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Institutional Environment, Public-Private Hybrid Forms, and Entrepreneurial Reinvestment in a Transition Economy

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Institutional Environment, Public-Private Hybrid Forms, and Entrepreneurial Reinvestment in a Transition Economy

Abstract

Many less developed and, especially, transition economies have had high levels of entrepreneurial reinvestment for relatively long periods despite the absence of developed government institutions. To resolve this puzzle, this study proposes that many entrepreneurial firms in these economies have been actively engaged in political activities, through which organizational arrangements are created to co-opt government agencies into their organizational structures to manipulate and even control unfavorable institutional environments. It empirically evaluates the role of one such organizational arrangement – public-private hybrid forms – in China's gradual reform period. It suggests that, through protecting property rights and facilitating access to key resources and opportunities, public-private hybrid forms may act as a substitute for deficient market and legal institutions, thus facilitating entrepreneurial reinvestment. The findings from a national sample of Chinese entrepreneurial firms support our propositions. In general, entrepreneurial firms adopting public-private hybrid forms enjoy higher entrepreneurial reinvestment rates than pure private firms during gradual reform; and this may be the case because such forms help to both protect private property rights and access key resources and opportunities. In addition, the association between the forms and reinvestment rate is found higher under less developed government institutions.

Key words – Public-private hybrid forms; Entrepreneurial political activities, Entrepreneurial reinvestment rate; Legal and market institutions; China

JEL classifications: L26.

1. Introduction

Recent entrepreneurship literature has highlighted association between institutions (especially, formal government institutions) and entrepreneurship (see, e.g., reviews by Bruton et al., 2010; Jennings et al., 2013; and Minniti and Levesque, 2008).[1] Classical institutional scholars have forcefully argued for the role of formal government institutions in facilitating entrepreneurial investment, which subsumes entrepreneurial reinvestment and is central to the process of entrepreneurship because it determines entrepreneurial survival and growth (Casson, 1982; North, 1990). North (1990, 2005) suggests that property rights institutions promulgated by the state are fundamental, because enterprising individuals will invest only when they expect to be able to keep the fruits of their investments. While focusing on a broader set of government institutions, Baumol (1990) also argues that formal institutions are key to understanding entrepreneurial investment activities. Nevertheless, a number of researchers have found that, despite the absence of developed formal government institutions, many less developed and, especially, transition economies have had high levels of entrepreneurial reinvestment for relatively long periods in the last several decades (see, e.g., Haber, 2002; McMillan and Woodruff, 1999, 2002; Zhou, 2013). A natural question, therefore, is: Why have these economies had such high levels of entrepreneurial reinvestment for relatively long periods?

To partially answer this question, this study, adopting resource dependence theory (Pfeffer and Salancik, 1978), suggests that many entrepreneurial firms in some less developed and transition economies have been actively engaged in purposive political activities. Such political activities, however, are not institutional entrepreneurship per se, which aims to shape

[1] While entrepreneurship is defined by Schumpeter (2008[1934]) as carrying out of new combinations, many empirical papers operationalize entrepreneurship as founding of a new business, which does not necessarily involve carrying out of new combinations (Shane, 2003). This study adopts the non-Schumpeterian, operational definition of entrepreneurship.

government policy, as is common in the existing literature (Bruton et al., 2010; Garud et al., 2007; Hillman et al., 2004; Lawton et al., 2013). Instead, these firms create organizational arrangements to co-opt government agencies into their organizational structures in order to manipulate and even control unfavorable institutional environments (Selznick, 1949; Pfeffer and Salancik, 1978).

This study focuses on one such firm-level organizational arrangement called public-private hybrid forms, which were widespread in some transition economies, e.g., China (e.g., Ahlstrom et al., 2008; C. Chen, 1999; W. Chen, 2007; Gregory, et al., 2000; Huang, 2008; Nee, 1992; M. Peng, 2001; Tsang, 1996; Walder and Oi, 1999; Whiting, 1999), Hungary and Poland (e.g., Lipton and Sachs, 1990; Megginson and Netter, 2001; Stark, 1996), and Vietnam (e.g., Walder and Nguyen, 2008), particularly during their gradual reform periods. Transition economies during gradual reform are a particularly suitable case for examining the role of firm-level organizational arrangements in facilitating entrepreneurial reinvestment because of the lack of full socio-political legitimacy of private firms and, thus, even more acute problem of deficient government institutions than other less-developed economies (Ahlstrom et al., 2008; M. Peng, 2001, 2003; Tsang, 1996; Zhou, 2009). Given the unfavorable institutional environment, many private firms in these economies have been engaged in purposive political activities for survival and growth (Zhou, 2009). And public-private hybrid forms are a result of such activities, which are political in nature because they involve bargaining and even collusion between entrepreneurs and government agencies/officials over firms' property rights (M. Peng, 2001; Walder and Oi, 1999). Under a public-private hybrid form, although hybrid firms are de facto private, as they are controlled by private entrepreneurs and owned either wholly or partly by them, they are de jure

public, since they are registered as public firms and need to share residual income with government agencies (C. Chen, 1999; Nee, 1992; M. Peng, 2001; Walder and Nguyen, 2008).[2]

While the previous literature has studied extensively why and how entrepreneurs adopt public-private hybrid forms in some transition economies (see, e.g., Ahlstrom et al., 2008; C. Chen, 1999; W. Chen, 2007; Nee, 1992; M. Peng, 2001; Walder and Nguyen, 2008; Whiting, 1999), empirically, it is still not known whether or how these forms facilitate entrepreneurial reinvestment during gradual reform. While such forms may facilitate entrepreneurial reinvestment because they help control unfavorable institutional environments, they may also discourage it because they dilute the property rights of entrepreneurial firms (Nee, 1992). In addition, while the existing literature suggests that the role of public-private hybrid forms may vary with institutional environments (e.g., Nee, 1992; Walder and Oi, 1999), there has been a lack of systematic research on how the significance of these forms is related to variations in legal and market institutions.

To fill in these gaps in the previous literature, this study employs data from a national survey of Chinese private firms in 1996. China adopted a gradual reform strategy for its industrial sector in the first two decades of the economic reform (1978 – 1998). As such, government institutions were not conducive to private entrepreneurship in 1996, in general, and many domestic entrepreneurial firms still adopted public-private hybrid forms (Gregory et al., 2000). [3] The dataset has a unique advantage in that it includes a national sample of 1946 private

[2] In this sense, they are discrete property forms that fall between public and private firms and are different from the hybrids discussed in previous organizational literature, which include forms that combine either different organizing logics (Haveman and Rao, 2006) or different features of market and hierarchy, such as network organizations (Williamson, 1991) or different parts of two or more organizations, such as strategic alliances and joint-ventures (Pfeffer and Nowak, 1976).

[3] Domestic private entrepreneurial firms in China are mostly small and medium-sized enterprises owned by individual entrepreneurs and include both pure private firms and public-private hybrid firms. While public-private hybrid firms are de facto private firms with de jure public ownership as defined above, pure private firms are enterprises owned by individual entrepreneurs both de facto and de jure. As such, compared to public-private hybrid

enterprises owned de facto by private entrepreneurs, with both pure private firms (i.e., enterprises owned by private entrepreneurs both de facto and de jure) and public-private hybrid firms (i.e., de facto private firms with de jure public ownership) included. I test whether and how public-private hybrid forms facilitate entrepreneurial reinvestment with fixed effects models. And the changing role of hybrid forms under varying government institutions is tested by comparing the roles of such forms in different provincial regions with different levels of institutional development using Hierarchical Linear Models.

This study has the following findings. In general, entrepreneurial firms adopting public-private hybrid forms enjoy higher entrepreneurial reinvestment rates than pure private firms during gradual reform; and this may be the case because such forms help to both protect private property rights and access key resources and opportunities. In addition, the association between the forms and reinvestment rate is found higher under less developed government institutions. These results make the following contributions to the existing literature. First, for the literature on resource dependence theory, the results demonstrate that, in addition to shaping government regulations, creating firm-level organizational arrangements to co-opt government agencies into the organizational structures of firms is an effective political activity for controlling an unfavorable institutional environment. Second, for the entrepreneurship literature, the results suggest that entrepreneurial political activities such as creating public-private hybrid forms are key to understanding high entrepreneurial reinvestment rates, and, thus, high entrepreneurial growth, in the absence of well-developed government institutions. Third, for the literature on public-private hybrid forms, the results demonstrate that such forms can facilitate property rights

firms, pure private firms have clearly defined property rights with little government involvement (Naughton, 2007). There are two types of pure private firms in China: non-farm private enterprises (*siying qiye*) and individual enterprises (*getihu*). The difference between a private enterprise and an individual enterprise is that the former has at least eight employees and the latter fewer than eight employees.

protection and access to resources and opportunities, thus facilitating entrepreneurial reinvestment; yet, their net benefits depend on the overall institutional environment.

2. Theory and Hypotheses

2.1. Institutional environment for entrepreneurship during gradual reform

Following North (1990) and Baumol (1990), the recent literature has suggested that formal government institutions – particularly, an independent legal system for property rights protection (e.g., Acemoglu and Johnson, 2005; Johnson et al., 2002) and a developed market system (Minniti, 2008; Sobel, 2008; Zhou, 2011) – are key to facilitating entrepreneurial reinvestment in both the developed and developing worlds. However, although many less developed and, particularly, transition economies have had high levels of entrepreneurial reinvestment for decades, they have not had strong and independent legal infrastructures (Hoskisson et al., 2000; M. Peng, 2003; Zhou, 2013), and have lacked sufficient intermediaries in capital, labor, and product markets (Aidis et al., 2008; M. Peng, 2003; Puffer et al., 2009).

For transition economies during their gradual reform periods, the problem of deficient government institutions has been further exacerbated by the lack of socio-political legitimacy of private firms. Socio-political legitimacy here refers to the perception of desirability of organizational activity within the larger economic and political system (Suchman, 1995; Zhou, 2009). During gradual reform periods such as those in Hungary and Poland in the 1980s, China in the 1980s and 1990s, and Vietnam in the 1990s and 2000s, the Marxist-Leninist party was not dissolved but still had a tight control over both political and economic arenas. However, the party would allow private property and firms, as well as markets, to emerge and develop gradually for practical economic reasons (e.g., resolving shortages of consumer goods and

services). The result was thus a mixed economy with both government-owned and private enterprises, and with both government economic planning and market mechanisms (Kornai, 1992; Nee, 1992). Yet, the governments continued to embrace the socialist ideology of public ownership and were reluctant to provide full socio-political legitimacy to private entrepreneurship (Ahlstrom et al., 2008; M. Peng, 2001, 2003; Tsang, 1996; Zhou, 2009).

Low socio-political legitimacy had a profound effect on private firms. First, with low legitimacy, private firms usually faced considerable hostility from many government officials, who believed that private entrepreneurship would not only undermine the socialist system but threaten public firms by heightening domestic competition (Ahlstrom et al., 2008; Tsang, 1996; Zhou, 2009). As a result, private firms encountered not only ideological harassment from conservative officials but arbitrarily high rates of taxes, fees and levies from government agencies, and blackmail and extortion from other organizations, e.g., public firms (Ahlstrom et al., 2008; Y. Peng, 2004; Zhou, 2009). And the legal systems, which were not independent but under the tight control of the Marxist-Leninist party, seldom protected the legal rights of private firms, particularly when they had disputes with public firms or agencies (Nee, 1992; Nee and Opper, 2012).

Low legitimacy was also partly responsible for the unlevel playing field between public and private firms, meaning that public firms enjoyed more favorable treatment than private firms in terms of access to resources and opportunities (Gregory et al., 2000). During the gradual reform, the government still controlled most key resources (e.g., capital, land, and technologies) and opportunities (e.g., access to sales networks), and distributed these more on the basis of political than economic considerations (Gregory et al., 2000).[4]

[4] One example for the unlevel playing field is that, until 1998, the Chinese central bank had annual lending quotas, which took into account only demand for finance from state-owned enterprises, while demand from private firms

Given these deficient government institutions, how do we account for the high level of entrepreneurial reinvestment in many less developed economies, particularly those transition economies under gradual reform? While a number of explanations may be offered, such as fast economic growth and, thus, high demand for consumer goods in these economies (Hoskisson et al., 2000), and the roles played by informal social institutions such as entrepreneurs' network ties (e.g., Aidis et al., 2008; Li and Zhang, 2007; Peng and Luo, 2000; Tan et al., 2009; Xin and Pearce, 1996), one key factor may be purposive political activities of entrepreneurial firms.

2.2. Firms' political activities and public-private hybrid forms

First formulated by Pfeffer and Salancik (1978), resource dependence theory was one of the earliest organizational theories to recognize that firms often actively engage in purposeful political activities to control and manipulate their unfavorable environment. According to this theory, firms depend on their contextual environment for both legitimacy and resources in order to survive; however, although constrained by their environment, they can act to reduce environmental uncertainty and dependence. Depending on the nature of the environment, firms can use different strategies for reducing uncertainty and dependence. To minimize dependence on other organizations that provide vital resources, firms may engage in different kinds of inter-organizational arrangements, such as interlocks, alliances, joint ventures, mergers and acquisitions (see reviews in Hillman et al., 2009; Drees and Heugens, 2013). For the larger social

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was completely outside of its consideration (Zhou, 2009). For another example, in Russia, private firms were prohibited from entering several key industries. One case in point is that, in the early 1990s, the Russian government permitted Gazprom – the state-controlled gas corporation – to monopolize the production, sale, transport, and export of natural gas. In addition, Gazprom was exempt from the export tax, some import tariffs, and the value-added tax (Aslund, 2007).

system (e.g., the government), however, firms may adopt political means and activities to alter the condition of such an external environment (Pfeffer and Salancik, 1978).

Firms may engage in a variety of political activities. The existing empirical research focuses primarily on how large corporations attempt to shape government regulations in ways that are favorable to them (Hillman et al., 2004; Lawton et al., 2013; Oliver, 1991). This study, however, suggests that, given their relatively small size and low socio-political legitimacy and influence, entrepreneurial firms in transition economies during gradual reform often do not have the capacity to shape government policy. Instead, they create firm-level organizational arrangements to co-opt government agencies into their organizational structures in order to reduce uncertainty and dependence. The public-private hybrid forms discussed here represent such firm-level organizational arrangements created by entrepreneurs during gradual reform. According to the existing literature, there have been two major public-private hybrid forms during gradual reform.

One form is so-called “red-hat” firms: A private entrepreneur would register his/her private startup as a de jure public firm with permission from a government agency (Nee, 1992; M. Peng, 2001; Walder and Oi, 1999). Yet, the entrepreneurs would continue to operate such firms as private, although they would need to pay a percentage (usually negotiable, but around 2 percent) of gross profit to the government as a “management fee” (C. Chen, 1999; W. Chen, 2007; Nee, 1992; Whiting, 1999). “Red-hat” firms were found primarily in China in the 1980s and 1990s, although they continued to exist even in the 2000s (Ahlstrom et al., 2008; He and Zhang, 2006; Huang, 2008). Conservative estimates suggest that at least 20 percent of all private enterprises in China in the 1990s were ever “red-hat” firm (Zhang and Ming, 2000).

Rented firms would involve a private entrepreneur renting a public firm, which was, usually, small in size, on a long-term basis based on one-to-one bargaining with the government (Lipton and Sachs, 1990; Megginson and Netter, 2001; M. Peng, 2001; Stark, 1996). The private entrepreneurs – usually managers or workers of the public firms – would operate the rented firms as though they were their own, although they needed to share residual income streams – with negotiable percentages – with the government (M. Peng 2001; Lipton and Sachs, 1990; Walder and Oi, 1999). This is virtually a form of informal or hidden privatization because the lease agreements were widely viewed by the entrepreneurial lease-holders, as well as by the employees and the public, as de facto private property rights (Lipton and Sachs, 1990; M. Peng, 2001). Rented firms were found in a number of transition economies during their earlier reform periods, such as China in the 1980s and 1990s (M. Peng, 2001; Walder and Oi, 1999), many central and eastern European countries in the 1980s (Lipton and Sachs, 1990; Megginson and Netter, 2001; Stark, 1996), and Vietnam in the 1990s and 2000s (Walder and Nguyen, 2008). In central and eastern Europe, workers within the firms already rented thousands of small State-Owned Enterprises (SOEs) through auctions before the collapse of the communist regimes (Megginson and Netter, 2001).

Under both forms, the hybrid firms, though de facto private, were legally owned by a government agency or agencies. In terms of the three types of property rights – to use or control assets, to receive income flows from assets, and to exchange assets with others (Alchian and Demsetz, 1973), one could say that the entrepreneurs enjoyed virtually all control rights and at least part of the income and exchange rights for both “red-hat” firms and rented firms. The

government agencies, however, enjoyed part of the income and exchange rights of the firms only (Walder and Oi, 1999).[5]

It should be noted that government agencies also played an active role in the creation of both forms. This is because such hybrid firms not only brought direct government revenues (management fees or rents) but could also facilitate economic growth. Since the beginning of the economic reforms, socialist governments from Asia to East Europe had all faced stagnant economies with overall lossmaking public firms and deteriorating government revenues (Kornai, 1992; Lipton and Sachs, 1990; Naughton, 2007). Therefore, many socialist governments adopted informal privatization policies by leasing small public firms to enterprising individuals (often firm insiders, including both managers and workers) in order to increase the efficiency of these firms (Lipton and Sachs, 1990; M. Peng, 2001; Stark, 1996; Walder and Oi, 1999). In China, local governments in many regions even colluded with private entrepreneurs to allow private firms with pubic disguise (i.e., "red-hat" firms) to emerge and grow in order to create jobs and bring in tax revenue (C. Chen, 1999; Walder and Oi, 1999; Whiting, 1999). Therefore, it may be argued that the two forms were a result of both the co-optation of government agencies into firm structure by private entrepreneurs and the co-optation of private entrepreneurs into public firms by government agencies.

2.3. Public-private hybrid forms and entrepreneurial reinvestment

[5] While entrepreneurs enjoyed full control rights in both "red-hat" and rented firms, they might have had more income and exchange rights by taking the form of red-hat firms than by renting public firms. This is because most of the capital in "red-hat" firms came from private entrepreneurs, while capital in rented firms was initially from government agencies, although the private entrepreneurs were usually allowed to invest in the rented firms and also to purchase public shares and thus to have more control over the firm assets (Gregory, et al., 2000; Walder and Nguyen, 2008).

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Could public-private hybrid forms facilitate entrepreneurial reinvestment? This study suggests that such forms may both facilitate and discourage entrepreneurial reinvestment, and that the net effect depends on the overall institutional environment.

Resource dependence theorists suggest that co-opting more powerful external interests into an internal structure is an effective strategy for relatively less powerful organizations to neutralize institutional opposition, thus helping them to both enhance socio-political legitimacy (Selznick, 1949; Pfeffer and Salancik, 1978) and access political support and resources (Pfeffer and Salancik, 1978; Oliver, 1991). In particular, ownership-based arrangements may be even more advantageous in enhancing legitimacy and stabilizing resource supply relationships than non-ownership arrangements, such as interlocks and alliances (Pfeffer and Salancik, 1978; see also, Drees and Heugens, 2013).

In view of this theory, as ownership-based arrangements that co-opt government agencies into an internal structure through both surrendering legal ownership to the latter and sharing incomes (e.g., management fees or rents) with them, public-private hybrid forms may also bring to the entrepreneurial firms at least two types of benefits that may facilitate entrepreneurial reinvestment. First, given their de jure public ownership – the socio-politically more legitimate ownership form during gradual reform – public-private hybrid firms would enjoy higher socio-political legitimacy and, thus, better property rights protection in the absence of effective legal systems. Compared to pure private firms, hybrid firms would enjoy better protection of property rights in two ways. First, being de jure public firms, they could avoid ideological and political campaigns launched against them by powerful higher level conservative officials, and could enjoy lower tax rates (Dai, 2005; He and Zhang, 2006). Second, de jure public ownership could protect them from infringement of property rights by other individuals and organizations. When

facing such infringements, unlike pure private firms, a hybrid firm could legitimately involve government authorities in the case to enhance its negotiating or legal position (Nee, 1992). Given that better protection of private property rights is a necessary condition for entrepreneurs to invest (North, 1990), it follows that hybrid firms may have higher reinvestment rates than pure private firms.

Second, because of their de jure public ownership and income sharing with government agencies, hybrid firms might enjoy better access to key resources and opportunities, most of which would be still controlled by the government, than pure private firms under the unlevel playing field (Nee, 1992). Indeed, a report based on large sample survey data from China suggested that public-private hybrid forms were indeed "helpful in securing access to land, assets, finance, and markets," and that local governments often subsidized locally-owned public firms, including hybrid firms, through favorable contracts or loans on preferential terms (Gregory, et al., 2000, p. 20). Given that a reinvestment decision is not simply reinvesting profits into the firm, but is also concerned with the mobilization of substantial economic resources and opportunities (Child and Yuan, 1996), it follows that hybrid firms may, again, have higher reinvestment rates than pure private firms.

Despite the benefits discussed above, some previous studies suggest that public-private hybrid forms could also involve ambiguous property rights (Dai, 2005; He and Zhang, 2006; Nee, 1992). Indeed, the fact that entrepreneurs were de facto owners of firms and government agencies owned the firms in legal terms already suggests a certain degree of ambiguity in terms of property rights. Furthermore, it is relatively common that both the entrepreneurs and the government had claims over (parts of) firm properties. Although "red-hat" firms were entrepreneurial startups, government agencies usually also provided necessary factors of

production and services upon the request of the entrepreneurs (Gregory, et al., 2000). For rented public firms, entrepreneurs were also allowed to invest and/or purchase government shares, despite the fact that they were still public firms, legally. To make things worse, the two parties usually did not have a common understanding concerning the shares that each should have because of difficulties in pricing the properties over which each had claims (Dai, 2005).

Such ambiguous property rights could make entrepreneurs vulnerable to disputes with the government agencies. In China, for example, numerous stories emerged in newspapers about disputes over firm properties between government agencies and entrepreneurs in "red-hat" or rented firms since the mid-1990s; and entrepreneurs were usually the losers in such disputes (Dai, 2005; Liu, 2002; Zhang and Ming, 2000). In extreme cases, firms were even confiscated by local governments, and their private owners were sentenced for embezzlement of "public assets" simply because they had taken some profits for personal use (Dai, 2005; He and Zhang, 2006). Given such potential disputes, and given that clearly defined property rights are a necessary condition for entrepreneurs to invest (Grossman and Hart, 1986; North, 1990), one may reason that public-private hybrid firms would reinvest less than pure private firms, which are owned by private entrepreneurs only and, thus, presumably have clearly defined property rights.

While public-private hybrid forms may indeed discourage entrepreneurial reinvestment, it is argued here that the costs of the forms may be relatively small, compared to their benefits, during gradual reform periods because of poorly developed government institutions. As discussed previously, there existed symbiotic relationships between entrepreneurs and government agencies during gradual reform, in general. Thus, both parties would be cautious enough not to allow potential conflicts to jeopardize their common interests (i.e., growing the hybrid firms). In China, it is noted that there were relatively few disputes over firm properties

between government agencies and entrepreneurs by the mid-1990s; and such disputes increased rapidly only after China introduced elements of radical reform by maintaining state control over large public firms but privatizing small ones ("grasping the big and getting rid of small") in the late 1990s (Dai, 2005; Liu, 2002). Therefore, it is argued here that the overall association between public-private hybrid forms and reinvestment rates may be positive during gradual reform.

Hypothesis 1. Public-private hybrid firms on average will have higher reinvestment rates than pure private firms during gradual reform.

The previous discussion suggests that, overall, public-private hybrid forms could facilitate entrepreneurial reinvestment through two mechanisms, namely, better protection of property rights and easier access to government-controlled key resources and opportunities. To test these mechanisms, I propose the next several hypotheses. Hypothesis 2.1 and Hypothesis 2.2 test whether the forms help protect private property rights, with the former focusing on government expropriation and the latter on infringement of property rights by other individuals and organizations. Hypothesis 2.3 tests whether these forms facilitate access to critical government-controlled resources and opportunities.[6]

Hypothesis 2.1. Public-private hybrid firms will encounter lower government expropriation than pure private firms during gradual reform.

[6] To formally test the mediating effect of these mechanisms, one should show that (i) public-private hybrid forms facilitate better protection of property rights and easier access to key resources and opportunities and (ii) the latter, in turn, facilitate entrepreneurial reinvestment (MacKinnon et al., 2007). However, since the previous literature has already established that entrepreneurial reinvestment is positively associated with better property rights protection (e.g., Cull and Xu, 2005; Johnson et al., 2002; Zhou, 2013) and easier access to key resources and opportunities (Child and Yuan, 1996; Zhou, 2013), part (ii) is not retested in this study and I focus on part (i) only, as in hypotheses 2.1-2.3.

Hypothesis 2.2. Public-private hybrid firms will enjoy better government protection of legal firm rights than pure private firms during gradual reform.

Hypothesis 2.3. Public-private hybrid firms will access critical government-controlled resources and opportunities more easily than pure private firms during gradual reform.

Resource dependence theory suggests that the effect of firm strategy for reducing resource dependence is not constant but varies as government regulations vary (Pfeffer and Salancik, 1978). One example is that, as the government passes stricter antitrust legislation, ownership-based arrangements such as joint ventures, acquisitions and mergers will affect liaising organizations' market shares and financial returns negatively because the organizations are obliged by the law to divest synergetic parts of an acquired target or to invest heavily in meeting new compliance demands (Drees and Heugens, 2013). In our case, it is argued above that public-private hybrid forms may facilitate entrepreneurial reinvestment when developed government institutions are largely missing. Yet, given that transition economies under gradual reform all adopted market and legal reforms, one may wonder how the association between public-private hybrid forms and reinvestment rates would vary under different government institutions.

Some earlier studies suggest that market reforms in transition economies might lead to a hybrid economic system, which differs from both market capitalism and state socialism with various hybrid organizational forms dominating economic organizations. Stark (1996), for example, argued that post-reform Hungarian economy might have been dominated by networked groups of firms that blurred conventional organizational boundaries and included both government and private ownership. Walder (1995) also suggested that Township and Village

Enterprises (TVEs), many of which were “red-hat” firms (He and Zhang, 2006; Huang, 2008), might have been a more competitive organizational form than either SOEs or pure private firms in China’s emerging market economy. Based on the logic of these earlier studies, it follows that public-private hybrid forms may continue to benefit private entrepreneurs, thus facilitating entrepreneurial reinvestment, even with more developed government institutions.

It is argued here that the association between hybrid forms and entrepreneurial reinvestment may be lower under more developed government institutions (particularly, property rights institutions and the market system) for the following reasons. First, the benefits of hybrid forms may be lower under more developed government institutions. As private property rights are more protected by government institutions, private entrepreneurship would enjoy higher socio-political legitimacy; and government expropriation of private properties, as well as infringement of property rights by other individuals and organizations, would be lower (Lu and Tao, 2008; Nee, 1992; Zhou, 2013). In addition, as the market system (i.e., markets for factors and products) is more developed, private entrepreneurs and their firms could find alternative sources of resources and opportunities from the market, and thus would rely less on the government for these resources/opportunities (Gregory et al., 2000; Peng and Luo, 2000; Zhou, 2014). Therefore, the significance of public-private hybrid forms for both property rights protection and access to critical resources and opportunities would be lower.

Second, the lower benefits of public-private hybrid forms under more developed government institutions may lead to a series of chain reactions, which, in turn, could increase internal conflict between government agencies and private entrepreneurs. Previously, it has been discussed that the amount of such internal conflict may be relatively low under poorly developed government institutions because both private entrepreneurs and government agencies could

benefit from public-private hybrid forms. Under more developed government institutions, however, with lower benefits of the forms, many entrepreneurs of the hybrid firms might want to share less residual incomes (i.e., management fees or rents) with their partnering government agencies, and might even ask for privatization of the firms, i.e., getting rid of the de jure public ownership of the "red-hat" firms or the rented firms and re-registering them as pure private firms (Dai, 2005; He and Zhang, 2006). While some government agencies might indeed concede to such requests, most would not and would even attempt to exercise control rights or confiscate the firms, thus worsening the internal conflict (Dai, 2005).

Given the lower benefits and higher costs of public-private hybrid forms, it is argued here that the association between public-private hybrid forms and entrepreneurial reinvestment rates may be weaker under more developed property rights institutions and factor and product markets. Thus, we have:

Hypothesis 3. During gradual reform, the association between public-private hybrid forms and entrepreneurial reinvestment rate will be lower under better government protection of private property rights.

Hypothesis 4. During gradual reform, the association between public-private hybrid forms and entrepreneurial reinvestment rate will be lower under more developed markets.

3. Data and methods

3.1. Data

The empirical test uses a national sample of domestic private enterprises in 1996 from China's transition economy. The sample is appropriate for this test for several reasons. First, given that China began its comprehensive reform by privatizing small government-owned enterprises and

deregulating a number of factor and product markets only in 1998, and given that private property rights were not protected by the Chinese Constitution until 2004, the sample firms in 1996 still faced deficient government institutions with poorly protected property rights, an unlevel playing field, and less developed factor and product markets in general (McMillan and Woodruff, 2002; Naughton, 2007).[7] Second, the sample includes both pure private firms and public-private hybrid firms, and thus enables us to evaluate the role of public-private hybrid forms in entrepreneurial reinvestment. Third, it is noted that government institutions differed dramatically across Chinese regions during the entire gradual reform period, thanks to the decentralization reform that the Chinese government adopted in the early 1980s (Chen et al., 2000; Fan and Wang, 2001; Zhou, 2011). This variation in the formal institutional environment allows us to test how the association between public-private hybrid forms and reinvestment rate changes under different government institutions.

The sample firms come from the 1997 National Survey of Chinese Private Enterprises, which was sponsored by the Chinese government and designed and administered by a joint research team from both the Chinese Academy of Social Sciences and All China Federation of Industry and Commerce (ACFIC) – a semi-governmental commercial organization that serves the interests of private entrepreneurs by connecting them with the Chinese Communist Party (Zhang and Ming, 2000). According to the *Tentative Stipulations on Private Enterprises* promulgated by the central government in 1988, private enterprises are domestic profit-making economic units invested in and established by natural persons, or controlled by natural persons, using employed labor and with employment size of at least eight (Zhou, 2009). Some of the

[7] In fact, some researchers have suggested that the institutional environment for entrepreneurship throughout the 1990s was even less conducive than that in the 1980s (e.g., Huang, 2008).

sample firms (about 47 percent) were selected from the list of private enterprises registered with the State Administration for Industry and Commerce, and the remaining sample (53 percent) came from the list of member firms of the ACFIC.

Member firms of the ACFIC were usually larger and more visible than other private enterprises in each region; thus, to include more ACFIC member firms biases the sample toward larger private enterprises. The reason that more ACIFC member firms were included is that one of the purposes of the 1997 survey was to include some "red-hat" firms and rented public firms, and many ACFIC member firms were such.[8] According to *The Stipulation on Several Questions about the ACFIC* promulgated on July 6, 1991 by the Department of United Front of the Central Committee of the Chinese Communist Party, members of the ACFIC primarily included private enterprises, individual enterprises, some collective enterprises, and a few small and medium SOEs. These collective enterprises and SOEs were usually owned or controlled, at least partially, by private entrepreneurs, who joined the ACFIC primarily through self-nomination (Asian Development Bank, 2003).

Through the use of a stratified sampling method, a total of 1946 private enterprises were sampled from the 21 surveyed provinces, among which five came from the Southeastern-Coastal regions, four from Northern regions, six from the Western regions, and four from the Mid-Central regions. The sampling involved two stages. In the first stage, a pre-specified number of counties were selected in each province based on economic development level so that both rich and poor counties were represented. In the second stage, a pre-specified number of sample 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

[8] This is based on my personal communications with one of the key members of the joint research team.

sampled. The survey was based on face-to-face intensive interviews with entrepreneurs (i.e., the largest private owners) to collect information about them and their firms at the end of 1996. The interviewers were local employees of the ACFIC who were familiar with local private entrepreneurs and had been trained intensively by the joint research team.[9]

The survey data asked about the registration status of each sample firm (i.e., whether the firm was registered as a SOE, a collective enterprise, or a private firm) at the end of 1996 in order to identify whether it was a public-private hybrid firm. In addition to registration status, the survey asked a rich set of other questions, covering the size, history, reinvestment behaviors, and basic financial backgrounds of the firms, and the human capital and occupational history of the entrepreneurs. Most variables on the basic characteristics of the firms and entrepreneurs in the survey data are also available in the 1995 and 2000 National Surveys of Chinese Private Enterprises, which include more firms and more provinces but do not contain registration status – the key independent variable – for testing the hypotheses. Distributions of the common variables are similar across the three surveys.[10]

Following Johnson, et al. (2002) and Cull and Xu (2005), who tested the effect of legal protection of property rights on firms' reinvestment rates using data from East Europe or China, only firms with positive profits in 1996 enter the reinvestment regressions. Thus, 91 firms that reported negative or zero profits were removed from the data. The dropped firms accounted for 4.7 percent of the sample; they were a little bit younger and smaller, and more likely to have female owners. This procedure leaves a working sample of 1855 entrepreneurial firms. Table 1

[9] The joint research team did not disclose the response rate. However, it had taken several measures to ensure the representativeness of the sample. For example, whenever a firm declined the interview, another firm with very similar characteristics in the same area and same industry had to be found to replace it.
[10] The three surveys selected different firm samples each year and, thus, panel data models are not applicable for the pooled data from all three surveys.

describes the distributions of the study variables in this working sample, and Table 2 is the correlation matrix between the variables.

[Insert Table 1 and Table 2 about here]

3.2. Dependent variables

Following previous studies (e.g., Johnson, et al., 2002; Cull and Xu, 2005), the dependent variable in hypotheses 1, 3, and 4 – *reinvestment rate* – is measured as the percentage of the net profit (i.e., profit after taxes, fees and levies) earned in 1996 that was kept for reinvestment in the firm. This variable has a mean of 0.62, which is not significantly different from the mean of the same variable from the 1995 and 2000 National Surveys of Chinese Private Enterprises (0.68 for the 1995 survey, and 0.58 for the 2000 survey). Because the distribution of the dependent variable is skewed, its logarithmic form is used (a small number is used to replace zero for logarithmic transformation).

Based on North (1990; North and Weingast, 1989), government expropriation in Hypothesis 2.1 is measured with *tax rate*, which is calculated with total tax payment (i.e., the sum of all types of taxes, fees, and levies) divided by sales income in 1996. The tax rate for firms and entrepreneurs was negotiable during gradual reform, depending on the relationship with government agencies, and a lower tax rate indicated lower government expropriation (Kornai, 1992; Naughton, 2007). This measure has been used in the China literature (Li et al., 2008). The primary reason to use sales income instead of gross profit as the denominator is that the largest tax for firms in China is the value-added tax, which is based on sales income (see Li et al., 2008). This variable is taken natural logarithm to adjust for skewed distribution.

The survey asked entrepreneurs whether they could access help from a list of organizations (including government agencies) when encountering a number of problems. The dependent variables in hypotheses 2.2 and 2.3 are constructed from these questions and are all binary variables. The dependent variable in Hypothesis 2.2 is *access to government protection of firm rights*. This variable is coded 1 if the entrepreneur could access help from relevant party/government agencies (such as the police) and the court system when his/her firm's legal rights were being violated; 0, otherwise.

For Hypothesis 2.3, multiple variables are used to measure entrepreneurs' access to critical government-controlled resources and opportunities. *Access to capital* is coded 1 if the entrepreneur could access help from formal financial institutions, most of which were state-owned, when the firm lacked financial capital; 0, otherwise. *Access to sales market* is coded 1 if the entrepreneur could access help from relevant party/government agencies when the firm had difficulty in selling products/services; 0, otherwise. *Access to land* is coded 1 if the entrepreneur could access help from relevant party/government agencies when the firm needed land; 0, otherwise. *Access to technology* is coded 1 if the entrepreneur could access help from relevant party/government agencies when the firm had difficulty in obtaining technologies; 0, otherwise.

3.3. Independent variable

Public firms include SOEs and collective enterprises in socialist economies. SOEs are owned, nominally, by all people in the society but, de facto, by the government (at either central or regional/local levels); and traditional collective enterprises are owned, nominally, by all workers in an enterprise but, de facto, by local governments (Kornai, 1992). In China, such traditional collective enterprises include both urban collective enterprises (UCEs) and TVEs. In 1983, the

Chinese government established that shareholding cooperative enterprises (SCEs) – privately formed cooperatives engaged in industry – were also socialist in nature and considered collective enterprises, although investors in such ventures retained private ownership of their assets (Whiting, 1999).

The survey intentionally included some public-private hybrid firms that were de facto private firms with de jure public registration status. One question asked whether a firm was a public-private hybrid firm or not: "what was the official registration status of your firm at the end of 1996?" And the answers included each of the four choices of public firms (i.e., SOEs, UCEs, TVEs, and SCEs), together with choices indicating de jure private ownership (i.e., private enterprises and individual enterprises). Individual enterprises were included in the survey because ACFIC member firms included such enterprises. Cross-tabulations of the data suggest that those sample firms that were registered as any of the four types of public firms were indeed owned and controlled de facto by the entrepreneurs. Analysis shows that, among 171 sample firms registered as "public" firms in the data, the largest individual owner's capital investment, on average, consisted of 68 percent of the total capital of the firm, while investment from local governments and other public sources ranged from 0 to 12 percent. In addition, the entrepreneur had a final say on strategic decisions among 77 percent of these "public" firms; in only 23 percent of such firms, the entrepreneur needed to share strategic decision making power with other members of the board of directors, which possibly included a government agency. Thus, it is clear that these firms were not real public firms, but public-private hybrid firms.

Therefore, the independent variable – *hybrid firm* – is a binary variable and is coded 1 if the firm was registered as any of the four choices (a SOE, a UCE, a TVE, and a SCE) at the end of 1996; 0, otherwise. In total, 9.5 percent of the sample firms are hybrid firms at the end of

1996. In more detail, 0.22 percent are SOEs, 2.22 percent urban collective enterprises, 2.50 percent rural collective enterprises, and 4.55 percent shareholding cooperative enterprises.

3.4. Moderating variables

The moderating variables in hypotheses 3 and 4 are at the provincial level. *Property rights protection* – the moderating variable in Hypothesis 3 – is constructed from the above survey data and is the provincial means of entrepreneurs' perception of property rights security. In the survey, entrepreneurs were asked whether (1) arbitrary charges, fines, or apportionments by government agents and (2) blackmail and extortion were significant social problems. According to North (1990) and Johnson et al. (2002), these two types of social problems suggest a predatory business environment, indicating insecure property rights. Unfortunately, only two answers – yes or no – were provided for this question in the survey. As such, the entrepreneur's perception of property rights security is coded 1 if the entrepreneur did not think that these two types of government predatory behaviors were significant problems; 0, otherwise. And by taking the provincial means of this perception variable, we get *property rights protection*, which ranges from 12 percent to 46 percent, with a larger value indicating that a greater percentage of entrepreneurs agreed that they had property rights security in a province.

While taking group means is a popular way to construct higher-level variables in social sciences (Raudenbush and Bryk, 2002), I also used an alternative measure for provincial level property rights protection for a robustness test. The alternative measure is taken directly from the 1997 *National Economic Research Institute (NERI) Indices of Marketization of China's Provinces*, constructed by Fan and Wang (2001). This measure is based on two components: number of lawyers per capita and number of legal cases on infringement of firm rights divided

by GDP, both of which are taken as three-year averages (1995 – 1997). The correlation between this alternative measure and *property rights protection* is moderately high (r = 0.50).

Market development – the moderating variable in Hypothesis 4 – is a composite index taken from *the Extent of Marketization of Economic Systems in China* (Chen, et al., 2000), which includes indices for the development of markets in each province in the mid-1990s. This variable directly measures the development of market intermediaries – resellers, physical distribution firms, marketing services agencies, and market-oriented financial intermediaries, which are key indicators for market development (Kornai, 1992; Naughton, 2007). It is the average of the following components: (1) number of marketplaces for products and factor resources per 1000 people, (2) number of wholesale and retail sales trade enterprises per 1000 people, (3) number of employees in wholesale and retail sales trade enterprises per 1000 people, and (4) number of non-state financial institutions per 1000 people in each province. This variable was already normalized in the original source and ranges from 0 to 1, with a higher value indicating a higher level of market system development in a province.

For a robustness test, an alternative measure for provincial level market development is used. This alternative measure is also taken directly from the 1997 *National Economic Research Institute (NERI) Indices of Marketization of China's Provinces*, constructed by Fan and Wang (2001). It is based on a number of components reflecting the extent to which prices of products and factor resources were determined by the market rather than by the government. The correlation between this alternative measure and *market development* is high (r = 0.60).

3.5. Control variables

Firm size is measured by total sales income at the end of 1996. Larger firms are usually treated better by the government and thus have more entrepreneurial opportunities and thus higher

reinvestment rates (Gregory, et al., 2000; Zhou, 2009). This variable is taken natural logarithm to adjust for skewed distribution. *Firm age* is 1996 minus the year when the firm was established. Younger firms may have lower reinvestment rates because of the liability of newness and, thus, fewer entrepreneurial opportunities (e.g., Acs and Audretsch, 1988; Hannan and Freeman, 1989). *City firm* is a binary variable used to control for the location of the main establishment of the firm because firms in cities (especially big cities) enjoyed better infrastructure and, possibly, also better institutional environments. It is coded 1 if it was located in big cities; 0, otherwise. The data indicate fifteen industrial sectors for the main business line of the firms. So, fourteen dummy variables for *industrial sectors* are also included in regressions (manufacturing sector as the comparison group). It is often argued that a higher profit rate may indicate higher entrepreneurial ability and more entrepreneurial opportunities, which can facilitate reinvestment (Johnson, et al., 2002). Thus, for testing hypotheses 1, 3 and 4, *return on sales* is also controlled, which is the ratio of net profit to total sales income in the 1996 financial year. Using return on capital, which has more missing data, does not change the statistical results.

Concerning the entrepreneur, gender and human capital variables, including education and age are often considered to have effects on entrepreneurial behavior (see, e.g., Carroll and Mosakowski, 1987). *Female* is a binary variable coded 1 if an entrepreneur was a female; 0, otherwise. Based on Xie and Hannum (1996), *education* is measured by the number of years of schooling.[11] *Age* is 1996 minus the year when the entrepreneur was born. Moreover, previous literature suggests that entrepreneurs' political capital also plays a role in entrepreneurship in

[11] The questionnaire asked the level of education. I transformed the levels into number of years in schooling using Xie and Hannum (1996)'s coding scheme. That is, 0 years for illiterate; 5 years for elementary school; 8 years for junior high school; 11 years for senior high school and vocational school; 13 years for associate degree; 15 years for bachelor's degree; and 18 years for master's degree. Using level of education instead of years of schooling does not change the results.

transition economies (e.g., Róna-Tas, 1994; Wu, 2006; Zhou, 2009, 2013). Therefore, *party member* is a binary variable coded 1 if the entrepreneur was a Chinese Communist Party member at the end of 1996; 0, otherwise.

When testing hypotheses 3 and 4, several provincial level variables are also controlled. *GDP growth rate* in 1996 is an indicator of regional economic health, which may be positively related with entrepreneurial opportunities and thus entrepreneurial reinvestment (Bowen and Clercq, 2008). *East coastal provinces* is a binary variable coded 1 if the province is located in the Southeastern-Coastal regions; 0, otherwise. These provinces had a more developed regional economy and better infrastructure; thus, entrepreneurs might have had more entrepreneurial opportunities and, thus, higher entrepreneurial reinvestment. Some authors also believe that these provinces had a higher proportion of public-private hybrid firms (Huang, 2008; Walder and Oi, 1999). *Centrally-administered city* is 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. I have also attempted to control for other provincial level variables, such as GDP per capita, contribution of the industrial sector to the GDP, and provincial population. These variables were dropped from the regressions because they either have very high correlations with the provincial level variables already controlled or have no effect on either the dependent variable or the coefficients of other variables.

Table 3 compares the means for the study variables between hybrid firms and pure private firms. It suggests that, on average, hybrid firms have easier access to government protection of property rights and government-controlled resources. In addition, it shows that the two types of firms, on average, have very similar characteristics in terms of most of the

covariates, except that hybrid firms are larger, are located more in big cities, and are more likely owned by entrepreneurs with better education and party membership.

[Insert Table 3 about here]

3.6. Model specification

The sample firms were nested within 21 provinces, which were heterogeneous in their stages of gradual reform. Thus, for testing hypotheses 1 – 2.3, I estimated the fixed effects model with each province dummy added as a group specific constant term in each of the regressions to control for environmental heterogeneity across provinces (Greene, 2000). A general representation of the regressions that I estimated is shown in the following equation:

$$\mathrm{Y}_{ij} = \alpha + \gamma' H_{ij} + \beta' \mathrm{X}_{ij} + \eta_j + \varepsilon_{ij} \qquad (1)$$

for $i = 1, \ldots, n_j$ firms in province j; $j = 1, \ldots, 21$ provinces.

In the above equation, $\boldsymbol{Y_{ij}}$ is the dependent variable; $\boldsymbol{\alpha}$ is the intercept; $\boldsymbol{\gamma}$ is the effect of hybrid firm on the dependent variable, because $\boldsymbol{H_{ij}}$ denotes *hybrid firm* that varies over the *i* firm/entrepreneur in each *j* province; $\boldsymbol{\beta}$ is a vector of all other firm-level effects on the dependent variable, because $\boldsymbol{X_{ij}}$ is a vector of firm-level control variables that vary over the *i* firm in each *j* province; $\boldsymbol{\eta_j}$ a vector of the province specific constant term and is thus the same across all units in province *j*; and $\boldsymbol{\varepsilon_{ij}}$ is a mean zero firm-level error term. Since the dependent variables in hypotheses 1 and 2.1 – reinvestment rate and tax rate – are continuous variables, the least squares

dummy variable model – a version of the fixed effects model – is used. For hypotheses 2.2 and 2.3, the dependent variables are binary, and thus the fixed effects logit model is used.

For hypotheses 3 and 4, since the covariates come from both the firm and provincial levels, the fixed effects model is not appropriate because provincial level variables would be subsumed by province dummies. Instead, Hierarchical Linear Models (HLM) are used for testing these two hypotheses because HLM enable us to conceptualize in terms of multiple levels (Raudenbush and Bryk, 2002). A general representation of the regressions used for testing hypotheses 3 and 4 is shown in the following equation:

$$\mathrm{Y}_{\mathrm{ij}} = \alpha + \gamma' H_{\mathrm{ij}} + \varphi'(H_{\mathrm{ij}} \times D_j) + \beta' \mathrm{X}_{\mathrm{ij}} + \mu' \mathrm{D}_{\mathrm{j}} + \lambda' \mathrm{P}_{\mathrm{j}} + \theta_{\mathrm{j}} + \varepsilon_{\mathrm{ij}} \qquad (2)$$

for $i = 1, \ldots, n_j$ firms in province j; $j = 1, \ldots, 21$ provinces.

In this equation, $\boldsymbol{Y_{ij}}$, $\boldsymbol{\alpha}$, $\boldsymbol{\gamma}$, $\boldsymbol{H_{ij}}$, $\boldsymbol{\beta}$, $\boldsymbol{X_{ij}}$, $\boldsymbol{\varepsilon_{ij}}$ have the same meaning as in equation 1. However, $\boldsymbol{\eta_j}$ – the vector of province specific constant term in equation 1 – has been replaced by three provincial level items here: $\boldsymbol{\mu' D_j}$, $\boldsymbol{\lambda' P_j}$, and $\boldsymbol{\theta_j}$, and a new cross-level item – $\boldsymbol{\varphi' (H_{ij} \times D_j)}$ – has been added. Here, $\boldsymbol{\mu}$ is the effect of *property rights protection* (or *market development*) on the dependent variable, because $\boldsymbol{D_j}$ denotes *property rights protection* (or *market development*) that varies over j provinces; $\boldsymbol{\lambda}$ is a vector of all other provincial level effects on the dependent variable, because $\boldsymbol{P_{ij}}$ is a vector of provincial level control variables that vary over j provinces; $\boldsymbol{\theta_j}$ is provincial level random effect and is the same across all units in province j; $\boldsymbol{\varphi}$ is the effect of the interaction between hybrid firm – $\boldsymbol{H_{ij}}$ – and *property rights protection* (or *market development*) – $\boldsymbol{D_j}$. Here, *property rights protection* and *market development* are not included in

the same equation but are separated in two different equations because of high correlation between the two (r = 0.64).

4. Regression results

4.1. Major findings

Results for testing Hypothesis 1 are presented in columns 1 and 2 of Table 4. Column 1 regresses *reinvestment rate* (logged) on control variables only, and column 2 adds *hybrid firm* into column 1. The results from column 2 provide strong support for Hypothesis 1. The coefficient of *hybrid firm* is positive and statistically significant. On average, the reinvestment rate of public-private hybrid firms is 22.3 percent ($e^{0.201}$-1) higher than that of pure private firms in the sample.

The effects of several other control variables in column 2 of Table 4 are as follows. *Firm size* has a significantly positive effect, and, thus, smaller private firms indeed reinvested less because of even more unfavorable government treatment. *Female* has a large positive effect. One possible reason for this may be motivation. Previous research suggests that female entrepreneurs usually have stronger motivation, such as desiring for higher business achievement, than males (Cromie, 1987). Lastly, *party member* has a large positive effect on reinvestment rates, suggesting that political capital may indeed facilitate entrepreneurship in a transition economy.

Results for testing Hypothesis 2.1 are presented in column 3 of Table 4. This column regresses *tax rate* (logged) on *hybrid firm*, all firm-level control variables except for return on sales, and all provincial dummies. The coefficient of *hybrid firm* is -0.192 and statistically significant. Substantively, on average, the estimate amounts to 0.83 ($e^{-0.192}$) times less in total tax rate for hybrid firms than for pure private firms. Thus, Hypothesis 2.1 is also supported.

[Insert Table 4 about here]

Results for testing hypotheses 2.2 and 2.3 are reported in Table 5. Overall, both hypotheses are strongly supported. The coefficient of *hybrid firm* in each column has the expected sign and is statistically significant. Compared to a pure entrepreneurial firm, the odds of *access to government protection of firm rights* are 1.41 ($e^{0.344}$) times greater for a hybrid firm; the odds of *access to capital* are 1.65 ($e^{0.503}$) times greater for a hybrid firm; the odds of *access to sales market* are 3.42 ($e^{1.229}$) times greater for a hybrid firm; the odds of *access to land* are 1.83 ($e^{0.605}$) times greater for a hybrid firm; and the odds of *access to technology* are 3.30 ($e^{1.193}$) times greater for a hybrid firm.

[Insert Table 5 about here]

Table 6 reports results from the HLM for testing hypotheses 3 and 4 with all firm level and provincial level variables controlled. Column 1 in this table tests Hypothesis 3, which suggests that the association between *hybrid firm* and *reinvestment rate* would be lower in regions with more government protection of private property rights. Indeed, this column shows that the coefficient of *hybrid firm* is positive and significant, and that of the interaction between *hybrid firm* and *property rights protection* is negative and statistically significant. Substantively, the interaction coefficient suggests that, as the percentage of private firms that believed that government protection of private property rights was fine, increases by one percentage point, the coefficient of *hybrid firm* would decrease by 0.017. Thus, Hypothesis 3 is supported.

Column 2 in Table 6 tests Hypothesis 4, which suggests that the association between *hybrid firm* and *reinvestment rate* would be lower in regions with more developed markets. It shows that the coefficient of *hybrid firm* is positive and significant and that of the interaction

between *hybrid firm* and *market development* is negative and statistically significant. Substantively, the interaction coefficient suggests that as *market development*, which ranges from 0 to 1, increases by one percentage point, the coefficient of hybrid firm would decrease by 0.081 (=0.805/100). Thus, Hypothesis 4 is also supported.

The effects of provincial level variables in Table 6 also deserve mention here. *Property rights protection* has a significantly positive effect, supporting the notion that property rights protection is fundamental for entrepreneurial investment (North, 1990). Surprisingly, however, *market development* has no significant effect on reinvestment rate. Further analysis suggests that this is because of the high correlation between *market development* and *centrally-administered city* (r = 0.69). In fact, both variables show significantly positive effects on reinvestment rate if one variable is dropped.

[Insert Table 6 about here]

4.2. Robustness tests

As noted above, the existing literature has identified two public-private hybrid forms, i.e., "red-hat" firms and rented public firms. Do these two different forms have the same effect on entrepreneurial reinvestment, as suggested by previous scholars (see, e.g., M. Peng, 2001)? In this study, the data do not allow us to identify whether the hybrid firm was a "red-hat" or rented public firm. But the data do allow us to differentiate four types of registration status of hybrid forms: SOEs (located primarily in urban areas), UCEs (located in urban areas), TVEs (located in rural areas), and SCEs (located primarily in rural areas). It is noted that most of the firms that were registered as SOEs and UCEs were probably rented public firms, and most of the firms registered as TVEs and SCEs might be "red-hat" firms because "leasing" to private operators

was more popular among urban firms and putting on a "red hat" was more common in rural areas (Naughton, 2007). Therefore, I test the effects of urban and rural hybrid firms separately. The results suggest that the hypotheses are virtually still supported.[12]

Given the inevitable measurement errors in any group-level indices, one may wonder whether the results for testing hypotheses 3 and 4 reported above reflect the true effects of property rights protection and market development or the measurement errors of the two variables. To tackle this problem, I have tried using the alternative measures of both property rights protection and market development as discussed in Section 3.4 to retest the hypotheses. Additional tests suggest that both hypotheses are still strongly supported if the alternative measures are used.[13]

This study does not formally test the mediating effect of better property rights protection and easier access to key resources and opportunities between hybrid firms and reinvestment rates for two reasons. In addition to the reason stated previously, in note 6, there are quite a lot of missing values in the measures of property rights protection and access to key resources and opportunities, making a formal test of the mediating effect problematic (Zhang and Wang, 2013). Nevertheless, I have tried adding all of the measures of property rights protection and access to government resources into the equation in column 2 of Table 4, and the coefficient of hybrid firm drops from 0.201 to 0.133. This suggests that property rights protection and access to

[12] The results are as follows. Using urban hybrid firm, its coefficient for testing Hypothesis 1 is 0.277 (0.135); the interaction between it and property rights protection for testing Hypothesis 3 is -0.032 (0.020); the interaction between it and market development for testing Hypothesis 4 is -0.915 (0.630). Using rural hybrid firm, its coefficient for testing Hypothesis 1 is 0.163 (0.080); the interaction between it and property rights protection for testing Hypothesis 3 is -0.134 (0.058); the interaction between it and market development for testing Hypothesis 4 is -0.761 (0.365). In the parentheses are province-clustered robust standard errors. The coefficients of both urban and rural hybrid firms for testing hypotheses 2.1-2.3 are all positive and most are also statistically significant.

[13] Using the two alternative measures, it is found that the interaction between hybrid firm and property rights protection for testing Hypothesis 3 is -0.030 (0.020), and the interaction between it and market development for testing Hypothesis 4 is -0.015 (0.009). In the parentheses are province-clustered robust standard errors.

government-controlled resources may indeed mediate the relationship between hybrid firms and reinvestment rates, at least partially.

Table 3 suggests that, compared to pure private firms, hybrid firms are larger, are located more in big cities, and are more likely to be owned by entrepreneurs with better education and party membership. Thus, to compare the two types of firms more fairly, I have also tried multiple propensity score matching methods, which help reduce biases typical to observational studies by creating a sample of units that receive the treatment that is comparable on all observed covariates to a sample of units that does not receive the treatment (Morgan and Winship, 2007). And, the results still support the hypotheses (see Appendix 1 for results from one of the propensity score matching methods).

5. Discussion

This paper makes several contributions to the existing literature. First, it contributes to the literature on resource dependence theory by suggesting that creating firm-level organizational arrangements to co-opt government agencies into the organizational structure of firms is also an effective political activity for controlling environmental uncertainty. Following Pfeffer and Salancik (1978), researchers have conducted extensive studies to understand how firms use political means and activities to alter the conditions of external political environments. Yet, the existing research focuses primarily on the political activities of large corporations in shaping government regulations in ways favorable to them (Hillman et al., 2004; Lawton et al., 2013; Oliver, 1991). Shaping government regulations, however, may be a less feasible option for many small firms, such as entrepreneurial firms during gradual reform because of their low socio-political legitimacy and/or influence. For such small firms, creating firm-level organizational

arrangements to co-opt government agencies into their organizational structures may be a more viable choice.

Second, it contributes to the entrepreneurship literature by suggesting that entrepreneurial political activities matter. Primarily based on economic theorists such as North (1990, 2005) and Baumol (1990), prior entrepreneurship literature has focused on the role of government institutions in entrepreneurial development. Building on resource dependence theory, this study suggests that entrepreneurial political activities are key to understanding high entrepreneurial reinvestment rates, and thus high entrepreneurial growth, in many less developed economies, such as China during its gradual reform. Particularly, it demonstrates that, in the absence of well-developed government institutions, entrepreneurial political activities can create firm-level organizational arrangements, such as public-private hybrid forms, to co-opt the government into its organizational structure and reduce environmental uncertainty, thus facilitating entrepreneurship.

Third, it serves as an important addition to the growing literature on public-private hybrid forms. While this literature has noted some of the benefits and costs of such forms, little is known concerning their consequences for entrepreneurial firms. Focusing on entrepreneurial reinvestment, this study suggests that, given both benefits and costs, such forms may facilitate, as well as discourage, entrepreneurial reinvestment, and the net effect of the forms depends on the overall institutional environment. It has demonstrated that, under poorly developed government institutions during gradual reform, such forms may facilitate rather than discourage entrepreneurial reinvestment because the costs of such forms (i.e., ambiguous property rights) may be relatively small compared to their benefits (i.e., providing government protection of property rights and facilitating access to key resources and opportunities). And, it has provided

empirical evidence for the two benefits of such forms. In addition, this paper has shown that the association between such forms and reinvestment rates is higher under less developed government institutions, thus lending support to the notion that hybrid organizations substitute for, rather than complement, formal institutions (Williamson, 1991; see also, Nee, 1992).

This study also has several limitations that may suggest future directions for research. First, this paper focuses on the payoffs of public-private hybrid forms to individual entrepreneurial firms under poorly developed government institutions, but ignores the possible negative externalities that such an entrepreneurial political activity may create for other firms (particularly, pure private firms) and for the society as a whole. Using Baumol's (1990) categorization of three types of entrepreneurship (i.e., productive, unproductive, and destructive), firms' political activities to resolve resource dependence may not always be productive for the society as whole, but might involve some elements of unproductive rent seeking. This is because favorable treatment from government agencies in terms of access to key resources and opportunities occurs often at the expense of other firms and tax-payers. In this sense, it is possible that the benefits obtained by public-private hybrid firms during gradual reform may also occur at the expense of less privileged firms, such as pure private firms. And to maintain their advantages, it is also possible that public-private hybrid firms may be less interested in pushing forward legal and market reforms, compared to pure private firms. As a result, it is possible that the higher the advantages of such forms, the slower the legal and market reforms. Given its scope and the data constraints, this paper cannot verify these possibilities. Future research may explore such negative externalities of public-private hybrid forms with appropriate data.

Second, although this paper has established a positive association between public-private hybrid forms and reinvestment rates, causality between the two variables is not clear, given the

endogeneity issue. There may be two sources of endogeneity here. The first source is unmeasured but relevant variables that may have been omitted from the regression as in virtually all regression analyses. The second is the possibility of reverse causality given that the two variables are measured simultaneously. In our case, reverse causality may occur when firms that had strong motivation for growth and thus had higher reinvestment rate found it difficult to grow because of poorly developed government institutions, and thus adopted public-private hybrid forms in order to resolve institutional constraints.

The endogeneity issue also exists when testing for the changing association between public-private hybrid forms and reinvestment rates under different government institutions. It is possible that there are unobservable provincial level factors that confound the moderating effect of government institutions. In addition, it may be possible that government institutions in at least some provinces may have been partly results of entrepreneurial political activities, although the previous literature suggests that this is less likely because of the weak socio-political influence of private firms in China during gradual reform (Gregory, et al., 2000; Naughton, 2007; Walder and Oi, 1999). Given the lack of a suitable instrumental variable, neither source of endogeneity is solvable with the current cross-sectional data. Future research may resolve the causality problem with an instrumental variable approach or a longitudinal research design.

6. Conclusion

Many less developed and, particularly, transition economies have had high levels of entrepreneurial reinvestment for relatively long periods despite the absence of developed government institutions. This study suggests that many entrepreneurial firms in these economies actively engage in political activities, through which firm-level organizational arrangements are

created to co-opt government agencies into their organizational structure in order to control and even manipulate the unfavorable institutional environment. It has empirically evaluated the role of one such organizational arrangement – public-private hybrid forms – in China's gradual reform period. Using large scale national survey data from China, it finds that entrepreneurial firms adopting these forms enjoy higher entrepreneurial reinvestment rates than pure private firms during gradual reform, and that this may be because such forms help to protect private property rights and access key resources and opportunities. In addition, it finds that the association between the forms and reinvestment rates is higher under less developed government institutions.

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Table 1. Descriptive statistics

Variable	Mean	s.d.	Min	Max	median	N
1.reinvest rate	0.62	0.29	0	1	0.65	1434
2.tax rate	0.06	0.07	0	1	0.05	1495
3.access to government protection of firm rights	0.64	0.48	0	1	1	1692
4.access to capital	0.56	0.50	0	1	1	1807
5.access to sales market	0.01	0.12	0	1	0	1675
6.access to land	0.45	0.50	0	1	0	1682
7.access to technology	0.02	0.15	0	1	0	1636
8.hybrid firm	0.10	0.29	0	1	0	1803
9.firm size [a]	6.69	25.93	0	503	1.20	1565
10.firm age	8.71	5.83	0	47	8	1811
11.city firm	0.30	0.46	0	1	0	1841
12.return on sales	0.13	0.18	0	4.50	0.10	1489
13.female	0.08	0.27	0	1	0	1850
14.age	39.58	8.67	19	84	39	1827
15.education	11.39	2.79	0	18	12	1845
16.party member	0.18	0.39	0	1	0	1854
17.property rights protection	28.53	7.76	0	45.95	26.24	21
18.market development	0.24	0.12	0.09	0.70	0.22	21
19.GDP growth rate	0.11	0.02	0.08	0.15	0.11	21
20.east coastal provinces	0.19	0.39	0	1	0	21
21.centrally-administered city	0.09	0.28	0	1	0	21

Note: [a] Firm size is measured as sales income. The unit is 1 million Chinese Yuan.

Table 2. Correlation matrix

Variable	1	2	3	4	5	6	7	8	9	10
1.reinvest rate										
2.tax rate	-0.03									
3.access to government protection of firm rights	0.05	0.01								
4.access to capital	0.05	-0.01	0.17							
5.access to sales market	-0.01	-0.02	0.03	0.06						
6.access to land	0.06	0.01	0.22	0.27	0.08					
7.access to technology	0.02	-0.04	0.03	0.06	0.22	0.09				
8.hybrid firm	0.04	-0.03	0.04	0.08	0.07	0.07	0.06			
9.firm size [a]	0.12	-0.23	0.05	0.21	-0.01	0.10	0.00	0.19		
10.firm age	-0.01	-0.00	-0.05	0.07	0.01	0.04	0.02	-0.08	0.07	
11.city firm	0.02	0.01	-0.04	-0.10	-0.01	-0.19	-0.03	0.09	0.25	0.01
12.return on sales	-0.06	0.31	0.02	-0.04	0.02	-0.06	-0.02	-0.04	-0.34	-0.01
13.female	0.00	0.03	-0.01	-0.05	0.00	-0.07	-0.01	0.01	-0.04	-0.09
14.age	0.01	0.05	-0.03	0.01	0.01	-0.01	0.00	0.02	0.06	0.12
15.education	0.01	-0.01	0.01	-0.00	-0.01	-0.11	0.03	0.08	0.20	-0.12
16.party member	0.04	0.02	0.03	0.06	0.01	-0.00	0.04	0.05	0.07	-0.01
17.property rights protection	0.12	-0.01	0.03	-0.07	-0.01	-0.12	-0.04	0.03	0.02	-0.19
18.market development	0.08	-0.01	-0.02	-0.16	0.03	-0.07	0.01	0.00	0.06	-0.12
19.GDP growth rate	0.01	-0.03	-0.04	-0.03	0.01	0.12	0.03	-0.02	0.03	0.04
20.east coastal provinces	0.05	-0.03	09	-0.06	0.00	-0.00	0.01	0.03	0.06	-0.17
21.centrally-administered city	0.07	0.00	-0.07	-0.12	0.02	-0.12	-0.02	0.01	0.15	-0.01

Variable	11	12	13	14	15	16	17	18	19	20
11.city firm										
12. return on sales	-0.04									
13.female	0.04	0.02								
14.age	0.03	-0.00	-0.06							
15.education	0.30	-0.05	0.05	-0.20						
16.party member	-0.04	-0.06	-0.06	0.12	0.04					
17. property rights protection	0.08	-0.03	0.01	-0.01	0.06	-0.07				
18.market development	0.13	-0.04	0.06	-0.00	0.06	-0.02	0.48			
19.GDP growth rate	-0.04	-0.03	-0.11	0.01	-0.06	0.02	-0.05	0.08		
20.east coastal provinces	0.01	-0.09	0.00	-0.02	-0.02	0.01	0.44	0.50	0.24	
21.centrally-administered city	0.31	-0.00	0.02	0.01	0.19	-0.03	0.29	0.69	0.08	0.11

Note: [a] Firm size is measured as sales income. The unit is 1 million Chinese Yuan.
Correlations with an absolute value exceeding 0.05 are significant at p = 0.05.

Table 3. Means of variables for hybrid firms and pure private firms

Variable	Hybrid firms	Pure private firms	t-statistic
1.reinvest rate	0.64	0.61	1.50
2.tax rate	0.05	0.06	1.29
3.access to government protection of firm rights	0.69	0.63	1.65*
4.access to capital	0.68	0.55	3.15***
5.access to sales market	0.04	0.01	2.76***
6.access to land	0.56	0.44	2.72***
7.access to technology	0.05	0.02	2.25**
8.firm size [a]	16.41	5.78	4.60***
9.firm age	8.71	8.76	0.11
10.city firm	0.42	0.28	3.71***
11.return on sales	0.11	0.14	1.45
12.female	0.08	0.08	0.21
13.age	40.30	39.57	1.04
14.education	12.08	11.30	3.46***
15.party member	0.25	0.18	2.23**
16.property rights protection	29.12	28.42	1.12
17.market development	0.24	0.24	0.02
18.GDP growth rate	0.11	0.11	0.66
19.east coastal provinces	0.23	0.19	1.32
20.centrally-administered city	0.10	0.09	0.60

Note: [a] Firm size is measured as sales income. The unit is 1 million Chinese Yuan.
* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$ (two-tailed tests).

Table 4. Estimates of hybrid firm for reinvestment rate and tax rate

Explanatory variables	Dependent variables		
	Reinvestment rate (logged)		Tax rate (logged)
Hybrid firm	-	0.201**	-0.192*
	-	(0.096)	(0.095)
Firm size (logged)	0.111***	0.106***	-0.032
	(0.035)	(0.035)	(0.027)
Firm age	-0.005	-0.005	-0.006
	(0.009)	(0.009)	(0.005)
City firm	-0.054	-0.058	0.064
	(0.111)	(0.114)	(0.063)
Return on sales	-0.083	-0.085	-
	(0.434)	(0.447)	-
Entrepreneur is a female	0.268*	0.262*	0.244***
	(0.144)	(0.149)	(0.082)
Entrepreneur's age	0.004	0.004	0.011***
	(0.004)	(0.004)	(0.003)
Entrepreneur's education	-0.005	-0.006	0.013
	(0.014)	(0.014)	(0.012)
Entrepreneur is a Party member	0.178*	0.172*	0.094
	(0.089)	(0.091)	(0.086)
Industrial dummies (14)	added	added	added
Province dummies (20)	added	added	added
Constant	-0.860**	-0.890	-4.278***
	(0.307)	(0.542)	(0.231)
R^2	0.060	0.065	0.092
Observations	1365	1351	1388

Note: Province-clustered robust standard errors in parentheses.
* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$ (two-tailed tests).

Table 5. Logistic estimates of hybrid firm for access to government protection of firm rights and entrepreneurial resources

Explanatory	Dependent variables				
	Access to government protection of firm rights	Access to capital	Access to sales market	Access to land	Access to technology
Hybrid firm	0.344*	0.503**	1.229**	0.605***	1.193**
	(0.199)	(0.228)	(0.512)	(0.197)	(0.477)
Firm size (logged)	0.096*	0.313***	-0.007	0.196***	-0.054
	(0.060)	(0.054)	(0.158)	(0.048)	(0.114)
Firm age	-0.035	0.010	-0.024	-0.009	0.029
	(0.022)	(0.019)	(0.042)	(0.013)	(0.026)
City firm	-0.071	-0.815***	-0.165	-0.477**	-0.469
	(0.232)	(0.214)	(0.522)	(0.200)	(0.424)
Entrepreneur is a female	-0.112	0.119	-0.502	-0.200	0.220
	(0.246)	(0.220)	(0.958)	(0.316)	(0.742)
Entrepreneur's age	-0.008	-0.009	-0.009	-0.003	0.018
	(0.006)	(0.006)	(0.021)	(0.007)	(0.032)
Entrepreneur's education	0.008	0.009	-0.074	-0.040	0.176*
	(0.030)	(0.032)	(0.087)	(0.038)	(0.094)
Entrepreneur is a Party member	0.041	0.221	0.209	-0.129	0.406
	(0.163)	(0.151)	(0.608)	(0.203)	(0.408)
Industrial dummies (14)	added	added	added	added	added
Province dummies (20)	added	added	added	added	added
Constant	-0.162	2.369*	-3.971	0.047	-23.419***
	(1.630)	(1.397)	(2.452)	(1.247)	(2.154)
Pseudo R^2	0.079	0.132	0.104	0.164	0.126
Observations	1238	1470	1375	1376	1352

Note: Province-clustered robust standard errors in parentheses.
* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$ (two-tailed tests).

Table 6. HLM estimates of hybrid firm as legal and market institutions vary

Explanatory variables	Reinvestment rate (logged)	
Hybrid firm	0.622***	0.309*
	(0.000)	(0.158)
Hybrid firm × property rights protection	-0.017***	-
	(0.003)	-
Hybrid firm × market development	-	-0.805*
	-	(0.425)
Provincial level controls		
Property rights protection	0.027**	0.025**
	(0.012)	(0.012)
Market development	0.699	0.776
	(1.015)	(1.020)
GDP growth rate	2.421	2.421
	(3.461)	(3.437)
East coastal provinces	-0.197	-0.196
	(0.239)	(0.239)
Centrally-administered city	0.065	0.067
	(0.374)	(0.372)
Firm level controls		
Firm size (logged)	0.112***	0.111***
	(0.034)	(0.034)
Firm age	-0.008	-0.008
	(0.009)	(0.009)
City firm	-0.103	-0.106
	(0.112)	(0.112)
Return on sales	-0.085	-0.093
	(0.420)	(0.421)
Entrepreneur is a female	0.251*	0.256*
	(0.135)	(0.134)
Entrepreneur's age	0.003	0.003
	(0.004)	(0.004)
Entrepreneur's education	-0.006	-0.005
	(0.015)	(0.015)
Entrepreneur is a Party member	0.144*	0.148*
	(0.088)	(0.088)
Industrial dummies (14)	added	added
Constant	-2.025**	-1.984**
	(0.957)	(0.953)
Firm level random effect	2.538***	2.538***
	(0.479)	(0.479)
Provincial level random effect	0.250	0.250
	(0.497)	(0.510)
Log likelihood	-2534.182	-2534.173
Firm level observations	1351	1351
Number of provinces	21	21

Note: Province-clustered robust standard errors in parentheses.
* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$ (two-tailed tests).

Appendix 1.
Comparison of estimates of hybrid firm from OLS/LPM and propensity score matching

	OLS/LPM regression with all covariates	Kernel matching with Gausian with the same set of covariates
Reinvestment rate (logged)	0.201**	0.197**
	(0.096)	(0.086)
Tax rate (logged)	-0.192*	-0.219**
	(0.095)	(0.112)
Access to government protection of firm rights	0.067**	0.066
	(0.038)	(0.046)
Access to capital	0.086**	0.090**
	(0.040)	(0.046)
Access to sales market	0.028*	0.034*
	(0.016)	(0.020)
Access to land	0.127***	0.112**
	(0.037)	(0.051)
Access to technology	0.042*	0.045*
	(0.023)	(0.023)

Note: OLS = Ordinary Least Squares; LPM = Linear Probability Model. The OLS model is used for estimating the effect of hybrid firm on reinvestment rate and tax rate; the LPM, which is the linear regression model applied to a binary dependent variable, is used for estimating the effect of hybrid firm on the remaining five binary dependent variables. I use LPM in column 1 here instead of the logit model as in Table 5 in order to make a fair comparison because estimates from the propensity score matching methods are based on the linear regression model. Results from other propensity score matching methods are similar as Kernal matching with Gausian.

In parentheses are standard errors.
* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$ (two-tailed tests).