992). The most influential stage model is the *Uppsala internationalization model* (Johanson & Vahlne, 1977). This process, whereby a firm gradually increases its international involvement, is described as being sequential as firms gain more foreign experience in operations.

One basic assumption of the Uppsala Model is that lack of knowledge about foreign markets is a major obstacle to international operations, but such knowledge can be acquired (Johanson & Vahlne, 1977). However, because of the tacit character of knowledge, one important source is a firm's own operations. An organization's previous experience can serve as a guide to a related decision because organizations confine search to areas in which they are experienced when they face high uncertainty (March, 1988). The benefits of accumulated past experience for making decisions have been found in

various organizational settings (Haleblian & Finkelstein, 1999; Henisz & Delios, 2001). In the case of FDI, by operating in a foreign market, the firm acquires invaluable information about that market that cannot be acquired by other means. In this paper, I measure the firm's past foreign investment experience using the total number of foreign subsidiaries in the years prior to the year of a foreign entry. This measure has been widely used in previous studies (Henisz & Delios, 2001).

*Ownership concentration.* A firm with a low ownership concentration is more susceptible to a severe agency problem. Compared with large owners, such as institutional owners, small shareholders do not have the capability to monitor firm behavior. Therefore, there is a greater chance of management expropriation in firms held by a large number of small shareholders rather than in firms held by a few large shareholders. In the case of going abroad, it is possible that managers pursue their own interests in making the decision. Therefore, it is necessary to control for the agency problem. I use the percentage of the firm held by the top five shareholders as the measure of the firm's ownership concentration.

*Legal person shares.* Legal person shares (*faren gu*) are shares owned by domestic institutions with a legal person status, such as banks and mutual funds. Legal person shares in China resemble institutional shares in the West: they are relatively conservative in investment strategy to ensure the stability of returns (Menkhoff, 2002). The risk-aversion of legal person shareholders could result in a reluctance of firms to invest abroad. As argued earlier, it is possible that legal person shares are owned by the state. I calculate legal person ownership percentage by adding the percentages owned by the top

ten shareholders that are officially classified as legal persons, excluding state-owned legal person shares.

*A-shares.* Tradable A-shares are owned by domestic individual residents of China or institutions, but cannot be owned by foreign investors. A-shares are the only type of shares that can be publicly traded among domestic investors on the Shanghai or Shenzhen Stock Exchange. Individual investors are more risk-seeking than institutional investors, because they can diversify away the risk by holding different stocks (Verma & Verma, 2008). Therefore, I expect A-shareholders to favor risky investment decisions such as going abroad. I calculate A-share percentage by adding the percentages owned by the top ten shareholders that are officially classified as tradable A-shareholders.

*Product diversification.* Product diversification also influences the extent of internationalization. Since product diversification is resource-consuming, it competes with globalization for scarce resources such as capital. However, it is also possible that the experience generated from product diversification can be applied to globalization. The literature on the relationship between product diversification and globalization is inconclusive (Doukas & Lang, 2003; Tallman & Li, 1996). I control for product diversification as measured by the concentric index developed by Montgomery and Wernerfelt (1988).

*Time effects.* To control for possible time effects, I include year dummies in the regressions. Industry dummies are unnecessary since the sample consists of the relatively homogeneous high-tech industries.

#### 3.4.4 Estimation Method

The dependent variable is whether a firm has a foreign subsidiary in a particular year, which is a dummy variable; therefore, probit regression is the suitable estimation model. There are two problems to solve in the empirical analyses: sample selection and endogeneity.

The sample selection problem exists because none of the firms in the sample are 100% state owned. It is the case since all listed firms have some shares owned by the public. Therefore, it is necessary to control for the sample selection bias by calculating the probability of a firm to be listed and enter that probability as a control variable in the following regressions, as suggested by Heckman (1979). To calculate the ratio, I gather information on all 100% state-owned unlisted firms in the high-tech industries. The data come from the registration records and include basic information such as location, establishment year, registration capital and annual sales. There are a total number of 1,547 firms. I predict the probability of a firm being 100% SOE by running a probit regression as shown in model 1 in Table 3-2. The independent variables include number of patents a firm filed in the U.S., annual sales and province and year dummies. I use the number of patents as an independent variable to predict the probability of a firm being listed or not because firms may choose to be listed if they have certain capabilities (Tong, 2009). In the case of high-tech firms, innovation capability is an important one. Patent data is acquired by searching company names at the USPTO website. Based on the results in this regression, I calculate the inverse Mill's ratio and enter the ratio in all other regressions as a control variable.

One of the independent variables, state ownership, is endogenous because government may choose to privatize firms with certain characteristics that may lead to internationalization. Another independent variable, total debts, is also endogenous because investing abroad may cause an increase in the level of a firm's debts. Therefore, another empirical challenge in this paper is controlling for the endogeneity of state ownership and total debts. Instrument variables that are related to the endogenous variables but unrelated to the probability that firms will go abroad are necessary to solve the problem of endogeneity.

Since privatization could be viewed as one way through which government raises money to deal with financial deficits (Boubakri & Cosset, 1998; Jing & Padgett, 2006), the level of financial deficits of provincial government in which a firm is located may predict the probability of privatization of that firm. Financial deficit is calculated by subtracting financial expenses from financial revenues. Financial deficit at the provincial level of the previous year predicts the need for provincial government to privatize firms, not the probability of a firm to invest abroad. It is used as the instrument for state ownership.

I use two instrument variables for total debts, one at firm level and the other at provincial level. Previous research has identified fixed assets as a determinant of total debts (Chui, Lloyd & Kwok, 2002; Friend & Lang, 1988). Since fixed assets can be used as collateral to secure debts, firms with a high level of fixed assets are expected to issue more debts (Titman & Wessels, 1988). I choose the amount of fixed assets of the previous year as the firm-level instrument. The provincial level instrument variable is the total number of branches of the four largest state-owned banks in the province in which a

firm is located. This variable predicts the availability of funds from state-owned banks. Both variables should be related to the level of total debts of a firm, but not related to the probability of the firm going abroad.

To test the relevance and exogeneity of the instruments, I conduct first-stage F-test and Sargan-Hansen test. The former is a test of instrument relevance; while the latter is a test of instrument exogeneity (Bascle, 2008). The first-stage F-test can be viewed as a sophisticated F-test with the null hypothesis that the coefficients of instruments equal zero (Staiger & Stock, 1997). A rejection of the test means that instruments are relevant. The null hypothesis of Sargan-Hansen test is that the instruments are valid instruments, i.e., uncorrelated with the error term, and that the excluded instruments are correctly excluded from the estimated equation. A rejection casts doubt on the validity of the instruments (StataCorp, 2009). I run `ivreg2` to get the first-stage F-test and Sargan and Basman statistics because such tests have not been developed after `ivprobit`. For state ownership, the instrument has an F-test value of 2.68 (p-value=0.10) and Hansen J statistic is 0.00 (p-value=1.00). For total debt, the instruments have the F-test value is 17.64 (p-value=0.00) and Hansen J statistics is 0.87 (P-value=0.35). These tests show that the instruments are relevant and exogenous.

Model 2 and 3 in Table 3-2 are the models that calculate the predicted value of state ownership and total debts using the instrument variables and other control variables. I use these variables in model 2 and 3 in Table 3-3 to test Hypothesis 1. To test H2 and H3, I use the `ivprobit` command in STATA 11 to run the regression. Moreover, I use the cluster option in STATA to account for intra-group variance since I have panel data. I use the entire sample to test Hypothesis 1. To test Hypothesis 2 and 3, I split the sample into

three sub-samples: SOEs, PPEs and FPEs. I run the same regression in these different samples to investigate the potential differences of independent variables in influencing the probability that firms will go abroad.

### 3.5 Results

Table 3-1 shows the means, standard deviations, and correlations of variables used in the regressions. Table 3-2 includes three first-stage regressions. Model 1 calculates the inverse Mill's ratio of being listed. The regression shows that the more patents a firm filed in the U.S, the more likely it will be listed; the larger the annual sales, the more likely it will be listed. Model 2 and 3 calculates the predicted value of state ownership and total debts. The instrument variables are significant in expected signs.

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Insert Table 3-1 & 3-2 about here  
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Table 3-3 reports the parameters and robust standard errors of eleven model specifications. Models 1, 2, 4, and 5 run probit regression while models 3 and 6 to 11 run ivprobit model. Model 1 is the baseline model that includes only the control variables. In model 2, I add the independent variable predicted state ownership to test H1. I run the ivprobit model and treat state ownership as the endogenous variable in model 3. In model 4, I add the other independent variables predicted total debts, intangible assets, and year after 2001. In model 5, I further add the interaction terms between state ownership and total debts, and between state ownership and intangible assets. In these two models (models 4 and 5), I run probit model using the predicted value of state ownership and total debts because the command ivprobit can only accommodate one endogenous

variable at one time (since it is hard to find an instrument variable for both state ownership and total debts).

The first five models use the full sample. In models 6, 7 and 8, I split the full sample into three categories: SOEs, PPEs, and FPEs, according to a firm's level of state ownership. In these three models, the only endogenous variable is total debts. Therefore, I use ivprobit command and include fixed assets and the number of bank branches as the instrument variables in these three regressions. Similarly, in models 9, 10 and 11, I split the sample again, and add the interaction terms between total debts and year after 2001, and between intangible assets and year after 2001.

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Insert Table 3-3 about here  
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The first hypothesis, the probability of going abroad is negatively related to the level of state ownership, is strongly supported. The coefficient of state ownership is negatively significant in models 2 to 5. Previous studies have recognized the difficulty of interpreting the results of probit models; therefore, it is necessary to show the effects of independent variables in probit models by reporting their marginal effects (Hoetker, 2007; Wiersema & Bowen, 2009). I calculated the marginal effects of state ownership using the margins command in STATA. In model 4, the probability of conducting FDI decrease from 68% to 33% if the level of state ownership increase from one standard deviation below mean to the mean value, other variables constant at their mean values. The probability further decreases to 8% when state ownership increases from mean to one standard deviation above mean.

Both total debts and intangible assets are positively significant in models 4 and 5. However, when I split the sample according to ownership type, different factors influence the probability of SOEs and PPEs investing abroad. For SOEs, total debts are positively significant in models 6 and 9; therefore, hypothesis 2a is supported. The probability of going abroad increases from 5% to 23% when total debts increase from one standard deviation below mean to one standard deviation above mean in model 6. SOEs with high levels of total debts are more likely to invest abroad. Intangible assets are not significant for SOEs. For PPEs, on the contrary, intangible assets are positively significant, while total debts become non-significant in models 7 and 10. The probability of going abroad increases from 19% to 29% when intangible assets increase from one standard deviation below mean to one standard deviation above mean in model 7. Thus, hypothesis 2c is also supported. Hypothesis 2b, however, is not supported since total debts rather than intangible assets are significant for FPEs in models 8 and 11. The results in models 6 to 11 suggest that while SOEs and FPEs rely on external government resources to invest abroad, PPEs rely on internal firm resources to invest abroad.

I further conduct F-test to test the difference in the coefficients of total debts and intangible assets. The Chi-square test value is 14.09, 7.64, and 11.21 for models 4, 5, and 6, and they are significant at p value of 0.01, 0.05 and 0.01, respectively. The test confirms that total debts and intangible assets do have different effects for these three different groups of government corporations.

Year after 2001 is positively significant in models 6 and 9. Its effect on the probability of going abroad differs when I split the sample. Out of the three types of firms,

only SOEs are more likely to go abroad after the year of 2001. PPEs and FPEs do not react to the policy. This result supports Hypothesis 3.

When we look at the interaction terms in model 5, the support is weaker. The interaction term between state ownership and intangible assets is marginally negatively significant, showing that the effects of intangible assets on the probability of foreign entry become weaker as state ownership increases, consistent with Hypotheses 2b and 2c. However, the interaction term between state ownership and total debts is not significant. Overall, the interaction effects are not strong, which may be due to the findings in model 8 and 11: FPEs rely on total debts rather than intangible assets to invest abroad.

For the interaction terms in models 9 to 11, only the interaction term between total debts and year after 2001 in model 9 is positively significant, showing that for SOEs, the effects of total debts on the probability of foreign entry is higher after the year of 2001. The result is consistent with the prediction of Hypothesis 2a and 3. Since SOEs are more likely to invest abroad after the year of 2001 and they rely on total debts when they go abroad, the interaction term is positively significant. As for the interaction term between intangible assets and year after 2001, none of them are significant in the three models, showing that the effect of intangible assets on the probability of foreign entry is not influenced by the time period. The results are consistent with Hypothesis 2b/c and 3: since the government policy does not influence the internal resources, the effects of internal resources (intangible assets) on the probability of foreign entry is not influenced by the government policy.

In short, all hypotheses are supported except for Hypothesis 2b. FPEs are found to rely on external government resources, rather than internal firm resources, to go abroad.

This is an unexpected finding that deserves further discussion. One possible explanation for this result is that FPEs may use government loans to establish connections to the government (Chan, Cheng & Szeto, 2002; Xin & Pearce, 1996). The attempt to invest abroad by utilizing government resources may be a good way for them to establish a link which they could utilize in the future. For example, managers in FPEs may become acquaintance to officials in banks or the government. Viewed in this way, the decision to invest abroad using government resource is a strategic step stone to gain further access to government resources.

As for control variables, product diversification is negatively significant in most of the models, showing that firms are constrained by their resources. Those firms that conduct a high level of product diversification are less likely to invest abroad. Legal person share is negatively significant in all models except the first, indicating that legal person shareholders are risk-averse and deter firms from going abroad. Legal person shares are negatively significant in all models, indicating that institutional investors are more risk-averse. ROA is positively significant in models 1, 2, 6 and 11, indicating that better performing firms are more likely to go abroad. Firm age is negatively significant in models 3 to 6 and 9. Older firms may be subject to a high level of inertia (Freeman, Carroll & Hannan, 1983), making them less likely to conduct strategic changes. For SOEs, ownership concentration is negatively significant, which means that firms with a low ownership concentration are more likely to invest abroad. This is an indication that SOEs suffer from the agency problem. SOEs are likely to invest abroad just to cater to the advocates of the government. These managers only consider their political outlook rather than the performance of the firm (Qu, 2003). Therefore, in SOEs with a low

ownership concentration, managers pursue their own interests to invest abroad because the minority shareholders lack monitoring power. The situation is different for PPEs. In these firms, ownership concentration turns out to be positively significant. This result may reflect the fact that in PPEs, the lack of large shareholders makes it hard to agree on a big strategic move such as investing abroad (Edwards & Weichenrieder, 2009).

The number of prior foreign investments made by a firm is positively significant for PPEs and FPEs, but is insignificant for SOEs. This measure reflects the experience of the firm. It is interesting that unlike PPEs and FPEs, SOEs generally do not rely on their past experience to invest abroad. Ideally, firms will gain enough foreign experience before they go abroad (Johanson & Vahlne, 1977); otherwise, they will suffer from their lack of market knowledge. However, this is not a concern for SOEs since they have enough capital to support a foreign failure even if the investment does turn out to be unsuccessful. In this case, SOEs are able to invest abroad even though they lack relevant foreign experience.

Fixed asset is positively significant in models 6 to 11. It works well as an instrument variable, indicating that the level of total debts of a firm increases with the firm's fixed assets. The number of bank branches in a province is positively significant in models 7 and 10. Firms located in provinces with more state bank branches are more likely to get loans. The Wald test for exogeneity shows that models 6, 7 and 10 suffer from endogeneity problem. Therefore, it is necessary to use instrument variables to solve the problem of endogeneity.

***Robustness check.*** I checked the robustness of the results in several ways. First, as I described earlier. I tried different methods to categorize SOEs and PPEs. The results are

summarized in Models 1 to 5 in Table 3-4. I also tried Cox regression rather than probit model to test the first hypothesis because Cox model is suitable for rare events (Cox, 1975). I cannot test the other hypotheses using Cox model because Cox model will not accommodate the instrument variables in the regression. The results of Cox model are summarized in model 6 of Table 3-4.

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Insert Table 3-4 about here  
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The results in Table 3-4 largely support the previous findings. Models 1 and 2 shows the classification by SASAC: firms with state ownership above zero and is controlled by SASAC are considered as SOEs while firms with state ownership above zero but not controlled by SASAC are considered as PPEs. When I classify SOEs and PPEs in this way, SOEs still rely on total debts rather than intangible assets to go abroad. Chi-square value to test differences in coefficients is 9.97, significant at p value of 0.01. For PPEs under this categorization, they rely on intangible assets rather than total debts. Chi-square value is 4.59 with p-value of 0.10. Model 3 and 4 use 40% as the cutting point to classify SOEs and PPEs and the results are similar. The chi-square value is 8.38 and 7.22, with p value of 0.04 and 0.07 in model 3 and 4. Year of 2001 is also positively significant in model 3, but not in model 4. The tests in models 1 to 4 show the robustness of results supporting Hypotheses 2. The support of Hypothesis 3 is weaker since Year after 2001 is not significant in either model 1 or 2.

In model 5, I use another measure of state ownership and again it is significant, supporting Hypothesis 1. Model 6 shows that the results hold if I choose a different model specification: Cox model. The coefficients reported in model 6 are the hazard ratio

of conducting FDI. Therefore, a coefficient larger than one means the variable increases the probability of FDI while a coefficient smaller than one means the variable decreases the probability. We can see that state ownership decreases the probability of investing abroad, consistent with the hypothesis. The results in models 5 and 6 show the robustness of Hypothesis 1.

### 3.6 Discussion and Conclusion

The globalization of firms from emerging economies has become a prominent phenomenon that deserves investigation. To better understand this phenomenon, this paper investigates the role of the government in the globalization of MNEs from emerging economies. Government plays an important role in this process by influencing both the *motivation* of firms to go abroad and their *resources* for doing so. To analyze how state ownership influences the probability that firms will go abroad, I compare the strategies of SOEs, PPEs and FPEs. The level of risk-taking of a firm decreases with the level of state ownership. Without favorable policies, SOEs are less likely than FPEs and PPEs to go abroad and the probability of going abroad is negatively related to state ownership. This finding shows that state ownership influences the strategic orientation of firms.

Different types of government corporations also rely on different types of resources when they go abroad. While SOEs rely on external resources to fund their FDI activities, PPEs rely on internal resources. This difference is due to the fact that while SOEs are not performance-sensitive, PPEs want to improve performance from globalization. Solely relying on external resources such as debts to go abroad will only harm firm performance in the long run because firms will not be able to overcome the

liability of foreignness when they operate abroad. Therefore, PPEs will not rely on external resources to invest abroad. But SOEs do not have such concerns. This finding shows that internal firm-specific ownership advantage is not the only reason for firms to invest abroad; the ability to acquire external government resources will also enable them to go abroad. This result also indicates that theories developed in the Western context may not be applicable in the setting of emerging economies.

It is interesting to note, however, that FPEs will rely on total debts rather than firm-specific advantages to go abroad, contrary to the prediction. This result may reflect the fact that FPEs may view utilizing government loans as one way to establish a relationship with banks that could be utilized in the future. Further studies are necessary to investigate the strategic behavior of FPEs, in comparison with other firms.

Finally, this paper investigates how different firms react to a government policy encouraging firms to invest abroad. Such a policy influence both the motivation and resources of going abroad by creating institutional pressure and increasing the availability of external resources. As a result, SOEs are more likely to invest abroad after such a policy is announced while PPEs and FPEs will not be influenced since they depend less on the government for resources.

Several implications follow from the results. First, from a theoretical perspective, bridging the research on MNEs from emerging economies and the research on government corporations helps us better understand MNEs from emerging economies. Government, especially state ownership, does influence the process of globalization to a large degree, as manifested in the FDI decisions made by managers. Second, this paper shows that SOEs and PPEs are different in their priorities and strategic orientations.

Therefore, when we consider government corporations, we should not treat PPEs the same as SOEs. This finding is applicable not only in emerging economies, but also in developed countries where there are a large number of PPEs (Koppell, 2007). Third, since SOEs rely largely on government support to invest abroad, the performance of SOEs after going abroad is likely to suffer because they cannot compete successfully abroad. Government may need to support SOEs' foreign operations for a long time.

From the perspective of the government, this paper shows that it is not enough to support FDI only with government resources such as no-interest loans. The ultimate goal is to help these firms compete successfully in foreign markets. To achieve this goal, it is vital to provide favorable environments in which firms can develop their firm-specific ownership advantages. Moreover, although the process of privatization has been going on for some time, a large number of SOEs in emerging economies still rely heavily on the government to survive. It is a crucial task for the government to maintain the balance between political control and enterprise independence in SOEs (Koppell, 2007). The over-reliance of SOEs on government will create inefficiencies, as described in this paper.

This paper suffers from several limitations. First, the sample comes from only one country: China. It is well recognized that the Chinese government has been influential in firm strategy. It is not clear whether governments from other emerging economies can exert influential power over firms as the Chinese government does. Second, this paper focuses only on high-tech firms. Many MNEs from emerging economies are in natural resource industries. The motivations and strategies of such MNEs are different from those of MNEs in high-tech industries. The findings of this paper may not be applicable

to the setting of other industries, such as natural resource industry. Third, one natural extension of this study is to analyze performance implications after firms go abroad. Theoretically, firms that rely on government resources to invest abroad should suffer from internationalization, while firms that rely on intangible assets to invest abroad should benefit from internationalization. However, because these firms do not disclose performance information at the foreign subsidiary level in their annual reports, it is hard to verify this prediction.

Despite these limitations, this paper contributes to the literature of both MNEs from emerging economies and the strategy of government corporations. Considering the role of state ownership helps scholars better understand the globalization of MNEs from emerging economies. Government can influence both the motivations of firms to go abroad and their resources for doing so. On the motivation side, SOEs are less likely than PPEs and FPEs to invest abroad. On the resource side, SOEs will rely on external government resources to invest abroad, while PPEs will rely on internal firm-specific ownership advantages. These key differences between SOEs and PPEs warrant further investigation.

This chapter investigates how institutional environments, especially government, influence the availability of external resources, and thus the choice of firm scope. In the next chapter, I will examine how the unique institutional environments in emerging economies influence development of internal resources.

### 3.7 Tables

*Table 3-1 Means, Standard Deviations, and Correlations<sup>16</sup>*

Variable	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 FDI	0.06	0.23	1.00													
2 State ownership	21.34	24.82	-0.05	1.00												
3 Total debts	3.76	5.44	0.24	0.13	1.00											
4 Predicted State ownership	21.28	11.88	0.00	0.62	0.14	1.00										
5 Predicted total debts	3.77	3.45	0.28	0.07	0.67	0.14	1.00									
6 Inverse Mill's ratio	0.58	0.25	-0.01	0.15	0.10	0.27	0.08	1.00								
7 Intangible assets	5.07	9.37	0.22	0.02	0.45	0.11	0.64	0.02	1.00							
8 Year after 2001	0.58	0.49	0.07	0.11	0.05	-0.18	0.11	0.01	0.09	1.00						
9 ROA	0.01	0.27	0.02	0.03	0.03	0.06	0.01	0.15	-0.01	0.10	1.00					
10 Age	7.84	4.24	0.02	0.24	0.10	-0.37	0.23	0.42	0.19	0.37	0.18	1.00				
11 Product diversification	0.16	0.39	-0.09	0.04	0.09	0.07	0.09	0.00	0.05	0.19	0.01	0.10	1.00			
12 Legal person shares	16.08	22.93	0.03	0.41	0.06	-0.33	0.03	0.03	-0.03	0.38	0.12	0.29	0.06	1.00		
13 A-shares	2.07	3.86	0.09	0.21	0.04	-0.30	0.11	0.07	0.07	0.39	0.03	0.21	0.05	0.36	1.00	
14 Ownership concentration	39.31	15.95	0.00	0.40	0.05	0.19	0.03	0.20	-0.04	0.23	0.07	-0.37	-0.02	-0.19	-0.21	1.00
15 Number of prior foreign entries	0.36	2.56	0.32	0.03	0.31	-0.04	0.40	0.01	0.18	0.08	0.00	0.02	0.00	0.01	0.10	-0.07

<sup>16</sup> n=1270; correlations above .04 are significant at the .01 level (two-tailed tests).

Table 3-2 1st Stage Regressions

	DV=100% SOE	DV=State ownership	DV=Total debts
Financial deficit		-0.42+ (0.20)	
Fixed assets			0.60*** (0.03)
Number of bank branches			0.27** (0.10)
Annual sales	0.43*** (0.01)		
Patent	0.86*** (0.11)		
Firm age		-0.36 (0.29)	0.11** (0.05)
Product diversification		0.77 (1.29)	0.46+ (0.28)
ROA		-0.20 (0.15)	-0.57+ (0.34)
Legal person shares		-0.05*** (0.00)	-0.10 (0.07)
A-shares		-0.03+ (0.02)	0.04 (0.03)
Ownership concentration		0.44*** (0.05)	0.10 (0.09)
Number of prior FDI made by the firm		-0.17 (0.25)	0.12* (0.05)
Intangible assets		0.10+ (0.06)	0.56*** (0.13)
Year after 2001		1.12 (2.00)	0.34 (0.53)
Province dummies	Included	Not included	Not included
Year dummies	Included	Included	Included
Constant	-6.46*** (0.19)	8.29 (5.73)	2.05+ (1.22)
Inverse Mill's ratio		-2.14 (7.77)	0.16 (0.15)
Number of observations	14398	1270	1270
R-Square	0.31	0.37	0.44
LR/Wald chi-square	3784.51	496.53	786.98
Probability > chi-square	0.00	0.00	0.00

Table 3-3 Results of Probit Regression<sup>17</sup>

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
<b>Second stage: DV=FDI</b>					
<b>Independent Variables</b>					
State ownership (H1)		-0.14** (0.06)	-0.05*** (0.00)	-0.44** (0.18)	-0.48** (0.19)
Total debts (H2)				0.47** (0.18)	0.49** (0.20)
Intangible assets (H2)				0.57*** (0.18)	0.58** (0.19)
Year after 2001 (H3)				5.14** (2.02)	5.58** (2.12)
State ownership * Total debts					0.07 (0.05)
State ownership * Intangible assets					-0.02+ (0.01)
<b>Control Variables</b>					
ROA	0.90* (0.40)	1.02** (0.47)	-0.01 (0.27)	-0.05 (0.58)	-0.09 (0.59)
Firm age	-0.01 (0.02)	0.00 (0.00)	-0.03* (0.02)	-0.15** (0.05)	-0.15** (0.05)
Product diversification	-0.28** (0.12)	-0.32** (0.13)	-0.03 (0.14)	-0.01 (0.17)	0.01 (0.18)
Legal person shares	-0.00 (0.00)	0.02 (0.03)	-0.04*** (0.01)	-0.22* (0.09)	-0.24** (0.09)
A-shares	0.01 (0.02)	0.03 (0.02)	0.03*** (0.01)	0.11* (0.05)	0.12* (0.05)
Ownership concentration	0.01 (0.01)	-0.01 (0.03)	0.03*** (0.01)	0.20** (0.08)	0.22** (0.08)
Number of prior FDI made by the firm	0.32*** (0.05)	0.32*** (0.05)	0.04 (0.09)	0.19*** (0.05)	0.18*** (0.06)
Year dummies	Included	Included	Included	Included	Included
Inverse Mill's ratio	-1.12+ (0.65)	-0.85 (0.80)	-0.06 (0.63)	-0.88 (0.75)	-1.21 (0.76)
Constant	-1.44** (0.53)	-2.48 (1.68)	1.21* (0.60)	-0.09 (0.83)	0.07 (0.85)
Wald test of exogeneity			2.02		
P value			0.16		
Number of observations	1270	1270	1270	1270	1270
Log pseudolikelihood	-210.58	-207.74	-5766.51	-197.85	-197.05
Pseudo r-square	0.22	0.23		0.27	0.27
Wald chi-square	104.11	109.26	1311.13	147.18	150.11
Probability > chi-square	0.00	0.00	0.00	0.00	0.00

<sup>17</sup> +p<0.1; \*p<0.05; \*\*p<0.01, \*\*\*p<0.001. All two-tailed tests. Robust standard errors are in parentheses.

Table 3-3 Continued

Variables	Model 6 (SOE)	Model 7 (PPE)	Model 8 (FPE)	Model 9 (SOE)	Model 10 (PPE)	Model 11 (FPE)
<b>Second stage:</b>						
<b>DV=FDI</b>						
<b>Independent Variables</b>						
Total debts (H2)	1.68*** (0.52)	-1.19 (4.26)	1.54* (0.70)	1.58** (0.56)	-0.58 (0.45)	1.71* (0.71)
Intangible assets (H2)	0.49 (0.37)	0.36* (0.16)	-0.16 (0.16)	0.43 (0.38)	0.40** (0.14)	-0.21 (0.17)
Year after 2001 (H3)	3.11* (1.52)	0.32 (0.51)	1.21 (0.96)	3.82+ (2.17)	0.59 (0.45)	1.23 (1.02)
Total debts * Year after 2001				0.18*** (0.04)	0.19 (0.13)	-0.28 (0.70)
Intangible assets * Year after 2001				0.91 (2.26)	0.42 (0.32)	0.21 (2.51)
<b>Control Variables</b>						
ROA	13.99** (4.80)	2.03 (2.39)	1.14 (0.76)	13.79 (15.08)	1.55 (2.14)	0.98+ (0.56)
Firm age	-0.19* (0.08)	0.00 (0.03)	-0.03 (0.03)	-0.88** (0.31)	-0.03 (0.03)	-0.01 (0.04)
Product diversification	-1.53+ (0.88)	-0.37+ (0.22)	-0.57*** (0.13)	1.71 (1.45)	-0.34 (0.22)	-0.56*** (0.12)
Legal person shares	-0.17* (0.08)	-0.02* (0.01)	-0.02+ (0.01)	-0.12*** (0.23)	-0.02+ (0.01)	-0.02+ (0.01)
A-shares	-0.78 (0.80)	-0.04 (0.04)	0.02 (0.02)	-0.46** (0.18)	-0.03 (0.04)	0.03 (0.02)
Ownership concentration	-0.04+ (0.02)	0.04*** (0.01)	0.01 (0.01)	-0.06*** (0.02)	0.03*** (0.01)	0.01 (0.01)
Number of prior FDI made by the firm	0.86 (0.77)	0.35*** (0.06)	0.22+ (0.13)	0.50 (1.27)	0.31*** (0.05)	0.19 (0.14)
Year dummies	Included	Included	Included	Included	Included	Included
Inverse Mill's ratio	-1.12 (2.54)	1.23 (1.16)	-1.56 (1.17)	-4.23** (1.89)	-0.96 (0.62)	-0.07 (0.66)
Constant	0.60 (2.06)	-4.12*** (0.89)	-2.39* (1.09)	0.72** (0.253)	-2.42** (0.65)	-3.42*** (0.98)
<b>First Stage:</b>						
<b>DV=Total debts</b>						
Fixed assets	0.82** (0.27)	0.71*** (0.12)	0.26* (0.11)	0.74** (0.25)	0.83*** (0.13)	0.26* (0.11)
Number of bank branches	0.34 (0.27)	0.35* (0.15)	0.26 (0.17)	0.58 (0.47)	0.30* (0.13)	0.22 (0.16)
ROA	-0.52+ (0.31)	-0.23*** (0.05)	-0.44+ (0.27)	-0.61* (0.31)	-0.24*** (0.05)	-0.56* (0.28)
Firm age	-0.18 (0.21)	0.66 (0.91)	-0.27 (0.91)	-0.07 (0.21)	1.15 (1.01)	0.70 (0.95)
Product diversification	0.48* (0.21)	1.20** (0.41)	1.21** (0.39)	0.43* (0.20)	1.32*** (0.38)	1.21** (0.39)
Legal person shares	-0.02 (0.03)	0.04 (0.25)	-0.06 (0.21)	-0.04 (0.03)	0.03 (0.25)	-0.03 (0.22)
A-shares	-0.11+ (0.05)	-0.08 (0.61)	0.05 (0.05)	-0.10+ (0.05)	-0.09 (0.59)	0.05 (0.05)
Ownership	0.11	0.07	-0.11	-0.16	0.08	-0.13

concentration	(0.41)	(0.20)	(0.20)	(0.37)	(0.20)	(0.21)
Number of prior FDI made by the firm	0.22* (0.10)	0.14* (0.07)	0.59+ (0.31)	0.21* (0.09)	0.19** (0.07)	0.57+ (0.33)
Intangible assets	-0.17 (1.19)	0.79+ (0.45)	1.19* (0.57)	0.05 (0.99)	0.38 (0.44)	1.16* (0.56)
Year after 2001	0.96 (2.04)	-0.57 (1.19)	-0.46 (1.14)	0.46 (1.93)	-0.91 (1.22)	-1.04 (1.12)
Inverse Mill's ratio	-1.12* (0.56)	-0.30 (0.24)	-0.84 (3.25)	0.58* (0.24)	1.56 (1.10)	2.12* (1.06)
Total debts * Year after 2001					-0.53 (0.38)	-0.07 (0.29)
Intangible assets * Year after 2001					1.50 (0.92)	-0.10 (0.90)
Year dummies	Included	Included	Included	Included	Included	Included
Constant	0.94* (0.47)	2.84 (2.26)	3.81 (1.68)	-1.44 (3.17)	-0.61 (1.22)	1.68 (1.49)
Wald test of exogeneity	4.29	2.73	1.35	1.44	7.87	1.77
P value	0.04	0.10	0.25	0.23	0.01	0.18
Number of observations	293	498	583	293	498	583
Log pseuolikelihood	-4299.00	-7322.56	-10504.92	-4284.45	-7316.30	-10503.31
Pseudo r-square						
Wald chi-square	114.55	108.74	111.10	345.89	186.32	121.47
Probability > chi- square	0.00	0.00	0.00	0.00	0.00	0.00

Table 3-4 Robustness check<sup>18</sup>

Variables	Model 1 SOE (SASAC)	Model 2 PPE (non-SASAC)	Model 3 SOE (>40%)	Model 4 PPE (≤40%)	Model 5 (Ultimate control)	Model 6 (Cox model)
<b>Second stage: DV=FDI</b>						
<b>Independent Variables</b>						
State ownership (H1)					-0.00+	0.91**
					(0.00)	(0.03)
Total debts (H2)	2.72*** (0.74)	0.79 (0.53)	1.64*** (0.32)	0.03 (0.38)	0.09*** (0.02)	1.00* (0.00)
Intangible assets (H2)	-1.09** (0.36)	2.23+ (1.32)	1.49 (2.36)	3.03* (1.48)	0.10 (0.08)	1.00* (0.00)
Year after 2001 (H3)	-0.59 (0.85)	0.91 (0.74)	2.07+ (1.14)	0.69 (0.51)	0.39+ (0.22)	Not included
<b>Control Variables</b>						
ROA	7.85 (9.56)	0.92 (1.82)	14.02*** (3.69)	1.62 (2.22)	0.34 (0.26)	1.86 (1.05)
Firm age	0.10 (0.11)	-0.08+ (0.04)	-0.18** (0.07)	-0.02 (0.03)	-0.03 (0.02)	0.93 (0.06)
Product diversification	0.52 (0.55)	-0.06 (0.24)	-0.62 (0.43)	-0.31 (0.22)	-0.37* (0.16)	0.60*** (0.08)
Legal person shares	0.00 (0.01)	-0.09*** (0.03)	-0.06 (0.07)	-0.02** (0.01)	-0.01+ (0.00)	0.95** (0.02)
A-shares	0.00 (0.17)	-0.01 (0.03)	-0.33 (0.22)	-0.03 (0.04)	-0.03 (0.04)	1.00 (0.04)
Largest Ownership	-0.01 (0.01)	-0.01 (0.01)	-0.02 (0.01)	0.04*** (0.01)	0.00 (0.01)	1.07*** (0.02)
Number of prior FDI made by the firm	0.04 (0.31)	1.29*** (0.37)	0.14** (0.34)	0.27*** (0.06)	0.27*** (0.04)	1.81*** (0.33)
Year dummies	Included	Included	Included	Included	Included	Not Included
Inverse Mill's ratio	0.34 (1.15)	-2.53*** (0.63)	-1.66** (0.62)	-0.88 (0.65)	-0.41 (0.27)	0.39 (0.38)
Constant	-1.32+ (0.81)	-0.25 (0.65)	-0.42 (1.09)	-2.88*** (0.68)	-1.77*** (0.38)	N.A.
Wald test of exogeneity	0.60	0.62	4.03	0.37		
P value	0.44	0.43	0.05	0.54		
Number of observations	199	611	395	415	1398	1398
Log pseudolikelihood	-2110.22	-7914.81	-6312.39	-6106.55	-249.30	-155.70
Wald chi-square	285.43	225.47	138.63	85.35	41.69	58.20
Probability > chi- square	0.00	0.00	0.00	0.00	0.00	0.00

<sup>18</sup> +p<0.1; \*p<0.05; \*\*p<0.01, \*\*\*p<0.001. All two-tailed tests. Robust standard errors are in parentheses.

## CHAPTER 4 RELATED DIVERSIFICATION AND FIRM PERFORMANCE

### REVISITED: THE LIABILITY OF RELATED DIVERSIFICATION

#### 4.1 Introduction

Product diversification, or diversification across business lines, is a common corporate strategy (Rumelt, 1974). The extent of product diversification has important implications for both the competitiveness of a firm and its overall performance. According to the academic literature, firms should benefit from related diversification because related diversification adds value by exploiting existing resources and capabilities to several businesses (Montgomery & Wernerfelt, 1988). Empirically, however, the literature has not provided a conclusive result on the relationship between related diversification and firm performance (Hoskisson & Hitt, 1990; Ramanujam & Varadarajan, 1989). The literature largely contributes the lack of empirical supports to the measurement issue that the current measures of relatedness do not capture the true relatedness between businesses (Robins & Wiersema, 2003).

Few studies documented the difficulty of realizing the benefits of related diversification. Although firms can potentially benefit from related diversification through economies of scope (Seth, 1990), or the exploitation of resources (Montgomery & Wernerfelt, 1988), not every firm can benefit from it unless the firm has the appropriate capability (Teece et al., 1997). The lack of capability to benefit from related diversification may also contribute to the lack of support of the positive relationship between related diversification and firm performance.

The theoretical conceptualization of this paper is based on the view that related diversification is a strategy to exploit existing resources of a firm. Previous studies on

related diversification implicitly assume that firms have the capability to benefit from such resource exploitation. This paper relaxes this assumption and tries to evaluate the relationship between related diversification and performance through a capability perspective. I argue that to benefit from related diversification, firms should have two types of capabilities: search and selection, and implementation (Helfat, 2007). Search and selection is the capability to recognize truly related businesses; and implementation is the capability to exploit resources in related businesses. I further argue that these capabilities are unusual in firms based in emerging economies, due to inexperience and weak investor oversight. Thus, the lack of capabilities of search and selection will contribute to what I call seemingly related diversification, a type of diversification focusing on the relatedness of technologies but not of markets, which will harm firm performance. Even though a firm is able to identify a truly related business, the lack of implementation capability will also contribute to deteriorative performance after related diversification for firms from emerging economies. Therefore, both seemingly related diversification and related diversification are negatively related to firm performance.

This paper also investigates two contingencies that influence the relationship between related diversification and firm performance: experience and state ownership. The literature in capability suggests that capability can be acquired through learning (Blyler & Coff, 2003; Zollo & Winter, 2002). This paper shows that learning mitigates the negative impact of related diversification on firm performance, indicating that firms can conquer the difficulties of related diversification through learning. The literature also recognizes the role of ownership identity in firm strategies such as diversification (Li et al., 2005), but few studies have investigated how ownership identity influences the

development of capabilities. Therefore, this paper considers the role of ownership identity in harvesting from related diversification. State-owned enterprise (SOE) is an important type of firm in emerging economies and this paper investigates how SOEs perform in terms of related diversification.

This paper draws on data capturing the population of H-share firms (firms that are listed on HKSE) from 1993 to 2006. It first examines the relationship between related diversification and firm performance. Then, it tests whether the relationship is moderated by firm experience and state ownership. The proposed relationship is summarized in Figure 4-1 and detailed later in the paper.

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Insert Figure 4-1 about here  
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The contribution of this paper is four-fold. First, this paper documents the difficulties of benefiting from related diversification for firms from emerging economies and develops the concept of seemingly related diversification – a type of diversification focusing on the relatedness of technologies but not of markets. Second, it identifies two types of capability that are relevant to related diversification: search and selection, and implementation. Third, it shows that capabilities can be acquired through learning. Therefore, the relationship between related diversification is dynamic in nature. Lastly, it contributes to the literature on ownership identity by showing that the poor corporate governance in SOEs makes it hard to develop capabilities needed to benefit from related diversification.

## 4.2 Background

### 4.2.1 *Related Diversification and Firm Performance*

One of the dominant theories to explain the benefits of related diversification is the resource-based view. The resource-based view considers a firm as a combination of different resources that are rare, valuable, non-imitable and non-substitutable (Barney, 1991). These resources create competitive advantages for the firms that possess them. Firms diversify to utilize their productive resources that are surplus to their current operations (Chatterjee & Wernerfelt, 1991). Benefits of diversification come from the exploitation of resources.

On the contrary, non-diversification limits a firm's opportunity to leverage resources and capabilities across different industries. Lubatkin and Chatterjee (1994) found that single-business firms do not exploit between-unit capabilities. In other words, firms pursuing a single line of business do not obtain economies of scope. Moreover, single-business firms are subject to greater industry risk than diversified firms, which increases their cost of capital. Similar to non-diversification, unrelated diversification also incurs substantial costs. Grant, Jammine, and Thomas (1988) documented the growing strain on top management as it tries to manage increasingly disparate and less familiar lines of business. In addition, firms engaged in unrelated diversification sometimes invest too much in lines of business with poor investment opportunities (Stulz, 1990) and in others merely to subsidize failing business segments (Berger & Ofek, 1995).

The arguments clearly predict that related diversification should outperform both single business firms and unrelated diversifiers. The empirical support of this relationship is, however, mixed. In his seminal study, Rumelt (1974) found in a sample of *Fortune*

500 companies that firms with a moderate level of diversification—firms engaged in related diversification as distinct from firms in a single line of business or firms engaged in unrelated diversification—outperform both single-business firms and conglomerates. Subsequent research confirmed Rumelt’s results (Montgomery & Singh, 1984; Palich et al., 2000). But this result has been challenged by Christensen and Montgomery (1981), who showed that industry characteristics, rather than different diversification types, contribute to the differences in firm performance. Similarly, several studies find that firms do not benefit from related diversification (Johnson & Thomas, 1987; Lubatkin, 1987). Strategy scholars recognize the mixed empirical results on the relationship between related diversification and firm performance and contribute it to measurement issues (Markides & Williamson, 1994; Robins & Wiersema, 2003). Robins and Wiersema (2003) showed that both concentric measure and entropy measure suffer from a lack of content validity. Accordingly, scholars begin to develop more appropriate measures of relatedness of diversification (Miller, 2006). Few studies, however, explore the potential difficulties firms face when they conduct related diversification.

Another gap in the diversification literature is that previous studies on the relationship between diversification and performance are mostly located in the context of developed countries. Although there have been an increasing number of studies that examine this relationship in emerging economies recently (Chakrabarti et al., 2007; Chang & Hong, 2002; Hoskisson et al., 2000; Khanna & Palepu, 1997), these studies largely focus on the benefits of unrelated diversification due to institutional voids in emerging economies (Khanna & Palepu, 2000b), also neglecting to address the difficulties of related diversification.

It is clear that there is an implicit assumption underlying the current studies of related diversification and firm performance: firms have the capability to benefit from related diversification. This assumption, I believe, does not always hold, especially in emerging economies. In the following discussion, I will relax this assumption.

### 4.3 Hypotheses Development

#### 4.3.1 *Capabilities and Related Diversification*

I distinguish between two capabilities that are relevant to related diversification, namely search and selection, and implementation. According to Helfat et. al (2007), search and selection, and implementation are the two main functions served by dynamic capabilities with regard to the resource base of an organization. In the context of related diversification, search and selection means that a firm should be able to identify its key resource base and the related businesses where the key resource can be applied. Implementation means that the firm should be able to exploit its key resource in related businesses. I will discuss these two capabilities in the following sections.

##### 4.3.1.1 *Search and Selection*

Benefits from related diversification come from the identification, creation, and utilization of resources and competences across multiple business units (Li & Wong, 2003). Thus, an initial step in related diversification is recognizing the key resources that have made a firm successful in one business and then finding out related businesses where the same resources can be utilized.

It is not an easy task to identify the truly related business because there are many dimensions through which firms can diversify. Several scholars have documented the difficulties of finding out the best opportunities of related diversification. Markides and

Williamson (1994) argued that firms should go beyond the input/technology/production, and focus on the strategic assets behind different businesses when they search for opportunities of related diversification. Only such related diversification can create long-run competitive advantages of a firm. More specifically, they describe strategic assets as customer assets, channel assets, input assets, process assets, and market knowledge assets. In other words, only the similarities between these assets will lead to improved performance. These five dimensions, although comprehensive, are somewhat redundant. Building on their research, I propose two dimensions of related diversification: technology and market.

The current literature on related diversification mainly focuses on the technology (or product) dimension and the market (or customer) side is largely neglected. This fact is evident in the wide use of Standard Industrial Classification (SIC) code, which is more technology/product-oriented than market/customer-oriented (Jacobs & O'Neill, 2003), as the measure of relatedness. Although there have been several attempts to refine the measure of relatedness, these efforts still largely focus on the technology side. For example, Miller (2006) identified technology diversity as a new measure of relatedness of diversification and showed that technology diversity is positively related to firm performance. The market dimension, however, is equally important. Three out of the five types of strategic assets outlined by Makides and Williamson (1994) are customer-related: customer assets, channel assets, and market knowledge assets. Assuming that relatedness is limited to the technology side can result in a phenomenon I call “seemingly related diversification”— a type of diversification focusing on the relatedness of technologies but not of markets.

For firms in emerging economies, such as China, it is not unusual that firms lack the capability of search and selection, thus falling into seemingly related diversification, for at least two reasons. First, many emerging economies have, until recently, experienced rising demand and rapid growth (UNCTAD, 2009), in such sellers' markets, firms have most followed market demands. During their short history, these young firms have not had the chance of developing a coherent diversification strategy. Thus, they lack relevant experience (Hitt, Dacin, Levitas, Arregle & Borza, 2000).

Second, listed firms in emerging economies have little transparency. The influence of shareholders outside of the controlling state or family is limited, exacerbating information asymmetries (Berle & Means, 1932; Fama & Jensen, 1983; Jensen & Meckling, 1976) in both directions. Not only do minority shareholders lack full information about the firm, but the firm does not benefit from the full knowledge of its shareholders. Thus, when seeking opportunities for diversification, managers may be ignorant of the best opportunities and end up in a "synergy trap" (Sirower, 1997). Consequently, managers may seek the appearance of relatedness rather than understanding the resource base linking different businesses.

Both inexperience and information asymmetries lead to the same prediction, that firms in emerging economies lack the capability of search and selection, thus relying on existing and widely used standards to determine the relatedness of businesses, which is technology side not market side of related diversification. This is exaggerated by the fact that many Chinese firms look for advice from western consultants or private equity firms when they choose the path to diversify (Furst-Mueller, 2000; Li & Wong, 2003). Western consultants are aware of the concept of core competence (Prahalad & Hamel, 1990) and

believe related diversification based on technology/product relatedness is beneficial (Miller, 2006). They will push Chinese firms to diversify along the technology/product side, neglecting the market/customer side. As a result, Chinese firms will jump into seemingly related diversification.

Seemingly related diversification is likely to harm firm performance in emerging economies because unlike developed countries where markets are usually assumed to be large and homogeneous, markets in emerging economies are small and constrained by relationships with customers, government officials, and so forth (Peng & Luo, 2000). Doing business in these settings is not simply an arms-length exchange of products for payments; it more closely resembles social exchange or economic exchange embedded in the context of social relationships (Blau, 1964; Granovetter, 1985). In such circumstances, relatedness is more a function of markets—or customers—than of technologies or products. Markets for technologically similar products may be dissimilar and require fundamentally different capabilities. These differences may result in the inability of firms to benefit from related diversification in emerging economies.

The experience of a large Chinese firm with its core business of marine shipping containers illustrates seemingly related diversification. The firm sought to diversify into a related industry and, with the help of consultants, converged on highway trailers or semi-trailers. Highway trailers bear a close physical resemblance to shipping containers: trailers are essentially containers placed on a chassis with wheels, brakes, lights, and the like. The firm and its consultants overlooked the fact, however, that unlike shipping containers, which conform to international specifications, highway trailers in China are built to specifications controlled by provinces and sometimes municipalities. The result is

that customers from different regions of China require slightly different products. Thus, neither the economies of scale nor the dominant market share in the highway trailer business anticipated by the firm materialized and the firm's strategy changed to production of highway trailer components rather than final assembly. The expected gain from related diversification is not realized due to the differences in markets even though there is similarity in terms of technology.

Summarizing the above arguments, I have the following hypothesis:

***Hypothesis 1: Seemingly related diversification is negatively related to firm performance for firms from emerging economies.***

#### *4.3.1.2 Implementation*

The second dimension of capability that is required for a firm to benefit from related diversification is implementation. In the case of related diversification, it is the capability of resource exploitation - utilizing existing capabilities in new businesses. Even though a firm is able to identify a truly related business, it still requires the capability of implementation to realize the gain from related diversification. Two factors impede effective resource exploitation in emerging economies.

The first one is organizational challenge: the challenge of integrating separate businesses. Firms can diversify through various means, such as merger and acquisition (M&A), and internal development (Ramanujam & Varadarajan, 1989). No matter how firms diversify, they face the challenge of increasing size. In the case of M&A, post-merger integration is difficult enough in developed countries (Datta, 1991; Zollo & Singh, 2004), because it is not easy to decide on important questions such as the degree to which pre-existing resources within the acquired firm are replaced with the equivalent resources of the acquirer (Zollo & Singh, 2004). Post-M&A integration is even more

difficult in settings like China due to endemic localism and the legacy of state ownership. Even the most powerful Chinese firms have had difficulty integrating newly acquired subsidiaries, as illustrated by the experiences at COSCO and Haier. Executives at COSCO deferred integration of its bulk shipping subsidiaries for more than a decade (Meyer, 2007), and those at Haier encountered, and eventually overcame, substantial resistance from workers after acquiring a television factory in Hefei, Anhui Province (Paine, 2002). In the case of internal development, the organizational challenge of increased size is also notable. There is growing strain on top management as it tries to manage increasingly lines of business (Grant *et al.*, 1988). Growing size of a firm also brings in control losses, coordination costs, and inefficiencies from conflicting “dominant logics” of different businesses (Markides, 1992). These challenges are more prevalent for firms from emerging economies because firms are generally young and have not experienced such expansion (Hitt *et al.*, 2000).

The second challenge comes from the need to acquire complementary assets. Complementary assets include assets such as specialized manufacturing, distribution channels, or even complementary technologies (Teece, 1986). The realization of benefits of related diversification usually depends on the existence of complementary assets. As indicated by Wernerfelt (1984), complementary assets can foster successful entry into new product markets. Subsequently, the empirical study of Klepper and Simons (2000) and the theoretical work of Helfat and Lieberman (2002) documented the importance of complementary assets in explaining entry and survival of firms. Absent markets for complementary assets, related diversification is at risk. Let us illustrate with an example: a refrigerator manufacturer (Haier) entered the air conditioner market to exploit

refrigeration technology. The required complementary asset was installation, which was not needed for refrigerators. Therefore, Haier had to enter the installation business to sell air conditioners. The difficulty to acquire complementary assets in emerging economies due to the lack of markets for such assets (Khanna & Palepu, 1997; Leff, 1978) makes it hard for firms to implement the diversification strategy successfully.

The difficulty in implementation of related diversification means that even though a firm successfully identifies a truly related business, the performance may still drop due to the lack of implementation capability. Therefore, related diversification, including both seemingly related diversification and truly related diversification, will contribute to poor performance in emerging economies, I have the following hypothesis:

***Hypothesis 2: Related diversification is negatively related to firm performance for firms from emerging economies.***

#### *4.3.2 The Moderating Role of Experience*

Firms can overcome the liability of related diversification through learning. Capabilities can be described as complicated routines that are derived from path-dependent processes (Eisenhardt & Martin, 2000; Nelson & Winter, 1982). As suggested by Eisenhardt and Martin (2000), “path dependence is more accurately described in terms of learning mechanisms that have been identified principally within the psychological literature” (Page: 1114). In other words, learning fosters the development of capabilities.

Various studies have documented that firms can obtain capabilities through organizational learning. In a conceptual piece, Zollo and Winter (2002) emphasized the role of learning in creating and developing capabilities. They argue that experience accumulation, knowledge articulation and knowledge codification will foster the development of capability. Scholars also document the importance of mistakes in

developing capabilities because mistakes motivate people to learn (Hayward, 1999). Hayward (1999) found that firms with a moderate number of small mistakes lead to higher acquisition skills in a sample of 120 U.S. firms in six sectors.

Building on existing research, this paper argues that capabilities of conducting efficient related diversification can also be learned from a firm's prior experience. Repeated practice helps a firm to understand the processes of related diversification and develop more efficient routines of search and selection and implementation. In terms of search and selection, prior experience makes the search and selection more efficient. An organization's previous experience can serve as a guide to a related decision because organizations confine search to areas in which they are experienced (March, 1988). The benefits of accumulated past experience for making decisions have been found in various organizational settings (Haleblian & Finkelstein, 1999; Henisz & Delios, 2001). Prior experience, either successful or unsuccessful, will help a firm identify its own key resources and the truly related businesses. A firm may develop certain routines to search for related businesses based on its prior experience (Ouchi & Watanabe, 2009).

In terms of implementation, as shown by existing research, experience about certain mode of diversification, such as M&A, will enable firms to implement that mode more successfully in the future. Zollo and Singh (2004) showed that repeated practices with homogeneous acquisitions are positively associated with the accumulation of knowledge about how to execute acquisitions and how to benefit from acquisitions. Similarly, the skill of acquiring and developing complementary assets can also be enhanced through practice. Since these skills are largely intangible, experience is a valuable source through which a firm can acquire them (Zollo & Winter, 2002).

Summarizing the above arguments, the existence of prior experience helps a firm develop the capabilities needed to benefit from related diversification. The development of capabilities will attenuate the negative performance implication of related diversification. Therefore, I have the following hypothesis:

***Hypothesis 3: Prior experience of related diversification positively moderates the relationship between related diversification and firm performance.***

#### *4.3.3 The Moderating Role of State Ownership*

Scholars have long recognized the role of ownership identity in influencing firm strategy (Chaganti & Damanpour, 1991; Palmer *et al.*, 1987). The state has acted as one important type of owner for a long time worldwide (Koppell, 2007), especially in emerging economies. The existing literature recognizes that SOEs and private firms differ in terms of strategy, structure, and performance (Brouthers *et al.*, 2007; Li & Xia, 2008). Various scholars have shown that SOEs are associated with defensive strategies (Arens & Brouthers, 2001; Parker, 1995), mechanistic structure (Brouthers *et al.*, 2007), administrative tasks and empire-building strategies (Li & Xia, 2008), low total factor productivity (Jefferson & Rawski, 2000), labor redundancy (Dong & Putterman, 2003), and poor performance (Brouthers *et al.*, 2007; Li & Xia, 2008; Villalonga, 2000).

In terms of diversification strategy, scholars have found that SOEs are associated with severe agency problem, which may encourage managers to diversify in their own interests rather than the owners (Jensen & Meckling, 1976). Managers are generally more risk-averse than owners (Donaldson, 1961) and may pursue diversification to maintain stable revenue streams and to minimize losses (Hoskisson & Turk, 1990; Tosi & Gomez-Mejia, 1989). Besides reducing risk, a strategy of diversification can also facilitate growth in assets and hence in managers' compensation. Dyl (1988), for example, found

CEO compensation to be positively related to firm size, measured by total assets, in a sample of *Fortune 500* firms.

Scholars also recognize the role of ownership identity in shaping a firm's capabilities. For example, Kor and Mahoney (2005) found that institutional investors boots economic returns from developing capabilities. However, no prior studies have investigated how state ownership influences the development of capabilities.

This paper will try to examine how state ownership influences the development of capabilities by exploring the impact of state ownership on the relationship between related diversification and firm performance. State-owned enterprise (SOE) is an important type of firms in emerging economies (Vaaler & Schrage, 2009). In SOEs, government shareholders rarely have the motivation or the expertise to monitor the operations. Given the fact that managers in SOEs are not evaluated by firm performance (Qu, 2003), it is no wonder that manages in SOEs may use diversification as a means to gain their personal interests. In search and selection process of related diversification, managers may choose to acquire another business just to increase firm size, which may lead to an increase in their compensation (Dyl, 1988), instead of carefully identifying the two dimensions of related diversification – technology and market. Alternatively, they may choose another business to acquire based on Guanxi rather than true relatedness (Chung, 2006). When they implement related diversification strategy, the learning mechanism will not work since decrease of firm performance will not trigger managers' motives to learn (Qu, 2003). To summarize, it is hard for SOEs to benefit from related diversification. Thus, I have the following hypothesis:

***Hypothesis 4: State ownership negatively moderates the relationship between related diversification and firm performance.***

## 4.4 Methodology

### 4.4.1 *Sample*

This paper covers all 96 Chinese firms listed on the HKSE (Hong Kong Stock Exchange), the so-called H-share firms, between 1993 and 2006. H-share firms are incorporated in China, but listed on the HKSE; these firms operate under Chinese law. There are also firms listed on the HKSE that are Chinese firms incorporated in Hong Kong: they operate under Hong Kong law. Their shares are called red-chip stocks. The Hong Kong listing of the Bank of China, for example, consists of H-shares while its Hong Kong subsidiary, Bank of China-Hong Kong, is a red chip listing. The sample includes only H-share firms. The first H-share issue traded on the HKSE was Tsingtao Brewery Co. Ltd., which was listed on July 15, 1993.

Listed Chinese firms have diversified greatly in the past ten years (Zhou & Delios, Forthcoming). The high level of diversification of Chinese firms creates the possibility of studying the diversification-performance relationship among firms from an emerging economy. The data are taken from annual shareholder reports, which are generally issued in early April. Since the first H-share listing was in mid-1993, I collected annual data of each H-share firm from the first full year of listing, 1994 or later, through 2006, thirteen years in all.

### 4.4.2 *Measures*

***Performance.*** Because there is no perfect measure of firm performance (Meyer, 2002), no consensus exists in the literature regarding the most appropriate measure to use. Two major types of measures for performance are generally applied: accounting-based

measures and market-based measures. Given the fact that many Chinese firms are under-priced in their IPOs and the sample consists mainly of newly listed firms, I choose accounting-based measures for performance. I focus on return on assets (ROA), defined as net income divided by total assets, which is widely used to measure firm performance (Audia & Greve, 2006).

***Related Diversification.*** This paper measures related diversification using a dummy variable. First, a firm is classified as a single business firm if the dominant business covers more than 95% of its total sales. The information of a firm's major business lines is obtained through their annual reports. Second, for the firms that diversify, related diversification is identified through eleven different divisions of SIC codes<sup>19</sup>. If a firm conducts businesses in more than one category, it is regarded as unrelated diversifier. It is related diversifier otherwise. For example, Northeast Electric Development Co. Ltd. had four major businesses in 2001: manufacturing of transmission machinery (SIC code: 3568)<sup>20</sup>, hotel and catering (SIC code: 7011), transformer equipment (SIC code: 3612), and entertainment (SIC code: 7929). Since it covers two different categories: manufacturing and service, it is classified as an unrelated diversifier. For another example, consider First Tractor Co. Ltd. It had two major businesses in 2005: agricultural machinery (SIC code: 3523) and construction machinery (SIC code: 3531). Since it only conducts business in manufacturing business, it is a related diversifier.

***Seemingly Related Diversification.*** Among related diversifiers, there are firms that conduct seemingly related diversification. This paper uses a dummy variable to measure

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<sup>19</sup> The eleven divisions are: a) agricultural, fishing and forestry; b) mining; c) construction; d) manufacturing; e) transportation, communication, electronics, gas and sanitary service; f) wholesale trade; g) retail trade; h) finance, insurance and real estate; i) services; j) public administration; and k) nonclassifiable establishments.

<sup>20</sup> I use U.S. SIC codes, not Chinese SIC codes, for consistency with the literature.

seemingly related diversification. Seemingly related diversification is defined as a diversification that focuses only on the technology side but overlooks the market side. To assess the similarity of two businesses, I use the input-out table as a reference (Fan & Lang, 2000). The input-out table is published by National Bureau of Statistics of China. It documents the input-output relationship of 42 types of products. I calculate the correlation matrix of these 42 types and regard two businesses as sharing markets if the correlation is higher than 0.9. Then, I match the correlation table with the SIC code. Diversifications that are within the same three-digit SIC code but with correlation lower than 0.9 is regarded as seemingly related diversification. This is an objective way to identify seemingly related diversification.

I also checked on the objective measure by subjective coding. A research assistant is hired to double-check the coding of seemingly related diversification, based on the correlation table and her knowledge. Whenever there is a disagreement between her coding and the objective measure, the author of the paper consults an industry expert to decide. The correlation of subjective coding and objective coding is 0.92, showing a high level of consistency for the coding.

One example of seemingly related diversification is Dongfeng Motor Group Co Ltd, it had three major businesses in 2005: manufacture and sale of commercial vehicles, manufacture and sale of passenger vehicles, and manufacture and sale of engines and other automotive parts. Although these three businesses share similar technology, they have different customers.

***Merger and acquisition experience.*** The data regarding M&As come from Zephyr, a database that collects information on M&A, IPO, joint venture, and private equity deals. I

identified all of the M&A deals made by H-share firms between 1993 and 2006. I exclude the deals that cover two different categories of SIC codes. Then, I calculated the total number of deals a firm had made in all of the previous years and created the variable M&A experience. It is not a perfect measure of experience but it is an appropriate one since 1) M&A is a favorable mode of market entry by firms from emerging economies (Batson, 2007; Luo & Tung, 2007); and 2) the existing literature has shown that firms can learn through M&A (Kale & Singh, 2007).

***State ownership.*** The major ownership categories in China include state shares, legal person shares, employee shares, A-shares, and B-shares. The three dominant types of shareholding are state, legal person, and tradable A-share, each making up approximately 30 percent of the total shares in the companies listed in mainland China (Sun et al., 2002). I measure state ownership by the percentage of state shares plus state-owned legal person shares, following Chinese ownership categories. Note that there may be multiple state and state-owned legal person shareholders. In fact, it is common for several governments and government-owned entities to hold shares in H-share firms. For example, Aluminum Corporation of China Ltd. has Chinalco, China Cinda, China Construction Bank, China Orient, and China Development Bank, most of which are government-owned entities, among its largest owners.

***Control variables.*** I control for several other factors that may influence firm performance. *Firm size* is controlled to remove its impact on performance. Larger firms generally command larger market shares, have greater market power, and are more capable of managing risks than smaller firms. Hence they tend to perform better than smaller firms (Fama & French, 1995). I use the log of a firm's sales as the measure of

*firm size*. Highly leveraged firms have less capacity to raise the funds needed to execute a diversification strategy, compared to firms with lower debt ratios. Thus, another control variable, *debt to equity ratio*, is used to measure capital structure. *Ownership concentration* generally renders firms less susceptible to agency problems since large owners and institutional investors, in comparison with small shareholders, have greater capacity to monitor management. Agency problems can range from the loss of strategic focus to outright expropriation of firm assets, all of which will lead to poor performance (Bodolica & Spraggon, 2009; Xia et al., 2009). I use the percentage of shares held by the largest shareholder to measure ownership concentration. This measure has been widely used by other scholars (Claessens et al., 2000). I also control for whether the CEO of a firm currently or has held a government appointment before. It is measured by a dummy variable named *CEO government*. It is important to control for this variable because managers that held government positions may not consider improving performance as the most important task (Fan, Wong & Zhang, 2007). They have many other duties to fulfill (Bai & Xu, 2005), such as maintaining employment (Aghion & Schankerman, 2004). The information about the name of the CEO is available in the annual reports. I then search for the bibliography of the CEO through annual reports and the Internet to decide the value of this variable. Since diversification and performance differ by industry and year, I also included *industry and year dummies* in the regressions.

#### 4.4.3 *Model Specification*

The analysis presents three important technological considerations. First, unobserved heterogeneity is a concern because the data is panel data, which means there are multiple observations for each firm. To account for potential unobserved

heterogeneity in error term, which is common in panel data, I first test for panel heteroskedasticity and autocorrelation. The LR test shows that the panel has heteroskedastic error terms with chi-square value of 65.83. The Wooldridge test for autocorrelation shows that the panel data is auto-correlated with F-test value of 23.28 (Wooldridge, 2002). Given the heteroskedastic and auto-correlated panel data, GLS is the proper estimation method (StataCorp, 2009). More specifically, I use the feasible GLS with heteroskedastic and correlated error structure (STATA command xtglsl).

Second, it is also possible that Chinese firms self-select to list on the HKSE. I used a two-stage model to control for the sample selection problem. In the first stage, all Chinese firms that were listed in both the Mainland China stock markets and the HKSE were included in a logit regression. The dependent variable in the first stage was a dummy variable with a value of one if the firm was listed in the HKSE. The independent variables included firm size (log of sales), performance (ROA), debt ratio and industry and year dummies. I calculate the inverse Mill's ratio based on the predicted probability that a firm would be listed in the HKSE. The inverse Mill's ratio is entered in all of the following regressions to control for selection bias.

Third, various studies have shown that firms choose to diversify, thus creating an endogeneity problem (Campa & Kedia, 2002; Villalonga, 2004). There are several ways to reduce the problem of endogeneity. One way is to lag independent variables. Therefore, I lag all independent variables for one year. Another solution to the endogeneity problem is to use a two-stage least square instrument variable regression (2SLS). In the first stage, 2SLS estimates the endogenous variable on all of the independent variables and produces a predicted value of the endogenous variable. In the

second stage, the predicted value is used to replace the endogenous variable. Although this approach solves the problem of endogeneity, it is less efficient because it produces large standard errors (Wooldridge, 2003). Therefore, even though a variable may be theoretically endogenous, it is better to test whether the endogeneity will cause statistical problems before one chooses to use the instrument variable regression (David, O'Brien, Yoshikawa & Delios, 2009).

To test for the endogeneity problem, the first step is to find out instrument variables for the endogenous variable. In this study, I choose several instrument variables that have been used by previous studies: the net cash flow of a firm, a firm's size relative to median firm in an industry per year, the fraction of diversified firms in an industry, the total value of announced M&A deals per year and GDP growth rate (Campa & Kedia, 2002; David et al., 2009; Villalonga, 2004). These instruments should be related to diversification but not directly related to firm performance. The first stage F-test value for seemingly related diversification and related diversification is 2.35 (P-value=0.04) and 4.00 (P-value=0.00), this test shows that the instruments are relevant and strong (Staiger & Stock, 1997; Stock, Wright & Yogo, 2002). The Sargan-Hansen test is a test for instrument exogeneity. The null hypothesis is that the instruments are valid instruments, i.e., uncorrelated with the error term, and that the excluded instruments are correctly excluded from the estimated equation (Hayashi, 2000). A rejection casts doubt on the validity of the instruments. The test value of chi-square is 4.02 (P-value=0.40) and 4.28 (P-value=0.37) for seemingly related diversification and related diversification. These tests show that the instruments are relevant and exogenous.

After the two-stage least squares instrument variable regression, I run the Durbin-Wu-Hausman test to test for the endogeneity problem (Durbin, 1954; Hausman, 1978; Wu, 1973). The null hypothesis for this test is that ordinary least squares (OLS) estimator of the same equation would yield consistent estimates; that is, any endogeneity among the regressors would not have deleterious effects on OLS estimates. The Durbin-Wu-Hausman test shows that neither seemingly related diversification nor related diversification creates an endogeneity problem. The test value for these two variables are 1.93 (P-value=0.16) and 1.31 (P-value=0.25), respectively. Although the tests show that instrument variables are not necessary, I still conduct a 2SLS regression as a robustness check, the results are displayed in model 7 and 8 in Table 4-4.

Moreover, the results of the Durbin-Wu-Hausman test depend on the choice of instrument variables. To avoid the influence of the quality of instruments on the regression results, I adopt a third method to deal with the endogeneity problem: matching on propensity scores. Previous studies have shown that matching based on propensity score is an efficient way to deal with the problem of non-random selection of treatment (Rosenbaum & Rubin, 1983). In this method, I first calculate the propensity score of conducting seemingly-related diversification, and then use the propensity score to match the observations to calculate the treatment effects. I use firm size (log of sales), firm diversification experience (the number of M&A deals conducted by the firm), state ownership, debt ratio and the probability of being listed on HKSE, industry as well as year dummies as the independent variables in the probit model to predict the probability of conducting seemingly related diversification. Then, I estimate the average treatment effects of seemingly related diversification using `nmatch` command in STATA. I use the

same method to calculate the propensity score and treatment effects for related diversification as well. This is the third way to deal with the potential endogeneity problem that firms self-select into seemingly related or related diversification. The results are summarized in models 2 and 3 in Table 4-2.

#### 4.5 Results

Table 4-1 shows means, standard deviations, and correlations for variables used in the regressions. Note that all the significant correlations between the variables are less than 0.6. There is no serious problem of multicollinearity.

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Insert Table 4-1 about here  
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The results of the first stage regression to account for sample selection problem are reported in model 1 of Table 4-2. The results show that better performed firms are more likely to be listed on the HKSE, while firms with heavier debts and larger size are more likely to be listed on the Shanghai or Shenzhen Stock Exchange. The results are consistent with the fact that the listing requirements on the HKSE are more stringent than domestic stock exchanges (Ferguson et al., 2002). It is also notable that the pseudo R-square is 0.94, indicating that the independent variables account for much of the choice of listing on the HKSE. Based on this regression, I calculate the inverse Mill's ratio, which is used in all of the following regressions.

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Insert Table 4-2 about here  
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The results of the probit model to calculate propensity score and average treatment effect of seemingly related diversification are reported in model 2 of Table 4-2.

I conduct the same estimation for the variable related diversification, and the results are reported in model 3 of Table 4-2. The results show that the more M&A experience a firm has, the less likely this firm is conducting seemingly related diversification or related diversification. The average treatment effects of seemingly related diversification and related diversification are both negatively significant. This result means that seemingly related diversification and related diversification do harm firm performance, after controlling for the endogeneity problem by propensity score matching. Hypotheses 1 and 2 receive some preliminary supports.

Table 4-3 summarizes the results from the test for the hypotheses, where performance (ROA) is the dependent variable. Model 1 is the baseline model, which includes only control variables. In Model 2, I add seemingly related diversification; in Model 3, I add related diversification; and in Model 4 and Model 5, the interaction between related diversification and M&A experience, and the interaction between related diversification and state ownership, are entered into the regression, respectively. In Model 6, I include both interaction terms at the same time.

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Insert Table 4-3 about here  
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Hypothesis 1 and Hypothesis 2 predict that seemingly related diversification and related diversification are negatively related to firm performance. As shown in Model 2 and Model 3, both seemingly related diversification and related diversification are negatively significant at 0.001 level. Therefore, Hypothesis 1 and Hypothesis 2 are strongly supported. Hypothesis 3 and Hypothesis 4 predict the moderating role of M&A experience and state ownership on the negative relationship between related

diversification and firm performance. In Model 4, the interaction term between related diversification and M&A experience is positively significant, indicating that the negative impact of related diversification is mitigated if a firm accumulate more experience about related diversification. Thus, Hypothesis 3 is supported. Similarly, in Model 5, the interaction term between related diversification and state ownership is negatively significant, showing that the negative impact of related diversification is exaggerated by high level of state ownership: the higher the state ownership, the worse the negative impact of related diversification on firm performance. Hypothesis 4 is also supported. Both interaction terms are entered into the regression simultaneously in Model 6. The results persist.

As for the effects of the control variables, debt ratio is negatively significant throughout the models, indicating that firms with high debt ratio are not performing well. The variable CEO government is negatively significant from models 4-6 in Table 4-3. If the CEO of a firm holds or held a government position, the performance of the firm is worse than other firms. It is within the expectation because these firms are not performance-oriented. Similarly, state ownership is negatively significant in models 1 and 2, which means the agency problem in SOEs is associated with poor performance. Firm size, as measured by log of total sales, is marginally negatively significant in most of the models, showing that larger firms perform relatively worse than smaller firms.

To further illustrate the moderating role of M&A experience and state ownership, the interaction effects of M&A experience and state ownership on the relationship between related diversification and firm performance are plotted in Figure 4-2 and Figure 4-3. In Figure 4-2, we can see that the slope of the line for firms with M&A experience

below mean is steeper than that of firms with M&A experience above mean, showing that firms with low M&A experience suffer more from related diversification. In Figure 4-3, the line for firms with state ownership below mean is only slightly downward, while the line for firms with state ownership above mean is sharply downward. The negative impact of related diversification on firm performance is much more severe for firms with high level of state ownership.

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Insert Figure 4-2 & 4-3 about here  
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**Robustness check.** I run different models to test the effects of seemingly related diversification and related diversification on firm performance. Table 4-4 summarizes the results of eight different models using four different regression methods. The first two models use OLS and the results hold, except that the moderating role of state ownership is not detected. Model 3 and 4 run firm fixed effect regression. Seemingly related diversification and related diversification remain negatively significant. However, neither of the interaction effects is significant. Model 5 and 6 run the firm random effect regression. Similar to the results of OLS, only the moderating role of state ownership is not supported. Model 7 and 8 run the 2SLS regression with the instrument variables: net cash flow, firm size relative to median firm by industry by year, the fraction of diversified firms by industry, the total value of announced M&A deals by year and GDP growth rate. Seemingly related diversification and related diversification remain negatively significant. Since interaction effects in 2SLS is hard to implement and explain, I do not include the interaction terms in the models. As for the control variables, debt to equity ratio remains negatively significant in most models, so is CEO government. Stat ownership is negatively

significant in the fixed effect models. Overall, the main effects of seemingly related diversification and related diversification remain robust. The moderating effects, especially the role of state ownership, are less robust than the main effects.

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Insert Table 4-4 about here  
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I use other measures of related diversification to test the hypotheses as well. I replace the dummy variable of related diversification with the two widely-used measures of diversification, concentric measure (Montgomery & Wernerfelt, 1988) and entropy measure of related diversification (Jacquemin & Berry, 1979). The results hold for these two measures. I also try different measures for firm performance: ROS and Tobin's Q. The results for different performance measures do not differ much. I also used an alternate measure for state ownership. Instead of using a continuous measure, I used a dummy variable that is equal to one if state ownership exceeds 50 percent. The results hold for that variance as well.

Certain industries, such as natural resources and transportation, are subject to high levels of vertical integration. I excluded firms from these industries and the results remained robust. Moreover, instead of matching by propensity score, I also tried other matching methods: coarse exact matching (CEM). CEM is a monotonic imbalance-reducing matching method which temporarily coarsens the data to find out exact match (Blackwell, Iacus, King & Porro, 2009). The results of average treatment effects are similar using this matching method.

## 4.6 Discussion and Conclusion

### 4.6.1 Findings

Diversification has been a crucial topic in the arena of strategic management for a considerable time. The relationship between firm performance and related diversification, however, remains unclear. Theoretically, related diversification should add value to a firm because it exploits the key resources into other businesses. However, there is a lack of empirical evidence for the benefits of related diversification. Although the literature has recognized the lack of empirical support, it has not attributed it to a firm's lack of capabilities conducting related diversification. Therefore, a primary objective of this study has been to investigate the related diversification-performance relationship in an emerging economy from a capability perspective. More specifically, this paper focuses on the liabilities of related diversification in emerging economies. The liability results from the lack of capabilities that are associated with related diversification: search and selection, and implementation. The lack of search and selection capability will result in seemingly related diversification, which is harmful to firm performance especially in emerging economies. The lack of implementation capability shows that even though a firm is able to identify a truly related business, there are still many challenges to face in order to benefit from related diversification. The first two hypotheses document the difficulty of firms from emerging economies to benefit from related diversification.

Then, this paper proceeds to investigate the moderators of the relationship between related diversification and firm performance. The literature on capabilities shows that capabilities can be acquired through learning. Therefore, I predict that the negative impact of related diversification will mitigate as firms learn from their previous

experience. The empirical test supports the prediction. The support of this prediction also verifies the applicability of capability perspective to the issue of related diversification.

I also consider the impact of state ownership in diversification. Ownership identity is important in both diversification and capabilities literature. The motivations and capabilities of different ownership identities influence the capability of a firm to benefit from related diversification in emerging economies. To better understand the role of ownership identity, I explore the moderating effects of state ownership. It is crucial to investigate the role of state ownership for two reasons. First, it reflects the severity of agency problem, and second, it is an important part of economy in emerging economies. The empirical test also supports the prediction that firms with high level of state ownership suffer more from related diversification than firms with low state ownership.

#### *4.6.2 Theoretical Implications*

Three theoretical implications follow from the results. First, it contributes to the literature of related diversification by showing that the lack of empirical support of the benefits of related diversification is not only the problem of measurement, but also the lack of capabilities. A firm's capacity cannot be assumed, especially in settings like China where firms have existed under the Company Law for only less than twenty years. Rather, as the results show, the lack of capabilities of search and selection and implementation contributes to the liability of related diversification. More specifically, I identify a type of related diversification – seemingly related diversification, which is prevalent in emerging economies. The concept of seemingly related diversification helps us better understand how firms are harmed by related diversification.

The second theoretical contribution is to the literature on capabilities, especially dynamic capabilities. Dynamic capability is the capacity of an organization to purposefully create, extend, or modify its resource base (Helfat, 2007). Although the literature on dynamic capabilities has developed fast during the last decade, several key issues still remain unclear. This paper empirically shows that 1) learning is an important mechanism for firms to develop dynamic capabilities; 2) dynamic capabilities can influence firm performance indirectly through intermediate outcomes such as related diversification; and 3) dynamic capabilities can be disentangled into two distinctive capabilities when it comes to the issue of related diversification – search and selection, and implementation. The findings in this paper shed some lights on how dynamic capabilities are developed and how dynamic capabilities influence firm strategy and performance.

A third theoretical implication is to the studies of strategies of firms from emerging economies. Firms from emerging economies are different from firms in developed countries in many aspects such as strategy and organizational structure, due to the unique characteristics of institutional environments in emerging economies. The findings in this paper show that firms from emerging economies are more likely to suffer from the liability of related diversification due to inexperience and the lack of monitoring and incentives of managers. We should consider the different characteristics of firms from emerging economies when we evaluate their strategy and performance. The recognition of these differences help us better understand firms from emerging economies.

Finally, the findings in this chapter also speak to the “diversification discount” literature in finance. In finance literature, there has been ongoing debate on the existence of diversification discount<sup>21</sup>: some studies confirm its existence (Berger & Ofek, 1995) while others disagree (Villalonga, 2004). Different from scholars in the strategy area, scholars in the finance area do not distinguish between related and unrelated diversification. Not distinguishing between related and unrelated diversification hinders our understanding of diversification because related and unrelated diversification indeed have different rationales. The value creation or destruction mechanisms are different for these two types of diversification (Hoskisson & Hitt, 1990). Considering whether related diversification or unrelated diversification creates diversification discounts or diversification premium is necessary because I believe this relationship is contingent on a number of factors, such as the type of diversification and resources that firms have. It is hard to reach an overall conclusion. This chapter shows that diversification discount may occur if firms do not know how to benefit from related diversification. Another important contingency is the empirical context, while this chapter focuses on firms from China, the diversification discount literature focuses on firms from U.S. The difference in empirical settings may imply that firms have different resources in different settings, contributing to different relationships between diversification and firm performance.

#### *4.6.3 Practical Implications*

The findings also have important implications for managers and policy makers in emerging economies. First, while it is well known that related diversification may provide benefits to firms, the value of related diversification might be hard to realize for

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<sup>21</sup> Diversification discount is the phenomenon that diversified firms are traded at a discount prior to diversifying (Villalonga, 2004).

firms from emerging economies. Unlike their counterparties from developed countries, firms in emerging economies may lack the capabilities to benefit from related diversification. For managers in emerging economies, when they decide to conduct related diversification, it is extremely important to recognize the difficulties of related diversification. More specifically, they should try to avoid to be trapped into seemingly related diversification. Similarly for policy makers, they should not blindly encourage related diversification by offering favorable policies. Second, the findings from the study show that high levels of state ownership means severe agency problem. Since managers play an important role in conducting diversification and developing capabilities, the government should try to monitor and motivate managers in SOEs effectively.

#### *4.6.4 Limitations and Future Research*

Two technical issues require exploration. One arises from a measurement problem. The measure of seemingly related diversification is not perfect. Though it is coded according to the input-output table, the information of input-output table is inconclusive. Perhaps efforts can be made to develop a more accurate measure of seemingly related diversification relying on other sources of information.

A further technical issue is whether listed Chinese firms, which in most instances are subsidiaries of larger business groups, are the proper units for analysis of the diversification-performance relationship. Many Chinese firms list only part of their assets, and many of these listed companies engage in extensive connected or related transactions with unlisted subsidiaries (Meyer & Lu, 2005). Since it is hard to gather information on unlisted assets other than their connected or related transactions with listed entities, I cannot control for interactions between listed and unlisted assets and, in

particular, the possibility that the latter either subsidize, or are subsidized by, the former. Future research on the diversification-performance relationship must explore whether diversification is best understood at the level of the listed entity or the larger group corporation or holding company.

#### *4.6.5 Conclusions*

Despite these limitations, this paper is among one of the first attempts to empirically investigate how capabilities and institutional environments influence diversification and firm performance. It highlights the opportunities for future research on these issues. Hopefully, the theoretical development and empirical support in this paper will provide a useful first step to better understand both diversification and capabilities.

This chapter shows how the development of internal resources- the capabilities to benefit from related diversification, is missing for firms from emerging economies due to the unique institutional environments. Together, chapters 3 and 4 indicate that institutional environments influence the development of internal resources and the availability of external resources, thus influencing firm scope.

## 4.7 Tables

*Table 4-1 Descriptive Statistics and Correlation Matrix<sup>22</sup>*

Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
1 ROA	0.05	0.08	1.00									
2 Seemingly Related Diversification	0.20	0.40	-0.06	1.00								
3 Related Diversification	0.33	0.45	-0.08	0.59	1.00							
4 M&A experience	0.26	1.13	0.09	-0.09	-0.12	1.00						
5 State Ownership	0.43	0.28	0.01	-0.02	0.01	0.16	1.00					
6 Debt/Equity Ratio	0.47	0.43	0.04	0.09	0.07	0.01	-0.08	1.00				
7 Log of Sales	7.95	1.48	0.09	0.05	0.00	0.07	0.00	0.17	1.00			
8 Largest Ownership	53.55	13.83	0.02	-0.03	-0.09	0.05	0.12	-0.12	-0.05	1.00		
9 CEO government	0.68	0.47	0.02	-0.15	-0.13	0.09	0.19	0.03	0.06	0.01	1.00	
1 0 Inverse Mill's Ratio	0.31	0.05	-0.11	0.05	0.06	-0.05	0.07	0.26	0.07	-0.04	-0.11	1.00

<sup>22</sup> Note: correlation > .10 is significant at 0.01 level, Pearson correlation, all two-tailed tests. N=416.

Table 4-2 Regression Results for Sample Selection and propensity score matching<sup>23</sup>

<b>Variables</b>	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
Debt/Equity Ratio	-2.35*** (0.58)	0.12 (0.15)	0.10 (0.13)
Log of Sales	-3.76*** (0.37)	0.06 (0.04)	0.03 (0.05)
ROA	13.06*** (4.50)		
M&A experience		-0.21* (0.11)	-0.33** (0.13)
State ownership		0.23 (0.25)	0.32 (0.22)
Inverse Mill's ratio		2.12 (1.43)	1.47 (1.23)
Industry dummies	Included	Included	Included
Year dummies	Included	Included	Included
Average Treatment Effect		-0.02* (0.01)	-0.02** (0.01)
Number of observations	8031	416	416
Wald (LR) Chi-square	448.72	69.35	62.64
Log (pseudo)likelihood	-122.57	-243.76	-308.69
Pseudo R-square	0.94	0.12	0.09

<sup>23</sup> Note: +p<.10; \*p<.05; \*\*p<.01, \*\*\*p<0.001. All two-tailed tests. Standard errors are in parentheses. Industry and year dummies are omitted for lack of space.

Table 4-3 Regression Results<sup>24</sup>

Variables	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
<b>Independent Variables</b>						
Seemingly Related Diversification		-0.03*** (0.01)				
Related Diversification			-0.02** (0.01)	-0.02** (0.01)	-0.02** (0.01)	-0.02** (0.01)
Related Diversification * M&A Experience				0.04*** (0.01)		0.04*** (0.01)
Related Diversification * State ownership					-0.03+ (0.01)	-0.03* (0.01)
<b>Control Variable</b>						
M&A Experience	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
State Ownership	-0.02* (0.01)	-0.02* (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)
Debt/Equity Ratio	-0.03** (0.01)	-0.02* (0.01)	-0.03** (0.01)	-0.03** (0.01)	-0.03** (0.01)	-0.03** (0.01)
Log of Sales	-0.00* (0.00)	-0.00+ (0.00)	-0.00+ (0.00)	-0.00 (0.00)	-0.00+ (0.00)	-0.00 (0.00)
Largest Ownership	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
CEO Government	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.00)	-0.02* (0.01)	-0.01+ (0.00)	-0.02** (0.01)
Inverse Mill's ratio	0.08 (0.05)	0.07 (0.05)	0.07 (0.05)	0.08 (0.05)	0.07 (0.05)	0.08 (0.05)
Industry dummies	Included	Included	Included	Included	Included	Included
Year dummies	Included	Included	Included	Included	Included	Included
Constant	0.09*** (0.03)	Omitted	Omitted	Omitted	0.09*** (0.03)	0.08** (0.03)
Wald Chi-square	220.37	938.95	814.51	889.52	276.47	316.69
df	46	48	48	49	48	49
Model significance	0.00	0.00	0.00	0.00	0.00	0.00

<sup>24</sup> Note: +p<.10; \*p<.05; \*\*p<.01, \*\*\*p<0.001. All two-tailed tests. Standard errors are in parentheses. Industry and year dummies are omitted for lack of space.

Table 4-4 Robustness Check<sup>25</sup>

Variables	Model 1 (OLS)	Model 2 (OLS)	Model 3 (FE)	Model 4 (FE)	Model 5 (RE)	Model 6 (RE)	Model 7 (2SLS)	Model 8 (2SLS)
Seemingly Related Diversification	-0.04** (0.01)		-0.02+ (0.01)		-0.03* (0.01)		-0.11+ (0.06)	
Related Diversification		-0.03** (0.01)		-0.02+ (0.01)		-0.02+ (0.01)		-0.08* (0.04)
Related Diversification * M&A		0.04* (0.02)		0.03 (0.02)		0.06** (0.02)		
Experience Related Diversification * State ownership		-0.06 (0.04)		-0.02 (0.04)		-0.00 (0.00)		
M&A	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Experience								
State	-0.01 (0.02)	-0.00 (0.02)	-0.05* (0.02)	-0.05* (0.02)	-0.00 (0.02)	0.00 (0.02)	0.01 (0.01)	0.01 (0.01)
Ownership								
Debt/Equity Ratio	-0.03** (0.01)	-0.02+ (0.01)	- 0.09*** (0.01)	- 0.09*** (0.01)	-0.00 (0.01)	-0.00 (0.01)	- 0.09*** (0.01)	- 0.09*** (0.01)
Log of Sales	0.00 (0.00)	0.00 (0.00)	0.01 (0.01)	0.01 (0.01)	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)
Largest Ownership	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00* (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
CEO Government	-0.03** (0.01)	- 0.04*** (0.01)	-0.00 (0.01)	-0.00 (0.01)	-0.02 (0.01)	-0.03* (0.01)	- 0.03*** (0.01)	- 0.03*** (0.01)
Inverse Mill's ratio	-0.19+ (0.10)	-0.16 (0.10)	-0.15 (0.11)	-0.15 (0.11)	0.02 (0.09)	0.04 (0.09)	0.05 (0.09)	0.06 (0.09)
Industry dummies	Include d	Include d	Include d	Include d	Include d	Include d	Include d	Include d
Year dummies	Include d	Include d	Include d	Include d	Include d	Include d	Include d	Include d
Constant	0.14 (0.09)	0.12 (0.09)	-0.05 (0.06)	-0.07 (0.06)	0.07 (0.06)	0.08 (0.06)	0.04+ (0.03)	0.05* (0.03)
F value / Wald	2.99	3.01	7.91	7.33	75.78	83.86	5.55	6.07
Chi-square								
R-square	0.28	0.29					0.31	0.37
Model significance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

<sup>25</sup> Note: +p<.10; \*p<.05; \*\*p<.01, \*\*\*p<0.001. All two-tailed tests. Standard errors are in parentheses. Industry and year dummies are omitted for lack of space.

4.8 Figures

Figure 4-1 Conceptual Framework

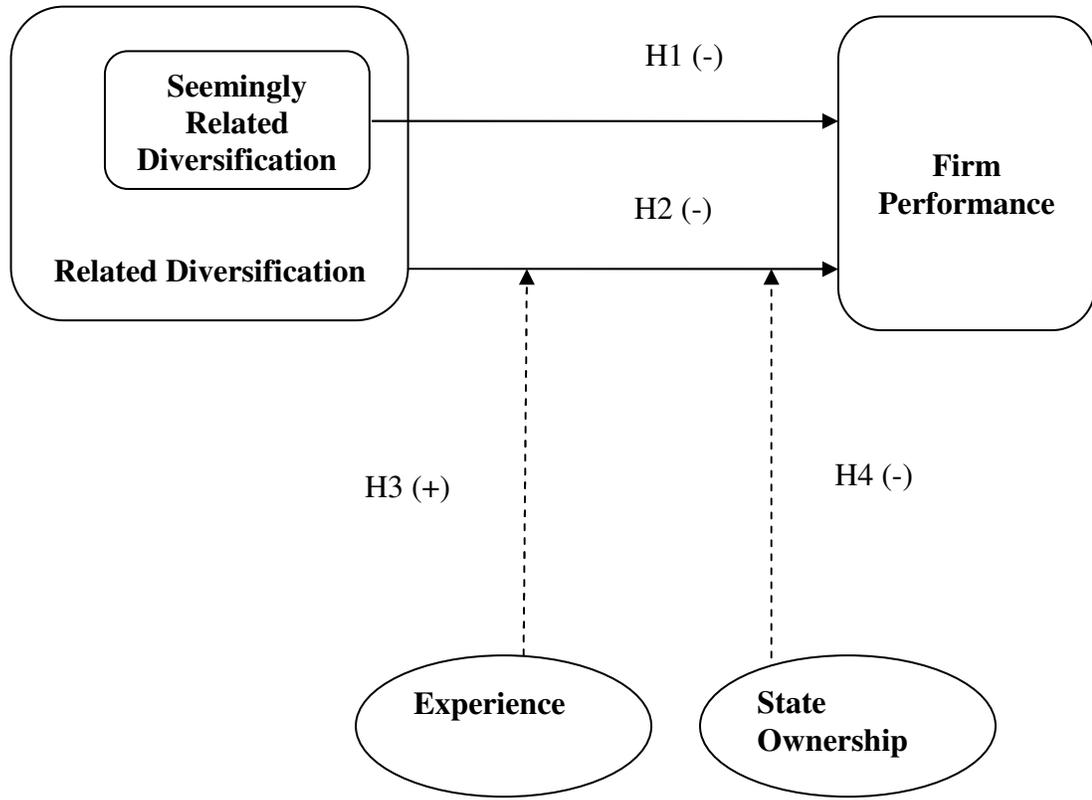


Figure 4-2 Moderating Effect of M&A Experience on the Relationship between Related Diversification and Firm Performance

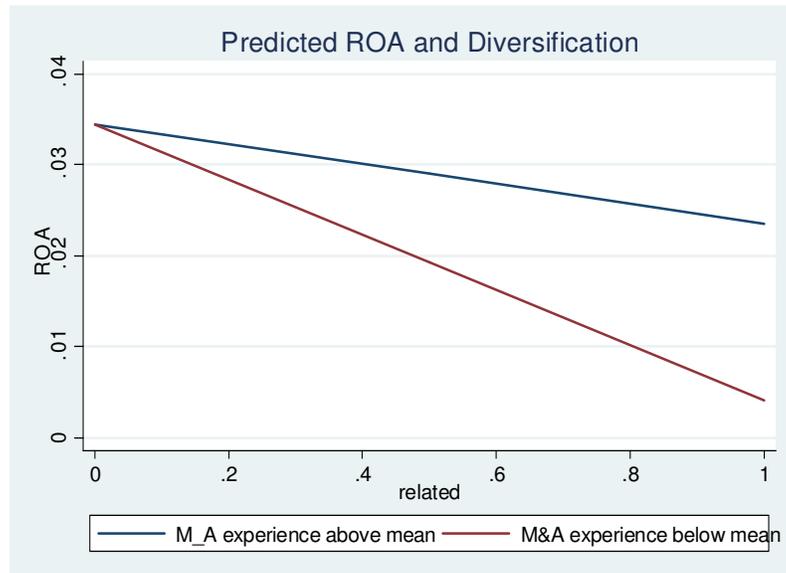
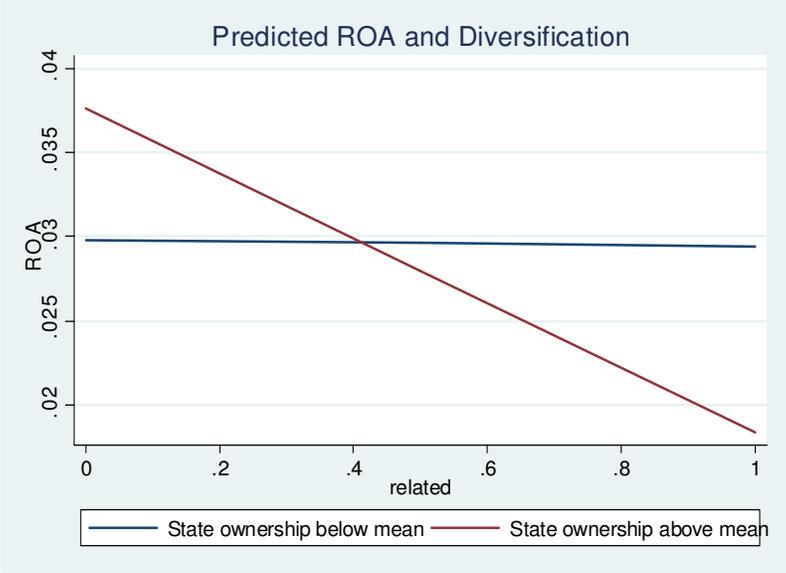


Figure 4-3 Moderating Effect of State Ownership on the Relationship between Related Diversification and Firm Performance



## CHAPTER 5 CONCLUSION

### 5.1 Dissertation summary

Product diversification is on the center stage of strategy research while geographic diversification (internationalization) is on the center stage of international business research. My dissertation seeks to bridge these two streams of research from the theoretical lenses of resource-based view, resource dependency theory and institutional theory. In this section, I will first summarize the findings of the dissertation, and then discuss the contribution and practical implication, and conclude with areas for future research.

This dissertation explores how resources and institutional environments influence firm scope, with an area emphasis on emerging economies. Chapter 2 focuses on the concept of institutional distance, disaggregate it into eight dimensions and empirically shows the validity of the new measures. This chapter also compares the different impacts of institutional distances on foreign entry choices in U.S. and Chinese firms. By demonstrating the role of institutional distance in influencing firm strategy, this chapter highlights the importance of investigating firm strategy in different institutional environments, especially emerging economies. Chapter 3 and chapter 4 examine diversification strategy of Chinese listed firms. Chapter 3 explores the role of government in influencing the globalization strategy of government corporations. Government, as an important part of institutional environments, influences both the motivation and resources of firms to go abroad through ownership and policy. SOEs are less likely than PPEs and FPEs to invest abroad because of their risk-averse nature. They also differ in terms of the resources to rely on when they go abroad. While SOEs rely on external resources largely

influenced by the government, PPEs rely on internal firm resources. A government policy encouraging firms to go abroad will create institutional pressures for SOEs to comply with and also influence the availability of external resources to support such activities. As a result, SOEs are more likely to go abroad after such the policy, but not necessarily PPEs and FPEs. Chapter 4 introduces the concept of seemingly related diversification, a type of diversification that focuses on the relatedness of technology but not of markets. This chapter shows that firms from emerging economies suffer from seemingly related diversification, due to the unique institutional environments. Moreover, even if firms are able to identify truly related businesses, they still face the difficulty of implementing such a strategy. Therefore, it is hard for firms from emerging economies to benefit from related diversification. However, as firms learn from their own experience, the liability of related diversification will diminish. It is also worthwhile to notice that SOEs suffer more from the liability of related diversification due to the severe agency problem. Overall, this dissertation shows how institutional environments influence the development of internal resources and the availability of external resources and then the choice of firm scope.

## 5.2 Contributions and implications

The contribution of this dissertation is three-fold. First, theoretically, although RBV, RDT and IT have been applied to explain the relationship among resource, institutional environments and firm scope, there has not been an integrated framework that links these concepts using these theories. As suggested by Hillman, Withers and Collins (2009), the integration of RDT with other theoretical perspectives such as RBV and IT provides a promising future for the development of RDT. Likewise, the integration will also advance the theoretical development in RBV and IT. Chapter 1

provides such a framework, as shown in Figure 1-2. This framework provides a roadmap to understand these relationships. It compares these three different theories and shows that they can explain different relationships. For example, while RBV explains how the possession of resources encourages firms to increase their scope, RDT explains how the acquisition of resources as a result of the increase in firm scope.

The relationships are interactive and complicated, and it is impossible to investigate all of them in a single dissertation. However, having the framework is a first attempt to understand these complicated relationships. In this dissertation, I examine how institutional environment influence resources and then firm scope. Chapter 2 examines how internal resources and capabilities can mitigate the negative impact of institutional distance on the internationalization process. Chapter 3 examines the motivation and the source of resources when firms go abroad. PPEs rely on internal resources and capabilities, as predicted by RBV while SOEs rely on external government resources to conduct FDI, as predicted by RDT. Government provides resources that firms can utilize when they go abroad. By providing these resources, government influences the availability of resources in external environment and thus firm scope. Chapter 4 shows institutional environments constrain the development of resources and capabilities, especially the capabilities to benefit from related diversification.

Second, this dissertation advances our understanding of firm strategy in emerging economies. As acknowledge by various scholars, firm strategy in emerging economies are indeed different in emerging economies, due to the unique institutional environments. Emerging economies are characterized by various unique features, such as fast growth, institutional voids, a large number of government corporations, and young private sectors

(Peng & Delios, 2006). All of these characteristics render the applicability of theories and findings in the western context to emerging economies. Therefore, scholars interested in emerging economies should be cautious in applying existing theories and should try to develop new theories to explain firm strategy in emerging economies (Barney & Zhang, 2009; Whetten, 2009).

This dissertation aims to develop such theories and provide empirical evidence to better understand firm strategy in emerging economies. More specifically, I focus on the diversification strategy in emerging economies. Chapter 4 shows that the relationship between related product diversification and firm performance is different in emerging economies. This chapter contributes to the literature by showing that seemingly related diversification would harm firm performance in emerging economies and firms may actually need to learn how to benefit from truly related diversification. It is a good supplement to existing theories on the benefits of unrelated diversification (Guillen, 2000; Khanna & Palepu, 2000a). Together, they provide a relatively complete picture of the relationship between product diversification and firm performance for firms in emerging economies. Similarly, the findings of Chapter 3 also show the applicability of existing theories to emerging economies is limited. The internalization theory (Buckley & Casson, 1976), a dominant theory in explaining globalization, is only applicable to PPEs that seek to exploit their key resources in foreign markets. It is not applicable to SOEs which invest abroad to gain legitimacy. SOEs will rely on external government resources rather than internal firm resources to go abroad.

This dissertation also contributes to the literature empirically. It contributes to international business literature empirically by providing a set of multi-dimensional

measures of institutional distances. Instead of relying on the widely-used Hofstede approach and measures of cultural distance, chapter 2 uses institutional theories of national business, governance and innovation systems to ground the conceptual definitions, analysis, and choice of empirical dimensions and indicators. The new measures are made publicly available to all researchers, with the intent to help them use distance measures that match their research questions. Perhaps this new approach can help resolve some of the inconsistencies reported in the literature concerning the effects of national distance on various strategies such as foreign entry mode choice and human resource practices, given that each of these questions may possibly require the use of different dimensions and measures of distance. This dissertation also contributes to the strategy literature by introducing the concept of seemingly related diversification and empirically measuring and testing the concept. The introduction and empirical tests of this concept help us understand the difficulty of realizing the gains of related diversification.

This dissertation also has important practical implications. For managers in firms from emerging economies, it is important to notice that they should not blindly mimic the strategy of western firms. The same strategy that is successful in the west may turn out to be unsuccessful in emerging economies, such as related diversification. They should be aware of their firms' internal resources and external environments and make the best strategic choices accordingly. Similarly, for managers of MNEs operating in emerging economies, it is crucial that they recognize the role of institutional environments in influencing firm strategy and identify the best strategy for their firms. For policy makers in emerging economies, they should notice SOEs' over reliance on the government for

various resources. Instead of providing easy capital to SOEs, they should try to find a way to help SOEs develop their own capabilities in order to survive in market competition. They should also be aware of the severe agency problem and mitigate its negative impact on firm performance by motivating managers in SOEs through various incentives such as stock option plan.

### 5.3 Areas of future research

Future research can explore several areas. First, since both product diversification and geographic diversification require resource inputs, it will be interesting to investigate the relationship between these two types of diversification. As described in the introduction, previous research has not been conclusive in the relationship between product and geographic diversification, while some scholars find they are substitute (Wiersema & Bowen, 2008), others find that they are complementary (Doukas & Lang, 2003; Kim et al., 1989), still others find that they are not related to each other (Tallman & Li, 1996). There is much work to be done to clarify the relationship between product and geographic diversification (Geringer, Tallman & Olsen, 2000). As Hitt and his colleagues (1997) claimed, there is a need to understand the combined evolutionary path of product and geographic diversification.

Along this line of advocate, this topic is extremely important in emerging economies because in fast developing emerging economies, many firms face the choice of product or geographic diversification as they grow. It is crucial for them to maintain the balance between product and geographic diversification in a way that best fits their growth strategy. For example, if product and geographic diversification are indeed substitute to each other, then, a firm should pursue either product or geographic

diversification, jumping into both will harm firm performance. Moreover, for those young firms facing the choice of diversification for the first time, which is the better way to go, product or geographic diversification? Choosing the wrong path may bring them enormous losses.

The previous inconclusive findings on the relationship between product and geographic diversification may be the result of the contingency nature of this relationship, as I described in the introduction. Both resources and institutional environments can influence the relationship between product and geographic diversification. Applying the framework developed in this dissertation, since institutional environments can influence firm scope both directly and indirectly through the impacts on resources, it is crucial to identify the elements in institutional environments that foster specific types of resources and diversification.

Institutional environments can directly influence the relationship between product and geographic diversification. Chapter 3 describes how government policies encourage firms to go abroad. As a result, firms may rush into geographic diversification rather than product diversification. Institutional environments can also indirectly influence the relationship through the impacts on resources. For example, the lack of markets for complementary assets as described in chapter 4 may contribute to a shortage of supply of complementary assets. This shortage of supply will further constrain the ability of firms to grow. Given the constraint, firms may have to choose one or the other dimension to grow, but not both (Kumar, 2009). Similarly, since many firms from emerging economies are inexperienced when they grow as I described in chapter 4, it is unlikely that they will have the capability to replicate and transfer the tacit and intact competences in both

dimensions. All of the above arguments suggest that firms should seriously consider their own resources and the institutional environments to decide which way to go when they grow.

Second, this dissertation shows that SOEs rely heavily on government for various resources. As a result, they lack the motivation and capabilities to develop their own resources. But one of the major arguments in resource dependence theory is that firms will seek to reduce their dependence over other parties (Hillman et al., 2009; Pfeffer & Salancik, 1978). If this is the case for SOEs, we may be able to find out conditions under which SOEs may seek to reduce the power from the government. If this is true, several interesting questions may be worthwhile to explore: under what conditions will SOEs try to reduce their reliance on the government? Through which ways would SOEs achieve this goal? How would government react to the actions taken by SOEs? The answers to these questions will help us understand the development of SOEs in emerging economies.

Third, emerging economies are characterized by rapidly-changing environment (Peng, 2006; Tan & Tan, 2005). Therefore, it is necessary to recognize the dynamic nature of various relationships. In this dissertation, I investigate how the relationship between related diversification and firm performance changes as firms gain more experience. Similarly, I also examine how the probability of going abroad changes as a government policy is announced. However, given the relatively short history of Chinese stock market, the time period covered in this study is only about 15 years. Studies that cover longer time period are desirable. Moreover, as firms are still in the process of conducting massive product and geographic diversification, firms may experience new

developments frequently. It is necessary to revisit the relationship every few years to explore the new developments.

Fourth, the sample in this dissertation has several limitations. First, it only includes one emerging economy – China. Although China is the largest emerging economy and shares many characteristics of emerging economies. It has several unique features, such as the important role of government and Guanxi in business transactions (Peng & Luo, 2000). It is not clear whether the findings in this dissertation can be applied to other emerging economies. Second, the sample includes only listed firms. There are a large number of unlisted firms in China. These firms are also active in various business activities. Understanding the strategy of these firms is also important since they are a crucial part of the economy.

Despite these limitations, this dissertation explores how firm resources and institutional environments influence the choice of firm scope in emerging economies. It contributes to the literature of strategy and international business by investigating the unique strategic choices for firms from emerging economies.

## APPENDICES

### **Appendix 1: World Values Survey Questions Used in the Calculation of Cultural Distance**

In the attempt to replicate Hofstede's (1980) cultural scores with time-varying measures, I used the World Values Survey (Inglehart, 2004). I obtained data from four waves of the WVS conducted between 1980 and 2004 for as many as 69 countries, interpolating the years in between surveys. I used mean response scores by country as the input data for all calculations.

To measure Hofstede's power distance, I computed the percentage of respondents who chose "obedience" in response to question a042: "Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five." The other categories were leadership, self-control, thrift saving money and things, determination perseverance, religious faith, unselfishness, and loyalty. I also took into account the percentage of people who responded to question e018 that "it would be a good thing": "I'm going to read out a list of various changes in our way of life that might take place in the near future. Please tell me for each one, if it were to happen, whether you think it would be a good thing, a bad thing, or don't you mind? —Greater respect for authority."

To measure uncertainty avoidance I computed the percentage of people answering "very careful" to question a165: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" I also took into consideration if they chose "good job security" in response to question c013: "Here are some more aspects of a job that people say are important. Please look at them and tell me which ones you personally think are important in a job?" The other categories were good

pay, not too much pressure, a respected job, good hours, an opportunity to use initiatives, generous holidays, you can achieve something, a responsible job, a job that is interesting, a job that meets one's abilities, pleasant people to work with, good chance for promotion, a useful job for society, meeting people, good physical working conditions, have time off at the weekends, and none of these.

To measure individualism I computed the percentage of people who chose "independence" in response to question a029: "Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five." The other categories were good manners, politeness and neatness, hard work, honesty, feeling of responsibility, patience, and imagination. I also took into account the response to question e037: "Now I'd like you to tell me your views on various issues. How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between: —The government should take more responsibility to ensure that everyone is provided for. —People should take more responsibility to provide for themselves."

Finally, to measure masculinity I computed the mean response on a scale from 1 to 5 to the question: "For each of the following, indicate how important it is in your life: —a001 family, and\_—a005 work.

## Appendix 2: Calculation of Euclidean and Mahalanobis Distance

### Euclidean Distance

Suppose that for a specific country in any given year we observe  $x_i$  for  $i = 1 \dots p$ , where  $x_i$  is a characteristic of the specified dimension (e.g. for the economic dimension  $x_1$ =imports,  $x_2$ =GDP per capita etc). Let  $\bar{x}_i$  be the arithmetic mean of characteristic  $i$  across all countries in any given year. Let  $\sigma_{x_i}$  be the sample standard deviation of characteristic  $i$  across all countries in any given year. We first standardized each dimension:

$$z_i = \frac{(x_i - \bar{x}_i)}{\sigma_{x_i}} \quad \text{for each country in the given year.}$$

Then the Euclidean distance between two countries A and B is calculated as

$$d(A, B) = \sqrt{\sum_{i=0}^p (z_i(A) - z_i(B))^2}$$

where  $z_i(A)$  and  $z_i(B)$  are the values of the standardized characteristic  $i$  corresponding to countries A and B respectively.

### Mahalanobis Distance

Suppose that for two countries in any given year, we observe two vectors  $\mathbf{a} = (a_1, a_2, \dots, a_p)$  and  $\mathbf{b} = (b_1, b_2, \dots, b_p)$  of  $p$  different characteristics. Similarly, suppose there is an  $n$ -by- $p$  matrix  $\mathbf{M}$  with  $p$  columns representing characteristics, and  $n$  rows containing each country in each year (so the number of rows would be the summation over all years of the number of countries in each year). We define  $\mathbf{C}$ , a covariance matrix for  $\mathbf{M}$ , as a  $p$ -by- $p$  matrix with element  $\mathbf{C}_{ij}$  equal to the sample covariance of columns  $i$  and  $j$  in the matrix  $\mathbf{M}$ . Finally, let  $\mathbf{I}$  be the  $p$ -by- $p$  identity matrix. Then the squared Mahalanobis distance between two countries is calculated as:

$$d(a, b)^2 = (\mathbf{a} - \mathbf{b})\mathbf{C}^{-1}(\mathbf{a} - \mathbf{b})^T$$

We can alternatively rewrite the Euclidean distance above as:

$$d(a, b) = \sqrt{(\mathbf{a} - \mathbf{b})\mathbf{I}(\mathbf{a} - \mathbf{b})^T}$$

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