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**Regional Institutional Development, Political Connections, and Entrepreneurial
Performance in China's Transition Economy**

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Regional Institutional Development, Political Connections, and Entrepreneurial Performance in China's Transition Economy

ABSTRACT

While prior research has emphasized the role of political connections in facilitating entrepreneurial performance in China's early reform period (1978 – 1999), this study argues that regional institutions had been increasingly conducive to entrepreneurial activities and, thus, also played a key role in China's entrepreneurial success during that period. The purpose of this study is twofold. First, it aims to demonstrate how regional institutional development facilitated entrepreneurial performance in China. Second, it aims to understand how formal institutional development among Chinese regions affected the role of political connections. Using a two-level hierarchical dataset on Chinese private enterprises, this study finds that not only legal protection of property rights but also the development of market system mattered for entrepreneurial performance. In addition, it shows that political connections played a diminishing role during regional institutional development in China.

Key words: entrepreneurial performance, legal protection of property rights, development of market system, political connections, China

JEL code: O12; O17; O43; P26; R58.

1 Introduction

One of the most important outcomes of China's market-oriented reforms in the early reform period (1978 – 1999) is the emergence and rapid growth of domestic private entrepreneurial firms, which include both private and individual enterprises.¹ While legally forbidden before the economic reforms and allowed to reemerge only in the late 1970s when China started its reforms, by 1998, there were already 1.2 million private enterprises and 31 million individual enterprises; and the two types of entrepreneurial firms accounted for one-third of national industrial output and one-fifth of national non-farm employment (International Finance Corporation (IFC) 2000).

Such a rapid entrepreneurial growth was driven primarily by the high average performance of entrepreneurial firms, especially, private enterprises. Biennial national surveys of Chinese private enterprises suggest that the average return on capital – after-tax profits divided by total capital – ranged from 0.31 to 0.35 in the 1990s (Zhang and Ming 2000). Such a high profit rate was higher than not only that of the State-owned Enterprises (SOEs), but also that of Township and Village Enterprises (TVEs) – China's economic locomotives in the 1980s and early 1990s. According to Nee (2005), the average return on capital was around 0.10 for TVEs and below 0.05 for SOEs throughout the 1990s. Seeing the high returns for investment, potential entrepreneurs rushed into businesses, thus triggering rapid entrepreneurial growth in China's early reform period (McMillan and Woodruff 2002).

The high entrepreneurial performance, as well as the resulting rapid entrepreneurial growth, is puzzling. Although China adopted market-based policies ever since the late 1970s, the

¹ Domestic private entrepreneurial firms in China are mostly small and medium-sized enterprises owned by individual entrepreneurs. There are two types of private firms: non-farm private enterprises (*siying qiye*) and individual enterprises (*getihu*). The difference between private enterprises and individual enterprises is the number of employees: A private firm is a private enterprise if it has at least eight employees, but an individual enterprise if fewer than eight employees. In this paper, I use "private firm" to indicate both types of enterprises.

development of formal institutions was slow and difficult in general (Hoskisson et al. 2000). It is widely accepted that the national market and legal institutions were uncondusive, if not detrimental, to private entrepreneurship in the first two decades of China's economic reforms (Huang 2008; IFC 2000; Naughton 2007).

To resolve this puzzle, prior research has emphasized the significance of informal social arrangements, particularly, *guanxi* (i.e., social relations), in China's entrepreneurial success (e.g., Park and Luo 2001; Peng 2004; Tan, et al. 2009; Xin and Pearce 1996). Among various types of *guanxi* for entrepreneurs, political connections –vertical *guanxi* to the state and its agents –have obtained particular attention because of strong government intervention in the Chinese economy (Zhou 2013). Theoretically, political connections are argued to be able to facilitate entrepreneurial activities and performance under less developed formal institutions because they help entrepreneurs mobilize key resources and obtain private protection of property rights (Zhou 2013). Empirically, a number of studies have consistently reported positive effects of political connections on entrepreneurial activities and performance in China (e.g., Peng and Luo 2000; Walder 2002; Wu 2006; Xin and Pearce 1996; Zhou 2009, 2013).

However, it should be noted that political connections, as well as other informal social arrangements, may not fully account for the high entrepreneurial performance in China. A number of other explanations may be offered, such as fast economic growth and, thus, high demand for consumer goods during China's early reform period (Hoskisson et al. 2000; Zhou 2013). In particular, as Baumol (1990) pointed out, although informal arrangements such as political connections may help entrepreneurs adapt to a hostile institutional environment, entrepreneurial activities on average would not enjoy higher returns but have low payoffs instead and be even unproductive or destructive when formal institutional environment is not conducive.

Recently, an increasing number of studies have attempted to understand how formal institutions affect entrepreneurship and new venture growth in China's transition economy. Some studies suggest that, compared to other transition or emerging economies, China's more stable and efficient institutions have helped Chinese entrepreneurial firms take long-term views and grow faster (Batjargal et al. forthcoming; Hitt et al. 2004). Other studies show that formal institutions, in particular, legal protection of property rights, have a positive effect on entrepreneurial activities in China (Cull and Xu 2005; Lu and Tao 2010; Zhou 2011). Nonetheless, these studies, in general, do not account for why and how formal institutions related to entrepreneurship emerged and developed in China. Many of these studies also do not measure formal institutions directly but either use country dummy (China versus other transition or emerging country) or time (before a certain year versus after) to indicate institutional difference. And those studies that do measure formal institutions directly (e.g., Cull and Xu 2005; Zhou 2011) usually focus primarily on legal protection of property rights while rarely on other important aspects of institutional development. In addition, while there is a debate on the effect of institutional development on the significance of political connections, prior studies have rarely tested this effect empirically (Zhou 2013).

Continuing this new literature that emphasizes the role of formal institutions, this study first explains how formal institutions related to entrepreneurship emerged and developed in China's early transition period. It suggests that, although often considered un conducive to private entrepreneurial firms in general, the institutional environment in the first two decades of China's market-oriented reforms was not homogeneous throughout China; rather, there have been significant variations in formal institutions among different regions as a result of the decentralization reform enacted in the early 1980s (Breznitz and Murphree 2011; Montinola, et

al. 1995; Weingast 1995). In addition, regional governments have emulated the regulatory policies of the fast growing regions in order to facilitate economic development and thus to increase regional revenue. Out of the regional emulation process, new legal and market institutions, which were conducive to entrepreneurial growth, were invented and diffused across Chinese regions since the early 1990s (Zhou 2011).

In addition, based on new institutional economic theory (especially, North 1990, 1991), this study aims to systematically demonstrate how regional institutional development affected entrepreneurial performance, as well as the role of political connections, in China's early reform period. First, building on North (1990, 1991), this study argues that not only legal protection of property rights but also the development of market system played a significantly positive role in facilitating entrepreneurial performance in China. Market system here means a system of societywide coordination of human activities not by central command but by mutual interactions in the form of transactions (Lindblom 2001). Some prior studies conjecture that expansion of market system may have an even more influential effect on entrepreneurship than legal protection in the early period of market transition (Smallbone and Welter 2001; Zhou 2011). Yet, the effect of market development has rarely been empirically examined. China's early transition period provides a unique opportunity to examine the effect of market development because, compared to other emerging and transition economies, building a market system was the central task for, and also the most successful achievement of, China's central and local governments (Qian 2000).

Second, this study aims to understand how formal institutional development affected the role of political connections. Many prior studies, including those on Chinese firms, assume that political connections substitute for formal institutions, and, thus, their effects may decrease as the

latter improves. Yet, empirically, it is not clear whether they may complement or substitute for formal institutions, since political connections continue to play a significant role in China even today (Tan, et al. 2009; Zhou 2009) and even in advanced market economies (Dixit 2004; Faccio 2006; Pfeffer and Salancik 2003). Based on the China case, this study demonstrates that political connections play a diminishing role during both legal and market development, thus providing empirical support to the substitution argument.

This study employs a two-level, hierarchical quantitative dataset on Chinese private enterprises for hypothesis testing. The firm level data include a nationally representative sample of 1946 Chinese entrepreneurial firms in 1996. The provincial level data include a number of institutional and economic variables that directly measure the institutional and economic development in each province around 1996. By the mid 1990s, formal institutional environment in many Chinese provinces has already developed substantially, thanks to both Deng Xiaoping's Southern Tour in early 1992 and the diffusion of the liberal state models across Chinese regions since 1992 (Zhou 2011, 2012a). Thus, if the institutional account of this paper is correct, one would expect higher performance of entrepreneurial firms and less significance of political connections among provinces with more developed legal and market systems.

2 The regional institutional development

2.1 Formal institutions

Institutions are humanly devised constraints that shape human interaction (North 1990). They include both what individuals are prohibited from doing and under what conditions some individuals are permitted to undertake certain activities. As such, institutions define the choice

set of economic actors and, therefore, determine transaction and production costs and hence the profitability and feasibility of engaging in economic activity (North 1991).

Institutions can be either informal or formal. Informal institutions are rules based on implicit understandings and not accessible through written documents and not necessarily sanctioned through formal position, and formal institutions are written rules that are determined and executed through formal position, such as authority or ownership (Zenger, et al. 2002). Although new institutional economists have long argued that both formal and informal institutions matter in economic transactions, it is formal institutions that have attracted more interest among new institutional scholars until very recently (Dixit 2004).

Among all formal institutions, the existing literature has focused primarily on property rights institutions. North argued that economic actors will not invest, produce, or engage in market transactions if they do not expect to be able to keep the fruits of their efforts (North 1990; North and Weingast 1989). Indeed, many empirical studies suggest that a credible commitment on the part of the state to protecting private property rights is necessary for long-term economic growth (e.g., Acemoglu and Johnson 2005; Johnson, et al. 2002; La Porta, et al. 1997). Besides property rights institutions, a developed market system is also crucial for entrepreneurs to capture the gains from trade and thus, for long term economic growth. According to Lindblom (2001), market system is a system of societywide coordination of human activities not by central command but by mutual interactions. A market system emerges when mutual interactions of buyers and sellers, rather than government planning, organize or coordinate economic activities in a society. Substantively, it can be identified when various markets (e.g., labor markets, agricultural markets, markets for services and goods, markets for intermediate services and goods, and capital markets) are proliferating and linked tightly with each other through the price

mechanism (Lindblom 2001, chapter 1). Although seldom examined empirically, North (1991) argued that a developed market system can raise the benefits of cooperative solutions and reduce transaction and production costs per exchange so that the potential gains from trade are realizeable (see, also, Gwartney and Lawson 2002; Zhou 2010).

2.2 Development of formal institutions across Chinese regions

It is generally accepted that, unlike Eastern Europe and the former Soviet Union states, the Chinese state did not have any government programs to deliberately develop its domestic private sector in the first two decades of the economic reform (e.g., IFC 2000; McMillan and Woodruff 2002; Tsang 1994; Zhou 2009, 2011). And thus, the national institutional environment, in general, was against rather than conducive to private entrepreneurship even by the early 2000s. Indeed, although private entrepreneurial firms were allowed to reemerge at the end of the 1970s when the Chinese government began its market-oriented economic reforms, the state restricted the private sector such that it could only play a marginal, stop-gap role in the economy for socialist ideological reasons before Deng Xiaoping's Southern Tour in 1992 (Chang and MacMillan 1991; IFC 2000; Tsang 1994). And, even after China embraced the market economic system since 1992, it has been noted that the central government was still reluctant to provide a set of national legal and market institutions needed for healthy entrepreneurial growth throughout the 1990s and early 2000s (IFC 2000; Zhou 2011, 2012a). Not only were well-functioning markets (particularly, credit, equity, and labor markets) largely absent (Naughton 2007), but the central government still controlled most key economic resources and kept the private sector at a subordinate and near-pariah status, discriminating against it when distributing these resources (IFC 2000). Furthermore, the central government did not provide substantive legal protection for

and enforcement of private property rights. It granted formal constitutional recognition to the private sector only in 1999, and private property rights were not protected even rhetorically in the Chinese Constitution until 2004 (Zhou 2009, 2011, 2012a).

Unconducive national institutions notwithstanding, the institutional environment in China, in fact, was not homogeneous; rather, there was large variation in formal legal and market institutions among Chinese regions (Montinola, et al. 1995). And such regional legal and market institutions had developed at an increasingly faster pace, especially, since the early 1990s (Zhou 2011). A question, then, is: how did legal and market institutions emerge and develop among Chinese regions?

Formal institutions, for sure, do not emerge in a vacuum. There have been several accounts on the emergence and development of legal and market institutions in China. Some researchers emphasize the external influence as a result of the opening of the Chinese economy to the outside world. Steinfeld (2010), for example, argued that China has in many ways handed over – outsourced – the remaking of its domestic economy and domestic institutions to foreign companies and foreign rule-making authorities. While this account may indeed find a number of empirical evidences, it should be noted that, for a large country like China, foreign trade and investment per se are unlikely to be quantitatively as important as small countries; and even their effects on institutional change ultimately depend on internal changes (Qian 2000). As such, a number of researchers have focused on the internal sources of institutional change, in particular, the initiatives of regional and local governments (see, e.g., Breznitz and Murphree 2011; Montinola, et al. 1995; Qian 2000).

It is noted that the Chinese central reformers began to transfer government authority from central to provincial and local levels in 1979 in order to enjoin government officials at these

levels to support profitable economic development (Naughton 2007; see also Zhou 2011). After the decentralization reform, provincial and local governments became regulators of their economies. They could issue business licenses, coordinate business development, resolve business disputes, and enact tax policies. They also acquired the authority to determine the structure of regional expenditure, which was linked to the revenues generated in the region (Qian 2000). As a result, since then, although remaining *de jure* a unitary state, China has in many ways functioned as a *de facto* market-preserving federalist state (Blanchard and Shleifer 2005; Montinola, et al. 1995).

A market-preserving federalist structure is argued to have an advantage in facilitating regional experimentation in terms of regulatory policies and imitation of successful ones (Blanchard and Shleifer 2005; Montinola, et al. 1995). In China, given the impossibility of planning for economic reform *ex ante*, as it was complex in nature and had no historical precedence, regional bureaucrats had to experiment with whatever regulatory policies were considered most appropriate for their own region, or imitate successful policies in other regions (Breznitz and Murphree 2011; Zhou 2011). A number of successful regulatory models, such as the Southern Jiangsu model, the Guangdong model, and the Zhejiang model, were thus attempted since the early 1980s (Chow 2002). Some of these models (e.g., the Southern Jiangsu model) resembled the developmental state model that emphasizes government ownership (Oi 1992). Others (e.g., the Guangdong model and the Zhejiang model), however, were much closer to the liberal state model, which relies on the private sector as the engine of growth and catalyst for generating wealth (Pisani and Pagan 2004; Zhou 2011).

Not surprisingly, the developmental-state-like models based on government ownership were more popular among regional governments in the first decade of the reform when China

still embraced the planned economic system (Huang and Di 2004). However, following Deng Xiaoping's Southern Tour in 1992, after which the Chinese Communist Party (CCP) pledged to transform China's planned economic system into a market economic system, the liberal-state-like models (particularly, the Zhejiang model) started to gain popularity and were thus emulated widely across many provinces.² It is argued here that it was the diffusion of the policies of the liberal-state-like models that facilitated formal institutional development across China.

Overall, the liberal-state-like models (in particular, the Zhejiang model) encouraged the growth of market institutions and provided much better protection to private property rights than the developmental-state-like models. First, governments under such models did not intervene in the economy directly. And regional bureaucrats were keen to facilitate the development of "special markets" – marketplaces for specific goods – and allowed these market institutions to allocate goods and resources. They were also keen to develop private-sector institutions, especially local private financial institutions such as informal credit markets, to provide private firms key factor resources, which were not easily accessible for them (IFC 2000; Zhou 2009, 2011, 2012a). As a result, government allocation faded gradually and market allocation was increasingly common. Second, governments under such models usually tolerated and encouraged private entrepreneurship even when those in other regions were suppressing it (Huang and Di 2004; Zhou 2011). During the early reform period, especially after the 1989 Tiananmen Square event, there were times when the central government tried to illegalize private firms and, thus, sent down inspection teams to those regions where private entrepreneurship thrived in order to collect evidences against it. However, powerful provincial bureaucrats in these regions (such as

² For details of the competition between the developmental-state-like models and the liberal-state-like models in reform-era China, see Huang and Di (2004); Zhou (2011).

those in Zhejiang) stood up and successfully protected private firms from being closed down by central inspectors (Huang 2005; Zhou 2012a).

As the liberal-state-like models started to spread across many Chinese regions since 1992, many provincial governments issued special government orders throughout the 1990s and early 2000s to elevate the status of private firms/entrepreneurs, to facilitate market allocation of factor resources, such as capital, to remove discriminative legal/regional practices against them, and to ease complex administrative procedures for them (Huang 2005). For example, the provincial government of Jiangxi (an inland and less-developed province) had taken a number of deregulatory measures to liberalize the regulatory environment for the private sector. Such measures included simplifying administrative and regulatory procedures for private firms, strengthening protection of legal rights of private firms, extending preferential policies formerly awarded only to public firms or foreign invested firms to private firms, and facilitating special markets, e.g., credit markets (Huang 2005; Zhou 2011).

Figure 1 shows the status of legal and market development across Chinese provinces in the mid 1990s. It suggests that Chinese provinces varied widely in terms of both legal protection of property rights and market development (see section 4.3 for how these two institutional variables are measured) by that time. Yet, using Guangdong – the province that had the highest market development level – as the benchmark, many provinces had already achieved relatively high level of market development then. And such provinces included not just Southeastern Coastal provinces (e.g., Guangdong, Hainan, and Fujian) or centrally-administered municipal cities (Beijing, Chongqing, Shanghai, and Tianjin), which enjoyed more regulatory autonomy and thus experimented market-oriented reforms earlier than others, but also some inner provinces such as Hunan and Hebei that emulated the free economic policies of the more liberal provinces

(Montinola, et al. 1995; Zhou 2011). In addition, this figure suggests that market and legal institutions did not improve side by side in China. Although many market developed provinces (e.g., Guangdong and the four centrally-administered municipal cities) also had quite high level of legal protection of property rights, it was some northern inland provinces (e.g., Gansu, Ningxia, Shaanxi) that enjoyed higher levels of legal development, a notion which has been noted by prior researchers and also supported by anecdotal evidences (Fan and Wang 2000; Zhou 2011). One possible explanation was that, given their extremely unfavorable locations that hindered market development, those northern inland provinces had chosen to develop legal institutions first to facilitate economic growth (Fan and Wang 2000).

[Insert Figure 1 about here]

3 Regional institutional development, political connections, and entrepreneurial performance

Given the regional diffusion of legal and regulatory practices, it is argued here, based on the new institutional economic theory, that regional legal and market development may have a positive effect on the performance of private entrepreneurial firms, thus facilitating rapid entrepreneurial growth in China's early reform period.

The recent entrepreneurship literature has highlighted association between formal institutions and entrepreneurship (see, e.g., a review in Miniti and Levesque 2008). According to North (1990), institutions can affect entrepreneurship because, as “rules of the game” in a society, they structure entrepreneurial incentives to invest and produce. In particular, the recent literature has focused on the fundamental importance of secure property rights. Based on the

analysis of the rise of the Western world, North and his colleagues (North and Weingast 1989; North and Thomas 1973) have forcefully argued that a credible commitment on the part of the state to protecting private property rights is necessary for entrepreneurial investment and performance and, in turn, long-term economic growth. Also, many empirical studies have found that well-functioning formal legal systems to protect property rights, which include intellectual property rights, are a key to facilitate entrepreneurial performance and innovation in both developed and developing worlds (e.g., Acemoglu and Johnson 2005; Cohen et al. 2000; Huang and Murray 2009; Huang 2010; Johnson, et al. 2002; La Porta, et al. 1997).

In China, cases of infringement of property rights including intellectual property rights of private entrepreneurs by government agents, non-governmental organizations, or other citizens were often reported throughout the 1980s and 1990s (e.g., Chang and MacMillan 1991; Nee 2000; Tsang 1994). Nee (2000), for example, reported a case of how a group of villagers raided an entrepreneur's orange grove with the tolerance of and even support from village cadres in Fujian Province. This case, he argued, "highlights the precarious status of private entrepreneurs in an institutional context in which private property rights based on legal contracts are poorly understood" (Nee 2000:79). Similarly, Yusheng Peng (2004:1057) suggested that "cadre predation and political discrimination were probably the biggest obstacle to the development of private entrepreneurship [in China], so much so that one county government felt it necessary to 'put cats in the cage and let the mice prosper', with cats metaphorically referring to predatory cadres."

These cases of infringement of the property rights of private entrepreneurs had negative effects on entrepreneurial activities and performance. Expecting that they could not keep the fruits of their efforts because of weak protection of property rights, many Chinese entrepreneurs

refrained from reinvesting in their own firms (IFC 2000; Tsang 1994; Zhou 2009) or even transferred their profits to other countries, often secretly, and, thus, triggering large-scale capital flight since the early 1990s in China (Sicular 1998).

Such negative effects, for sure, did not serve the interests of regional governments, which strived to facilitate economic growth and, thus, to maximize government revenues, since the decentralization reform. As a result, as discussed in the previous section, a number of regional governments had been taking measures to provide protection to private property rights. Many regional governments, for example, took a number of measures to stop arbitrary charges, fines, or apportionments by government agents on private firms since the early 1990s (Zhou 2013). In addition, many regions also strengthened punishment for infringement of intellectual property rights (Huang 2010; Zhou 2012b). Such measures to protect private property rights would facilitate entrepreneurial investment and performance because entrepreneurs could keep more profits for their own and, thus, put more entrepreneurial/innovative efforts in their businesses. Thus, based on the new institutional perspective, we have:

Hypothesis 1: The more protected the private property rights in a region, the higher the economic performance of entrepreneurial firms in that region.

Besides legal protection of property rights, North (1991) argued that a developed market system is also crucial for entrepreneurs because it helps capture the gains from trade. Without a developed market system, entrepreneurs may face two distinctive transaction cost problems (North 1991). One is classical problem of agency under which the entrepreneur would often be confined to short-distance personalized exchange, as in ancient societies (North 1991), or have to use kinship ties for trade, as the Maghribis did in the Middle Age (Greif 2006). And this problem

would increasingly become a major dilemma as the size and volume of trade become large as in contemporary economies. The second problem consists of contract negotiation and enforcement, which has also become a major dilemma in contemporary world because entrepreneurs are increasingly engaged in long-distance trade, which makes contract negotiation and enforcement more complex.

These two transaction costs problems would have a negative effect on entrepreneurial performance. First, the agency problem would hinder the development of long-distance trade, and, thus, entrepreneurial firms would be confined to small local markets but could not expand to larger regional or national markets. Second, the problem of contract negotiation and enforcement would divert entrepreneurial energy and resources from productive activities and, thus, reduce entrepreneurial performance (Baumol 1990). A developed market system could help resolve both problems of transaction costs, thus facilitating entrepreneurial performance. First, under a developed market system, factor resources and commodities are freely mobile within a unified market; and market information (e.g., the prices of various factors and commodities) is readily available and disseminated within the market (Lindblom 2001; North 1991). As a result, searching and information costs would be greatly reduced for the entrepreneurs. Such reduction in searching and information costs could, *ex ante*, make cheating a less feasible and profitable option between principals and agents and between traders. Second, under a developed market system, market exchanges are governed by independent, third party enforcement organizations usually sanctioned by the government, which enjoys legitimate coercive power (North 1990). Thus, any disputes between principals and agents and between anonymous traders would be resolved, *ex post*, less costly by an independent third party, such as a modern court (Greif 2006; North 1991). Based on both reasons, therefore, it is argued that a more developed market system

could facilitate entrepreneurial performance because it helps resolve the two transaction cost problems, thus bringing more gains from trade (in particular, from long-distance trade as in contemporary economies).

It has also been noted that a developed market system could facilitate entrepreneurial performance through ensuring access to crucial resources such as finance (Acs and Szerb 2007; IFC 2000; Zhou 2009; 2013). One example here is the development of financial markets. Virtually all new entrepreneurial firms require some initial amount of capital and often more as they grow. However, it is usually difficult for new ventures to obtain capital in many less developed and transition economies due to not only the generic information asymmetry problem between entrepreneurs and lenders but also the poorly developed financial system (Amit, et al. 1990; IFC 2000; Zhou 2009). As the financial market develops, therefore, new ventures would access capital more easily and their performance may increase as a result.

Above, it is noted that many regional governments in China have been actively nurturing and growing market institutions (e.g., facilitating the development of special markets and private-sector institutions such as informal credit markets), thus, we have:

Hypothesis 2: The more developed the market system in a region, the higher the economic performance of entrepreneurial firms in that region.

As discussed above, prior studies have argued that political connections played a key role in facilitating entrepreneurial activities and performance in China. Given that many Chinese regions have undergone major formal institutional development and such development may also facilitate entrepreneurial performance, one may wonder how the role of political connections

might change as formal institutions such as property rights institutions and market system improve.

To answer this question, let us first take a look at the effect of property rights institutions on the role of political connections. There are, however, conflicting views in the existing literature on this effect. According to one view, political connections may complement legal institutions for property rights protection. Some researchers argue that the positive role of political connections in many less developed and transition economies like China may be due not to the absence of developed property rights institutions and market systems but to the long-existing political markets that favor resource allocation and problem solving through political power (Boisot and Child 1996). Even in those former transition economies that have successfully established rule of law, such as Hungary, political connections were still found to play an important role in political and economic arenas because of newly emerged political markets (McDermott 2003; Stark and Vedres 2012). This line of reasoning, therefore, suggests that the effect of political connections would remain positive and change little even when formal property rights institutions improve.

Another view, however, suggests that political connections and formal property rights institutions are substitutable (Sun, et al. 2010; Xin and Pearce 1996; Zhou 2013). Prior studies suggest that political connections affect entrepreneurship through two mechanisms, i.e., facilitating acquisition of resources and information and providing private protection of property rights (Zhou 2013). In a transition economy, cases of infringement of private property rights would decrease substantially as long as the government strengthens legal institutions for property rights protection and, thus, increasing penalties for such infringement cases. Entrepreneurs, therefore, may turn to political connections less often for property rights protection under

improving legal institutions. And for any new infringement cases, entrepreneurs may be inclined to resolve them more through the improved legal institutions than political connections because the former may be less costly and more reliable (Siegel 2007; Shleifer and Vishny 1994). This line of reasoning, therefore, predicts the declining significance of political connections as formal property rights institutions improve.

Based on the above two lines of reasoning, we have the following competing hypotheses. Here, Hypothesis 3.1 is based on the complement view and Hypothesis 3.2 the substitution one.

Hypothesis 3.1: The effect of political connections on the economic performance of entrepreneurial firms would not change as property rights regime changes in a region.

Hypothesis 3.2: The more protected the private property rights in a region, the lower the effect of political connections on the economic performance of entrepreneurial firms.

Similarly, there are also conflicting views on the effect of market system on the role of political connections. On the one hand, the complement view suggests that market system development would have little effect on the role of political connections. As discussed above for property rights institutions, this view argues that the positive role of political connections in many less developed and transition economies is related primarily to long-existing or newly emerged political markets but not to the absence of either property rights institutions or developed market systems. Moreover, it is found that political connections are still significant for entrepreneurs and firms to obtain a number of benefits, such as relaxed regulatory oversight, preferential treatment in competition for government contracts, and many others, even in advanced market economies (Dixit 2004; Faccio 2006; Pfeffer and Salancik 2003). Therefore,

this view suggests that the effect of political connections may remain positive and change little when market system develops in a transition economy.

On the other hand, the substitution argument suggests that market system development would reduce the significance of political connections. As mentioned above, one mechanism that political connections affect entrepreneurship in a less developed economy is through facilitating acquisition of resources and information. In a transition economy, as the government introduces market-oriented reforms, thus increasing market allocation of factor resources, entrepreneurs would obtain resources and market information more easily through formal markets (Peng and Luo 2000; Zhou 2009). As such, this view predicts that the benefits of political connections in acquiring resources and information may decrease.

Based on these two lines of reasoning, we can derive the following competing hypotheses. Here, Hypothesis 4.1 is based on the complement view and Hypothesis 4.2 the substitution one.

Hypothesis 4.1: The effect of political connections on the economic performance of entrepreneurial firms would not change as the market system changes in a region.

Hypothesis 4.2: The more developed the market system in a region, the lower the effect of political connections on the economic performance of entrepreneurial firms.

4 Data and methods

4.1 Data

I tested the above hypotheses by using a two-level, hierarchical quantitative dataset on Chinese private enterprises. The firm level data include a nationally representative sample of 1946

Chinese entrepreneurial firms in 1996. The provincial level data include a number of institutional and economic variables that measure the institutional and economic development in each province around 1996. The mid 1990s saw the unprecedented growth in the number, size, and contribution of the domestic private sector (IFC 2000; Naughton 2007; Zhou 2011). However, as discussed in Section 2, the domestic private sector in general still faced deficient national institutions then. Yet, during that period, the liberal-state-like models had already started to spread across many Chinese regions such that regional institutional environments had become increasingly conducive to private entrepreneurship.

The firm level data for hypothesis testing come from the 1997 National Survey of Chinese Private Enterprises, which was designed and administered by a joint research team from the All China Federation of Industry and Commerce and the Chinese Academy of Social Sciences (Zhang and Ming 2000). Following the definition of private enterprise specified in the *Tentative Stipulations on Private Enterprises*, promulgated by the central government in 1988, the survey included only domestic private firms that had at least eight employees and were owned by private entrepreneurs at the end of 1996.

Using a stratified sampling method, the survey selected an almost nationally representative sample of 1,946 (or 0.2 percent) of 960,000 private enterprises registered with the State Administration for Industry and Commerce in 1996, in 21 of 31 provinces (including autonomous regions and province-level municipal cities). Five of these 21 provinces were in the Southeastern-Coastal regions, four in Northern regions, six in Western regions, and four in Mid-Central regions. The sampling involved two stages. In the first, a pre-specified number of counties were selected in each province based on economic development levels, so that both rich and poor counties were represented. In the second stage, a pre-specified number of private firms

were selected in each county based on location and primary industrial sector. Both urban and rural firms were chosen; and within each urban/rural area, firms from all industrial sectors were sampled. The number of sampled firms in each province, county, urban/rural area, and sector was proportionate to the population size of the private enterprises in each of these categories.

The survey was based on face-to-face intensive interviews with both entrepreneurs (i.e., the largest owners) and accountants to collect information about the entrepreneurs and their firms in 1996. Interviewers were primarily local employees of the All China Federation of Industry and Commerce who were familiar with local private entrepreneurs, and were trained intensively by the joint research team before the survey.

The dataset from this survey is appropriate for testing above hypotheses because it includes a rich set of questions, including the size, history, and financial/accounting information of each of the firms, and family background, social connections, human capital, and occupational history of the entrepreneurs. Most variables on the basic characteristics of the firms and entrepreneurs in the 1997 data are also available in the 1995 and 2000 National Surveys of Chinese Private Enterprises, which include more firms and more provinces, but not some of the key variables (e.g., political connections) necessary for testing the hypotheses. Distributions of common variables are very similar across the three surveys.

I assembled the provincial level data from two widely-used second-hand sources. The first source is the *1995-1997 China Statistical Yearbooks* (China Statistical Bureau 1995, 1996, 1997) for provincial level economic variables and the second 2000 annual report of *National Economic Research Institute (NERI) Indices of Marketization of China's Provinces* for institutional development in each province (Fan and Wang 2000). The NERI indices use the methodology of *Economic Freedom of the World* to rank Chinese provinces according to their

level of market/regulatory/legal development on five general topics: (1) relationship between government and the market, (2) the non-state sector, (3) the manufactured goods market, (4) the factor market, and (5) intermediary institutions and legal environment (Gwartney, et al. 2005; also see Zhou 2011). Under each topic, there are a number of indices that reflect different aspects of the topic with each index ranging from 0 to 10. Given that each index reflects one aspect of market/regulatory/legal development in a province, the NERI indices allow researchers to recombine these indices to construct new indices for such factors as development of market system and legal protection of property rights.

4.2 Dependent variables

Economic performance of entrepreneurial firms is measured with two standard measures in the literature. Both measures come from the firm-level data. The first measure is *return on capital*, which is after-tax profit divided by total capital in 1996. This measure quantifies how efficient a firm generates cash flow relative to the capital it has invested in its business and is affected positively by factor inputs and entrepreneurial efforts. Given that market development may allow entrepreneurs get access to factor resources more easily in a transition economy (Fan and Wang 2000), and given that improvement in property rights protection elicits entrepreneurial efforts (North 1990), entrepreneurs may enjoy higher return on capital as the two formal institutions improve. *Profit margin* – the second measure – is after-tax profit as a percentage of sales revenue in 1996. In general, it provides an indication of efficiency in that it captures the amount of surplus generated per unit of the product or service sold, and is a function of entrepreneurial efforts, which, as discussed above, are affected by property rights protection.

It is often noted that Chinese firms tend to underreport or even not report their profit level for tax and political reasons (IFC 2000; Zhou 2012a, 2012b). While this may be indeed a problem for studies on Chinese firms, it is noted that the means of the two variables are consistent with those of similar national surveys on private enterprises from other years, suggesting that the two measures may have reasonably high external reliability. The average return on capital from this survey is 0.35, very close to the one from a 1993 national survey (0.31); and the average profit margin is 12.2 percent, also close to the one from the 2000 national survey (9.6 percent). Because the distribution of the dependent variables are skewed, their logarithmic form is used (a small number is used to replace zero for logarithmic transformation). As a result, 33 firms that reported negative profits were removed from the data. The dropped firms accounted for 1.7 percent of the sample, were a little younger and smaller, and were owned more likely by female owners. This procedure leaves a working sample of 1913 entrepreneurial firms.

4.3 Independent variables

The two independent variables – legal protection of property rights and market development – are both provincial level variables and are constructed from the NERI indices. *Legal protection of property rights* is an average of two components. The first component is the number of legal cases on infringement of economic rights divided by total GDP in a province. This component is supposed to be negatively correlated with legal protection of property rights and, thus, its inverse is used (Fan and Wang 2000). The second component is perceptions of the firms about how well their legal business activities were protected by the law. This component came from firm level surveys done by the NERI. Both components, which were transformed to range from 0 to 10 in

the original source, were calculated as a three-year average (1995 – 1997). Therefore, *legal protection of property rights* also ranges roughly from 0 to 10, with higher values indicating higher level of protection of property rights in a province.

Based on Lindblom (2001), *market development* is an average of nine components in three general topics. The first general topic is *relationship between the government and the market*, which includes three components: extent to which the market was used as a primary mechanism for resource allocation, extent to which government reduced tax burden for firms, and extent to which government reduced micro-intervention into firms. These components, therefore, measure the extent to which the market mechanism has replaced government planning in coordinating economy and the over freedom of sellers and buyers in economic exchange (Fan and Wang 2000; Gwartney, et al. 2005). The second topic is *the development of the manufactured goods markets*, which includes two components: extent to which prices of commodities were determined by the market and extent to which trade barriers within the region were removed. As such, the two components measure the extent to which voluntary exchange and free mobility of goods were a norm in the product market (Gwartney and Lawson 2002). The third topic is *the development of the factor markets*, which includes four components: competition in the banking industry, extent to which bank credits were allocated by the market, extent to which labor market was fluid, and significance of external investments in a regional economy. These four components measure the extent of free competition and free mobility of factor resources in the factor market (see Djankov, et al. 2004). All above components were calculated as a three-year average (1995 – 1997).

Overall, our variable of market development is consistent with Lindblom's (2001) definition of market system, as it directly measures the proliferation of product and factor

markets in a region. It has relatively high external reliability. It is positively correlated with another index on market system development in each province in the early 1990s constructed by Chen, Wu, and Xie (2000). The correlation coefficient between the two indices is 0.70. This variable also ranges roughly from 0 to 10, with higher values indicating higher level of market development in a province.

4.4 Control variables

There are both province-level and firm-level control variables. The province-level ones are as follows. *GDP growth rate* is an indicator of regional economic health, which may be positively related to entrepreneurial performance (Bowen and Clercq 2008). *GDP per capita* is a measure of economic development. I divided 1000 into this variable to facilitate interpretation. Prior studies suggest that GDP per capita may have a nonlinear effect on entrepreneurship (Martinez 2005; Zhou 2011). That is, entrepreneurial performance initially decreases and later increases as GDP per capita increases. Thus, a quadratic term of this variable is also controlled. Both GDP growth rate and GDP per capita were measured as three-year (1994-1996) averages to adjust for yearly fluctuations.

Eastern-coastal province is a binary variable, coded 1 if a province is located in the Eastern Coastal regions; 0, otherwise. These regions started economic and regulatory reforms earlier and also had better infrastructure than inland provinces. Thus, firms located in these regions may enjoy higher returns. *Centrally administered city* is also a binary variable, coded 1 if a provincial region is a centrally administered municipal city – Beijing, Shanghai, Tianjin, and Chongqing; 0, otherwise. These cities are institutionally and economically different from other provincial regions because of their closer relationships with the central government.

The firm-level control variables include the characteristics of the entrepreneur and the firm. As discussed in Section 1, prior studies have argued that political connections of the entrepreneur played a key role in China's entrepreneurial success. Based on the prior literature (e.g., Faccio 2006; Johnson and Mitton 2003; Zhou 2013), a private firm is defined as having political connections if its largest owner – the entrepreneur – has strong social network ties with at least one current government official. The survey included a series of questions directly related to this definition. It asked whether the entrepreneur was a government official in any period before starting the firm and whether any of the entrepreneur's strong ties – father, mother, most intimate relatives, best friends, spouse, or adult children – was a government official currently or before retirement. Thus, *political connection* is a binary variable, coded 1 if the entrepreneur was a government official in any period before starting the firm, or if a close personal connection – the entrepreneur's father, mother, most intimate relatives, good friends, spouse, and adult children – was a government official currently or before retirement; 0, otherwise. Here I included those entrepreneurs who were government officials previously because these people usually retained former colleagues/associates as close political contacts.

For other control variables concerning the entrepreneur, gender and human capital variables including education and age are often considered to affect entrepreneurial performance (e.g., Carroll and Mosakowski 1987; Hamilton 2000). Thus, *female* is a binary variable, coded 1 if an entrepreneur was female; 0, otherwise. The survey asked the entrepreneurs their level of education. I created three dummies to indicate the educational level – *lower than senior high school degree*, *senior high school graduate*, and *college graduate or above*. *Age* is 1997 minus the year of the entrepreneur's birth. This variable is taken logarithm to adjust for skewed distribution.

For variables concerning the firm, *firm age* and *firm size* are commonly used in entrepreneurship studies. Younger firms and smaller firms may have lower entrepreneurial performance due to the liability of newness and liability of smallness, respectively, and, thus, fewer entrepreneurial opportunities (e.g., Acs and Audretsch 1988; Hannan and Freeman 1989). Firm size here is measured by total assets at the end of 1996. Both firm age and firm size are taken logarithm to adjust for their skewed distribution. Some de facto private firms (i.e., firms started and owned by private entrepreneurs) in China were registered as public firms (i.e., State-Owned Enterprises (SOEs) or urban/rural collective firms) in order to take advantage of favorable government treatment in terms of both property rights protection and resource acquisition (Nee 2005). The survey managed to include some such de facto private firms and asked a question involving registration status in 1996. Thus, *public firm* is a binary variable, coded 1 if the firm was registered as public in 1996; 0, otherwise. *City firm* is a binary variable coded 1 if the main establishment of the firm was located in a large city; 0, otherwise. This variable is controlled because firms in cities (particularly large ones) enjoyed better legal and market infrastructures. The data indicated 14 industrial sectors for the main business line of the firms. So, fourteen dummy variables for *industrial sectors* are also created.

4.5 Model specification

The data used here are a multi-stage stratified sample of firms nested within provinces, which have substantial regulatory autonomy as discussed previously. As a result, firms within each province tend to be more similar to each other. In addition, the firm-level outcome variables – return on capital and profit margin – are predicted as a function of both firm-level and province-level variables. Clearly, Ordinary Least Squares (OLS) method is not appropriate here to analyze

such clustered data, which violate the randomness assumption of OLS. A most appropriate estimation strategy is to use hierarchical linear modeling (HLM), which has a specific goal to deal with both clustering and cross-level effects and, thus, produces more efficient estimates than one would obtain using OLS or any other method that relies on the OLS slope estimates but produces correct standard errors (Raudenbush and Bryk 2002). A general representation of the HLM models that I estimated is shown in the following equation:

$$Y_{ij} = \alpha + a'X_{ij} + b'X_j + u_j + e_{ij} , \quad (1)$$

for $i = 1, \dots, n_j$ firms in province j ; $j = 1, \dots, 21$ provinces. In the above equation, Y_{ij} is the dependent variable, either return on capital or profit margin; α is the intercept; a is a vector of firm-level fixed effects on the outcome variable, because X_{ij} is a vector of firm-level characteristics that vary over the i firm in each j province; b is a vector of province-level fixed effects on the outcome variable, because X_j is a vector of province-level characteristics that vary only over the j provinces in the sample; u_j is a mean zero province-level error term, and e_{ij} is a mean zero firm-level error term. I estimated models in the forms of Equation 1 with the full maximum likelihood method.

5 Statistical results

Table 1 reports the means and standard deviations of the study variables and Table 2 the zero-order correlations among the variables. Overall, Chinese private enterprises had high *return on capital* (0.35) and *profit margin* (0.12), both of which are much higher than SOEs and TVEs, as discussed in Section 1. About 52 percent of the interviewed entrepreneurs had political

connections, suggesting that exploiting political connections was indeed a widespread phenomenon in China's private sector in the mid 1990s, as mentioned in the previous literature (e.g., Peng and Luo 2000; Xin and Pearce 1996; Zhou 2009, 2013).

Virtually most, if not all, private enterprises in China entered industries other than the high-tech ones in the 1980s and 1990s (OECD 2007; Zhang and Ming 2000; Zhou 2012b).³ This may be true in our data well. Although the data do not allow us to differentiate clearly high-tech firms from non-high-tech ones, Table 1 shows that most of the firms were in industries such as manufacturing, restaurant, construction, etc., suggesting that most firms were in labor-intensive low-tech industries.

[Insert Table 1 and 2 about here]

5.1 Return on capital

Table 3 reports results for testing the hypotheses using return on capital as a measure for the dependent variable. Hypotheses 1 and 2 suggest that both *legal protection of property rights* and *market development* could improve entrepreneurial performance. Columns 1 and 2 report results for testing these two hypotheses. Column 1 includes only province-level variables and is thus used as the baseline model. Column 2 adds all firm level variables into the baseline model. In both columns, the coefficients of *legal protection* and *market development* are positive and statistically significant. Thus, I will interpret the coefficients from column 2 as this is the more fully specified model. Column 2 suggests that the coefficient of legal protection of property

³ Most of the high-tech firms were state-owned and the remaining were usually collectively owned in China by the late 1990s. High-tech firms founded by university researchers, for example, were usually registered as collective firms in the 1980s and 1990s (OECD 2007).

rights is 0.083, more than twice of its standard error (0.033). Substantively, this means that average return on capital increases by 8.7 percent ($e^{0.083} - 1 \approx 0.087$) as legal protection of property rights increases by 1. *Ceteris paribus*, a firm in Xinjiang could increase its return on capital by 40 percent if legal protection of property rights in Xinjiang would increase from 4.26 to the level of Guangdong (8.92). Hypothesis 1 is, therefore, supported.

Column 2 also shows that the coefficient of market development is 0.375, more than three times of its standard error (0.108). Substantively, this means that average return on capital increases by 45.5 percent ($e^{0.375} - 1 \approx 0.455$) as market development increases by 1. Therefore, Hypothesis 2 is also supported.

Column 3 in Table 2 reports the results for testing the complement view versus the substitution view (i.e., hypothesis 3.1 versus hypothesis 3.2 and hypothesis 4.1 versus hypothesis 4.2) by adding two interaction terms (i.e., interaction between *legal protection* and *political connection* and interaction between *market development* and *political connection*) into the equation of column 2. This column shows that the coefficients of both interaction terms are negative and statistically significant. Substantively, entrepreneurs with political connections have an average return on capital 291 percent ($e^{1.363} - 1 \approx 2.908$) higher than those with no political connections when both legal protection and market development are zero; such advantage, however, decreases by a factor of 0.883 ($e^{-0.124} \approx 0.883$) as legal protection increases by 1 and a factor of 0.908 ($e^{-0.096} \approx 0.908$) as market development increases by 1. These results provide strong support to the substitution view, i.e., hypotheses 3.2 and 4.2, but not the complement view as in hypotheses 3.1 and 4.1.

The effects of some of the control variables as shown in column 2 are as follows. *GDP growth rate* has a significantly positive effect, suggesting that entrepreneurs indeed had more

economic opportunities in regions which were economically healthier. Consistent with previous studies (Martinez 2005; Zhou 2011), *GDP per capita* has a nonlinear effect on entrepreneurship. That is, entrepreneurial performance initially decreases and later increases as GDP per capita increases. Firms in centrally administered municipal cities enjoyed significantly higher returns on capital. This may be caused, to a substantial degree, by the much more economic opportunities in these rich cities. In addition, this may also be caused by the clustering of some extremely profitable industrial sectors, such as real estate, high technologies, etc., in these municipal cities.

Education of the entrepreneur has a negative effect. One possible explanation for this is that entrepreneurs with higher education were more likely to work in urban service sectors, which usually had lower return on capital than the rural manufacturing sector (Zhou 2013). Firm size has a significantly positive effect. This may be partly because larger private firms usually enjoyed better treatment from the government, and had more economic opportunities (IFC 2000). Contrary to the notion of liability of newness, however, firm age, has a negative effect. A possible explanation may be that, given their more established market status, older firms had more organizational inertia such that they had less motivation to increase profit (Hannan and Freeman 1989).

[Insert Table 3 about here]

5.2 Profit margin

Table 4 reports results for testing the hypotheses using profit margin as a measure for the dependent variable. The equations in the three columns here are specified in the same way as the

ones in Table 3. Thus, results in columns 1 and 2 still test hypotheses 1 and 2 and those in column 3 test hypotheses 3.1- 4.2.

Column 2 in Table 3 suggests that the coefficient of legal protection of property rights is 0.070, more than twice of its standard error (0.025). Substantively, this means that average profit margin increases by 7.3 percent ($e^{0.070} - 1 \approx 0.073$) as legal protection of property rights increases by 1. This column also shows that the coefficient of market development is 0.266, more than three times of its standard error (0.081). Substantively, this means that average profit margin increases by 30.5 percent ($e^{0.266} - 1 \approx 0.305$) as market development increases by 1. Therefore, hypotheses 1 and 2 are supported.

Column 3 shows that entrepreneurs with political connections have an average profit margin 161 percent ($e^{0.723} - 1 \approx 1.061$) higher than those with no political connections when both legal protection and market development are zero; such advantage, however, decreases by a factor of 0.944 ($e^{-0.058} \approx 0.944$) as legal protection increases by 1 and a factor of 0.946 ($e^{-0.056} \approx 0.946$) as market development increases by 1. These results, again, provide strong support to the substitution view, i.e., hypotheses 3.2 and 4.2, but not the complement view as in hypotheses 3.1 and 4.1.

[Insert Table 4 about here]

5.3 Robustness tests

Given the inevitable measurement errors in any group-level indices, one may wonder whether the results reported above reflect the true effects of legal protection and market development or the measurement errors of the two independent variables. To tackle this problem, alternative

measures of both legal protection of property rights and market development were tried to retest the hypotheses. For legal protection of property rights, an alternative measure used is the provincial mean of property rights security reported by the entrepreneurs in the firm-level data used in this paper. For market development, the alternative measure used is the marketization index constructed by Chen, Wu, and Xie (2000), which measures the development of market system in each province in the early 1990s. Additional regressions suggest that these four hypotheses are still significantly supported by using these alternative measures.

5.4 Limitations

This paper also has limitations that may be addressed in future research. Given the cross-sectional data, we cannot rule out the existence of endogeneity. One source of endogeneity here may be omitted variable bias. Although I have controlled a number of variables that are correlated with both the dependent and independent variables based on prior studies, it is possible that some unmeasured variables, such as regional commercial cultures (Zhou 2011), may still create endogeneity problem in this study. Future research may use an instrumental variable approach or other econometric methods to resolve this issue.

Another source of endogeneity may come from reverse causality. In this case, reverse causality occurs when those high-performing entrepreneurs may influence the policy making procedure by actively lobbying the political elite to construct a modern legal and market system that is favorable for entrepreneurial growth (see, e.g., North and Weingast 1989). It may be argued, however, that reverse causality is less an issue in this study. In a number of contemporary emerging and transition economies like China, it has been found that the entrepreneurial class is very weak and the government not only monopolizes political power but

also plays a significant role in allocating resources and economic opportunities (Faccio 2006; Haber 2002; Siegel 2007). Under such a circumstance, what emerges is not modern capitalism but more like crony capitalism, under which the entrepreneurial class, in general, do not have the bargaining power to lobby for institutional change but can only request for private protection and support from powerful political elite (Faccio 2006; Johnson and Mitton 2003; Zhou 2009). Nonetheless, although less likely overall at the national level and in the earlier reform period in China, reverse causality may be present and even severe in certain regions, in particular, more developed regions, and in more recent years (Zhou 2011). Therefore, future studies should tackle the reverse causality problem using either longitudinal data or more advanced statistical techniques.

6 Conclusion and discussion

While prior studies have emphasized the role of political connections in China's entrepreneurial success in the early reform period (1978 – 1999), this research has argued that regional institutional environment had been increasingly conducive to entrepreneurial activities and, thus, played a key role in facilitating entrepreneurial performance during that period. Empirically, this paper demonstrates that not only legal protection of property rights but also the development of the market system mattered for entrepreneurial performance. In addition, it shows that political connections played a diminishing role in entrepreneurship during China's formal institutional development.

This paper makes several contributions to the existing literature. First, to the literature on Chinese entrepreneurship, the findings of the paper will contribute to understand the rapid growth of China's private entrepreneurial firms in the first two decades of the economic reform

(1978 – 1999). As noted previously, the unconducive national institutional environment for private entrepreneurship during that period has led many China scholars to argue that informal social arrangements (in particular, political connections) are keys to understand the rapid entrepreneurial growth in China. Yet, as Baumol (1990) argued forcefully, entrepreneurship will be restricted and even unproductive if formal institutions are not conducive. Based on the new institutional economic perspective, this study provides an alternative explanation for China's entrepreneurial success in the early reform period. It suggests that, as a result of the decentralization reform and regional emulation, regional legal and market institutions had been increasingly conducive to entrepreneurial activities and, thus, played a significantly positive role in improving entrepreneurial performance, thus facilitating entrepreneurial success, in China's early reform period.

Second, this paper contributes to the more general new institutional entrepreneurship literature by demonstrating that not only legal protection of property rights but also the development of market system matter for entrepreneurship. Based on North (1990), the prior empirical literature has focused primarily on the role of property rights protection in economic and entrepreneurial development. It is less known that North (1991) has also argued that a developed market system is crucial for entrepreneurs to capture the gains from trade. Yet, the effect of market development has rarely been empirically examined. Based on the unique China case, this study demonstrates empirically that both legal protection of property rights and the development of market system are significant for entrepreneurial performance.

This paper may also contribute to the debate on whether political connections complement or substitute formal institutions. Although the debate has attracted wide attention, there are relatively few quantitative studies on it. Reform-era China provides an excellent case

for conducting such an empirical research because it has incurred radical institutional change in the past three decades. Although it may not resolve the debate given the cross-sectional data, this study is among the first to use large-scale national survey data from China to examine the role of political connections during formal institutional change. Future research may employ high quality longitudinal data from China to further test whether political connections complement or substitute formal institutions.

As this paper studies the role of formal institutions in entrepreneurial performance in China's early reform period, one may wonder how institutional development may affect both entrepreneurial performance and the role of political connections in China more recently. It has been noted that regional institutional development is irreversible, as revealed in the past several decades in China, because it has brought increasing returns to the regional governments through higher government revenues (Naughton 2007; Zhou 2011). This, in turn, has brought further institutional changes at the national level. Seeing the increasing benefits of pro-entrepreneurship regional policies, the central government finally elevated the status of private entrepreneurial firms to that of SOEs in 1999, and introduced an amendment into the Chinese Constitution to protect private property rights in 2004 (Zhou 2009). In January 2005, the central government promulgated a regulation – “Thirty-six Principles on the Non-public Economy” – to seriously tackle the problems of government predation of and discrimination against private firms (Zhou 2011). All of these new policies are a blessing for private entrepreneurial firms. As a result, based on the findings of this paper, we would expect that such national level institutional development would further facilitate entrepreneurial performance and growth and that political connections would have even less effect on entrepreneurship in China today. Future research may investigate this issue using more recent data.

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Table 1. Means and Standard Deviations of Study Variables

Variables	Mean	S.D.
<i>Firm-level Variables</i>		
Return on capital	0.351	0.721
Profit margin	0.122	0.203
Political connection (0/1)	0.519	0.491
Female (0/1)	0.082	0.272
High school degree (0/1)	0.417	0.492
College degree or above (0/1)	0.202	0.400
Age of owner	39.496	8.699
Firm age	8.690	5.805
Firm size ^a	2.937	16.197
Registered as public firm (0/1)	0.050	0.216
City firm (0/1)	0.299	0.431
<i>Main Industrial sector (0/1)</i>		
Agriculture	0.037	0.188
Mining	0.018	0.134
Manufacturing	0.384	0.487
Utility	0.009	0.094
Construction	0.083	0.275
Geological exploration	0.002	0.023
Transportation	0.032	0.176
Restaurant	0.144	0.354
Financial and real estate	0.013	0.111
Social service	0.054	0.225
Health care	0.006	0.076
Education	0.026	0.160
Research	0.019	0.138
Others	0.082	0.274
<i>Provincial-level Variables</i>		
Legal protection of property rights	6.727	2.314
Market development	6.561	1.073
GDP growth rate	0.102	0.026
Per capita GDP (1000 Chinese Yuan)	4.272	2.712
Centrally administered city	0.089	0.285
Eastern-coastal province	0.526	0.499

^a: Firm size is measured with total assets. The unit for firm size is 1 million Chinese Yuan.

TABLE 2. Zero-order Correlations between Study Variables

Variable	1	2	3	4	5	6	7	8
1.Return on capital								
2.Profit margin	0.211							
3. Legal protection of property rights	-0.010	-0.037						
4. Market development	.0.003	0.052	-.0.496					
5. GDP growth rate	0.045	0.066	-0.314	0.165				
6. Per capita GDP	-0.051	-0.058	0.015	0.405	0.056			
7. Centrally adm. city	-0.001	-0.025	0.231	0.082	0.055	0.784		
8. Eastern-coastal province	-0.068	-0.050	-0.225	0.568	-0.143	0.570	0.264	
9. Political connection	0.002	-0.007	-0.077	-0.023	0.015	-0.040	-0.024	-0.017
10.Female	-0.037	-0.010	0.072	-0.014	-0.102	0.042	0.059	0.073
11.High school degree	0.002	0.000	0.044	-0.011	0.005	-0.041	0.006	-0.020
12.College degree or above	0.030	-0.066	0.135	-0.059	-0.043	0.099	0.134	-0.016
13.Age of owner	-0.019	0.027	0.083	-0.013	0.008	0.031	0.005	0.006
14.Firm age	-0.036	-0.022	0.015	0.003	0.051	-0.057	-0.062	-0.015
15.Firm size	-0.214	-0.164	0.065	-0.080	0.015	0.079	0.068	0.066
16.Registered as public firm	0.046	0.007	-0.010	-0.036	0.061	-0.020	-0.004	-0.090
17. City firm	0.031	-0.063	0.196	-0.053	0.035	0.251	0.302	0.017
Variable	9	10	11	12	13	14	15	16
9. Political connection								
10.Female	-0.000							
11.High school degree	0.046	0.004						
12.College degree or above	0.036	0.028	-0.403					
13.Age of owner	-0.022	-0.047	-0.111	-0.112				
14.Firm age	-0.074	-0.075	0.001	-0.150	0.262			
15.Firm size	0.097	-0.043	0.051	0.139	0.109	0.210		
16.Registered as public firm	0.068	0.000	0.017	0.015	-0.006	0.024	0.084	
17. City firm	-0.007	0.050	-0.054	0.359	0.003	-0.015	0.210	0.021

N = 1913 firms nested in 21 provinces. The dummies for the industrial sectors of the main business line of each firm are not reported in this table. Correlations with an absolute value exceeding .05 are significant at $p = .05$, and correlations exceeding .07 are significant at $p = .01$.

TABLE 3. HLM Estimates for Predicting Return on Capital

Variables	log(return on capital)		
<i>Provincial level variables</i>			
Legal protection of property rights	0.072** (0.034)	0.083** (0.033)	0.148*** (0.036)
Legal protection of property rights × Political connection			-0.124*** (0.039)
Market development	0.347*** (0.110)	0.375*** (0.108)	0.405*** (0.099)
Market development × Political connection			-0.096** (0.046)
GDP growth rate	5.295** (2.389)	4.705** (2.356)	5.367** (2.172)
Per capita GDP	-0.488*** (0.134)	-0.517*** (0.133)	-0.483*** (0.123)
Per capita GDP squared	0.020*** (0.007)	0.022*** (0.006)	0.021*** (0.006)
Centrally adm. city	0.649 (0.403)	0.753* (0.398)	0.706* (0.369)
Eastern-coastal province	0.196 (0.198)	0.163 (0.195)	0.141 (0.173)
<i>Firm-level variables</i>			
Political connection		-0.020 (0.074)	1.363*** (0.455)
Female		-0.038 (0.140)	-0.030 (0.139)
High school degree		-0.269*** (0.083)	-0.265*** (0.083)
College degree or above		-0.336*** (0.116)	-0.331*** (0.115)
Log (age of owner)		-0.027 (0.178)	-0.055 (0.178)
Log (firm age)		-0.101** (0.051)	-0.101** (0.051)
Log (firm size)		0.064*** (0.024)	0.066*** (0.024)
Registered as public firm		0.129 (0.180)	0.104 (0.179)
City firm		-0.175* (0.101)	-0.180* (0.100)
Industrial sector dummies		added	added
Constant	-3.759*** (0.716)	-3.688*** (0.947)	-4.393*** (0.918)
σ (e _{ij})	1.329*** (.025)	1.309*** (.025)	1.306*** (.025)
σ (u _j)	0.184*** (.054)	0.177*** (.054)	0.136** (.052)
Log-likelihood	-2358.010	-2337.661	-2332.544
Observations	1380	1380	1380
Number of groups	21	21	21

* $p < .10$; ** $p < .05$; *** $p < .01$ (two-tailed tests)

Standard errors are in parentheses. The missing values of firm-level control variables were imputed with best-subset regression imputation models that use reliable procedure for handling missing data (Little and Rubin 1987).

TABLE 4. HLM Estimates for Predicting Profit Margin

Variables	log(profit margin)		
<i>Provincial level variables</i>			
Legal protection of property rights	0.068** (0.033)	0.070*** (0.025)	0.092*** (0.029)
Legal protection of property rights × Political connection			-0.058** (0.024)
Market development	0.309*** (0.101)	0.266*** (0.081)	0.276*** (0.081)
Market development × Political connection			-0.056* (0.032)
GDP growth rate	-1.679 (2.161)	-0.920 (1.707)	-0.171 (1.768)
Per capita GDP	-0.281** (0.127)	-0.207** (0.100)	-0.228** (0.103)
Per capita GDP squared	0.008 (0.006)	0.005 (0.005)	0.006 (0.005)
Centrally adm. city	0.864** (0.358)	0.749*** (0.286)	0.673** (0.290)
Eastern-coastal province	-0.044 (0.196)	-0.050 (0.149)	0.055 (0.155)
<i>Firm-level variables</i>			
Political connection		-0.008 (0.065)	0.723** (0.301)
Female		-0.058 (0.090)	-0.054 (0.090)
High school degree		-0.009 (0.053)	-0.011 (0.053)
College degree or above		-0.079 (0.075)	-0.080 (0.075)
Log (age of owner)		0.063 (0.113)	0.056 (0.113)
Log (firm age)		0.033 (0.033)	0.038 (0.033)
Log (firm size)		-0.141*** (0.018)	-0.144*** (0.018)
Registered as public firm		0.023 (0.116)	0.014 (0.116)
City firm		-0.085 (0.008)	-0.089 (0.065)
Industrial sector dummies		added	added
Constant	-3.841*** (0.685)	-3.643*** (0.666)	-3.896*** (0.683)
σ (e _{ij})	0.920*** (.017)	0.886*** (.016)	0.888*** (.016)
σ (u _i)	0.195*** (.046)	0.132*** (.043)	0.153*** (.039)
Log-likelihood	-2077.217	-2012.991	-2012.635
Observations	1541	1541	1541
Number of groups	21	21	21

* $p < .10$; ** $p < .05$; *** $p < .01$ (two-tailed tests)

Standard errors are in parentheses. The missing values of firm-level control variables were imputed with best-subset regression imputation models that use reliable procedure for handling missing data (Little and Rubin 1987).

FIGURE 1. Institutional Development across Chinese Provinces in the mid 1990s.

Source: Fan and Wang (2000).