

# **Ownership Structure, Institutional Development, and Political Extraction: Evidence from China**

---

## **ABSTRACT**

This paper examines how ownership structure and institutional development influence the liquidity management and investment policies of firms, in response to the threat of political extraction in China. First, we document evidence that firms controlled by private entrepreneurs hold less cash reserves than their state-owned counterparts. In addition, cash holdings (investments) is positively (negatively) related to the strength of economic institutions. The results are consistent with the hypothesis that managers of private firms and firms located in provinces with weaker institutions have incentives to protect their assets from being expropriated by politicians, through holding less cash (which are easier to extract) and pursuing more investments in fixed assets (which are harder to extract). Finally, we find that firms with close connections to politicians hoard cash reserves and display lower investments than their non-connected counterparts. This suggests that political connections mitigate the threat of political extraction for those connected firms.

*JEL classification:* D23; H7; K0; P2

*Keywords:* Political extraction, Cash holdings, Investments, Political connection.

---

## 1. Introduction

Despite the rapid growth and development of China's economy in the past two decades, economic and legal institutions in China are still far from ideal (Allen et al., 2005; Yao and Yueh, 2009). The weak enforcement of property rights has given rise to rampant rent-seeking activities by government bureaucrats, as highlighted by numerous anecdotal evidences and academic studies in recent years (e.g., Fan et al., 2007). In particular, firms owned by private entrepreneurs are more likely to be the subject of political extraction than state-owned enterprises. For example, an article in *Investor Daily* finds that the actual income tax rate for private firms is almost twice that for state firms in 2009.<sup>1</sup> This problem is exacerbated by the variation in economic and legal institutions across different provinces in China. In spite of this, very little is known regarding managerial incentives to protect their assets from the threat of political extraction by government officials in China. This motivates us to systematically examine the implication of political extraction on firms' corporate policies.

In a recent cross-country study, Caprio et al. (2009) argue that managers have incentives to protect their assets from being expropriated by government bureaucrats, especially in countries where the threat of political extraction is high. This is achieved through restructuring their assets from liquid assets (such as cash and cash equivalents, which are easier to extract) to illiquid assets (such as fixed assets, which are harder to extract).

In this paper, our objectives are two-fold. First, we investigate whether ownership structure and institutional development influence the liquidity management and investment policies of firms, in response to the threat of political extraction in China. Our findings reveal that firms controlled by private entrepreneurs tend to hold less cash reserves than their state-owned counterparts. Meanwhile, firms in provinces with weak institutions also tend to hold less cash

---

<sup>1</sup> See "The comparison of tax burdens", *Investor Daily*, April 4, 2010.

and exhibit more investments in fixed assets than those located in provinces with strong institutions.

Several recent studies (e.g., Li et al., 2008; and Chen et al., 2010a) have argued that establishing connections to politicians or government bureaucrats is imperative for Chinese firms as it provides an alternative mechanism to shelter themselves from the threat of political extraction. Quoting from an article published in the *New York Times*: “Politicians vet land sales and set zoning rules. They decide who gets bank loans and who can list shares on China’s stock markets. Tax rates are usually subject to negotiation. ***Businessmen need political connection to thrive.***”<sup>2</sup>

With this in mind, our second objective is to examine the role of political connections in mitigating the threat of political extraction for both private and state-owned firms in China. We find evidence that connected firms are more likely to hoard cash reserves and e lower investments in fixed assets than their non-connected counterparts.

Overall, the findings in our paper should provide important insights to both investors and policy makers. We contribute to the literature on how political forces impact firm behavior and policies. Our single-country setting has several advantages over Caprio et al. (2009). First, this setting is relatively free from the omitted variables problem often encountered in cross-country studies. Second, we demonstrate that ownership structure and political connections, in addition to economic and legal institutions impact firm policies, which is not examined in Caprio et al. (2009). To the extent that China’s political, economic, and legal institutions are similar to many other transitional economies, the findings from our paper have implications to those markets as well.

---

<sup>2</sup> See “China’s communist party opens its doors to capitalists”, *New York Times*, November 4, 2002.

Moreover, our study contributes to the growing literature on political connections (Fisman, 2001; Faccio, 2006) by showing that political connections increase firm's ability to resist political extraction. In particular, our study offers fresh evidences on how political connections influence firms' corporate decisions (liquidity management and investments policies).

Finally, our study complements the literature on fiscal decentralization in China (Jin et al., 2005; Zhang, 2006). We provide evidence that under fiscal decentralization, private firms and firms in provinces with weaker institutions are forced to adopt corporate policies that deviate from the optimum. To the extent that this represents an unintended consequence of fiscal decentralization, our work has important implications to policy makers.

The remainder of the papers is organized as follows. Section 2 reviews the related literatures and develops the main hypotheses. Section 3 describes the source of data and the definitions of the variables. Section 4 provides the empirical analysis and discussions of our main results. Finally, Section 5 concludes the paper.

## **2. Literature Review and Hypothesis Development**

Our study is related to several strands of literature in economics and finance: fiscal decentralization, corporate liquidity and investment policies, and the role of political connections. We review the relevant studies and develop our hypotheses as follows.

### ***2.1 Fiscal Decentralization and Political Extraction in China***

To align local government incentives with promoting markets and productive enterprises, Chinese government has decentralized its fiscal system by linking the fiscal expenditure of local governments closely to their local fiscal revenues. In China, under the tax-sharing system with

effect from 1994, taxes and fees are widely regarded as an important source of revenue for local provincial governments (Jin et al., 2005). The local provincial governments have large discretion in levying surcharges, fees and fines, and deciding actual local tax rates. Anecdotal evidences suggest there is a large variation in terms of the importance of extra-budgetary revenue in supporting government expenditure across regions. According to an article in *Southern Weekly*, one of the most influential newspapers in China, some provincial governments in the less developed western regions rely much more heavily on the extra-budgetary revenue to operate than their counterparts in the more developed eastern areas.<sup>3</sup> This part of the extra-budgetary revenue is typically shared between the local government and the enforcing government bureaus.

As such, the implicit tax rates and fee burdens are likely to vary across regions with differing degrees of market development and government intervention (Zhang, 2006). In provinces with stronger (more developed) institutions, the reliance on the extra-budgetary revenue is significantly reduced, and thus the government's incentive to harass business entities for extra charges is relatively weak. Furthermore, government officials in those regions are more constrained in their action to extract benefits from firms because of the strong legal enforcement and outside monitoring. Finally, because governments in those regions are less likely to intervene in firm operation, their ability to extract benefits is also considerably weakened.

Evidences from extant studies also indicate that there exists regulatory discrimination between state-owned and entrepreneur-controlled firms, to the extent that the private sector is often the subject of state-predation. For example: Brandt and Li (2003) and Allen et al. (2005) document that ownership structure does matter as private enterprises are often disadvantaged in terms obtaining bank loans. In a survey of five former socialist countries, Johnson et al. (2000)

---

<sup>3</sup> See "Three ways to make fiscal cake", *Southern Weekly*, October 19, 2006.

further find that tax rates for private firms are higher in countries (such as Russia and Ukraine where bribes and “unofficial hidden” activity are more prevalent.

From these studies, we argue that private enterprises and those firms located in provinces with weak institutions are often disadvantaged in terms of tax and fees treatments, and are more likely to face higher threat of political extraction by the government bureaus as compared to their state-owned counterparts and those firms located in provinces with strong institutions.

## ***2.2 The Implications of Political Extraction on Corporate Policies in China***

Opler et al. (1999) examine the determinants of corporate cash holdings for the U.S. firms. They document that firms’ cash holdings increase with investment opportunities, firm size, and cash flows. Since then, several recent papers have documented that corporate governance at both country and firm levels could potentially influence corporate cash holdings in both U.S. and international firms.<sup>4</sup>

Myers and Rajan (1998) and Stulz (2005) propose that liquid assets (such as cash and cash equivalents) are more susceptible to the threat of political extraction and that managers have incentives to shelter their assets mitigate the threat. A recent paper by Caprio et al. (2009) empirically examines these propositions in an international setting. Using country-level corruption indices to measure the threat of political extraction, they find that firms in countries where corruption level is high are more likely to hold less cash and increase their investments in fixed assets (regardless of whether the projects yield positive NPV). These actions, which are taken in response to the threat of political extraction may explain why corruption is “evil” and may impede economic development in some countries.

---

<sup>4</sup> See Dittmar et al. (2003), Pinkowitz et al. (2006), Kalcheva and Lins (2007), and Harford et al. (2008) for some recent representative papers in the area of corporate cash holdings.

Our first hypothesis, H1, deals with the implications of political extraction on firm's liquidity management and investments policies. Earlier, we have mentioned that private firms and firms in provinces with weaker (less developed) institutions suffer from higher threats of political extraction. We posit that, to prevent resources (especially cash) from being extracted out by government bureaucrats, managers of these firms should have more incentives to shift their assets structure from liquid assets to non-liquid assets. This leads to these firms holding lower cash balances than their counterparts (state-owned enterprises and firms located in provinces with stronger institutions). Therefore, the first part of our first hypothesis, H1A, is stated as follows:

**H1A:** Private firms and firms located in provinces with weaker institutions hold less cash than state-owned enterprises and firms located in provinces with stronger institutions.

One natural prediction following H1A is that managers of firms which suffer from a higher threat of political extraction (private firms and firms located in provinces with weak institutions) will utilize the cash by increasing the investments in fixed assets such as equipment and buildings, which are harder to be extracted by politicians.<sup>5</sup>

However, Kornai (1986) observes that state-owned enterprises often receive government support, in form of additional funding, tax cuts, etc.; especially when they incur losses or fall into distress. This phenomenon is called soft budget constraint (SBC). Expecting that they will be bailed out by the government in case of failure, managers of state-owned enterprises tend to

---

<sup>5</sup> The empirical findings by Cull and Xu (2005) imply that an increase in private ownership leads to an increase in reinvestment rate. The measure of reinvestment rate is based on manager's perception of the proportion of profits that were reinvested in the firm in the last year, which is different from our measure of investments.

overinvest, i.e., invest in not only projects with positive NPV but also often in bad projects (Kornai et al., 2003). SBC syndromes are common in socialist economies, and greatly affect managerial incentives of state-owned enterprises. Lin and Tan (1999), among others, suggest that SBC syndromes are also common in transitional economies such as China.

These discussions suggest that *ceteris paribus*, state-owned enterprises invest more than private firms because of SBC. Nevertheless, the relative strength of two forces (SBC and the threat of political extraction) is not clear, and thus *ex ante*, we do not have any prediction on the difference in investments between private and state-owned enterprises. The second part of our first hypothesis, H1B, is stated as follows:

**H1B:** Firms located in provinces with weak institutions invest more than firms located in provinces with strong institutions.

### ***2.3 The Role of Political Connections***

A recent literature examines the value of political connections to connected companies around the world. This literature finds that political connections bring benefits to public companies in various forms such as favorable regulatory treatments, preferential access to capital, and lighter taxation. Fisman (2001) shows that the market values of Indonesian companies connected to the then president Suharto are affected by the news about Suharto's health. Faccio et al. (2006) find that politically connected companies are more likely to be bailed out by governments than similar non-connected firms in financial distress. Sapienza (2004) demonstrates that Italian government-owned banks charge lower interest rates to politically connected companies. Leuz and Oberholzer-Gee (2006) find that politically connected



companies in Indonesia have more access to domestic capital and thus are less likely to issue foreign shares. In a cross-country study, Faccio (2006) documents a significant increase in stock prices when companies announce that their large shareholders or executives have entered politics, e.g., by being elected as a parliament member.<sup>6</sup>

Because the Chinese government tightly controls business activities, political connections are found to greatly benefit connected companies in China. Fan et al. (2007) document that more than one-quarter of the CEOs of newly partially privatized Chinese firms are either currently or previously serving as government officials. Chen et al. (2010a) examine the determinants of political connections for listed family firms in China and find that establishing connections is imperative for firms located in provinces with weaker institutions. Zhou (2009) proposes that private firms in China invest in political capital (by becoming legislative members of the Chinese government) to circumvent the problem they experience in obtaining bank loans. Connections will also influence firms' financing and firm performance (Li et al., 2008; Fan et al., 2008a), diversification pattern (Fan et al., 2008b), incentives to engage in related party transactions (Cheung et al., 2010), investment efficiency (Chen et al., 2010b), cross-listing decisions (Hung et al., 2008), and the effectiveness of regulatory changes to improve minority-shareholder protection (Berkman et al., 2010).

In our second hypothesis, H2, we conjecture that political connections help to mitigate the threat of political extraction. In this respect, we predict that politically connected firms have greater abilities to protect their assets from being extracted. Therefore, they are more likely to hoard cash reserves, and exhibit lower investments than their non-connected counterparts. Therefore, H2, is stated as follows:

---

<sup>6</sup> Other studies have looked at the role of political connections in individual countries, such as: Brazil (Claessens et al, 2008), Pakistan (Mian and Khwaja, 2005), and the United States (Goldman et al., 2008).

**H2:** Politically connected firms hold more cash, and invest less than non-connected firms.

### 3. Source of Data and Variables Description

Our data comprises of provincial-level institutional indices and firm-level corporate governance as well as financial attributes. We collect firm-level financial data and the ultimate controlling shareholder data of state-controlled and entrepreneur-controlled Chinese firms that are listed on the Shanghai or Shenzhen Stock Exchange from the China Stock Market and Accounting Research (*CSMAR*) database. We rely on the annual reports to infer the connection status of the executives of each entrepreneur-controlled firm. We further classify state-owned enterprises into either central-state or local-state owned firms if the ultimate controlling shareholder is the central or local governments respectively.

Appendix A provides the detailed definition and description for each of the variables used in our study.

[Insert Appendix 1 here]

We employ four institutional indices which have been used by existing studies (such as Li et al., 2008; and Fan et al., 2008b) as measures of the level of financial development and protection of property rights for each of the provinces in China, from the National Economic Research Institute (*NERI*) (Fan and Wang, 2001) and other sources. The indices are standardized to be ranging from 0 to 1 and measure the degree of political extraction across the provinces in China.<sup>7</sup>

---

<sup>7</sup> A comprehensive measure of corruption in different regions in China is politically sensitive and therefore not available. While the provincial-level institutional variables in our paper do not directly measure the extent of political extraction as the corruption indices used in Caprio et al. (2009), these institutional variables still capture the extent to which firms in different provinces are subject to potential expropriation by the politicians.

Provinces with higher values on the institutional variables are implied to be more developed in terms of market development and are more protected from expropriation of property rights. Therefore, firms located in these provinces will face a lower risk of political extraction by government bureaucrats. Panel A of Table 1 presents the descriptive statistics of these institutional variables, by provinces.

[Insert Table 1 here]

The first institutional index is *Decentr*. It is the *NERI* index of government decentralization, constructed by the following information: the provincial government's spending as a percentage of provincial *GDP*; the tax rates in the province; the time spent by entrepreneurs in dealing with the bureaucracy; and the time needed for firm registration and to obtain various licenses). The mean of *Decentr* is 0.55, with a standard deviation of 0.29. Qinghai (Zhejiang) having the lowest (highest) value.

The second index is *Mkt1*. It is the *NERI* index of marketization, which captures the following aspects of regional market development: relationship between government and market; development of non-state business; development of product markets; development of factor markets; development of market intermediaries and legal environment). The mean of *Mkt1* is 0.53, with a standard deviation of 0.25. Xinjiang (Guangdong) has the lowest (highest) value of *Mkt1*.

The third index is *Mkt2*, the market index from Li et al. (2008). It is measured by the proportion of total fixed investment in a province that comes from private enterprises. According to Li et al. (2008), a small private sector involvement in the fixed investments is indicative of more intervention and regulation put in place by the local government. The mean of *Mkt2* is 0.74, with a standard deviation of 0.16. Yunnan (Guangdong) has the lowest (highest) value of *Mkt2*.

Finally, the fourth index is *Legal*. It is the legal effectiveness index from Lu and Yao (2009) and it is measured by the natural logarithm of the number of cases received per million of population. This index measures the trust placed by the people in the legal system of a particular province. The mean of *Legal* is 0.52, with a standard deviation of 0.28. Hainan (Shanghai) has the lowest (highest) value of *Legal*.

We construct several dummy variables to represent firm-level corporate governance attributes: (1) *Private* to represent firms whose ultimate controlling shareholders are private entrepreneurs; (2) *Conn\_Pri* to represent private firms with executives who are/were serving as government officials; (3) *Conn\_SOE* to represent those state-owned firms whose ultimate controlling shareholders are the central government.<sup>8</sup> We predict that politically connected entrepreneur firms (central-state firms) should have greater abilities to resist political extraction than their counterparts (local-state firms). In addition, we also collect the ownership variable, *Largest*, which is calculated as the percentage of ownership by the largest shareholder.

For the financial variables, we compute a firm's cash holdings ratio (*Cash*) as cash and cash equivalents divided by total assets at the end of year  $t$ . *Invest* is investment ratio and is calculated as net capital expenditures divided by total sales at the end of year  $t$ . *Lev* is leverage ratio and is calculated as total debts divided by total assets at the end of year  $t$ . *Capx* is investments in fixed assets ratio, and is calculated as capital expenditures divided by total assets at the end of year  $t$ .  $Q$  is Tobin's  $Q$ , our measure of investment opportunity and is calculated as the market value of equity plus book value of liabilities divided by book value of common equity. *CF* is cash flow ratio and is calculated as the cash flows from operations divided by total assets at the end of year  $t$ . *Delta\_NWC* is the change in net working capital ratio, calculated as the change in current

---

<sup>8</sup> Note that although state-owned enterprises are ultimately controlled by the state, these firms also have outside equity holders. Therefore, extracting wealth from state-owned enterprises is not a game by the government to move money from one pocket to the other; rather, it will have detrimental effect on the outside minority shareholders.

assets minus current liabilities from year  $t-1$  to year  $t$  divided by total assets at the end of year  $t$ . *Size* is the natural logarithm of the book value of total assets in millions of *Yuan* at the end of year  $t$  and is taken as a proxy for firm size.

We require our sample to have non-missing firm-year observations and exclude firms operating in the financial industry. We also exclude firms with certain firm-level financial ratios (cash holdings and leverage) that are negative or above 1 to minimize the data error problem. Finally, we winsorize all our control variables at the 1<sup>st</sup> and 99<sup>th</sup> percent levels to make sure that our results are not attributed to outliers in the data. Table 1 outlines the sample selection process.

[Insert Table 1 here]

Overall, our pooled sample consists of 9,743 firm-year observation (7,295 for SOEs and 2,448 for private firms) for firms in 29 provinces in China. Among private firms, political connection data of 804 firms-year observations are missing. Therefore, the number of firm-year observations analyzed in our private-firm subsample in tests involving political connections is 1,644. The sample period is from 1999 to 2007. Provinces with the largest number of observations are Shanghai and Guangdong (with more than 1,000 firm-year observations) and provinces with the lowest number of observation are Ningxia and Qinghai (with less than 100 firm-year observation).

Panel B presents the descriptive statistics of the firm-level variables for the pooled sample. 25 percent of our sample firms are classified to be private enterprises, with the largest percentage of private firms in Hainan (47 percent) and the smallest percentage in Jiangxi and Tianjin (5 percent). In addition, the largest shareholder, on average, owns 41 percent of the shares, with a

standard deviation of 17 percent, and a minimum (maximum) shareholding ratio of 11 and 77 percent respectively.

The mean *Cash* and *Invest* are about 15 percent, with standard deviations of 11 and 21 percents respectively. In terms of the distribution by province, Jilin (Beijing) has the lowest (largest) *Cash* of 9 (20) percent; and Shanghai (Guangxi) has the lowest (highest) *Invest* of 10 (25) percent respectively.

As for the other control variables, the mean (standard deviation) of *CF* are about 5 (8) percent; the mean (standard deviation) of *Q* is 2.4 (1.5); the mean (standard deviation) of *LEV* is 48 (18) percent; the mean (standard deviation) of *Delta\_NWC* is -2 (9) percent; the mean (standard deviation) of *Capx* is 8 (9) percent; and the mean (standard deviation) of *Size* is 7.4 (1) respectively.

[Insert Table 2 here]

The correlations between the provincial-level institutional indices and our two main firm-level financial variables of interest (*Cash* and *Invest*) are presented in Table 2. We observe that the *Cash* is negatively correlated to *Invest* and positively correlated to all four measures for the strength of institutions. On the other hand, *Invest* is negatively correlated to all proxies for institutional development. The correlation coefficients are mostly significant and range from -0.22 to -0.41. Meanwhile, the correlations among the four provincial-level indices are high and significant at least at the 5 percent level, with magnitudes ranging from 0.36 to 0.84.

[Insert Table 3 here]

## 4. Empirical Results and Discussions

### 4.1 The Implication of Political Extraction on Corporate Policies

Our first empirical task is to examine the role of ownership structure and institutional development on firms' liquidity management and investment policies, in response to the threat of political extraction in China. We estimate equation (1) using ordinary least squares (*OLS*) regressions for the pooled sample as follows:

$$\begin{aligned} Cash_{i,t} = & a_o + b_1 Private_i + b_2 Institutional_i + b_3 (Private_i \times Institutional_i) \\ & + \sum_{n=1}^N c_n Controls_{n,t} + \sum_{t=2}^T d_t Year_t + \sum_{k=2}^K e_k Industry_k + u_{i,t}, \end{aligned} \quad (1)$$

where the dependent variables are cash holdings (*Cash*) by firm *i* in year *t* respectively. *Private* is a dummy variable that represents firms controlled by private entrepreneurs. *Institutional* is one of the four provincial-level institutional indices. In all our regressions, we include dummies to control for industry and year fixed-effects.  $u_{i,t}$  is an error term that is assumed to be independent of the explanatory variables. To mitigate the problems of serial auto-correlation and heteroskedasticity, we estimate White's heteroskedasticity-corrected robust standard errors, clustered by firm as suggested by Petersen (2009).<sup>9</sup> In addition, we control for other firm-specific characteristics which previous studies (such as Opler et al. (1999), Dittmar et al. (2003), Kalcheva and Lins (2007), and Harford et al. (2008)) find to be important determinants of cash holdings, including: *Largest*, *CF*, *Q*, *Lev*,  $\Delta NWC$ , and *Size*.

We estimate equation (1) for each of the four *Institutional* variables to control for provincial-level effects and present the findings in Table 4. Our variable of interest is the coefficients  $b_1$  and  $b_2$ . The predictions from H1A are that the coefficient of  $b_1$  is *negative* and  $b_2$  is *positive* in the

---

<sup>9</sup> We also estimate province random-effects model and obtain qualitatively similar results. However, the appropriateness of the random-effects model is rejected by the Hausman test.

cash holdings regressions. From the results in Table 4, we document evidences that private firms are more likely to decrease their cash holdings in response to the threat of political extraction. One possible reason is that cash and cash equivalents is the most vulnerable asset (Myers and Rajan, 1998) and as a result, private firms in China will structure their assets in such a way so as to prevent assets from being extracted by government bureaucrats. On average, private enterprises will hold 1.5 percent to 2.8 percent less cash as a percentage of total assets, as compared to state-owned firms.

Meanwhile, the coefficient of  $b_2$  is positive and significant at the 10 percent level in three out of the four specifications. In other words, firms located in provinces with strong institutions face a smaller threat of being political extraction, and these firms can afford to hold more cash than their counterparts that are located in provinces with weak institutions. The results for the provincial-level indices corroborate Caprio et al. (2009)'s finding in their cross-country study. Likewise, the economic significance of the result is quite substantial. Holding other variables constant, a one standard deviation increase in the *Decentr* index will result in a 0.52 (for state-owned firms) and 1.42 percent (for private firms) increase in firms' cash holdings.<sup>10</sup>

Moreover, we also find that the coefficient of the interaction term between *Private* and *Institution*,  $b_3$ , is positive and statistically significant at the 5 percent levels in all the four specifications. This implies that the inverse relationship between cash holdings and the private firm dummy variable is more pronounced for those provinces with weaker institutions.

As for the other control variables, most are significantly correlated to cash holdings in the expected manner. In particular, firms with lower leverage and change in net working capital; and those with larger cash flow and investment opportunities are found to hold more cash.

---

<sup>10</sup> For state-owned firms, the change in cash holdings =  $0.018 \times 0.29 = 0.52$  percent. For private firms, the change in cash holdings =  $0.018 \times 0.29 + 0.031 \times 0.29 = 1.42$  percent.



Interestingly, we find that cash holdings is positively and significantly related to firm size (with p-values below 0.01 in all specifications), which is inconsistent with the finding in the existing literature by Opler et al. (1999) and Dittmar et al. (2003).

[Insert Table 4 here]

Since we argue that private firms and firms located in provinces with weaker institutions hold less cash in response to the threat of political extraction, the next task is to empirically investigate whether firms will convert the cash into fixed assets which are more difficult to extract. We test this proposition by estimating equation (2) below using *OLS* regressions:

$$\begin{aligned}
 Invest_{i,t} = & a_o + b_1 Private_i + b_2 Institutional_i + b_3 (Private_i \times Institutional_i) \\
 & + \sum_{n=1}^N c_n Controls_{n,t} + \sum_{t=2}^T d_t Year_t + \sum_{k=2}^K e_k Industry_k + u_{i,t},
 \end{aligned} \tag{2}$$

where the dependent variables are the net investments spending (adjusted by dividends) by firm  $i$  in year  $t$  respectively. All other variables are as defined earlier.

As argued in the section on hypothesis development, we do not have any apriori prediction on the sign of the coefficient of  $b_1$ . However, H1B still predicts that the coefficient of  $b_2$  should be **negative** in the investment regressions. The results in displayed in Table 5. As predicted, our results for the provincial-level institutional indices are similar to that in Caprio et al. (2009), in that there exists a positive relationship between the likelihood of political extraction and firms' net investments spending. In other words, as firms located in provinces with stronger institutions face less threat of being politically extracted, they have less incentives to structure their assets from liquid assets (cash) to less-liquid assets (investments), leading to these firms holding more cash and thus spending less on investments.

Although we do not find any significant association between the private firm dummy variable (*Private*) and net investments spending, the coefficient of the interaction term between *Private* and *Institution* exhibits positive sign and is statistically significant at least at the five percent level in three out of the four specifications. In terms of economic significance, holding other variables constant, a one standard deviation increase in the *Decentr* index leads to a 0.7 (private firms) to 2.1 percent (state-owned firms) decrease in firms' net investments spending.<sup>11</sup>

The interpretation of the result is as follows: on one hand, we should expect private firms to divert their resources from cash to spending more in terms of investments as a means to protect their assets from being extracted. On the other hand, state-owned enterprises will tend to invest more than the former from the perspective of the soft-budget constraint. Therefore, the current results we have are insufficient to draw inference about the impact of ownership structure on investments.

[Insert Table 5 here]

In sum, our results so far have documented evidence that ownership structure and institutional development influence firms' liquidity management and investments policies, in response to the threat of political extraction in China. Specifically, private firms, especially those located in provinces with weak institutions, are subject to a greater likelihood of political extraction. One possible way these firms can get around this problem is to structure their assets by reducing their cash holdings (which are most vulnerable to extraction) and in turn utilize the cash by increasing their investments in fixed assets (which are harder to extract).

---

<sup>11</sup> For state-owned firms, the change in investment spending =  $-0.073 \times 0.29 = -2.1$  percent. For private firms, the change in investment spending =  $-0.073 \times 0.29 + 0.049 \times 0.29 = -0.7$  percent.

## 4.2 The Role of Political Connections

In this sub-section, we investigate the role of political connections on the implications of political extraction in China. Based on previous studies, we posit that politically connected private firms (central state firms) may have greater abilities to resist political extraction than non-connected firms (local state firms, and therefore may hold more cash and invest less than the latter.

Our first prediction of H2 is with regards to the effect of political connections on firms' cash holdings in China. We estimate equations (3) and (4) using *OLS* regressions for the sample of private and state-owned firms in China as follows:

$$\begin{aligned} Cash_{i,t} = & a_o + b_1 Conn\_Priv_{i,t} + b_2 Institutional_i + b_3 (Conn\_Private_{i,t} \times Institutional_i) \\ & + \sum_{n=1}^N c_n Controls_{n,t} + \sum_{t=2}^T d_t Year_t + \sum_{k=2}^K e_k Industry_k + u_{i,t}, \end{aligned} \quad (3)$$

$$\begin{aligned} Cash_{i,t} = & a_o + b_1 Conn\_SOE_{i,t} + b_2 Institutional_i + b_3 (Conn\_SOE_{i,t} \times Institutional_i) \\ & + \sum_{n=1}^N c_n Controls_{n,t} + \sum_{t=2}^T d_t Year_t + \sum_{k=2}^K e_k Industry_k + u_{i,t}, \end{aligned} \quad (4)$$

where *Conn\_Priv* and *Conn\_SOE* are dummy variables that represents private firms with politically-connected executives and state-owned firms whose ultimate owners are the central government respectively. All other variables are as defined earlier.

H2 predicts that the coefficient  $b_1$  should be **positive** in the cash holdings regressions. The results for private firms are presented in Panel A of Table 6. Although the coefficient  $b_1$  is found to be mostly positive, with magnitudes ranging from 0.018 to 0.059, it is only statistically significant at the five percent level in the specification with *Mkt2* as the institutional index. More importantly, the interaction coefficient between *Conn\_Pri* and *Institution* is negative and statistically significant at least at the ten percent level in three out of four specifications. In other

words, politically connected private firms can afford to hold more cash as the established connections mitigate the threat of political extraction and this relationship is found to be more pertinent for firms located in provinces with weaker institutions.

For the state-owned enterprises, we observe from the results in Panel B of Table 6 that the coefficient  $b_1$  is positive and significant at least at the ten percent level in two out of four specifications, suggesting that central-state firms tend to hold more cash than local-state firms. None of the interaction coefficient between *Conn\_SOE* and *Institution* is significant at the conventional level of significance. All other control variables in Table 6 exhibit similar association with cash holdings as in Table 4.

[Insert Table 6 here]

Our second prediction of H2 entails the role of political connections on firms' net investments spending in China. We estimate equations (5) and (6) below using *OLS* regressions for the sample of private and state-owned firms respectively:

$$\begin{aligned} Invest_{i,t} = & a_o + b_1 Conn\_Priv_{i,t} + b_2 Institutional_i + b_3 (Conn\_Private_{i,t} \times Institutional_i) \\ & + \sum_{n=1}^N c_n Controls_{n,t} + \sum_{t=2}^T d_t Year_t + \sum_{k=2}^K e_k Industry_k + u_{i,t}, \end{aligned} \quad (5)$$

$$\begin{aligned} Invest_{i,t} = & a_o + b_1 Conn\_SOE_{i,t} + b_2 Institutional_i + b_3 (Conn\_SOE_{i,t} \times Institutional_i) \\ & + \sum_{n=1}^N c_n Controls_{n,t} + \sum_{t=2}^T d_t Year_t + \sum_{k=2}^K e_k Industry_k + u_{i,t}, \end{aligned} \quad (6)$$

where all variables are as defined earlier.

The prediction from H2 is that the coefficient  $b_1$  should be **negative** in the investments regressions. The results from Panel A Table 7 validate our prediction as the politically connected dummy variable is negatively correlated to net investments spending in all four specifications,

and it is statistically significant at least at the ten percent level in two specifications. In terms of economic significance, private firms with political connections spend 4 to 11 percent less in terms of investments out of total sales, as compared to their non-connected peers.

Moreover, we find that the interaction coefficient between *Conn\_Pri* and *Institution* is positive in all specifications and it is statistically significant at the one percent level in the specification with *Legal* as the institutional index. The results indicate that the negative relationship between political connection and investment is more significant for private firms in provinces with weak institutions.

The results for the state-owned firms, as presented in Panel B of Table 7, are in general stronger than that for the private firms. We find that state-owned firms connected to the central government, on average, spend less on investments as compared to their non-connected counterparts. The interaction coefficient between *Conn\_SOE* and *Institution* is now positive and significant at the five percent level in two out of four specifications, suggesting that the difference in investment levels between central and local-state firms shrinks with the development of institutions. Likewise, the signs and magnitudes of the coefficients of the other control variables in Table 7 are consistent with that found in Table 5.

To summarize, we find evidence that political connections mitigate the problem of political extraction. We have illustrated that politically connected firms have more incentives to hoard cash reserves and pursue less investments.

[Insert Table 7 here]

### 4.3 Robustness Tests

In this sub-section, we perform several robustness tests to ensure that our results are not sensitive to any measurement errors, changes in specifications, or endogeneity among the variables.

#### 4.3.1 Measures of Political Extraction

In the analysis we have conducted so far, we argue that private enterprises and firms located in provinces with weak institutions indeed suffer from higher threats of political extraction. We test whether this is indeed the case by using the total amount of taxes and fees (adjusted by subsidy from the government) paid by the firms as a measure the extent of political extraction.<sup>12</sup>

We estimate *OLS* regressions for the pooled sample as follows:

$$\begin{aligned} Tax\_Fees_{i,t} = & a_o + b_1 Private_i + b_2 Institutional_i + b_3 (Private_i \times Institutional_i) \\ & + \sum_{n=1}^N c_n Controls_{n,t} + \sum_{t=2}^T d_t Year_t + \sum_{k=2}^K e_k Industry_k + u_{i,t}, \end{aligned} \quad (7)$$

where the dependent variable is the taxes and fees ratio (*Tax\_Fees*) of firm *i* in year *t*. We also control for other firm-specific determinants of effective tax rates paid by firms as documented by Zimmerman (1983), Watts and Zimmerman (1986), and Gupta and Newberry (1997).

Using *Mkt2* as the institutional development index, we document that the private firm dummy variable exhibits positive (magnitude = 0.024) and significance association (with *t*-stats = 2.55) with total taxes and fees ratio.<sup>13</sup> In addition, the coefficient on *Mkt2* is negative (magnitude of -0.043) and highly significant (with *t*-stats = -8.46). We further interact both

---

<sup>12</sup> We use this measure as they constitute an important source of revenue for the local provincial governments, and they are an important form of political extraction as indicated by Capiro et al. (2009). *Tax\_Fees* has a mean of 7 percent and a standard deviation of 6 percent. The true amount that is extracted from the firm by politicians may be larger than the reported taxes and fees, as it may include bribes (which are unreported in the accounts).

<sup>13</sup> The results are qualitatively and quantitatively similar if we replace *Decentr* with the other measure of economic institutions.

*Private* and *Mkt2* and we find that the coefficient of the interaction term,  $b_3$ , is negative and weakly significant at the 10 percent level.

In terms of the other control variables, we document that large firms will pay significantly higher taxes and fees. This finding supports the political-cost theory proposed by Zimmerman (1983) and Watts and Zimmerman (1986). Leverage is negatively related to the tax ratios since higher leverage will increase the interest expenses, which is tax-deductible. Moreover, firms with larger cash flow, investment opportunities, investments in fixed assets and those whose largest shareholder owned a greater proportion of shares also pay more taxes and fees. Thus, our findings validate the numerous anecdotal evidences that private enterprises and those firms located in provinces with weak (less developed) institutions indeed suffer from a higher threat of political extraction as these firms will need to pay higher taxes and discretionary fees to the governments.

#### ***4.3.2 Alternative Specifications***

Our findings are based on regressions using firm-year observations. We also perform regressions using aggregated data across all years for each of the province, using Fama-MacBeth (1979) methodology, dividing our sample into two sub-periods (1999-2003 and 2004-2007), an alternative measure of cash holdings (computed as cash and cash equivalents divided by total sales), including a dummy variable for firms that pay dividends, and including lagged vales of the dependent variables (*Cash* and *Invest*) in the specifications.<sup>14</sup> The main results that we obtain previously remain unchanged regardless of the changes in specifications.

---

<sup>14</sup> The results are available upon request from the authors.

### ***4.3.2 Endogeneity Issues***

We acknowledge that our results may be driven by the endogenous relationships between the dependent and independent variables. For example: the low liquidity that we find in private firms could be a consequence of extraction (since these firms have to pay higher taxes and fees), rather than a strategy to avoid extraction by lowering cash holdings.

As mentioned by Caprio et al. (2009), if the low cash holdings are consequences of higher taxes and fees, ex-ante, we should observe that private firms and firms located in provinces with weaker institutions to reserve more cash to cater for their normal operations as well as for the payoffs to politicians if the amount and timing of such expenses are highly uncertain, which imply that we should expect to see a positive (negative) relationship between cash holdings and the private firm dummy variable (institutional index). Ex-post, after the payoffs have been made, we should not expect to see any relationships between cash holdings with the private firm dummy variable or the institutional index. However, these predictions are contrary to the negative relationship between cash holdings and the threat of political extraction that we have established in our findings.

Finally, in testing the role of political connection in mitigating the effects of political extraction, we assume that the connection variables to be exogenous. Ex-ante, firms that are more likely to suffer from extraction will have stronger incentives to build connections with politicians. In this respect, we use a two-stage least-squares approach (2SLS): in the first-stage regression, we use the private firm dummy variable and the institutional index as instruments in the firms' decision to build political connection. We further control for other variables which prior studies find to be important determinants of political connection. In the second-stage regression, we use the explained value of connection as an independent variable in the cash



holdings and investment regressions. Again, the main results remain unchanged after controlling for the endogeneity of the measure of political connection.

## **5. Conclusions**

Buiding on the analysis by Caprio et al. (2009) on the incentives of firms to structure their assets to protect valuable and vulnerable resources from being extracted by government bureaucrats, we examine how ownership structure, institutional development and political connections influence corporate decisions for listed firms, in response to the threat of political extraction in China. One important finding from our paper is that in addition to provincial-level institutional factors, firms' ownership characteristics (whether these firms are state-owned or private enterprises) also matter in firms' liquidity management and investments policies. Specifically, as private enterprises and firms located in provinces with weak (less developed) institutions typically face higher risk of political extraction, managers of these firms have incentives to protect their assets from the being extracted through holding less cash (which are easier to extract) and pursuing more investments in fixed assets (which are harder to extract). Moreover, we also find that politically connected firms have greater abilities to resist political extraction, and thus have more tendencies to accumulate cash reserves and spend less on investments than the non-connected firms.

The increasing contribution of the private sector to China's GDP cannot be ignored, despite the fact that they are competing at an uneven playing field to their state-owned counterparts. We show that the threat of political extraction (especially for private firms located in provinces with weaker institutions) may cause these firms to adopt corporate policies that will not represent the most optimum and efficient ones. In relationship-based transitional economies such as China,

private firms will also need to invest in political capital to mitigate the threat of political extraction. Gradually, with the liberalization of international capital markets, it is even more compelling for Chinese regulators to instill reforms in financial and legal systems such that the problem of extraction is minimized.

## References

- Allen, F., Qian, J., Qian, M. 2005. Law, finance, and economic growth in China. *Journal of Financial Economics* 77, 57-116.
- Berkman, H., Cole, R., Fu, J. 2010. Political connections and minority-shareholder protection: Evidence from securities-market regulations in China. Forthcoming in *Journal of Financial and Quantitative Analysis*.
- Brand, L., Li, H. 2003. Bank discrimination in transition economies: ideology, information or incentives? *Journal of Comparative Economics* 30, 781-811.
- Caprio, L., Faccio, M., McConnell, J. 2009. Sheltering corporate assets from political extraction. Working paper, Purdue University.
- Chaney, P., Faccio, M., Parsley, D. The quality of accounting information in politically connected firms. Forthcoming in *Journal of Accounting Research*.
- Chen, C., Li, Z., Su, X., Sun, Z. 2010a. Rent seeking incentives, political connection, and the control structure of private firms: Chinese evidence. Forthcoming in *Journal of Corporate Finance*.
- Chen, S., Sun, Z., Tang, S., Wu, D. 2010b. Government intervention and investment efficiency: Evidence from China. Forthcoming in *Journal of Corporate Finance*.
- Cheung, Y., Rau, P., Stouraitis, A. 2010. Helping hand or grabbing hand? Central vs. local government shareholders in Chinese listed firms, *Review of Finance* 14, 669-694.
- Cull, R., Xu, L. 2005. Institutions, ownership, and finance: The determinants of profit reinvestment among Chinese firms. *Journal of Financial Economics* 77, 117-146.
- Claessens, S., Feijen, E., Laeven, L. 2008. Political connections and preferential access to finance: The role of campaign contributions. *Journal of Financial Economics* 88, 554-580.
- Dittmar, A., Jahn Mahrt-Smith, J., Servaes, H. 2003. International corporate governance and corporate cash holdings. *Journal of Financial and Quantitative Analysis* 38, 111-134.
- Faccio, M. 2006. Politically connected firms. *American Economic Review* 96, 369-386.
- Faccio, M. 2010. Differences between politically connected and non-connected firms: A cross-country analysis. *Financial Management* 39, 905-928.
- Faccio, M., Masulis, R. W. and McConnell, J. J. 2006. Political connections and corporate bailouts. *Journal of Finance* 61: 2597-1635.

- Fama, E., MacBeth, J., 1973. Risk, returns, and equilibrium: Empirical tests. *Journal of Political Economy* 81, 607-638.
- Fan, G., Wang, X. 2001, NERI index of marketization of China's provinces. Economics Science Press, Beijing.
- Fan, J., Wong, T., Zhang, T. 2007. Politically connected CEOs, corporate governance, and post-IPO performance of China's newly partially privatized firms. *Journal of Financial Economics* 84, 330-357.
- Fan, J., Rui, M., Zhao, M. 2008. Public governance and corporate finance: Evidence from corruption cases. *Journal of Comparative Economics* 36, 343-364.
- Fan, J., Huang, J., Oberholzer-Gee, F., Zhao, M. 2008. Corporate diversification in China: Causes and consequences. Working paper, Chinese University of Hong Kong.
- Fishman, R. 2001. Estimating the value of political connections. *American Economic Review* 91, 1095-1102.
- Gupta, S., Newberry, K. 1997. Determinants in the variability in corporate effective tax rates: Evidence from longitudinal data. *Journal of Accounting and Public Policy* 16, 1-34.
- Harford, J., Mansi, S., Maxwell, W. 2008. Corporate governance and firm cash holdings in the US. *Journal of Financial Economics* 87, 535-555.
- Hung, M., Wong, T., Zhang, T. 2008. Political relations and overseas stock exchange listing: Evidence from Chinese state-owned enterprises. Working paper, Chinese University of Hong Kong.
- Lin, J., Tan, G. 1999. Policy burdens, accountability, and the soft budget constraint, *American Economic Review* 89, 426-431.
- Leuz, C., and Oberholzer-Gee, F. 2006. Political relationships, global financing, and corporate transparency: Evidence from Indonesia. *Journal of Financial Economics* 81: 411-439.
- Jin, H., Qian, Y., Weingast, B. 2005. Regional decentralization and fiscal incentives: Federalism, Chinese style. *Journal of Public Economics* 80, 1719-1742.
- Johnson, S., Kaufmann, D., McMillan, J., Woodruff, C. 2000. Why do firms hide? Bribes and unofficial activity after communism. *Journal of Public Economics* 76, 495-520.
- Kalcheva, I., Lins, K., 2007. International evidence on cash holdings and expected managerial agency problems. *Review of Financial Studies* 20, 1087-1112.
- Kim, C., Mauer, D., Sherman, A. 1998. The determinants of corporate liquidity: theory and evidence. *Journal of Financial and Quantitative Analysis* 33, 305-334.

- Keynes, J. 1936. *The General Theory of Employment, Interest, and Money*. London: Macmillan.
- Kornai, J. 1986. The soft budget constraint. *Kyklos* 39, 3 -30.
- Kornai, J., Maskin, M., Roland, G. 2003. Understanding the soft budget constraint. *Journal of Economic Literature* 41, 1095 – 1136.
- Li, H., Meng, L., Wang, Q., and Zhou, L. 2008. Political connections, financing, and firm performance: Evidence from Chinese private firms. *Journal of Development Economics* 87, 283-299.
- Lu, S., Yao, Y. 2009. The effectiveness of law, financial development, and economic growth in an economy of financial repression: Evidence from China. *World Development* 37, 763-777.
- Mian, A., Khwaja, A. 2005. Do lenders favor politically connected firms? Rent provision in an emerging market. *Quarterly Journal of Economics* 120, 1371-1411.
- Opler, T., Pinkowitz, L., Stulz, R., Williamson, R. 1999. The determinants and implications of corporate cash holdings. *Journal of Financial Economics* 52, 3-46.
- Petersen, M. 2009. Estimating standard errors in finance panel data sets: Comparing approaches. *Review of Financial Studies* 22, 435-480.
- Pinkowitz, L., Stulz, R., Williamson, R. 2006. Does the contribution of cash holdings and dividends to firm value depend on governance? A cross-country analysis. *Journal of Finance* 61, 2725-2751.
- Piotroski, J., Wong, T., Zhang, T. 2009, The financial reporting practice of state-controlled firms: Evidence from China. Working paper, Chinese University of Hong Kong.
- Sapienza, P. 2004. The effects of government ownership on bank lending. *Journal of Financial Economics* 72, 357–384.
- Shleifer, A., Vishy, R. 1994, Politicians and firms. *Quarterly Journal of Economics* 109, 995-1025.
- Watts, R., Zimmerman, J. 1986. *Towards a Positive Theory of Accounting*. Englewood Cliffs, NJ, Prentice Hall.
- Yao, Y., Yueh, L. 2009. Law, finance, and economic growth in China: An introduction. *World Development* 37, 753-762.
- Zhang, X. 2006. Fiscal decentralization and political decentralization in China: Implications for growth. *Journal of Comparative Economics* 34, 713-726.

Zhou, W. 2009. Bank financing in China's private sector: The payoffs of political capital. *World Development* 37, 787-799.

Zimmerman, J. 1983. Taxes and firm size. *Journal of Accounting and Economics* 5, 119-149.

**Appendix 1**  
Variables definitions

Variable name	Definition
<i>Firm-level governance attributes</i>	
<i>Private</i>	Dummy variable, which equals 1 if the ultimate owner is not the government or state-owned enterprises; or 0 otherwise.
<i>Conn_Priv</i> (Private firms)	Dummy variable, which equals 1 if one or more of its executives or directors are (were) government officials .or 0 otherwise
<i>Conn_SOE</i> (State-owned enterprises)	Dummy variable, equals to 1 if the ultimate owner is central instead of local government; and 0 otherwise.
<i>Largest</i>	The shareholding ratio of the largest shareholder
<i>Provincial-level institutional indices</i>	
<i>Decentr</i>	The National Economics Research Institute ( <i>NERI</i> ) Index of Government Decentralization from Fan and Wang (2001). The index is constructed by the following information: (1) the provincial government's spending as a percentage of provincial GDP; (2) the tax rates in the province; (3) the time spent by entrepreneurs in dealing with the bureaucracy; and (4) the time needed for firm registration and to obtain various licenses, obtained from Fan and Wang (2001).
<i>Mkt1</i>	The National Economics Research Institute ( <i>NERI</i> ) Index of Marketization from Fan and Wang (2001). The index captures the following aspects of regional market development: (1) relationship between government and market; (2) development of non-sate business; (3) development of product markets; (4) development of factor markets; (5) development of market intermediaries and legal environment.
<i>Mkt2</i>	Market Index from Li et al. (2008). The proportion of total fixed investment in a province that comes from private enterprises
<i>Legal</i>	Legal effectiveness index from Feng and Yao (2009), calculayed as the natural logarithm of cases received by the court per mission of population from 1991 to 2001.
<i>Firm-level financial variables</i>	
<i>Cash</i>	Cash holdings ratio, calculated as cash and cash equivalents divided by total assets.
<i>Invest</i>	Investment ratio, calculated as net capital expenditures divided by total sales.
<i>Q</i>	Tobin's <i>Q</i> , calculated as the market value of equity plus the book value of liability divided by book value of total assets.
<i>Lev</i>	Leverage ratio, calculated as total debt divided by total assets.
<i>CF</i>	Cash flow ratio, calculated as net cash flow from operating divided by total assets.
<i>Capx</i>	Capital expenditures ratio, calculated as capital expenditures divided by total assets.
<i>Delta_NWC</i>	Change in net working capital ratio, calculated as the change in net working capital divided by total assets.
<i>Size</i>	Size of the firm, calculated as the natural logarithm of total assets.

**Table 1**  
Sample selection process

	Number of firm-year observations
Population	11,224
Excludes:	
Firms in financial sector	127
Missing annual change variables due to new listing	732
Firms which are located in the provinces with missing institutional indices	281
Negative total assets or total sales	4
Negative ratios or ratios above 1 on other control variables	321
Missing other accounting or control variables	16
Final pooled sample	9,743
State-owned enterprises sample	7,295
Private firms sample	1,644 (*)

Note: This table details the sample selection process. The population consists of all listed companies on the Shanghai Stock Exchange and Shenzhen Stock Exchange during the sample period 1999 to 2007.

\* 804 firm-year observations are excluded from the subsample regressions due to missing political connection data.



**Table 2**  
Descriptive statistics

Panel A: Provincial-Level								
Province	N	<i>Decentr</i>	<i>Mkt1</i>	<i>Mkt2</i>	<i>Legal</i>	<i>Cash</i>	<i>Invest</i>	<i>Private</i>
Anhui	286	0.824	0.657	0.707	0.513	15.44%	16.48%	13.29%
Beijing	579	0.630	0.510	0.758	0.738	19.57%	13.77%	12.26%
Fujian	357	0.765	0.949	0.960	0.592	12.90%	11.45%	39.50%
Gansu	141	0.544	0.388	0.493	0.339	12.11%	14.58%	14.89%
Guangdong	1091	0.929	1.000	1.000	0.527	14.20%	14.58%	27.22%
Guangxi	163	0.910	0.583	0.691	0.249	12.73%	25.19%	24.54%
Guizhou	116	0.448	0.325	0.482	0.164	19.08%	10.63%	12.93%
Hainan	170	0.559	0.662	0.859	0.000	10.46%	24.14%	47.06%
Hebei	246	0.767	0.655	0.903	0.524	11.00%	13.74%	12.60%
Heilongjiang	255	0.105	0.410	0.659	0.705	11.53%	14.46%	30.59%
Henan	239	0.469	0.514	0.755	0.577	14.52%	16.63%	17.15%
Hubei	465	0.388	0.505	0.660	0.510	12.61%	17.28%	25.81%
Hunan	309	0.505	0.490	0.752	0.804	15.40%	17.00%	28.16%
Inner Mongolia	157	0.043	0.354	0.686	0.241	14.68%	19.74%	19.75%
Jiangsu	615	0.953	0.926	0.859	0.943	18.64%	12.26%	35.28%
Jiangxi	169	0.583	0.477	0.705	0.519	15.92%	15.38%	4.73%
Jilin	271	0.499	0.490	0.703	0.611	9.27%	17.93%	26.57%
Liaoning	397	0.582	0.633	0.769	0.823	12.87%	15.79%	25.94%
Ningxia	82	0.141	0.220	0.537	0.279	10.30%	22.24%	9.76%
Qinghai	72	0.000	0.076	0.583	0.085	11.35%	14.56%	37.50%
Shaanxi	186	0.424	0.241	0.546	0.280	14.28%	16.43%	24.19%
Shandong	552	0.814	0.784	0.876	0.875	13.52%	13.97%	23.01%
Shanghai	1083	0.835	0.719	0.947	1.000	15.32%	10.46%	20.78%
Shanxi	170	0.281	0.321	0.561	0.174	14.82%	16.23%	6.47%
Sichuan	520	0.824	0.521	0.829	0.431	13.56%	14.33%	34.42%

Tianjin	173	0.565	0.708	0.991	0.655	16.08%	15.86%	4.62%
Xinjiang	183	0.023	0.000	0.745	0.845	11.94%	20.66%	29.51%
Yunnan	163	0.660	0.374	0.530	0.187	18.04%	16.06%	17.18%
Zhejiang	533	1.000	0.980	0.974	0.950	16.58%	14.14%	45.97%
Mean		0.554	0.534	0.742	0.522			
Std Dev		0.292	0.254	0.157	0.283			
Panel B: Pooled Sample								
	N	Mean	Median	Std Dev	Min	P25	P75	Max
<i>Cash</i>	9,743	14.59%	12.09%	10.82%	0.39%	6.92%	19.63%	50.94%
<i>Invest</i>	9,743	14.86%	7.27%	21.39%	0.04%	2.51%	17.63%	128.08%
<i>CF</i>	9,743	4.94%	4.79%	7.93%	-19.64%	0.69%	9.30%	27.82%
<i>Q</i>	9,743	2.35	1.88	1.46	0.87	1.36	2.83	8.76
<i>Lev</i>	9,743	48.12%	48.62%	18.49%	8.10%	35.15%	61.36%	92.36%
<i>Delta_NWC</i>	9,743	-1.50%	-0.91%	9.18%	-35.03%	-5.51%	3.21%	23.76%
<i>Capx</i>	9,743	7.82%	6.58%	9.30%	-17.85%	1.98%	12.74%	37.21%
<i>Size</i>	9,743	7.38	7.29	0.95	5.34	6.74	7.96	10.20
<i>Largest</i>	9,743	41.25%	39.40%	16.93%	10.95%	27.84%	54.55%	76.82%
<i>Private</i>	9,743	0.25	0.00	0.43	0.00	0.00	1.00	1.00

Note: Panel A of this table presents the mean of the four institutional indices (*Decentr*, *Mkt1*, *Mkt2*, and *Legal*), *Cash*, *Invest*, and *Private*; by provinces. Panel B presents the descriptive statistics of the firm-specific control variables for the pooled sample. All firms-specific financial and control variables are as defined in the Appendix 1. The sample period is from 1999 to 2007.

**Table 3**  
Correlation analysis

	<i>Cash</i>	<i>Invest</i>	<i>Decentr</i>	<i>Mkt1</i>	<i>Mkt2</i>	<i>Legal</i>
<i>Cash</i>	1					
<i>Invest</i>	-0.470***	1				
<i>Decentr</i>	0.350*	-0.310*	1			
<i>Mkt1</i>	0.220	-0.330*	0.840***	1		
<i>Mkt2</i>	0.040	-0.220	0.590***	0.800***	1	
<i>Legal</i>	0.210	-0.410**	0.360**	0.470***	0.600***	1

Note: This table presents the correlation matrix among the provincial-level institutional indices and the two firm-level financial variables (*Cash* and *Invest*). All firms-specific financial and control variables are as defined in the Appendix 1. \*, \*\*, \*\*\* denotes statistical significance at the 10%, 5%, and 1% levels respectively. The sample period is from 1999 to 2007.

**Table 4**

Ownership structure, institutional development, and liquidity management policies

	(1)	(2)	(3)	(4)
	<i>Decentr</i>	<i>Mkt1</i>	<i>Mkt2</i>	<i>Legal</i>
<i>Private</i>	-0.018 [-2.81]***	-0.015 [-2.11]**	-0.028 [-1.76]*	-0.015 [-2.06]**
<i>Institution</i>	0.018 [3.73]***	0.010 [1.74]*	0.013 [1.29]	0.017 [3.16]***
<i>Private</i> × <i>Institution</i>	0.031 [3.67]***	0.028 [2.90]***	0.038 [2.04]**	0.028 [2.90]***
<i>Largest</i>	-0.002 [-0.32]	-0.002 [-0.23]	-0.001 [-0.19]	-0.003 [-0.44]
<i>Q</i>	0.004 [2.92]***	0.004 [3.01]***	0.003 [2.84]***	0.003 [2.93]***
<i>Lev</i>	-0.186 [-28.36]***	-0.185 [-28.29]***	-0.186 [-28.52]***	-0.185 [-28.40]***
<i>CF</i>	0.180 [11.07]***	0.184 [11.27]***	0.183 [11.23]***	0.184 [11.25]***
<i>Delta_NWC</i>	-0.039 [-2.73]***	-0.038 [-2.67]***	-0.039 [-2.70]***	-0.039 [-2.73]***
<i>Capx</i>	-0.011 [-0.97]	-0.010 [-0.89]	-0.009 [-0.76]	-0.009 [-0.79]
<i>Size</i>	0.006 [4.02]***	0.006 [4.02]***	0.006*** [3.89]	0.005 [3.51]***
Year Dummies	Included	Included	Included	Included
Industry Dummies	Included	Included	Included	Included
Adjusted R-square	0.18	0.17	0.17	0.17
N.	9,743	9,743	9,743	9,743

Note: This table presents the coefficient estimates of ordinary least-squares regressions, with *Cash* as the dependent variable. *Private* is a dummy variable that is equal to 1 for entrepreneur-controlled firms; or 0 otherwise. *Institution* is one of the four provincial-level institutional indices: *Decentr*, *Mkt1*, *Mkt2*, and *Legal*. All firms-specific financial and control variables are as defined in the Appendix 1. The *t*-statistics are reported in parentheses. The estimated standard errors are corrected for heteroskedasticity and cross-correlations using the Huber-White estimator, clustered by firm. \*, \*\*, \*\*\* denotes statistical significance at the 10%, 5%, and 1% levels respectively.

**Table 5**  
Ownership structure, institutional development, and investments policies

	(1)	(2)	(3)	(4)
	<i>Decentr</i>	<i>Mkt1</i>	<i>Mkt2</i>	<i>Legal</i>
<i>Private</i>	0.002 [0.17]	0.008 [0.50]	-0.021 [-0.69]	0.025 [1.60]
<i>Institution</i>	-0.073 [-6.59]***	-0.082 [-7.57]***	-0.145 [-7.94]***	-0.063 [-5.97]***
<i>Private</i> × <i>Institution</i>	0.049 [2.71]***	0.045 [2.29]**	0.071 [2.02]**	0.017 [0.85]
<i>Largest</i>	-0.046 [-3.36]***	-0.050 [-3.66]***	-0.049 [-3.62]***	-0.043 [-3.16]***
<i>Q</i>	-0.003 [-1.46]	-0.003 [-1.62]	-0.002 [-1.15]	-0.003 [-1.46]
<i>Lev</i>	-0.077 [-5.88]***	-0.079 [-5.96]***	-0.074 [-5.65]***	-0.078 [-5.91]***
<i>CF</i>	0.118 [4.31]***	0.113 [4.17]***	0.112 [4.13]***	0.108 [3.91]***
<i>Delta_NWC</i>	0.081 [3.13]***	0.080 [3.07]***	0.080 [3.09]***	0.081 [3.09]***
<i>Size</i>	0.012 [4.18]***	0.012 [4.45]***	0.014 [4.90]***	0.013 [4.65]***
Year Dummies	Included	Included	Included	Included
Industry Dummies	Included	Included	Included	Included
Adjusted R-square	0.12	0.12	0.12	0.11
N	9,743	9,743	9,743	9,743

Note: This table presents the coefficient estimates of ordinary least-squares regressions, with *Invest* as the dependent variable. *Private* is a dummy variable that is equal to 1 for entrepreneur-controlled firms; or 0 otherwise. *Institution* is one of the four provincial-level institutional indices: *Decentr*, *Mkt1*, *Mkt2*, and *Legal*. All firms-specific financial and control variables are as defined in the Appendix 1. The *t*-statistics are reported in parentheses. The estimated standard errors are corrected for heteroskedasticity and cross-correlations using the Huber-White estimator, clustered by firm. \*, \*\*, \*\*\* denotes statistical significance at the 10%, 5%, and 1% levels respectively.

**Table 6**  
Political connections and liquidity management policies

Panel A: Private firms				
	(1)	(2)	(3)	(4)
	<i>Decentr</i>	<i>Mkt1</i>	<i>Mkt2</i>	<i>Legal</i>
<i>Conn_Priv</i>	0.018 [1.54]	0.019 [1.62]	0.059 [2.01]**	-0.001 [-0.12]
<i>Institution</i>	0.068 [6.01]***	0.060 [5.24]***	0.122 [4.56]***	0.051 [3.64]***
<i>Conn_Private</i> × <i>Institution</i>	-0.029 [-1.80]*	-0.032 [-2.01]**	-0.073 [-2.06]**	0.005 [0.31]
<i>Largest</i>	0.034 [1.65]*	0.036 [1.73]*	0.037 [1.78]*	0.034 [1.68]*
<i>Q</i>	0.004 [2.00]**	0.004 [1.89]*	0.004 [1.72]*	0.004 [2.04]**
<i>Lev</i>	-0.184 [-11.55]***	-0.181 [-11.31]***	-0.184 [-11.48]***	-0.187 [-11.78]***
<i>CF</i>	0.097 [2.77]***	0.106 [3.05]***	0.102 [2.92]***	0.103 [3.00]***
<i>Delta_NWC</i>	-0.056 [-2.14]**	-0.054 [-2.03]**	-0.056 [-2.13]**	-0.058 [-2.23]**
<i>Capx</i>	-0.031 [-1.26]	-0.023 [-0.94]	-0.021 [-0.83]	-0.023 [-0.94]
<i>Size</i>	0.018 [5.31]***	0.018 [5.25]***	0.017 [5.00]***	0.016 [4.68]***
Year Dummies	Included	Included	Included	Included
Industry Dummies	Included	Included	Included	Included
Adjusted R-square	0.20	0.19	0.19	0.20
N	1,644	1,644	1,644	1,644

Panel B: State-owned enterprises				
	(1)	(2)	(3)	(4)
	<i>Decentr</i>	<i>Mkt1</i>	<i>Mkt2</i>	<i>Legal</i>
<i>Conn_SOE</i>	0.014 [2.10]**	0.011 [1.37]	-0.010 [-0.64]	0.012 [1.65]*
<i>Institution</i>	0.020 [3.66]***	0.011 [1.75]*	0.007 [0.64]	0.017 [2.71]***
<i>Conn_SOE</i> × <i>Institution</i>	-0.001 [-0.11]	0.004 [0.35]	0.027 [1.56]	0.001 [0.09]
<i>Largest</i>	-0.006 [-0.74]	-0.005 [-0.64]	-0.005 [-0.73]	-0.006 [-0.82]
<i>Q</i>	0.002 [1.76]*	0.003 [1.87]*	0.002 [1.77]*	0.003 [1.80]*
<i>Lev</i>	-0.177 [-22.53]***	-0.177 [-22.53]***	-0.177 [-22.73]***	-0.176 [-22.48]***
<i>CF</i>	0.205 [10.39]***	0.207 [10.45]***	0.208 [10.47]***	0.209 [10.58]***
<i>Delta_NWC</i>	-0.041 [-2.46]**	-0.041 [-2.46]**	-0.042 [-2.48]**	-0.041 [-2.42]**
<i>Capx</i>	-0.015 [-1.16]	-0.015 [-1.19]	-0.016 [-1.20]	-0.015 [-1.15]
<i>Size</i>	0.001 [0.82]	0.001 [0.86]	0.001 [0.86]	0.001 [0.57]
Year Dummies	Included	Included	Included	Included
Industry Dummies	Included	Included	Included	Included
Adjusted R-square	0.17	0.17	0.17	0.17
N	7,295	7,295	7,295	7,295

Note: This table presents the coefficient estimates of ordinary least-squares regressions, with *Cash* as the dependent variable. Panel A presents the results for the sample of private firms and Panel B presents the results for the sample of state-owned enterprises respectively. *Conn\_Priv* is a dummy variable, which equals 1 if the chairman or CEO of a private firm is politically connected with government; or 0 otherwise. *Conn\_SOE* is a dummy variable, which equals 1 if the ultimate owner of a state-owned firm is a central (instead of local) government; or 0 otherwise. *Institution* is one of the four provincial-level institutional indices: *Decentr*, *Mkt1*, *Mkt2*, and *Legal*. All firms-specific financial and control variables are as defined in the Appendix 1. The *t*-statistics are reported in parentheses. The estimated standard errors are corrected for heteroskedasticity and cross-correlations using the Huber-White estimator, clustered by firm. \*, \*\*, \*\*\* denotes statistical significance at the 10%, 5%, and 1% levels respectively.

**Table 7**  
Political connections and investment policies

Panel A: Private firms				
	(1)	(2)	(3)	(4)
	<i>Decentr</i>	<i>Mkt1</i>	<i>Mkt2</i>	<i>Legal</i>
<i>Conn_Priv</i>	-0.036 [-1.21]	-0.054 [-1.77]*	-0.080 [-1.10]	-0.106 [-2.80]***
<i>Institution</i>	-0.018 [-0.65]	-0.061 [-2.08]**	-0.095 [-1.48]	-0.100 [-2.96]***
<i>Conn_Private</i> × <i>Institution</i>	0.037 [0.99]	0.065 [1.64]	0.083 [0.98]	0.144 [2.87]***
<i>Largest</i>	0.020 [0.43]	0.024 [0.50]	0.020 [0.42]	0.022 [0.46]
<i>Q</i>	-0.009 [-2.42]**	-0.009 [-2.36]**	-0.009 [-2.29]**	-0.010 [-2.61]***
<i>Lev</i>	-0.244 [-6.83]***	-0.247 [-6.93]***	-0.244 [-6.88]***	-0.232 [-6.68]***
<i>CF</i>	0.102 [1.56]	0.104 [1.59]	0.105 [1.61]	0.101 [1.57]
<i>Delta_NWC</i>	0.047 [0.89]	0.045 [0.86]	0.047 [0.89]	0.044 [0.84]
<i>Size</i>	0.006 [0.68]	0.006 [0.68]	0.007 [0.82]	0.008 [0.87]
Year Dummies	Included	Included	Included	Included
Industry Dummies	Included	Included	Included	Included
Adjusted R-square	0.12	0.12	0.12	0.12
N	1,644	1,644	1,644	1,644



Panel B: State-owned enterprises				
	(1)	(2)	(3)	(4)
Institution	<i>Decentr</i>	<i>Mkt1</i>	<i>Mkt2</i>	<i>Legal</i>
<i>Conn_SOE</i>	-0.049 [-3.04]***	-0.049 [-3.01]***	-0.058 [-1.82]*	0.013 [0.67]
<i>Institution</i>	-0.088 [-6.77]***	-0.095 [-7.63]***	-0.160 [-7.57]***	-0.056 [-4.92]***
<i>Conn_SOE</i> × <i>Institution</i>	0.056 [2.54]**	0.058 [2.45]**	0.059 [1.52]	-0.032 [-1.30]
<i>Largest</i>	-0.050 [-3.32]***	-0.055 [-3.65]***	-0.054 [-3.59]***	-0.047 [-3.16]***
<i>Q</i>	0.000 [0.07]	0.000 [-0.13]	0.001 [0.41]	0.000 [0.05]
<i>Lev</i>	-0.048 [-3.29]***	-0.049 [-3.30]***	-0.043 [-2.90]***	-0.047 [-3.17]***
<i>CF</i>	0.104 [3.11]***	0.100 [2.99]***	0.097 [2.92]***	0.090 [2.67]***
<i>Delta_NWC</i>	0.079 [2.37]**	0.078 [2.33]**	0.078 [2.34]**	0.079 [2.35]**
<i>Size</i>	0.013 [4.32]***	0.014 [4.55]***	0.015 [5.02]***	0.014 [4.67]***
Year Dummies	Included	Included	Included	Included
Industry Dummies	Included	Included	Included	Included
Adjusted R-square	0.13	0.13	0.13	0.12
N	7,295	7,295	7,295	7,295

Note: This table presents the coefficient estimates of ordinary least-squares regressions, with *Invest* as the dependent variable. Panel A presents the results for the sample of private firms and Panel B presents the results for the sample of state-owned enterprises respectively. *Conn\_Priv* is a dummy variable, which equals 1 if the chairman or CEO of a private firm is politically connected with government; or 0 otherwise. *Conn\_SOE* is a dummy variable, which equals 1 if the ultimate owner of a state-owned firm is a central (instead of local) government; or 0 otherwise. *Institution* is one of the four provincial-level institutional indices: *Decentr*, *Mkt1*, *Mkt2*, and *Legal*. All firms-specific financial and control variables are as defined in the Appendix 1. The *t*-statistics are reported in parentheses. The estimated standard errors are corrected for heteroskedasticity and cross-correlations using the Huber-White estimator, clustered by firm. \*, \*\*, \*\*\* denotes statistical significance at the 10%, 5%, and 1% levels respectively.