

## Political Connections in a Market Economy

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## Abstract

The paper develops a transaction-based firm level analysis to compare the value of political connections in different types of economic transactions across a broad spectrum of distinct market structures. Our analysis is based on a large-scale national survey conducted by the World Bank in 2003 covering 2400 firms in 18 municipalities in China. Our results show that the value of political capital is correlated with the type of market structures in which agents use political connections to secure advantages. In competitive markets, political capital—whether in the form of political connections or government support—does not contribute competitive advantages. In this sense, the value of political connections in China does not differ much from patterns observable in established market economies.

## Political Connections in a Market Economy

That political connections grease the wheels in all economic orders is a near universal supposition. In non-market economies, production and distribution turn on the power of principals at the center of a hierarchy. As cadres of a redistributive state, political actors directly set the prices; hence, agents seeking comparative advantage compete for positional power in the hierarchy, and cultivate political connections (Szelényi 1983). In market economies, political connections also matter. Political actors impose restrictions on economic activities, giving rise to rents that agents compete for (Krueger 1974). Whether to control entry of new competitors or to promote strategic interests, desire to capture or channel the coercive power of the state motivates the demand for regulation favorable to an industry or firm (Stigler 1971). Given the fungibility of political capital in all types of economies, it is not surprising that its value in transitions from state socialism has motivated cross-disciplinary research in the social sciences.

Despite considerable research on the role of political capital in transition economies, relatively little is known about the detailed workings of political connections. Where do economic actors and firms actually secure advantage through reliance on political connections? What features of the institutional environment contribute to either preserving or reducing the value of political connections? Are there identifiable patterns of political advantages? These questions posed on the role of political connections accumulated under the old regime of state socialism not only have implications for understanding the nature of post-state socialist stratification orders, but they also shed light on the nature of emerging market economies.

Recent empirical research indicates that there are no simple answers about the overall economic value of political capital. On the one hand there is evidence indicating that state-owned firms with political connections to the old political elite perform worse than private firms (Xu and Wang 1999; Qi et al 2000; Sun and Tong 2003; Fan et al 2007). Firms with partial state ownership are subject to state interference, are forced to maintain higher employment levels and often serve as tools for private enrichment of politicians (Shleifer and Vishny 1994; Boycko et al. 1996; Shleifer and Vishny 1998). On the other hand, there is some indication that political connections may still have a positive impact on firm equity value (Fisman 2001; Faccio 2006). This suggests that firms can secure positional advantages over unconnected firms, even if overall firm productivity might be lower (Soloner et al. 2001). Such advantages for politically connected firms may be most pronounced under tight resource constraints. For the allocation of credit, for instance, positional advantages of politically connected firms are well documented not only in developing (Khawaja and Mian 2005) and transition economies (Park and Sehart 2001), but also in mature market economies (Faccio et al 2006).

Our field interviews with Chinese entrepreneurs conducted in Zhejiang province and Shanghai in the years 2005 and 2006 underline the complex nature of the issue. Two distinct entrepreneurial types coexist, and both seem to prosper in their own way: There are purely competitive players - often active in highly competitive markets and knowledge intensive sectors - who refuse any type of political networking. The general manager of a computer company in Zhejiang province who clearly rejected the idea of playing the “game of politics” explained, “In my sector, the government cannot give me much, not much tax breaks, and not much government contracts.” In parallel, there are those who invest heavily in political networking through party donations, active involvement as party secretaries or vice deputies, invite government officials on so-called “expert committees” and maintain close social ties with members of the local

government authorities. These entrepreneurs often regard their political connections as their most important asset.

Given this mixed account, we conjecture that the value of political connections depends on specific features of the institutional environment. Contextual features have been the focus of earlier research seeking to explain the role of political connections in China. Xin and Pearce (1996), for instance, suggest political connections function as a substitute for formal norms in weak institutional environments. In the early reform period, township and village enterprises owned by local governments enjoyed a competitive advantage over state-owned and private enterprise (Nee 1992). Subsequent construction of rational-legal institutions in response to emergent market forces cumulatively altered the institutional environment, opening the way for the dynamic growth of a private enterprise driven market economy (Nee 2000; Nee and Opper 2007). The greater reliance on rational-legal procedures and practices also contributed to reducing the value of *guanxi* or personal connections (Guthrie 1999).

What has not been examined in this literature is the question to what extent the value of political connections varies with the distinct economic transaction under review. We use market transition theory as a point of departure to explore whether the value of political connections varies across specific market structures. Broadly speaking, we shift attention to the interplay between the value of political capital and the introduction of competitive markets (Nee 1989). The theory's core propositions specify mechanisms that explain variation and change in relative rewards for political and economic actors in the course of market transition.

The aim of this paper is to develop a transaction-based firm-level approach to compare the value of political connections in different types of economic transactions for private goods ranging from competitive open markets to state-controlled markets and public service provision in the administrative sector and the regulatory market in China. Our results show that the value of

political capital is correlated with the type of market structures in which agents use political connections to secure advantages. A firm-level transaction-based approach shifts analytic focus to examine the nature of the economic institutions in which economic actors compete and cooperate to secure rewards (Guthrie 1997; Zhou 2000).

#### POLITICAL AND ECONOMIC ACTORS IN MARKETS: A TRANSACTION APPROACH

In command economies, the state assumed monopoly power over the allocation of all resources (Szelényi 1983). All productive assets from farmland to factories were owned and managed by the state, which sets prices by administrative fiat to control the allocation of resources. Clearly, under the central plan government bureaucrats and party officials maintained an overwhelming advantage in power over economic actors. A firm's access to resources and its bargaining over production quotas mainly depended on positional advantage stemming from political connections with the planning authorities.

Given a close linkage between the external environment and a firm's strategic response (Saloner et al 2001), the gradual replacement of state planning by market allocation and the resulting empowerment of the consumer as an economic actor combine to give rise to a self-reinforcing process that endogenously undermines the previous institutional foundations of firm survival, which in turn motivates strategic adjustments to the emergent market economy. The terms of exchange are now increasingly determined by both sellers and buyers in decentralized markets. Markets provide incentives insofar as rewards for performance depend on a match of quality and price, and therefore incentives align with productivity. Further, the market mechanism provides opportunity for entrepreneurs and firms to identify new markets and profit-making opportunities. The increase of market power, material incentives and wealth-maximizing opportunities outside of the state-directed redistributive sector triggers a shift in the balance of power from the established political actors towards economic actors (Nee 1989). It follows that the shift to market allocation causes changes in relative rewards that reduce the payoffs of network

advantages based on political position and offers incentives and opportunities for economic actors to engage in productivity-enhancing entrepreneurial activity. Whether firms choose to rely on organizational improvements, superior exploitation of assets, higher innovativeness or minimized “time to market” etc. (Saloner et al 2001), competitive markets shift the focus to the importance of capabilities as opposed to investing in political connections (Guthrie 1998, 1999).

The greater importance that firm managers put on the development of firm capabilities is evidenced by rapid strategic changes in the transition economies. Widespread experimentation with new organizational forms, gradual divestiture of state ownership and the emergence of new property arrangements (Nee 1992; Guthrie 1997; Jin and Qian 1998) illustrate the search for a better fit between firm strategy and external environment. Before the start of economic reform in 1978, China’s industrial sector was made-up of only two organizational forms (state-owned enterprises and collective enterprises). Now, China’s national statistics differentiates between ten distinct organizational forms in the urban industrial sector (National Bureau of Statistics of China). Rapidly expanding research budgets, employee training, patenting activities and shortened product life cycles signal that firms actively seek to develop new capabilities to gain and secure competitive advantages in market niches. China’s national research and development (R&D)-expenditures, for instance, increased from 0.8% to 1.3% of gross domestic product (GDP) between 1999 and 2003. Further, more than 60% of R&D funds are now provided by firms themselves (National Bureau of Statistics/Ministry of Science and Technology 2005).

A shift to capability-based firm strategies permeates the industrial economy of China, and is not limited to large-scale companies. As the founder of a small-scale packaging company with only 10 employees in Zhejiang province pointed out, “Innovation is necessary... others can see the niche you have; you just need new products in the future to survive competition.” Similarly the owner of a small textile company with 40 employees emphasized “we strive to be unique for a short period of time... we need to be different... differentiate... this leads to sale.”

The payoffs to a firm's investments in political connection and capability can thus be conveniently modeled in the following way. Assume that a firm can generate additional revenues either through the development of firm capabilities or by investing in political capital:

$$T_j = C\pi_j + P\phi_j \quad (1)$$

where  $T_j$  is firm  $j$ 's total expected payoff,  $C$  expected revenue from firm capabilities,  $P$  expected rents from political sources,  $\pi_j$  (with  $0 \leq \pi_j \leq 1$ ) firm  $j$ 's probability to realize additional revenue from the development of firm capabilities, and finally  $\phi_j$  (with  $0 \leq \phi_j \leq 1$ ) firm  $j$ 's probability to generate rents from political sources. In this model, a firm's expected pay-off  $T_j$  is determined as a linear combination between given structural parameters of the market (i.e.,  $C$  and  $P$ ) and firm-level parameters (i.e.,  $\pi_j$  and  $\phi_j$ ).

Further, the shift in the relative payoff implies that expected gains from firm capabilities ( $C$ ) and political rents ( $P$ ) are functions of market transition with

$$\frac{\partial C}{\partial m} > 0 \quad \text{and} \quad \frac{\partial P}{\partial m} < 0 \quad (2)$$

where  $m$  is the degree of marketization. In other words, the firm's income generation moves away from political rents  $P$  to income generated by firm capabilities  $C$  as market transition proceeds changing the relative payoffs of political position and productive entrepreneurship. Underlying mechanisms are shift parameters that combine and interact to cause punctuated equilibria in the firm's institutional environment. On the one hand, the hardening of public budget constraints and the reduction of the size of the redistributive sector as a consequence of market transition shifts a firm's income streams away from budgetary appropriations. Subsidies for loss making state-owned enterprises in China, for instance, decreased from 25% of government expenditures in 1985 to 2% in 2000 (National Bureau of Statistics of China). On the other hand, expanding market transition opens up new opportunities for entrepreneurship

and profit-making, providing a favorable environment for the fledging private enterprise economy. The high birth-rate of new private firms and rapid development of the private sector accelerated as private firms replaced the state-owned enterprise as the main growth engine of the industrial economy. In 2005, private firms produced more than 50% of China's GDP, and accounted for more than 75% of exports (Lague 2005). According to a recent prediction by the Chinese Academy of Social Sciences at least 70% of all firms will be privately owned by 2010 (Zhao 2006).

Such shifts in the institutional environment, however, does not rule out that political actors also adapt and profit from new elite opportunities stemming from marketization (Staniszki 1991; Nee 1991; Oi 1992; Burawoy and Krotov 1992; McAuley 1992; Shirk 1993; Walder 2003; Parish and Michaelson 1996; Gerber 2001). States can still provide positional advantages by channeling government spending to clients, targeting most favored treatment in tax policies, and through banking regulation and targeting industrial policy to regulate market entry and exit. Equally important, the shift from state to market allocation across the spectrum of economic activities did not occur at the same speed and to the same extent. Nor did free markets emerge spontaneously, if complementary institutions such as secure property rights and reliable contract enforcement mechanisms were missing. "By determining who can exchange and what products can be exchanged, these institutions determine the scope and scale of a market" (Greif 2006: 56). The value of a firm's political connections may therefore vary significantly across distinct types of market activities and continue to play a decisive role in certain activities.

To detect more directly the inherent value of positional advantages stemming from political connections therefore requires a focus on the specific institutional arrangement guiding economic exchange.<sup>1</sup> Our empirical tests focus on distinct market-based economic transactions across a broad spectrum of firm activities in different market structures representing varying

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<sup>1</sup> It is not sufficient to focus on overall valuations of company assets or profits to determine whether the prediction of a decline of political advantage in price-making markets is accurate (Fishman 2001; Faccio 2006). The problem is the source of positional advantage remains undetected.

levels of marketization and state control. This transaction-based view allows us to discern the range of variability of institutional environment in the transition economy. Does direct government assistance lead to improved economic results and do economic actors with political connections gain concrete competitive advantages in market allocation? And does the payoff from political connections vary across different market structures?

#### MARKET STRUCTURES IN CHINA'S MARKET ECONOMY

We differentiate between distinct market structures according to the intensity of private competition and the proportion of non-state activity. This allows us to examine whether the value of political connections varies with the extent to which resource allocation remains bounded by the redistributive economy. First of all, we include the product market as the most liberalized market structure. Private competition on the product market is consistently high, with only a few state monopolies remaining in China, such as that for tobacco. Our data-set includes only competitive product markets. A provincial marketization index developed by China's National Economic Research Institute (NERI), which encompasses a set of sub-indicators assessing progress in marketization across different markets, confirms that the product market is currently the most liberalized, with a mean level of 7.84 points out of 10 across all provinces in the year 2003 (Fan and Wang 2003). In addition, we examine three partially liberalized market orders sequentially according to increasing degrees of state controls in resource allocation:

Market competition was introduced late to the public electricity sector. In China the production of electricity has long been regarded as a public utility in the state domain. Only after 1999, under pressure of rapidly growing industry demand for electricity, did various regional initiatives begin to introduce market competition. The restructuring of the electricity sector proceeded quickly, however: by 2003, only 35% of electricity was generated by state-owned

firms and 25% by foreign-invested companies, including investments from Hong Kong, Taiwan and Macao (*China Data Online*).

Marketization of the commercial banking sector has proceeded more slowly. While banking reform started in the mid-1980s, market competition was introduced only at a modest level. In spite of the market-entry of foreign-invested banks and private domestic banks, the credit market is still heavily state-controlled. At the time of the survey, over 70% of deposits and loans were still accounted for by the four largest state-owned commercial banks. Only 1% of loans by state commercial bank were allocated to the private-sector entrepreneurs, signalling a severe imbalance given the high proportion of the industrial and commercial output by private enterprises (*Datastream*). The NERI-marketization index confirms slow progress in the market for bank loans. With a mean value of 2.67 out of 10 in 2002, credit allocation indeed occupied the lowest level of marketization of all 22 categories covered by the index.

Finally, we explore the effect of political capital in the market for government contracts. In spite of widespread efforts to standardize bidding rules and procedures for government contracts, political connections matter and easily undermine competitive bidding guidelines. In this sense, the market for government contracts can be readily used to redistribute rents to most favored bidders with political connections. In spite of considerable regional variation in institutional environments, the relative ranking of marketization for these market structures is invariant across China. Hence, product markets are in general the most marketized regardless of whether we explore product markets in Ningxia or in Zhejiang provinces. Similarly, markets for bank loans are in general ranked lowest in terms of marketization.

If market competition and the value of political connections are negatively correlated, we would expect to find little or no effect of political capital on commodity sales growth and the electricity market, while political capital can be expected to still provide positional advantages in

market structures where the state remains either the dominant supplier (credit market) or customer (government contracts).

[Insert Figure 1 here]

Political connections also can help to secure competitive advantages in regulatory and political markets. In transitional economies, the old political elite can benefit from the creation of new sources of positional power “as regulators of markets and private enterprises, brokers and middlemen for market transactions, managers or consultants in public, market-oriented enterprise...” (Walder 1996: 1063). This perspective suggests a continuity of the political elite’s power in new, economic roles, a shift facilitated by “strong network ties to state firms and state bureaucrats as sources of raw materials, marketing outlets, and official protection” (Parish and Michelson 1996: 1044). According to this line of reasoning, cadres are not only advantaged in “setting up but also in operating companies” (Róna-Tas 1994:45). To answer whether political connections indeed give firms a competitive advantage in their dealings with government authorities and regulators comparative institutional analysis needs to go beyond markets for private goods and services. We incorporate selected markets for public goods and regulatory markets where network advantages and political ties are more likely to secure preferential treatment due to the continuing role of the state as the sole supplier (Róna-Tas 1994; Parish and Michelson 1996).

First we look at whether firms with political capital receive better government services, and benefit from improved rule enforcement (see figure 2). Specifically, we explore how political capital affects the workload imposed by public regulation in the days needed for custom clearance, fines from regulatory and tax inspection and the overall perception of legal

predictability. An even stronger test case is the regulatory market, which due to its inherent potential for rent-seeking activities provides ample opportunities to create “new market value for official discretion” (Walder 2003:901). Similar to markets for private goods, the regulatory market and related rent-seeking activities have a competitive element. Firms invest time, effort and financial resources to compete over permits and licences. If in addition government officials enjoy some discretionary power in deciding on license allocations, not only the firm’s efforts but also political connections may become decisive factors for rent-seeking (Krueger 1974). Typical cases of regulatory allocation we review include the firms’ access to tax exemptions, export and import licenses, costs of business licenses, and industrial certification procedures. If our tests indicate that firms do not compete on a level playing field and that political connections provide a competitive edge in firm-government transactions, the regulatory market mechanism is bound to be suspect.

[Insert Figure 2 here]

## RESEARCH DESIGN AND EMPIRICAL TEST

We use data from the 2003 World Bank Investment Climate Survey, which provides an in-depth account of economic activities in China’s urban and peri-urban areas, covering both highly marketized cities in China’s coastal areas as well as less competitive, lagging cities such as Benxi in the northeast and Lanzhou in the northwestern region. The survey questionnaire includes not only detailed firm information, but also information on leadership and firm-government relations. Questions throughout are asked in an objective, quantitative manner, and provide credible measures on otherwise hard-to-assess activities such as red tape, and different dimensions of political capital. Thus the survey allows disentangling the role of economic capital

from political capital in explaining a firm's success in discrete market structures and types of economic transactions.

The survey is based on a random sample of cities and firms, stratified first on sub-sectors, which were selected to represent the most important (in terms of contribution to national GDP) industries and service sectors, and then on location. Overall 18 middle-sized and large cities were chosen, broadly covering all regions of China.<sup>2</sup> In this sense, the survey is not designed to be nationally representative, and we cannot rule out that the use of political connections may be more widespread in rural villages and townships, where more traditional forms of trading may persist. The survey includes 2400 firms of different legal status—state-owned, collective, private and listed stock firms. Complete information on positional power and relevant economic control variables is available for 2351 firms (98% of surveyed firms), which minimizes the potential problem of an item-specific non-response bias. Due to varying frequency of firm-level transactions the total number of observations varies across our estimation models.

Due to the urban focus, both level of industrialization and economic development are above the national average. Mean per capita GDP of the survey cities in 2002 was 15,824 RMB, as compared to 8,214 RMB nationally, and the agricultural sector contributed on average 7% to GDP, while the national average was 14% (National Bureau of Statistics). However, the overall ownership structure of the sample of firms resembles closely the general distribution of legal ownership forms (table 1a).

[Insert Table 1a here]

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<sup>2</sup> Northeastern region: Benxi, Dalian, Changchun, and Haerbin. Coastal region: Hangzhou, Wenzhou, Shenzhen, and Jiangmen. Central region: Nanchang, Zhengzhou, Wuhan, and Changsha. Southwestern region: Nanning, Guiyang, Chongqing, and Kunming. Northwest region: Xian, and Lanzhou.

There is only a minor overrepresentation of state-owned enterprises and underrepresentation of collective and cooperative firms. The representation of all other ownership forms is consistent with the general ownership structure of domestic firms. About 74% of the surveyed firms belong to ten manufacturing branches; the remaining 26% belong to four service sectors (Table 1b). Overall, the industrial structure provides an appropriate mix of labor intensive, capital-intensive and know-how production.

[Insert Table 1b here]

### **Model specification**

We seek to test for positional advantage stemming from political connections in the markets for private goods, and in the administrative and regulatory market, with controls for other factors that could account for varying outcomes. We measure firm performance in economic and regulatory transactions through 14 different outcome variables. Our aim was to select mainly measures which are based on quantifiable economic outcomes, in order to contain the risk of a subjective perception bias. Table 1c provides summary statistics of the selected variables.

[Insert table 1c here]

The stratified nature of the sample, with 100 to 150 observations each in 18 municipalities, calls for caution to not overlook confounding city-level effects. It is in general likely that firms within a geographical context may be more similar than firms in other municipalities due to local economic, political and also cultural factors. Within-city variation in the estimated errors would

thus potentially bias the standard errors downwards. We therefore estimate city-clustered standard errors.<sup>3</sup>

We use the following reduced form model.

$$Y_i = \beta_0 + \beta_1 \mathbf{P} + \beta_2 \mathbf{Z} + a_r + a_s + \varepsilon_i$$

$\mathbf{P}$  denotes a vector of four dimensions of political capital,  $\mathbf{Z}$  is a vector of firm-level control variables covering company characteristics and management features likely to influence the outcome variables. In addition we control for region ( $a_r$ ) and sector ( $a_s$ ) fixed effects. The variety of outcome variables calls for individual model-specifications including OLS, Probit and Tobit models.

### **Measures of political capital**

Political capital—in previous firm-level studies often measured by party membership or current/former cadre-status (Li et al. 2006; Fan et al 2007) —is most appropriately measured through multiple dimensions in order to capture the various channels through which holders of positional power can gain economic advantages. Rent-seeking activity can involve government officials seeking to leverage political capital to gain personal financial advantage or it can involve firms engaged in lobbying to increase profits not based on increases in productivity (Krueger 1974).

Government assistance can be viewed in a general sense as an indication of close and potentially helpful political connections and therefore provides a good proxy of a firm's political

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<sup>3</sup> Due to the relatively low intraclass correlation in our sample (between 0 and 5% in most cases) and the limited number of clusters with rather large numbers of observations, multilevel-analysis seems not to provide an effective tool (Kreft 1996; Maas and Hox 2005; Twisk 2006).

capital. The survey includes six typical fields of local government support (locating foreign technology; obtaining bank financing; identifying foreign investors, foreign clients, foreign suppliers, and domestic clients). Assistance in these areas is among the most sought after services, which companies need and seek to support domestic and global growth and development. For these measures of political capital it does not matter whether government assistance was provided through formal channels and procedures, or rests on informal network-based support. For estimates measuring performance on the product market, we include two dummy variables indicating whether the government provided assistance in identifying foreign and local clients. For our credit market-model, we include a dummy indicating government support in securing a bank loan. For all remaining outcome variables, we construct an index (ranging from 0 to 6) of government assistance received in all six fields of support. Overall, 25% of respondents reported receiving some kind of government assistance over the last business year.

It should be noted that government support is not yet a decisive success factor in distinct transactions, but only increases the probability of success. Among the population of firms without government assistance to secure credit, overall 18 % firms have a bank loan; among the subpopulation of firms with government assistance 48 % have a loan. In this sense, we are not running the risk of including a tautological independent variable. In a more abstract way, the indicator signals a general political approval of the firm. Since services are not equally available to all firms, government assistance signals that the firm is on good terms with bureaucrats and politicians. The measure can therefore also be interpreted as a signal of otherwise not explicitly revealed political connections.

Since party membership is a common feature among China's top managers, holding active party position provides a stronger signal of political capital that may actually yield competitive advantage. We thus introduce a dummy variable that signals whether the firm has close party ties

due to the manager's concurrent activity as a party official. In our data set, about 42% of chief executive officers (CEO) indicate that they also hold a position as party secretary or deputy party secretary. This is consistent with a trend of China's entrepreneurs and top managers joining the party to secure means of political inclusion in a communist party-controlled political order (Coble 2007). The politically active CEOs are cadre-entrepreneurs and managers insofar as they are economic actors who hold concurrent positional power in the political hierarchy. It should be explicitly noted, that active party members are not only to be found in state-owned enterprises. Only about 50% (457) of CEOs holding an active party position are actually placed in state-owned enterprises; 115 are placed in legally registered private firms, 40 are placed in stock listed firms, and 44 in international joint venture firms.

Former government bureaucrats who leave their position as part of China's *xia hai*-policy may also benefit from continuing political connections with the local government. We therefore include another dummy variable indicating whether the firm's CEO previously held a government position. Overall, 6% of the interviewed CEOs had done so. To further capture the CEO's political connections, we look at whether the government was involved in the recruitment of the current firm manager. Such involvement, we should note, is not limited to state-owned enterprises but is common in any firm-type where the government retains partial ownership. Government involvement in recruitment decisions did not end with the official introduction of the "*zhengqi fenkai*" (separation of government and firm)-policy. Wherever the government retains partial ownership shares, state agents exercise formally or informally an impact on management recruitments. In our sample, the government has a say in CEO-recruitment in about 26% of all cases. Out of these recruitments only about 50% (327) were actually recruitments in state-owned firms; even 6% of firms legally registered as private firms indicate that the government was involved in CEO recruitment

Finally, we control for government ownership, as public ownership shares typically strengthen a firm's ability to seek political support. Politicians and government officials are usually more willing to distribute rents to fully or partly state-owned enterprises, as they can expect return favors in the form of higher wages and fewer lay-offs, which eventually increase social and political stability (Shleifer and Vishny 1994).<sup>4</sup>

Pairwise correlation coefficients ranging from -0.04 to 0.30 confirm we capture very different dimensions of firm-based political capital with these selected measures (see Appendix). Throughout, we have ensured that the joint use of these measures is not having a dampening effect on any single measure. Hence, we only report complete models instead of stepwise results.

### **Control variables**

To isolate positional advantage stemming from political connections from other potentially confounding effects, we introduce  $Z$  as a vector of control variables capturing distinct company, management and regional features that may have an effect on both company capabilities in discrete economic transactions and also the fungibility of political connections.

#### ***Company-specific capital.***

*Firm size:* Not only may firm size influence a firm's economic performance due to economies of scales and bigger market share (Fama and French 1995), but larger firms are also more attractive to extract rents (Lioukas et al. 1993). In order to capture potentially confounding effects of firm

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<sup>4</sup> We decided against the use of legal company forms - such as state owned firms, shareholding firms, and joint stock firms -because legal registration forms fail to accurately reflect the state's ownership involvement. Average public ownership among non listed shareholding firms for instance is 10% (with values ranging from 0 to 100%); average public ownership among listed firms is 20% (ranging from 0 to 100%); average public ownership of foreign invested firms is 5%; average public ownership in firms classified as "other legal forms" is 8%, and more than 4% of "other firms" actually indicate 100% state ownership. The most precise measure of ownership relations therefore seems to be a continuous measure of public ownership. Tests including organizational types, however, confirm our overall findings on the relation between political capital and economic transaction outcomes.

size, we include the natural logarithm of a firm's sales value (in model 1) and assets (model 2 -14) of the preceding period.<sup>5</sup>

*Firm age:* The firm's age may affect performance on regulatory and economic markets. On the one hand, younger firms lack a track record and credible reputation, which may have a negative impact in some economic transactions. On the other hand, older firms may be saddled with organizational inertia (Hannan and Freeman 1989). Firm age may also influence both the availability and effectiveness of a firm's political capital. Older firms, for instance, will naturally have a more extensive interfirm network structure than younger, recently founded firms.

*Capital structure:* Financial leverage is positively correlated with a firm's economic performance (Qi et al. 2000; Xu and Wang 1999). Because financial leverage may stem from a firm's use of political connections in securing loans from state-owned banks, we use the debt-to-asset ratio (DAR) as a control variable (McGregor 2001).<sup>6</sup>

*Industry:* Because many regulations and industrial policies are sector specific, we included industrial dummy variables indicating 14 different sectors. Another dummy variable signals whether a firm is located in an industrial or technology park. Such parks generally benefit from more favorable government treatment and have other political capital advantages, which may affect economic performance. Further, we include a firm's capital-to-labor ratio. As China's industrial policy aims to shift the industrial structure away from labor-intensive production, a firm's production technology may have an impact on the potential value of political connections. We control whether a firm is listed on one of China's two stock exchanges. Listed firms comprise China's key enterprises, singled out to be the mainstay of economic development and emerging

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<sup>5</sup> The size of a firm may be an effect of political benefits received in a preceding period (due to asset stripping or asset appropriation). Hence we reran our estimations without controlling for size, and did not find substantial change in the level of significance.

<sup>6</sup> To rule out the risk of over-control, we also excluded financial leverage from our model. The results on political ties, however, did not change substantially.

capitalism. As large-scale modern corporations, China's listed firms are not only the most powerful economic actors but they are also a classical target of state intervention.

***Human capital and incentive structure.*** To control for the professional competence of firm managers and for management's incentive structure, we include the following measures.

*Manager education:* Whether managers act in an entrepreneurial and innovative manner or as rent-seekers may be tied to educational attainment. A dummy variable indicates whether the firm's CEO has college education.

*Manager tenure:* The managers' tenure may not only determine firm-specific performance-relevant human capital, but long-time managers may be in a better position to secure government help—they have had more time to develop a broader political network reflecting firm-specific needs.

*Incentive Contract:* Incentive contracts are a common corporate governance device to improve company performance. However, they are not evenly distributed. They are particularly uncommon when governments remain involved in recruitment decisions or when former government employees are recruited. In order to isolate the effect of political capital from individual incentive effects, we include a dichotomous variable indicating the existence of an incentive contract.

***Regional control variables.*** We included a set of regional, provincial and city-level controls that could affect both the firm's performance in distinct markets and also the market value of political capital.

*Regional context:* Five control variables sort China into main regions (coastal, central, northeast, northwest and southwest). Coastal China, the most liberalized and developed region, is our benchmark.

*Provincial-level marketization:* The provincial-level NERI-marketization index (Fan and Wang 2003) measures progress in marketization, which affects the firm's ability to capture economic opportunities. For the product market and credit market we apply the corresponding sector specific sub-indices; in the case of administrative and regulatory markets we control for the overall level of marketization.

*City-level economic development:* We include the natural logarithm of per capita GDP at the city-level, as local economic development may affect a firm's performance outlook.

Table 1d provides summary statistics for all independent variables and Appendix 1 provides correlation statistics.

[Insert Table 1d here]

## RESULTS

For the product market, which is intensely competitive and where the price of a product is determined by decentralized markets, firms with political capital have no positional advantage (see Table 2a). None of the different dimensions of political capital has a significant positive effect on sales growth (model 1). Firms with CEOs appointed by the government even have a significant disadvantage in sales performance. A similar pattern is found in the electricity market, which is also predominately privately organized and displays only a moderate level of state regulatory control. Firms with political capital do not benefit from a lower electricity price paid for one kw/h of electricity from the public grid (model 2). In price-making markets where economic actors rather than political actors make decisions on the terms of economic transactions, political connections do not provide a competitive advantage. Further, the overall explanatory power of both models remains rather low, which signals that market outcomes in competitive

markets depend on much more fine-grained measures reflecting product quality, pricing, market share, product demand and competition in the distinct market segment.

In contrast, economic transactions in the state-controlled credit market (model 3) are significantly influenced by political capital. Government assistance is positively associated with success in securing loans from state-owned banks. The marginal coefficient of government assistance shows an increase in the probability of credit access by 0.20 for firms with government support in credit applications (holding all other variables constant at the median value). Surprisingly, firms with government-appointed CEOs again experience disadvantages in credit allocation, though the marginal effect is comparatively low (the marginal probability decreases by 4%).

As expected, political connections provide the strongest competitive advantage on the market for government contracts (model 4). One of our interviewees in the Yangzi delta region indicated, “Competitive bidding is just a form... Political connections are still as important as before... If some senior government official gives a signal we will get the project. Sometimes we lose bids, because someone else gets the nod from a senior official.” Three measures of political capital confirm significant positive effects on a firm’s percentage of sales to the government. In particular, managers with a previous career as a government bureaucrat have a strong influence on the firm’s ability to secure government contracts. Overall government support and state involvement in management recruitment provide advantages. It seems obvious that bureaucrats who left their government position (*xia hai*) and picked up a job as a CEO build on their internal networks to cultivate political connections in order to secure government contracts. Our interviews with former cadre entrepreneurs confirm that many of these CEOs maintain business relations with government departments in which they worked prior to going into private

business.<sup>7</sup> In fact, some of these businesses were even founded on the idea of becoming a government supplier.

Outside of the specialty markets of sales to government, firms managed by former government officials do not enjoy a net advantage over businesses without political connections. The lack of positive effects of political capital on sales development in product markets (model 1) indicates that having a CEO who has political connections as a former government official does not translate into an overall sales advantage. In other words, in competitive markets the firm's competitive advantage is based on the quality of its products, and not on positional advantages arising from political connections.

[Insert Table 2a here]

In sum, we find strong confirmation for our conjecture that the value of political capital is connected with market structures. Outcomes in liberalized, predominantly privately organized markets tend not to reward political capital. Net advantages of positional power and chances for elite enrichment are limited to those markets that are partially liberalized and remain under dominant state-control, with the government either the main supplier of a scarce resource (credit market) or the customer (market for government contracts).

The persistent value of positional power in non-marketized or only partially marketized sectors of the economy may invite inferences on persisting or even increasing value of political capital in the administrative and regulatory sector. Earlier firm-level studies supported the idea that vertical firm-government relations could indeed provide a competitive edge in China's

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<sup>7</sup> Interviews conducted by authors in 2005-2006.

transition economy of the mid-1990s (Xin and Pearce 1996). Preferential treatment and outright discrimination were to a large extent determined by the quality of the firm's personal networks.

Our results do not confirm Xin and Pearce (see table 2b). Firms, with CEOs holding party positions and former cadre CEOs do not enjoy a systematic advantage in terms of public service provision. Though firms with government support seem to enjoy a certain advantage in their dealings with regulatory requirements (model 5) and report a higher perceived predictability of laws and regulations (model 7), we do not find similar advantages in any of the other transactions under review. In one case, we even find disadvantages of political capital. Firms with close ties to government, evidenced by the fact that their CEO is government appointed, appear to experience more delays in clearing customs (model 6).

Neither political capital nor company features such as size, age and industry help to explain how individual firms are treated by administrative authorities. If anything, quality of administrative service varies by regional characteristics such as economic development and marketization (table 2b). This indicates an increasing fairness and unbiased treatment of economic actors regardless of the firm's political connections and its financial-organizational characteristics. Overall, our models on rule enforcement (model 5, 7-9) have extremely low explanatory power. This is mainly explained by the focus of our analysis. While our model seeks to tease out the distinct value of political connections as a source of competitive advantage, it is not designed to explain the maximum variation across all dependent variables. We suspect that variation in the quality of rule enforcement is much more a local than an individual phenomenon (explained by firm characteristics), that is better described by local staffing of the administration, municipal leadership, financial resources of public administration etc. The focal finding, however, is that individual firm characteristics obviously capture little of the variation in rule enforcement,

which signals a lack of discrimination or favoritism of distinct economic actors either due to their economic characteristics or political position.

[Insert Table 2b here]

Analysis of the effects of political capital in different regulatory markets provides an even stronger test of its market value. Regulatory distribution of licenses, such as those for import and export, typifies transactions inviting discretionary use of political connections and abuse of positional power in government office through rent-seeking activity (Krueger 1974). In contrast to the widespread assumption that the established political elite relies on opportunities embedded in the regulatory roles of the state to compensate for a decline in redistributive power, we find no systematic evidence that companies with political connections enjoy advantages in the regulatory market. Only one of the five models shows a positive correlation between political capital in the form of government assistance and the probability of securing an import license (model 11). Firms receiving government help have a significantly higher chance to receive a license for direct product imports than firms without government support (though with a very low marginal effect on the success-rate of 0.005). In none of the other models, political capital yields a significant net-advantage. In one case, CEOs with positional power in the communist party even fare worse on the regulatory market. The chance to be granted a tax exemption (with a marginal effect of -0.07) is lower for politically active CEOs than for their non-political counterparts. The lack of any systematic preferential treatment of former and current positional power-holders across a broad set of administrative and regulatory transactions does not support the claim of persisting and widespread systematic advantages of politically connected firms.

[Insert Table 2c here]

Skeptics might object that political connections came to full play at earlier stages of market transition and have helped to build up specific company characteristics that now – at an advanced stage of transition – independently yield positive effects on transaction outcomes. Company size, for instance, might theoretically be the result of earlier asset appropriations in the course of privatization policies (Walder 2003). While clear counter evidence would require time series data covering earlier periods of China’s transition, some observations contradict this idea. First, company size does not create a general advantage, but is only associated with improved performance in seven out of fourteen models (table 2a-c). Secondly, company size and the examined measures of political capital are only moderately correlated, with even a negative correlation for former government officials (Appendix 1). Even exclusion of company size as a control variable would not substantially affect our results for political capital. Hence, we do not see evidence for lasting economic advantages due to potential asset accumulation of politically connected firms in prior periods.

A final note of caution should be added, which we share with the whole empirical literature studying the economic value of political connections. While we believe that we have provided the best possible approximation of political connections, we can not rule out that specific state-firm connections are simply not revealed by the available survey data. Firms may for instance possess direct linkages through relatives or acquaintances of key personnel or owners, which are not covered by the World Bank survey instrument. We still believe, however, that our findings probably accurately reflect the general relation between the value of political capital and distinct market structures. “Not revealed” or “hidden” political connections may well exist, but they will most likely be correlated with at least one of the five dimensions of political capital

captured in our model. It is unlikely, that firms without any formal party association and government assistance or state ownership, systematically possess informal connections, which would create otherwise unrecognised competitive advantages.

### **Robustness test**

There are three robustness issues that we consider. First, we checked whether our OLS- and tobit results were driven by outliers or predictor variables with high leverage by applying the conventional cut-off point ( $4/n$ ) of Cook's D to eliminate observations with outliers and high-leverage predictors from our sample. Through this procedure, model 1 was reduced by 34 observations (mainly the top sales performer) to a total sample of 2030 observations. Our estimates on political ties, however, were all confirmed and still indicate no sales advantages for firms with political connections. We applied the same procedure for all remaining OLS-estimations, but did not detect any systematic changes.<sup>8</sup>

Second, we confirmed the robustness across different sub-samples. Xin and Pearce (1996) show that entrepreneurs in the late 1980s and early 1990s routinely cultivated network ties with local officials to secure government backing and protection for their firm. Their research supports the view that entrepreneurs commonly rely on political connections with government as a means to counterbalance the structural disadvantages of a weak market environment. In the same vein, Wank (1996) suggests on the basis of his field research in Xiamen (1988-90 and 1995) that private business expansion is dependent on connections linking the entrepreneur with the local political bureaucracy. In an ethnographic study of Yu Zuomin, the party secretary of a village

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<sup>8</sup> Our estimates no longer confirm the originally positive impact of government support on regulatory requirements. Instead our results indicate a negative effect of CEOs who previously held a government position. Similarly, government-appointed CEOs are associated with longer delays for custom clearance (model 6). However, CEOs with government experience seem to be associated with facilitated procedures for custom clearance (model 6) and lower inspection fines (model 7). The results of the remaining models were all confirmed. Regression results are available from the authors.

near Tianjin, Gilley (1999) documents the importance of political connections and activism of cadre-entrepreneurs. Responding to this literature on the discriminatory treatment of private sector economic activities we examine the value of political capital in firms officially registered as private.

[Insert Table 3a here]

Once again, we find our earlier results broadly confirmed: Political capital does not seem to create market value for private firms in the competitive product and electricity markets, while political connections secure an economic pay-off in state-controlled markets (table 3a). Political capital has positive effects for private firms in the credit market (model 3), which is in line with the view that political connections pave the way for brokering deals and rent-seeking in state-controlled markets. For private firms, not only does government assistance increase a firm's chances to secure bank loans (with a marginal effect of 0.19 on credit access probability), but politically active CEOs enjoy additional advantages over their politically inactive counterparts (with a marginal effect of 0.18 on credit access probability). This result is consistent with previous research on the politicized nature of China's banking sector (Zhu 1999; Lin 2001). At the local level, both party officials and government bureaucrats can easily intervene in credit decisions, through long-standing ties with bank directors appointed by the local government (Park and Sehart 2001:618).

Our field interviews support the view that private business start-ups most critically suffer from limited credit market access. However, while credit access is undoubtedly a serious resource constraint for companies, our interviewees did not perceive restricted bank lending as an effective barrier to market entry or to further firm expansion. Major channels to bypass exclusion from the

state-regulated credit market are private loans from business partners, friends and family and business partnerships. Also, adjustments in terms of investment strategies were mentioned. Some interviewees, for instance, indicated that the choice of the industrial sector was to some extent influenced by the given financial constraints. It is estimated that about 30-50 percent of China's total capital investment is allocated outside the banking system (Tsai 2002). The robustness test for private firms also confirms that politically connected firms enjoy advantages in sales to government. Private firms with CEOs who have ready access and ties with government have a net advantage over private firms that lack such political connections (model 4).

Turning to the administrative and regulatory markets, politically connected firms again enjoy only scattered advantages. Government support seems to be connected with facilitated custom procedures (model 6) and a higher predictability of laws and regulations (model 7), and politically active CEOs report less corruption among tax inspectors (model 9). For all remaining transactions (models 8 and 10-14, tables 3b & 3c), including the issuing of licenses required for a firm to import and export goods and services, political connections do not generate any significant advantages for entrepreneurs of private firms. Our results also do not support the occurrence of asset appropriations in earlier periods. Only four out of 14 estimations indicate significant advantages for larger firms. Furthermore, the correlation coefficients between firm size and measures of political capital are consistently lower than in our full sample. Correlation coefficients between firm size and former government employment and government recruitment are even negative (-0.07, and -0.03).

[Insert tables 3b and 3c here]

While our model specification has controlled for economic development, we cannot rule out that advantages stemming from political connections may not still be linked with it. Responding to the question whether economic advantages of political capital vary with economic expansion, we repeated our analysis for a subsample of cities with below-mean per capita GDP. To support a causal link between economic expansion and the role of political capital, we would expect stronger effects for positional power and political connections among the less developed municipalities. In order to explore the potential impact of structural contextual effects connected with the early stage of regional industrialization, a third test reduced our sample to municipalities with more than 50% rural population. As before, political capital was only associated with competitive advantages in the credit market and the market for government contracts.<sup>9</sup> Outside of these state-controlled markets, political connections yield no payoff in competitive product and electricity markets. Also we found that the administrative and regulatory sectors do not generate systematic positional advantages for firms with political capital.<sup>10</sup>

## Discussion

Our transaction-based firm-level approach extends the core propositions of market transition theory to explore at the firm-level a potential linkage between the value of political capital and different market structures.<sup>11</sup> Overall, our evidence is consistent with Nee's (1991:279)

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<sup>9</sup> Results are available upon request from the authors.

<sup>10</sup> This finding does not rule out the possibility that some former managers of state-owned enterprises in the sample benefited from asset stripping because our dataset does not provide information on the former administrative rank. But even if this were the case, it does not contradict our finding for the political elite as a social group.

<sup>11</sup> The transition-based approach does not address the debate on stratification hypotheses predicting declining significance of positional power measured as net effects on household-level income attainment. First of all, politically-connected CEOs can seek to channel rents to augment their personal income. This common form of rent-seeking in transition economies cannot be detected by firm-level models. Second, in the early studies of market transition the site of research was rural China where small firms overlapped closely with the household unit. But in China's urban economy, the dominance of large and middle-sized firms renders a focus on

assertion that the “value of personal connections with cadres” is negatively correlated with the extent to which production, distribution and prices are determined by market forces. Competitive advantages stemming from political capital are highest in regulated and state dominated markets while we cannot detect a positive payoff of political connections in competitive markets. Our findings correspond with earlier work on the connection between political capital and market regulation, which finds a positive correlation between the representation of political directors on corporate boards and the level of industry regulation (Helland and Sykuta 2004).

Further, responding to the conjecture that political capital may create positional advantage in administrative and regulatory markets, we found no systematic advantage in such markets for politically connected firms. Instead, firm performance therein seems to a large extent determined by company characteristics and firm location. Particularly, economic transactions, which are closely related to the government’s ambition to launch an active industrial policy supporting promising and strong firms, depend in the first place on the firm’s organizational characteristics. We observe advantages for younger and large firms, not involved in capital-intensive production, and located in industrial parks and technology zones in the markets for export and import licenses (model 10, 11) and in applications for tax exemptions (model 12). In contrast, administrative fees are essentially determined by regional factors (model 13, 14). In this sense, China’s regulatory market development seems to move in the direction of a level playing field, where rule-based enforcement of regulatory standards prevails.

Our consistent findings on the limited market value of political capital in the administrative and regulatory markets may be indicative of a linked-evolutionary development, where progress in marketization triggers subsequent changes in the reward structure for political

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household earning attainment inappropriate to examine the structure of relative rewards between political and economic actors

actors, which eventually lead not only to a decline in the value of political connections in the marketized sectors, but also provide impetus for the creation of a rational-legal bureaucracy (Guthrie 1999; Nee and Opper 2007). Most importantly, the decentralization and privatization of economic activities render the socialist profit retention system, built on central planning and state-ownership, ineffective (Roland 2000). Fiscal federalism has played a crucial role as a market-preserving mechanism that has helped to introduce performance- and business-oriented thinking in the regulatory and redistributive sector (Oi 1992, Walder 1995, Montinola et al. 1995; Qian and Weingast 1997). As lower-level governments increase their revenue to the extent that they succeed in promoting economic development in their jurisdiction, firms' chances to benefit from their political connections are weakened. Like other markets, regulatory markets gradually become competitive markets (Krueger 1974).

## CONCLUSION

Overall, our findings suggest that by 2002, political connections in urban China provide competitive advantages principally in market settings where government restricts economic activity and where economic actors compete for rents. In competitive markets, however, political capital—whether in the form of political connections or government support—does not seem to confer competitive advantage in economic transactions. The absence of systematic advantages for political capital in administrative and regulatory markets, moreover, suggests that a linked evolution of market institutions and bureaucracy has strengthened rational-legal authority and procedures in public administration. The annual growth rate in millionaires of 6.5% in China confirms that entrepreneurial activities and wealth creation have become a social phenomenon, which is no longer limited to a small politically well-positioned elite. The rags-to riches tale is common among China's first generation self-made entrepreneurs. Take the story of Chen Rong, a

former mechanic from Shanghai, who invested his life savings of \$250 to start a textile workshop in 1984. Profits from the small start-up firm were invested in the stock market eventually gave him \$12 million profits which he used as the start-up capital to found Zhonglu, the largest manufacturer of bowling equipment with a current net worth of \$350 million (Kwong 2007).<sup>12</sup>

This does not mean that politically connected entrepreneurs may no longer benefit from their political capital to build up large-scale firms. Many on China's growing list of *parvenu* are politically connected and a third of China's richest 800 entrepreneurs are party members (Kwong 2007). Anecdotal evidence suggests, however, that positional advantages are usually limited to highly regulated sectors, such as the real estate sector, construction industry, banking or foreign trade. Not surprisingly, China's first US dollar billionaire, former China vice-president Rong Yiren, made his wealth as the leader of the state-controlled China International Trust and Investment Company Corp. (CITIC) (Dickie 2005). In this sense, China's experience as a young market capitalist economy is not dissimilar from the experience of the US economy in the 19th and early 20th century, where Leland Stanford obtained a government-backed monopoly and massive state financial subsidies and land grants to build the Central Pacific Railroad, and the creation of corporations such as Union Pacific, Northern Pacific railroad were facilitated by political connections. Also, our results do not rule out that rent-seeking with positional power still offers routine sources of opportunity for the political elite, as it continued to be manifest in bribe-taking by government officials. The mean expenditure for fees and bribes used to obtain certification of product quality and government-issued business registration, for examples, were

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<sup>12</sup> Despite a precipitous rise in relative income inequality, nearly three decades of sustained economic growth has benefited the masses through a dramatic reduction of absolute poverty (Firebaugh and Beck 1994; Stiglitz 2002). Income growth in China contributed notably to stability in population weighted between-nation income inequality, ending the stunning increases in income disparity between nations that began in the 19<sup>th</sup> century (Firebaugh 1999; 2003).

respectively 537 and 1533 *rmb* (models 13 & 14); standard deviations (22,866 and 39,505 *rmb*) indicate that bribes in regulatory markets were probably not trifling.

In a broader scheme, our findings invite some tentative inferences on China's transition path. If the value of political capital is lower in transactions in competitive markets, then the emergence of a market economy may give rise to more relative autonomy between the political and economic spheres, not dissimilar from established market economies (Kornai 1995; Evans 1995; Lindenberg 2000; Rickett 2000). This new transaction-based approach can be tested in other countries, not only in transition economies, but also in emerging market economies shifting away from heavy reliance on political controls. The availability of large-scale national data sets on firms facilitates research using this approach. We predict in competitive markets less value for political connections for economic actors, and greater value in restricted markets where economic actors compete for government-controlled rents.

Our predictions should not be interpreted as implying the state loses power in the transition to a market economy. Indeed, with more relative autonomy, state power becomes less encumbered by rent-seeking activity (Evans 1995). Fuelled by dynamic market capitalism, economic development in China has generated growing revenues for state coffers, as reflected in the huge currency reserve held by the central bank. Growth in tax revenues augments the state's wealth and power to make credible commitments to long-term national goals of modernization.

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
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
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**Figure 1: Marketization and Private Goods**

Private Goods	
Marketized    Weakly marketized	Product market
	Electricity market
	Credit Market
	Government contracts

**Figure 2: Administrative and regulatory market**

Public Goods	
Open access    Rationed	Government quality and rule enforcement
	Regulatory markets; e.g. licenses.

**Table 1a: Distribution of legal ownership type of firms, in 2002**

	Sample firms (in percent)	Total firm population (in percent)
State-owned enterprise	26	16
Collective and cooperative firm	16	21
non-publicly traded shareholding companies	18	17
private, non-listed firms	28	27
joint ventures and subsidiaries of multinational firms	10	8
Others	2	11

Source: Investment Climate Survey 2003 and National Statistical Bureau of China.

**Table 1b: Sectoral distribution of firms**

Sector	Freq.	Percent
Garment & leather products	353	14.71
Electronic equipment	185	7.71
Electronic parts making	276	11.50
Household electronics	63	2.63
Auto & auto parts	358	14.92
Information technology	203	8.46
Accounting & non-banking financial services	157	6.54
Advertisement & marketing	154	6.42
Business services	270	11.25
Food processing	71	2.96
Chemical products & medicine	66	2.75
Biotech products & Chinese medicine	36	1.50
Metallurgical products (manufacturing & tools)	158	6.58
Transportation equip. (incl. telecommunication & services)	50	2.08
Total	2,400	100.00

Source: Investment Climate Survey 2003

**Table 1c: Summary Statistics for dependent variables**

Variable	Obs	Mean	Std. Dev.
<b>Private goods</b>			
Sales growth in 2002	2372	51.57	694.68
Electricity price (Kw/h)	2361	.755	.489
Credit access (dummy = 1 if firm has a bank loan)	2333	.230	.421
Proportion of sales to government	2163	4.573	14.390
<b>Government quality and rule enforcement</b>			
Business days per month to deal with government regulations	2262	7.435	13.479
Average days for custom clearance	897	7.804905	11.36611
Inspection fines (total costs of fines)	2351	13.543	238.209
Local tax inspectors require gifts/bribes (dummy = 1, if yes)	2344	.277	.448
Predictability of laws and regulations (in percent)	2004	27.571	30.489
<b>Regulatory markets</b>			
Holding an export license (dummy = 1 if yes)	2237	.207	.405
Holding an import license (dummy = 1 if yes)	2201	.101	.301
Tax exemption (dummy = 1 if yes)	2350	.233	.423
Costs of national certificate (total of fees and bribes)	2320	525.903	22628.03
Price of getting a business registration (total of fee and bribes)	789	1517.293	39179.44

Source: Investment Climate Survey 2003

**Table 1d: Summary Statistics for independent variables**

Variable	Obs	Mean	Std. Dev.
<b>Political ties</b>			
Government assistance to identify foreign clients (dummy = 1 if yes)	2343	.0964575	.2952807
Government assistance to identify domestic clients (dummy = 1 if yes)	2353	.1806205	.3847852
Government assistance over 6 categories	2328	.6185567	1.161863
Government assistance to secure a bank loan (dummy = 1 if yes)	2353	.159371	.3660995
CEO was previously government employee (dummy = 1 if yes)	2378	.059714	.2370061
CEO is appointed by the government (dummy = 1 if yes)	2367	.2585551	.4379331
CEO holds formal position in the party (dummy = 1 if yes)	2351	.4206721	.493772
<b>Company</b>			
Log of firm age	2400	2.429834	.7994084
Log of sales value in 2001	2373	9.083141	2.259534
Log of total assets in 2001	2316	8.641803	2.497446
Debt equity ratio in 2001	2301	5.02889	95.68708
Capital labor ratio	2343	183.86	2452.013
Location in industrial park (dummy = 1 if yes)	2353	.2566936	.4369017
Listed firm (dummy = 1 if yes)	2373	.0303413	.1715609
Government ownership	2399	21.90013	40.21459
<b>Management</b>			
CEO has college education (dummy = 1 if yes)	2382	.8303946	.3753645
Tenure of CEO	2371	1.487227	.7598002
CEO has incentive contract (dummy = 1 if yes)	2400	.27625	.4472351
<b>Regional Controls</b>			
Provincial level marketization of product market (NERI)	2400	8.375	1.0176
Provincial level marketization of credit market (NERI)	2400	3.144167	2.788832
Overall provincial level marketization index (NERI)	2400	5.967708	1.714034
Log value of per capita GDP (City level)	2400	9.628858	.5836116

Source: Investment Climate Survey 2003; Fan &amp; Wang 2003; National Statistical Bureau of China.

**Table 2a: Markets for private goods and the role of political ties:**

	Model 1 Sales growth	Model 2 Electricity price	Model 3 Credit access	Model 4 % of sales to Government
	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)
<b>Political Ties</b>				
Government helps to find foreign clients	-15.452 (19.203)			
Government support to find domestic clients	-9.539 (19.054)			
Government support index		-0.005 (0.009)		3.614*** (0.894)
Government helps to get credit			0.622*** (0.112)	
CEO is appointed by the government	-38.096** (15.782)	0.023 (0.027)	-0.159** (0.070)	7.186** (2.854)
CEO held previously government position	60.181 (60.416)	-0.030 (0.048)	0.007 (0.171)	12.004*** (4.391)
CEO holds party position	9.733 (17.822)	0.020 (0.025)	0.066 (0.091)	-2.160 (2.488)
<b>Company</b>				
Log firmage	-2.141 (5.513)	-0.036** (0.016)	0.003 (0.048)	-1.639 (1.699)
Log sales (lagged)	-60.426** (28.245)			
Log assets (lagged)		-0.012** (0.005)	0.171*** (0.028)	-0.380 (0.581)
Debt equity ratio (lagged)	0.061* (0.034)	-0.000*** (0.000)	-0.001 (0.001)	0.013* (0.008)
Capital-labor ratio	0.050 (0.063)	0.000 (0.000)	-0.000 (0.000)	-0.004 (0.004)
Industrial park	116.751 (73.997)	0.028 (0.027)	0.087 (0.069)	-3.633 (2.780)
Listed company	43.406 (43.598)	-0.091 (0.061)	0.344*** (0.133)	12.989** (5.782)
Government ownership share	0.323 (0.277)	0.000 (0.000)	0.000 (0.001)	0.070** (0.033)
Sector (14 industries)	YES	YES	YES	YES
<b>Management</b>				
CEO has university education	61.605 (37.815)	0.055 (0.032)	-0.144 (0.112)	12.628*** (3.693)
Log tenure	-31.870* (15.747)	0.018 (0.015)	0.108*** (0.039)	-2.124 (1.504)
CEO has incentive contract	-22.048 (32.607)	-0.021 (0.024)	0.132* (0.075)	4.836** (2.383)
<b>Regional Controls</b>				
Region (5 regions)	YES	YES	YES	
Log pc GDP (city level)	58.810*** (14.848)	-0.040* (0.024)	-0.090 (0.100)	-0.901 (2.531)
Marketization of commodity market	52.618* (27.215)	0.073 (0.022)***		-1.715 (2.243)
Marketization of credit market			0.168*** (0.037)	
Constant	-475.735* (253.259)	0.073*** (0.022)	-2.997** (1.284)	-8.873 (34.382)
Method	OLS	OLS	Probit	Tobit
R2 / Pseudo R2	0.064	0.037	0.164	0.0376
N	2064	2027	2025	1912

Standard errors are clustered on city. \* Significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

**Table 2b: Rule enforcement and political ties**

	Model 5 # of business days per months to deal with requirements imposed by government regulations  Coeff (SE)	Model 6 Average days for local custom clearance of export goods  Coeff (SE)	Model 7 The predictability of laws or regulations that materially affect the operation and growth of business (in%)  Coeff (SE)	Model 8 Inspection fines (absolute)  Coeff (SE)	Model 9 Local tax inspectors require gifts/bribes  Coeff (SE)
<b>Political ties</b>					
Government support index	-0.522** (0.246)	-0.085 (0.272)	3.703*** (0.818)	-0.729 (2.329)	0.036 (0.024)
CEO is government appointed	-0.333 (0.490)	1.905* (1.088)	-1.591 (2.549)	-11.564 (8.507)	0.011 (0.062)
CEO held government Position	1.601 (1.590)	-0.550 (1.830)	-1.218 (4.302)	21.044 (28.278)	0.001 (0.110)
CEO holds party position	0.252 (0.771)	0.299 (1.180)	-0.004 (2.238)	-2.946 (10.665)	0.011 (0.072)
<b>Company</b>					
Log firmage	-0.135 (0.408)	0.299 (0.422)	0.484 (1.509)	-7.383 (10.179)	-0.086** (0.043)
Log assets (lagged)	0.088 (0.158)	-0.549** (0.224)	1.042** (0.521)	1.460 (3.262)	-0.002 (0.019)
Debt equity ratio (lagged)	-0.001 (0.011)	-0.000 (0.001)	-0.019 (0.043)	-0.004 (0.011)	-0.000 (0.000)
Capital-labor ratio	0.000 (0.000)	-0.000 (0.000)	-0.001 (0.001)	-0.000 (0.001)	-0.000 (0.000)
Industrial park	1.156 (1.084)	0.732 (1.175)	3.798 (2.405)	-22.414* (12.047)	-0.068 (0.067)
Listed company	0.067 (2.142)	2.853 (1.734)	-0.565 (5.596)	-8.432 (8.057)	-0.090 (0.182)
Government ownership share	0.021* (0.011)	-0.002 (0.009)	0.050* (0.029)	-0.115 (0.078)	0.001 (0.001)
Sector (14 industries)	YES	YES	YES	YES	YES
<b>Management</b>					
CEO has university education	-0.587 (0.831)	-3.285*** (1.123)	3.346 (2.933)	-6.359 (22.868)	0.050 (0.112)
Log tenure	-0.203 (0.442)	0.221 (0.384)	-0.441 (1.321)	-1.291 (4.167)	-0.005 (0.034)
CEO has incentive contract	-0.113 (0.552)	0.071 (0.899)	3.831* (2.128)	18.332 (16.560)	-0.013 (0.086)
<b>Regional Controls</b>					
Region	YES	YES	YES	YES	YES
Log per capita GDP (City)	-0.654 (0.701)	-3.082** (1.431)	0.314 (2.317)	0.210 (2.744)	0.251*** (0.058)
Marketization index	-0.782 (0.542)	-2.409* (1.357)	2.877* (1.675)	-2.927 (2.501)	0.022 (0.054)
Constant	25.430** (10.520)	67.877*** (22.736)	-23.265 (29.275)	69.457 (75.539)	-3.186*** (0.737)
Model	OLS	OLS	Tobit	OLS	Probit
R2 /pseudo R2	0.019	0.115	0.007	0.011	0.029
N	1993	787	1766	2039	2051

Standard errors are clustered on city. \* Significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

**Table 2c: Regulatory market and political ties**

	Model 10 Firm holds an export license	Model 11 Firm holds an import license	Model 12 Firm enjoys tax exemption	Model 13 Costs for quality certification by a national body (including fees, training, gifts and bribes)	Model 14 Costs for obtaining a business registration over last two years (including fees, gifts, bribes etc)
	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)
<b>Political ties</b>					
Receives government assistance	0.039 (0.030)	0.053* (0.031)	0.039 (0.031)	-607.241 (494.635)	-1482.077 (1174.347)
CEO held previously <i>Government position</i>	-0.300*** (0.100)	-0.131 (0.135)	-0.053 (0.081)	98.717 (290.730)	-1372.485 (2329.852)
CEO is appointed by the <i>Government</i>	0.100 (0.210)	-0.067 (0.219)	-0.053 (0.176)	756.026 (609.851)	3169.157 (2871.948)
CEO holds party position	-0.111 (0.085)	0.106 (0.108)	-0.174* (0.096)	2083.894 (2136.225)	5638.960 (6577.384)
<b>Company</b>					
Log firmage	-0.112** (0.057)	-0.173*** (0.065)	-0.106* (0.058)	-551.471 (525.350)	-1488.015 (1316.121)
Log assets (lagged)	0.233*** (0.029)	0.211*** (0.023)	0.136*** (0.023)	18.407 (53.075)	89.089 (383.224)
Debt equity ratio (lagged)	0.001 (0.002)	-0.000*** (0.000)	-0.000 (0.000)	0.177 (0.219)	9.380 (10.695)
Capital-labor ratio	-0.000** (0.000)	-0.000* (0.000)	-0.000** (0.000)	-0.061 (0.062)	0.465 (3.331)
Industrial park	0.458*** (0.079)	0.342*** (0.109)	0.626*** (0.105)	775.063 (1083.355)	1881.456 (2884.735)
Listed	0.078 (0.217)	0.042 (0.207)	0.319* (0.176)	17591.324 (16336.577)	44726.888 (41028.587)
Government ownership share	-0.001 (0.001)	-0.002 (0.001)	-0.000 (0.001)	-3.138 (3.436)	-12.969 (16.392)
Sector (9) industries)	YES	YES	YES	YES	YES
<b>Management</b>					
CEO education	0.619*** (0.139)	0.301* (0.160)	0.260* (0.152)	-1075.520 (992.481)	-2881.860 (2279.580)
Log tenure	0.011 (0.054)	0.101* (0.055)	-0.004 (0.057)	-1252.031 (1199.266)	-3130.162 (2938.411)
CEO has incentive contract	-0.041 (0.075)	0.047 (0.094)	-0.047 (0.088)	-1337.126 (1451.211)	-3204.771 (3423.159)
<b>Regional controls</b>					
Region	YES	YES	YES	YES	YES
Log pc GDP (city level)	0.246*** (0.082)	-0.118 (0.084)	0.025 (0.090)	3554.303*** (331.853)	14663.297*** (1827.793)
Marketindex	0.130** (0.062)	-0.030 (0.041)	-0.052 (0.104)	555.622 (392.827)	2568.384 (1505.662)
Constant	-6.019*** (1.052)	-1.305 (1.150)	-1.889 (1.357)	-3.59e+04*** (6608.740)	-1.59e+05*** (27956.994)
Model	Probit	Probit	Probit	OLS	OLS
R2/pseudo R2	0.307	0.224	0.182	0.033	0.094
N	1974	1946	2050	2029	698

Standard errors are clustered on city. \* Significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

**Table 3a: Markets for private goods and the role of political ties for private firms:**

	Model 1 Sales growth	Model 2 Electricity price	Model 3 Credit access private firm	Model 4 % of sales to Government
	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)
<b>Political ties</b>				
Government support to identify foreign clients	-60.240 (41.368)			
Government support to identify domestic clients	-6.806 (28.998)			
Government support index		0.004 (0.023)		5.752*** (1.467)
Government helps to get credit			0.592*** (0.169)	
CEO is government appointed	-28.447 (28.291)	0.005 (0.115)	0.418 (0.310)	14.822** (7.009)
CEO held government position	169.084 (154.584)	-0.049 (0.115)	-0.180 (0.334)	13.463* (6.977)
CEO holds party position	25.667 (17.571)	0.009 (0.074)	0.555*** (0.176)	2.123 (4.933)
<b>Company</b>				
Log firmage	-5.769 (16.063)	-0.082 (0.059)	-0.243 (0.158)	-10.548** (4.392)
Log sales (lagged)	-40.350** (16.236)			
Log assets (lagged)		0.014 (0.016)	0.217*** (0.050)	1.250 (1.169)
Debt equity ratio (lagged)	-0.174 (0.254)	-0.001** (0.001)	-0.003 (0.002)	-0.010 (0.125)
Capital labor ratio	0.666*** (0.144)	0.000 (0.000)	-0.000 (0.000)	-0.027 (0.025)
Industrial park	42.062 (51.203)	-0.063 (0.066)	0.051 (0.125)	-8.881* (4.780)
Listed firm	81.536 (61.885)	-0.267* (0.151)	0.494 (0.561)	43.701*** (15.294)
Government ownership share	-1.433* (0.757)	-0.007 (0.006)		0.148 (0.458)
Sector (14 industries)	YES	YES	YES	YES
<b>Management</b>				
CEO education	-34.308 (25.186)	0.106 (0.074)	-0.567** (0.235)	5.943 (5.691)
Log tenure	-59.020* (29.641)	0.080* (0.043)	-0.000 (0.102)	3.038 (3.155)
CEO has incentive contract	59.485* (33.342)	-0.049 (0.061)	0.123** (0.059)	3.758 (4.013)
<b>Regional controls</b>				
Region (5 regions)	YES	YES	YES	YES
Log pc GDP(city)	25.663 (27.694)	-0.104* (0.056)	-0.240 (0.147)	-3.001 (4.455)
Marketization of commodity market	-10.331 (19.471)	0.105* (0.056)		-13.998*** (3.929)
Marketization of credit market			0.077 (0.098)	
Constant	401.237 (291.902)	0.808 (0.776)	0.175 (2.052)	128.202** (58.290)
Model	OLS	Tobit	Probit	Tobit
R2 / pseudo r2	0.691	0.046	0.200	0.086
N	576	567	489	547

Standard errors are clustered on city. \* Significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

**Table 3b: Rule enforcement and political ties in private firms**

	Model 5 # of business days per months to deal with requirements imposed by government regulations	Model 6 Average days for local custom clearance of export goods	Model 7 The predictability of laws or regulations that materially affect the operation and growth of business (in %)	Model 8 Inspection fines (absolute)	Model 9 Local tax inspectors require gifts/bribes
	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)
<b>Political ties_</b>					
Government support index	-0.289 (0.256)	-1.193** (0.525)	5.498*** (1.520)	-5.809 (8.048)	0.066 (0.046)
CEO is government appointed	-0.145 (1.201)	2.962 (2.879)	-4.089 (7.657)	6.229 (10.350)	0.465 (0.318)
CEO held government position	1.428 (1.154)	-0.195 (3.753)	0.174 (7.634)	-7.198 (12.264)	-0.077 (0.253)
CEO holds party position	0.848 (0.816)	0.748 (1.928)	-0.844 (4.856)	-32.606 (22.747)	-0.201** (0.093)
<b>Company</b>					
Log firmage	-0.619 (0.790)	-0.650 (1.874)	6.115 (4.097)	-46.165 (41.506)	-0.119 (0.144)
Log assets (lagged)	0.022 (0.163)	-0.205 (0.363)	-0.487 (1.111)	-6.160 (6.021)	-0.021 (0.048)
Debt equity ratio (lagged)	-0.008 (0.014)	0.159** (0.063)	-0.093 (0.089)	-0.432 (0.276)	-0.002 (0.002)
Capital-labor ratio	-0.000* (0.000)	0.000 (0.001)	0.002 (0.006)	0.003 (0.004)	0.001** (0.000)
Industrial park	1.505 (0.964)	-0.750 (1.195)	4.083 (4.415)	-43.087 (42.392)	-0.025 (0.119)
Listed corporation	5.403* (2.832)	2.938 (7.142)	-13.673 (16.242)	24.368 (67.938)	0.348 (0.559)
Government ownership share	-0.045* (0.022)	-0.103*** (0.032)	-0.671 (0.675)	-2.964 (1.912)	-0.001 (0.012)
Sector (14 industries)	YES	YES	YES	YES	YES
<b>Management</b>					
CEO education	-2.184 (1.434)	-0.061 (1.137)	0.083 (5.118)	41.877 (47.188)	0.177 (0.268)
Log tenure	-0.881 (0.716)	-0.705 (0.652)	-0.341 (2.899)	-2.330 (5.155)	0.033 (0.080)
CEO has incentive contract	-0.625 (0.759)	-0.202 (1.932)	3.352 (4.028)	62.520 (54.638)	0.040 (0.137)
<b>Regional Control</b>					
Region (5 regions)	YES	YES	YES	YES	YES
Log per capita GDP (city)	-0.568 (0.368)	-4.752*** (0.957)	-1.728 (4.318)	-10.989* (5.705)	0.156* (0.091)
Marketization index	-1.012** (0.395)	-4.177* (2.176)	4.816 (3.565)	8.522 (19.935)	-0.038 (0.107)
Constant	26.609*** (6.778)	100.075*** (19.333)	-17.022 (54.680)	233.629 (194.966)	-1.698* (1.003)
Model	OLS	OLS	Tobit	OLS	Probit
R2 /pseudo R2	0.053	0.307	0.135	0.045	0.050
N	568	196	516	570	570

Standard errors are clustered on city. \* Significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

**Table 3c: Regulatory market and political ties in private firms**

	Model 10 Firm holds an export license	Model 11 Firm holds an import license	Model 12 Firm enjoys tax exemption	Model 13 Costs for quality certification by a national body (including fees, training, gifts and bribes)	Model 14 Costs for obtaining a business registration over last two years (including fees, gifts, bribes etc)
	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)	Coeff (SE)
<b>Political Ties</b>					
Government support index	0.081 (0.068)	0.032 (0.067)	0.012 (0.064)	-6.614 (14.499)	-16.896 (19.784)
CEO held previously government position	-0.612 (0.410)	-0.119 (0.545)	-0.364 (0.446)	-89.655 (79.707)	10.811 (102.329)
CEO is appointed by the Government	0.207 (0.431)	0.287 (0.331)	-0.058 (0.297)	-95.701 (74.130)	34.860 (74.521)
CEO holds party position	0.024 (0.208)	0.191 (0.233)	-0.058 (0.246)	40.223 (126.865)	-69.298 (52.545)
<b>Company</b>					
Log firmage	0.043 (0.166)	-0.232 (0.205)	-0.293** (0.127)	53.095 (42.980)	4.427 (50.968)
Log assets (lagged)	0.199*** (0.053)	0.274*** (0.065)	0.265*** (0.049)	10.222 (14.113)	7.813 (13.954)
Debt equity ratio (lagged)	-0.006** (0.003)	-0.006* (0.003)	-0.004** (0.002)	-0.404 (0.455)	0.311 (0.816)
Capital-labor ratio	-0.004** (0.002)	-0.001 (0.001)	-0.001** (0.001)	-0.037*** (0.009)	0.003 (0.051)
Industrial park	0.169 (0.137)	0.013 (0.188)	0.753*** (0.209)	59.201 (76.404)	57.667 (80.865)
Listed firm	0.772 (0.688)		1.196** (0.549)	-59.201 (83.886)	-66.872 (247.499)
Government ownership share			0.004 (0.012)	-0.614 (2.339)	-0.495 (1.227)
Sector (14 industries)	YES	YES	YES	YES	YES
<b>Management</b>					
CEO education	0.850*** (0.198)	0.377* (0.195)	0.711** (0.289)	87.466 (60.667)	28.406 (81.781)
Log tenure	-0.099 (0.129)	0.178 (0.192)	0.197* (0.118)	65.566 (44.365)	3.943 (26.227)
CEO has incentive contract	-0.080 (0.145)	0.056 (0.314)	-0.246* (0.139)	-88.460 (74.376)	32.508 (60.437)
<b>Regional Controls</b>					
Region (5 regions)	YES	YES	YES	YES	YES
Log pc GDP (city l)	0.374*** (0.083)	-0.081 (0.102)	0.145 (0.137)	181.487*** (44.429)	622.606** (271.300)
Marketization index	-0.021 (0.140)	-0.246 (0.204)	-0.019 (0.144)	43.021 (28.108)	93.273 (104.804)
Constant	-6.066*** (1.545)	-0.386 (1.280)	-5.239** (2.048)	-2411.194*** (693.868)	-6938.030* (3359.597)
Model	Probit	Probit	Probit	OLS	OLS
R2 / pseudo R2	0.244	0.212	0.298	0.046	0.216
N	473	450	570	568	227

Standard errors are clustered on city. \* Significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

## Appendix 1: Correlation coefficients of independent variable

	1	2	3	4	5	6	7	8	9	10	11	12
1 Government helps to identify foreign client	1.0000											
2 Government helps to identify domestic c	0.4045	1.0000										
3 Government support index	0.7417	0.7143	1.0000									
4 Government helps to secure a bank loan	0.2551	0.2897	0.6073	1.0000								
5 CEO held government position	-0.0228	0.0269	-0.0185	-0.0312	1.0000							
6 CEO is government appointed	-0.0138	0.0221	-0.0121	-0.0412	0.1161	1.0000						
7 CEO holds party position	0.0477	0.0662	0.0675	0.0493	0.0265	0.3167	1.0000					
8 Log of firm age	0.0009	-0.0077	-0.0136	-0.0165	-0.0434	0.3916	0.3668	1.0000				
9 Log of assets in 2001	0.1736	0.1456	0.2390	0.1974	-0.0514	0.1465	0.3249	0.2925	1.0000			
10 Log of sales in 2001	0.1908	0.1684	0.2687	0.2393	-0.0444	-0.0484	0.1726	0.0379	0.7347	1.0000		
11 Debt equity ration in 2001	-0.0050	-0.0126	0.0056	0.0518	-0.0096	-0.0114	0.0297	0.0041	0.0498	0.0421	1.0000	
12 Capital to labor ratio	0.0043	-0.0046	-0.0041	-0.0045	-0.0063	0.0324	0.0228	-0.0068	0.1335	0.0630	0.0041	1.0000
13 Location in industrial park	0.1108	0.0803	0.1655	0.1492	-0.0533	-0.1844	-0.1207	-0.2446	0.1077	0.2109	-0.0164	0.0052
14 Listed firm	0.0370	0.0291	0.0995	0.1233	-0.0168	-0.0572	0.0387	-0.0542	0.1965	0.2170	-0.0041	0.0127
15 Government ownership share	0.0070	0.0468	0.0215	0.0017	0.0492	0.4049	0.3482	0.4029	0.2832	0.0845	-0.0073	-0.0092
16 CEO holds university degree	0.0952	0.1127	0.1123	0.0508	0.0654	0.0087	0.1130	-0.0651	0.2272	0.2466	0.0152	0.0280
17 Log of CEO tenure	0.0036	-0.0049	0.0072	0.0217	0.0066	0.0201	-0.0786	0.0457	-0.1655	-0.1449	0.0028	-0.0230
18 CEO had incentive contract	0.0979	0.1560	0.1509	0.1292	-0.0041	-0.0780	0.0512	-0.0922	0.1010	0.1301	0.0350	-0.0087
19 Marketization of product markets	0.0898	0.0502	0.0532	-0.0036	-0.0605	-0.0866	-0.0321	-0.0960	0.1290	0.2107	0.0114	0.0582
20 Marketization of credit market	0.0489	-0.0006	0.0023	-0.0228	-0.0633	-0.1127	-0.1147	-0.1088	0.0864	0.1922	0.0014	0.0551
21 Marketization index	0.0706	0.0276	0.0315	-0.0090	-0.0741	-0.1251	-0.0965	-0.1172	0.1373	0.2425	0.0016	0.0694
22 Log per capita GDP	0.0296	-0.0285	-0.0263	-0.0362	-0.0480	-0.0725	-0.0216	-0.0786	0.1334	0.2022	-0.0119	0.0344

## Appendix 1 contnd

	13	14	15	16	17	18	19	20	21	22
13 Location in industrial park	1.0000									
14 Listed firm	0.0931	1.0000								
15 Government ownership share	-0.1492	-0.0017	1.0000							
16 CEO holds university degree	0.1291	0.0778	0.0684	1.0000						
17 Log of CEO tenure	0.0022	-0.0620	-0.1321	-0.1877	1.0000					
18 CEO had incentive contract	0.1068	0.0349	0.0057	0.1315	-0.0702	1.0000				
19 Marketization of product markets	0.0665	0.0133	-0.1145	0.0389	0.0320	0.0115	1.0000			
20 Marketization of crdit market	0.0109	-0.0059	-0.1521	-0.0616	0.0624	-0.0121	0.7202	1.0000		
21 Marketization index	0.0381	0.0134	-0.1567	-0.0098	0.0430	0.0062	0.8458	0.9316	1.0000	
22 Log per capita GDP	0.0760	0.0421	-0.0779	0.0479	0.0037	0.0231	0.5225	0.5133	0.5655	1.0000

