Agency in Inefficient Bureaucracies: Evidence from Chinese Ownership Reform*

Catherine Thomas
Columbia Business School

Yongxiang Wang
USC Marshall School of Business

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Abstract

The 2005 firm ownership reform in China required a contract renegotiation between controlling and minority shareholders. Minority shareholders in state-controlled firms achieved more favorable reform outcomes than minority shareholders in privately-controlled firms in cities where informal payments to government officials are relatively high. Reform outcomes were also correlated with bureaucratic managers' private financial incentives in these cities. Higher-paid bureaucrats achieved better outcomes for their state employers at the expense of minority shareholders. The results suggest that individual agency is more prevalent in low-quality bureaucracies and that agency can limit a government's ability to use unilateral power to expropriate private citizens.

Keywords: *Bureaucracy, agency, political economy, corporate governance*

JEL classifications: *D73, G30, L33, P16*

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1 Introduction

Recent research has verified that institutional quality affects economic outcomes, but we have limited understanding of the channels that govern this relationship. Acemoglu and Johnson (2005) show that property rights institutions impact economic growth and suggest that this is because individuals have no means of recourse in the event that a unilateral power decides to expropriate. They call for empirical investigation of the mechanisms underlying this relationship, using microeconomic data. Pande and Udry (2006) suggest that studying the consequences of variation in decision-makers' incentives within a given institutional context offers one approach to this investigation. This paper follows that approach, analyzing the firm-level outcomes of the 2005 ownership reform in China.[1]

Prior to 2005, all listed Chinese firms had two types of shareholders: the owners of tradable and nontradable shares. The 2005 ownership reform allowed nontradable shares to become tradable. In the 72 percent of reforming firms that were state-controlled, the reform process involved a contract renegotiation between the local or central government (the controlling shareholder) and private individuals (minority shareholders). It presented an unanticipated opportunity for state entities to benefit financially by using their unilateral power to expropriate minority shareholders. For the majority of traded firms, the owners of the tradable shares received some fraction of the nontradable shares as compensation for the resulting supply shock to tradables' value. The firm-level ratio of the number of nontradable shares received in compensation to the number of tradable shares owned is known as the compensation ratio and was the outcome of a bargaining game between the shareholders of each type.

The public sector employees who managed the ownership reform process for each state-controlled firm can be viewed as agents of the government in its role as controlling shareholder. These managers faced varying incentives to act in the financial interests

[1] Several other recent papers have examined the ownership reform (see Li et al. (2011) and the literature cited therein). We focus on the relationship between characteristics of the local bureaucracy and reform outcomes in state-controlled firms. The reform process is also of direct interest since it represents a large transfer of wealth between shareholders of different types. The market value of the 1079 firms studied in this paper approximated 550 billion U.S. dollars, and, together, the firms employed at least 7.6 million workers, excluding contract workers.

of the government since their salary, bonus and personal shareholdings varied across firms. Moreover, managers of state-controlled firms are part of the local bureaucracy, the quality of which is known to differ across locations (World Bank, 2006; Cai et al., 2012).

Our analysis reveals that the minority shareholders of state-controlled firms located in cities with bureaucracies the World Bank deems relatively efficient fared as well in the reform as the minority shareholders of privately-controlled firms in these cities. However, when a state-controlled firm was located in a city with a relatively inefficient local bureaucracy, its minority shareholders fared better in the reform. These shareholders achieved higher compensation ratios than did minority shareholders in the same cities that owned tradable shares of privately-controlled firms. They also achieved better outcomes than the minority shareholders of state-controlled firms located in well-functioning bureaucracies. The compensation ratio was particularly high for firms controlled by the local government—rather than by the central government—in inefficient local bureaucracies. These results suggest that, in this reform, inefficient local governments were actually less willing or less able to expropriate private citizens.

The paper next explores the channels that determine this relationship. Within inefficient bureaucracies, the firm-level reform outcomes are associated with bureaucrat managers' private incentives. Minority shareholders received the highest compensation ratios in local-government-controlled firms in inefficient bureaucracies where senior management faced weak incentives to represent the government's interests. The empirical evidence is consistent with the view that agency is particularly rife within inefficient bureaucracies and that bureaucratic agency has economic consequences for private citizens in these locations.

Survey data reveal that cities scoring poorly on bureaucracy efficiency are also thought to offer limited property rights protection. That is, in these cities, there is a higher perceived risk that private citizens will be expropriated. Nonetheless, while property rights protection in these cities was low, the findings reveal no evidence of minority-shareholder expropriation in these environments at the time of the reform. The results suggest that the quality of local governmental institutions (referred to by

Acemoglu and Johnson (2005) as "vertical institutions") is characterized by at least two dimensions that are relevant to economic outcomes: (1) the risk of expropriation and (2) the adherence of bureaucrats' actions to the state's objectives. Since these two dimensions of quality appear to be negatively correlated in this setting, bureaucrat agency can provide a potential channel for circumventing government objectives through capture by outside interests, limiting the vertical nature of government authority. Taken together, the results are consistent with the idea that agency in inefficient bureaucracies can serve to limit a low-quality government's ability to exercise its unilateral power.

The reform outcomes in the 28 percent of reforming firms that were under private control provide further evidence in support of the hypothesis that variation in the compensation ratio in state-controlled firms reflects agency in low-quality bureaucracies. The reform process for these firms consisted of a bargaining game between two groups of private citizens and the outcomes are predicted to be unrelated to the quality of local vertical institutions. As predicted, there is no correlation between the city-level measure of bureaucracy efficiency and the compensation ratio to which these firms' shareholders agreed. Moreover, senior managers' salaries are unrelated to the firm-level outcomes for privately-controlled firms, both in general and within cities with inefficient bureaucracies.

The findings also relate to the empirical literature on the causes and consequences of corruption—"the abuse of entrusted power for private gain" (Transparency International, 2011). The city-level measure of local-government efficiency used in the paper is based on the magnitude of payments made to government officials, and Cai et al. (2012) propose that it can be used as a measure of corruption.[2] The fact that managers in inefficient bureaucracies are more responsive to the financial incentives offered by their employer could be due to the fact that their effort is correlated with employer-provided incentives in these cities; or it could be because managers in these cities are

[2] A recent example of the relationship between entertainment and travel costs and corruption is the U.S. grand jury investigation into whether former employees of Avon Products Limited in China paid bribes to officials in violation of U.S. anti-corruption laws. This investigation began in 2008 with scrutiny of allegations of improper travel, entertainment and other expenses at Avon's Chinese operations (Bloomberg, 2012).

more likely to accept side-payments from outside interests when their employer offers weak incentives. If managers receive side-payments from minority shareholders to agree to a high compensation ratio, then their private financial incentives are determined by both the payments from their employer and by the side-payments they receive.

Svensson (2005) surveys the papers in this literature that ask whether higher bureaucrat wages reduce corruption—that is, whether financial incentives from the employer can offset the incentives on offer from outside interests.[3] Di Tella and Schargrodsky (2003) exploit variation over time to establish that salaries are negatively correlated with the extent of government-employee malfeasance only when the likelihood of being punished is limited. In our study, we use geographic variation in the quality of local government to establish that public servants appear to respond to private incentives only in poor-quality institutional environments. However, the results in this paper do not necessarily imply that low-paid bureaucrats in inefficient local governments accepted side-payments to agree to favor minority interests in the 2005 reform; the findings are also consistent with this subset of bureaucrats exerting less effort during the contract renegotiation.

The data do not support any feasible alternative explanations of the full set of empirical findings. While it is possible that the compensation ratio within state-controlled firms is correlated with an omitted variable that is also associated with government efficiency, we would still require an explanation for the further association between compensation ratios and managers' financial incentives in only a subset of cities. Conversely, while bureaucrat managers' salaries may be correlated with unobserved factors that also influence the firm-level compensation ratio, it is not clear why these outcomes are more responsive to these unobserved factors in state-controlled (and, in particular, in local-government-controlled) firms in low-quality bureaucracies.

[3] Cross-sectional evidence about the relationship between bureaucrat salary levels and corruption faces substantial identification issues and finds mixed results. Several papers, including Di Tella and Schargrodsky (2003), exploit variation across time in specific empirical settings to examine this question. Hsieh and Moretti (2006), using variation in the extent of corruption across different time periods, infer that corruption was, indeed, present in the United Nations Oil for Food Program in Iraq. Under the assumption that multinational oil firms were less willing than small obscure traders to pay bribes, they predict and observe relative underpricing of oil (reflecting corruption) when these traders make up a large share of oil buyers.

Finally, although the policy experiment studied in this paper is specific to state-controlled firms in China, the mechanisms at work may be quite general. The results suggest that private individuals do have a potential means of recourse against vertical institutions' unilateral power. Individual agency within a vertical institution can offset the imbalance of power between the institution and private citizens. Moreover, agency within a vertical institution may be more prevalent in low-quality institutions, where the risk of abuse of unilateral power is greatest.

The rest of the paper proceeds as follows: Section 2 presents a parsimonious summary of the relevant background to ownership reform and how the policy was implemented in state-controlled firms; it also describes sources of variation in local institutional quality and senior-management incentives. Section 3 describes the data used in the study and the approach taken in the empirical analysis. Section 4 presents the main results. Section 5 describes some robustness tests exploring possible alternative explanations for the findings. Section 6 concludes.

2 The Policy Shock and the Reform Process

2.1 Background to the Reform

Many of China's state-owned firms were partially privatized through share-issue privatizations starting in 1990, when securities markets were established in Shanghai and Shenzhen.[4] For three quarters of the 72 percent of partially-privatized firms that remained under government control, the controlling government agencies were local agencies, or *difang zhengfu*. The remaining one quarter were controlled by the central government, or *zhongyang zhengfu*. SASAC (the State-owned Assets Supervision and Administration Commission of the State Council) monitored the senior managers of central-government-controlled firms more closely than those of local-government-

[4]Huang (2003) describes how state bureaucracies sold assets at relatively low values at this time, often to multinational firms, providing some related evidence of the bureaucracy acting counter to the interests of the state employer.

controlled firms.[5]

From 1990 onwards, the typical firm-ownership structure consisted of both tradable and nontradable shares. At the start of the 2005 reform process, nontradables accounted for an average of 62 percent of both private- and state-controlled firms' outstanding shares. While these shares carried the same voting and cash flow rights as tradable shares, the key difference between the two, as the names suggest, was that owners could not sell nontradable shares in the secondary stock market.

Nontradability was thought to have multiple negative effects on corporate governance and firm value, as described in Wu (2004). The state had attempted ownership reform in 2001, but the process was canceled the following year due to a fear that the increase in the supply of tradable shares would destabilize Chinese stock markets. Calomiris et al. (2010) contains an empirical analysis of the financial effects of these policy changes. In this paper, we study the reform, which, by 2007, had succeeded in transforming the ownership structure of the majority of listed firms so that formerly nontradable shares could be traded. Two key events initiated the firm-level reform process:

First, on April 29, 2005, the CSRC (the Chinese equivalent of the SEC) announced the "Notice of the China Securities Regulatory Commission on Piloting the Share-trading Reform of Listed Companies."[6] This notice stated that the sale of nontradable shares would be permitted in the future, subject to the agreement of the owners of tradable shares. The announcement indicated that each firm was responsible for its own ownership reform process and that nontradables shareholders would have to compensate tradables shareholders for the right to sell nontradable shares into the stock market. Since the existing financial contract between nontradables and tradables shareholders specified that the former could not sell their shares, this reform constituted a contract renegotiation between the two groups. Thus, the announcement initiated a

[5] The managers of local-government-controlled firms are monitored by a local branch of SASAC, which is overseen by the central SASAC organization. This policy was institutionalized by the well-known Zhuada Fangxiao announcement in 1997, which translates to a policy of "focusing on central state firms, letting local state firms go."

[6] http://www.lawinfochina.com/law/displayModeTwo.asp?ID=4160&DB=1&keyword=. This date is defined as Event 1 in our event study analysis in Section 4.

nationwide bargaining game between nontradables and tradables shareholders in all listed firms. At this time, it became common knowledge that the firm's senior managers would bargain with tradables shareholders about the reform details at the firm level, but the exact role of each participant (senior management, tradables shareholders, board of directors, regulation agencies, financial intermediaries) in the bargaining game remained somewhat unclear.

Second, on September 4, 2005, the CSRC issued the "Measures for the Administration of the Share-trading Reform of Listed Companies."[7] Detailed requirements of each listed firm's ownership reform were included in this announcement: the bargaining/reform procedure; the principles governing setting up the reform plan; information disclosure of important news during this reform; and the role of financial intermediaries. Furthermore, the announcement made it clear that senior managers were the key players in the bargaining game on behalf of nontradables shareholders. In addition, 37 firms had successfully carried out their reforms by this time, and the details of the reforms, including the role of senior management, were publicized in the financial media.

Market participants in China viewed the April 29 and September 4, 2005 announcements as the two milestone policy announcements governing the nationwide reform among listed firms. Figure 1, which resembles the first figure presented in Li et al. (2011), summarizes the relevant sequence of events for an individual firm's reform process.

The vast majority of the 1390 firms that had undergone ownership reform by July 2007 agreed to a compensation ratio as part of the reform.[8] This ratio determined

[7] http://www.lawinfochina.com/law/display.asp?db=1&id=4552&keyword=. This date is defined as Event 2 in our event study analysis in Section 4.

[8] Our data, described in Section 3, include 1079 firms. Seven financial services firms also used a compensation ratio, and are excluded from the analysis. This means that 1086 firms used a compensation ratio as part of their reform, accounting for 88 percent of the 1238 firms that have passed ownership reforms. (The 1238 firms account for 94 percent of all the listed firms that underwent this reform). The other 12 percent (i.e., 152 firms) used different means of compensating tradables shareholders: offering call or put warrants; guaranteeing stock buy-backs at pre-set prices; or canceling a fraction of nontradable shares. Late-reforming firms (i.e., those reforming after July 18, 2007), and also excluded from our analysis, either had complex ownership structures (B, H, or N shares in addition to A shares and nontradable shares) or were poorly performing "Special Treatment" firms that underwent a different process.

the extent to which the owners of tradable shares were compensated with formerly nontradable shares for the negative supply shock to the value of their tradable shares. The compensation ratio was, hence, the outcome of the bargaining game between the owners of nontradable shares—which, for state-controlled firms, was the local or central government—and minority holders of tradable shares. We treat the management of the firm as the agent to the nontradables (controlling) shareholders' principal.

We assume that the minority tradables shareholders' objective was to achieve as high a compensation ratio as possible.[9] When the government retained a larger stake, it meant that a smaller stake had been transferred to minority shareholders. We do not make any assumption about the objective function of the government regarding their optimal compensation ratio at the firm level. One possible government objective was to minimize the agreed-upon compensation ratio so as to retain ownership over a larger fraction of each firm, which could, post-reform, be sold to generate revenues. Other possible government objectives include: timeliness in passing the reform, as per the central government's instructions; and various possible strategic motives, including treating minority shareholders well so as to attract future investment.

For state-controlled firms—especially for the subset of these firms controlled by the local government—the bargaining game was governed by the local institutional environment. Much of the existing empirical work characterizes the quality of vertical institutions as a measure of the risk that private citizens will be expropriated. This reform process presented an opportunity for local governments to exploit unilateral power and expropriate minority shareholders through offering a low compensation ratio.

We do not attempt to measure the efficient compensation ratio at the firm level and, as such, do not assess the welfare implications of observed outcomes. Our approach takes advantage of the fact that the renegotiation is a zero-sum game for each firm. We implicitly assume that, controlling for observable firm characteristics, the average compensation ratio paid in privately-controlled firms approximates the level

[9] There is evidence that the group of tradables shareholders is also subject to internal agency. For example, nontradables shareholders may make side-payments to tradables shareholders (see Wang, 2010). For the purposes of this paper, we include the concentration of ownership of the nontradables shares as a control variable in our analysis and focus on the issue of agency within government.

that would result in state-controlled firms if it were not for the imbalance in bargaining power arising from the unilateral power exerted by the controlling shareholder in state-controlled firms.[10]

As is often the case for other macroeconomic policies in China, the market did not expect the policy announcements about the reform, and, as described in Calomiris et al. (2010), there was no lobbying during this process. The main independent variables of interest in this paper—firm-level manager incentives and city-level institutional quality—were established prior to the policy announcements.

2.2 Variation in Institutional Quality

In 2004, the World Bank, with the cooperation of China National Bureau of Statistics, surveyed 12,400 firms across 120 Chinese cities to evaluate the investment climate in each of these cities. This is, to our knowledge, the largest and most comprehensive city-level survey available for China from this time—one year prior to the announcement of ownership reform. The survey asked firms to report the share of firm revenues that was spent on travel and entertainment expenses. Cai et al. (2012) describe this measure as including a combination of "grease money" for better government services and "protection money" to guard against government expropriation.

Cai et al. (2012) also point out that this measure may contain a component of legitimate business expenses for the firms surveyed in each city.[11] Rather than focus on the association between this firm-level measure and reform outcomes, we emphasize how the city-level average of this variable for the surveyed firms in a city affects the relationship between bureaucrat managers' private financial incentives and reform outcomes for firms within a city. The cross-country EBRD-World Bank Business Environment and Enterprise Performance Survey also surveys managers on the extent of unofficial payments made to public officials and averages the firm-level responses

[10] The empirical analysis includes firm-level controls for the extent of the supply shock to the value of tradable shares. These controls are the fraction of outstanding nontradable shares at the time of the reform and firm size.

[11] The analysis contains a number of additional firm-level control variables that are likely to be correlated with legitimate business expenses, including firm-level sales and industry fixed effects.

within-country. Svensson (2005) describes this variable as a cardinal measure of the extent of country-level corruption.[12]

Figure 2 illustrates the city-level variation in the entertainment and travel costs variable on a map of China. The figure demonstrates that high- and low-costs cities are fairly evenly dispersed throughout the country. Among 120 cities, the 10th percentile of this index is 0.7 percent of sales, and the 90th percentile is 1.9 percent of sales. Overall, this index has a mean and median value of 1.1 percent with a standard deviation of 0.5.

The same World Bank publication also presents two other measures of government inefficiency. One is the amount of time that firm employees spend interacting with four major government bureaucracies (tax administration, public security, environmental protection, and labor and social security). The other is the overall tax rate. These two variables are positively correlated with the entertainment and travel costs variable, consistent with the view that some cities' institutions are generally supportive of business activity, and some are not. We have chosen to focus on the entertainment and travel costs variable since these "expenditures can serve as a conduit for informal payments to officials" (World Bank, 2006). We treat this variable as a measure of the extent to which a typical firm in a given city is required to make side-payments to smooth interactions with local government officials, either due to inefficient red tape or local bureaucrat corruption.

Later in the same survey, firms were asked about the likelihood that their property and contracting rights would be protected and enforced. The pairwise correlation coefficient between the city-level responses to this variable and the entertainment and travel costs variable is -0.45. That is, cities in which firms incur high costs in interacting with local officials are also likely to be the cities in which firms believe that there is a low probability that their property and contracting rights will be protected.

Using data from a 2003 World Bank survey of firms in 18 Chinese cities, Cull and

[12] Transparency International differentiates between corruption "according to rule" and corruption "against the rule." The former is when a bribe is paid to receive preferential treatment for something that the bribe receiver is required to do by law, and maps into Cai et al.'s (2012) description of "grease money." The latter is a bribe paid to obtain services the bribe receiver is prohibited from providing, which may be closer to Cai et al.'s "protection money."

Xu (2005) use a further variable—"government help"—to measure the quality of local property rights, or vertical, institutions. They find that this variable is positively associated with firm reinvestment decisions, and they argue that it supports Acemoglu and Johnson (2005)'s conjecture that vertical institutions matter for economic growth because vertical power is unilateral. While this variable is not available in the 2004 round of the survey of 120 cities, for cities surveyed in both rounds, there is a negative correlation of 0.23 between "government help" and the entertainment and travel costs variable used here. Overall, these correlations suggest that different measures of the quality of local institutions at the city level present a consistent picture: Cities that perform poorly on one dimension of quality also tend to score poorly on all other measures, and vice versa.

2.3 Variation in Senior Management Incentives

The senior managers of state-controlled firms in China, modeled here as the agents of the state employer, are usually nominated and selected by the level of government that controls the firm—either local or central. In many cases, an official about to retire from a government position is selected for a management role. For example, a government official who has been regulating a partially privatized, state-controlled firm might be selected as the next CEO, since he would be thought to have very relevant industry experience. While Qian (1995) finds that satisfying the interests of the governing Communist Party and the state is often the sole criterion for measuring a firm's performance, Groves at al. (1995) discuss how managers' pay and career prospects began to be linked to their firms' economic performance in the industrial

reforms of 1980s.[13],[14]

Our data contain information on the top three senior managers' annual salaries—i.e., the total cash and bonus payments received by the top three managers of each firm.[15] We also observe these individuals' tradable and nontradable share holdings in the firm in 2004, prior to the start of the reform. Managers own tradable and nontradable shares for 307 and 46 of the 1079 firms in our data set, respectively. However, for firms where managers own tradable shares, the percentage of tradables owned is 0.01, whereas the equivalent number for firms where managers own nontradable shares is 5.9 percent.[16] Since the majority of reforms were completed by 2006, it has also been possible to collect information about CEOs' short-term career trajectories after the reform process and, specifically, whether or not they remained employed.[17]

Table 1A presents summary statistics for senior managers' financial incentives. The average management salary summed over the top three managers in state-controlled firms in 2004 is 600,000 RMB, very similar to the average salary levels in privately-controlled firms, and the standard deviation in both groups is also similar.[18] Table 1B shows that salary levels are strongly correlated with firm size. Firm size is considered the key determinant of salaries since it often reflects the importance of the firm as a

[13]The low-powered financial incentives characteristic of bureaucracies are thought to lead to regulatory capture and other inefficiencies (Tirole, 1994; Dixit 1997). Theoretical models of decision-making within bureaucracies that motivate weak incentives as a response to the organizational objectives of bureaucracies when the bureaucracies are well-functioning, particularly the multiple principal aspect of the organization, include Rose-Ackerman (1986), Tirole (1994), Dixit (1996, 1997), Detwatripont et al. (1999), and Williamson (1999). Acemoglu et al. (2008) show how government provision facilitates a commitment to low-powered incentives that may be desirable in influencing the composition of worker effort. Prendergast (2007) illustrates how bureaucrat wages influence the composition of bureaucrat types that are hired.

[14]Firth et al. (2006) provide evidence that managerial compensation in Chinese firms often also depends on the relative earnings of the company's workers and local living costs due to a societal expectation of equal pay among co-workers.

[15]The manager salary measure used in this paper is total manager compensation, including any bonus payments. We refer to this variable as salary rather than as compensation to avoid confusion among the outcome variable of interest, the compensation ratio, and manager compensation, which is a key independent variable.

[16]For this reason, we focus on the financial incentives related to management's nontradable shareholdings in the empirical analysis.

[17]These data are not available for the other two senior managers whose financial incentives are included in the manager-salary and shareholdings data.

[18]This corresponded, in 2005, to a mean level of annual salary and bonus summed over the top three managers of 75,000 USD.

tool of government policy and, hence, the prestige of the appointment. Though not shown in the table, salaries are also strongly correlated with the manager's tenure in the position.

We now turn to the question of how to measure the strength of senior management incentives relating to the reform process.[19] Baker and Hall (2004) ask whether the appropriate measure of incentives is "percent owned" or "dollars at stake." They demonstrate that accurate measurement of the variation in the strength of management incentives depends on whether the marginal product of management activity is invariant or proportional to firm size. If the marginal product is proportional to firm size, then the managers' percentage stake in the firm is the appropriate measure of the strength of incentives since it measures the managers' marginal benefit from the actions that they take.

In this paper, the management action of interest is the effort exerted to agree to a compensation ratio. Since this ratio is a percentage transfer, the marginal product that the state controller earns from the results of managers' effort, reflected in the agreed-upon compensation ratio, is proportional to firm size. The strength of managers' incentives relating to this action depends on the marginal benefit they obtain from the agreed-upon compensation ratio. If a manager owns nontradable shares, the marginal benefit he enjoys from achieving a lower compensation ratio is proportional to the extent of the shareholding, and his interests are aligned with those of the state controller—the majority holder of nontradable shares. When a manager receives a high salary and bonus payment relative to the size of the firm, then he is capturing a larger share of the firm's value in personal financial remuneration. He could, thus, be viewed as having more at stake in the outcome of the value of the firm that the state controller retains since the state determines his salary level and whether he remains in his position. This suggests that the percentage of nontradable shares owned by management and the ratio of managers' salary to firm size are two appropriate measures

[19] How best to measure variation in management incentives is a long-debated question, as discussed in Jensen and Murphy (1990) and in the large related literature in the corporate finance and labor economics fields.

of managers' financial incentives in this setting.[20]

While scaling managerial financial incentives by firm size allows us to measure management payoffs in relation to the marginal product of their actions, scaled measures are not necessarily good measures of managers' openness to outside capture. Unlike the managers in Baker and Hall's model, the managers in this empirical setting may act to maximize an objective function that explicitly includes side-payments from outside interests—in this case, the minority shareholders. It is possible that managers can be "captured" by minority shareholders with lower side-payments when they receive low levels of financial remuneration from the state employer.[21] In other words, higher salary levels or high values of nontradable shareholdings may offset agents' incentives to shirk or to accept side-payments from minority shareholders to agree to a lower compensation ratio. This introduces a mechanism whereby the level of manager financial incentives, rather than the value of the financial incentives relative to the effects of exerted effort, plays a direct role in the compensation ratios observed in the data. Since we argue that managerial actions could be influenced by either the strength of incentives from the employer or the propensity to change behavior in response to side-payments, we examine the relationships between variation in both the relative and absolute levels of managers' financial incentives.

3 Data and Empirical Strategy

The firm-level compensation ratio data, senior managers' holdings of nontradable and tradable shares, top ten nontradable shareholders' shareholdings, top ten tradable shareholders' shareholdings, and the proportion of total nontradable shares over outstanding shares of the firm are all taken from each listed firm's reform plan docu-

[20] A second reason why it is appropriate to scale the level of financial incentives by firm size relates to the fact that there is a strong positive correlation between salaries and firm size, reflecting the belief that a "fair" salary is increasing in firm size. Management might be more inclined to exert effort on behalf of the state if they believe they are being fairly paid.

[21] Two possible theoretical underpinnings of this prediction are: first, efficiency wages (Becker and Stigler, 1974), which also underpins the mechanism outlined in Di Tella and Schargodsky (2003); and second, a diminishing marginal utility of income theory, suggesting that managers are less open to outside capture at high salary levels.

ment.[22,23] Wind Information Corporation (WIND), a Shanghai-based provider of financial data for listed firms in China, also provides some information on this nationwide reform, allowing checks for data accuracy. Data on CEO turnover following the reform were also taken from WIND. Stock return data, return on assets, the log of sales, the proportion of independent directors, and senior managers' compensation were gathered from the Corporate Governance database and the Financial Statements Database at CSMAR, maintained by the Guo Tai An Information Technology Company (GTA), located in Shenzhen City.[24] Finally, data on ownership structure, including whether the controlling shareholder is a central- or local-government agency, were gathered from annual reports for the year prior to the reform, downloaded from the Shanghai and Shenzhen stock exchange websites.

The compensation ratio is the main dependent variable of interest in this paper.[25] The denominator is the total number of tradable shares prior to the policy reform. The numerator is the total number of formerly nontradable shares granted to the owners of tradable shares to compensate them for the supply-side shock to the value of their shares going into the reform. For example, if there were 70 nontradable shares and 30 tradable shares in a listed firm prior to the ownership reform, and the compensation ratio was set at 0.3, which is around the average level, then nontradables shareholders would give 30 x 0.3 = 9 shares to the owners of the formerly tradable shares. Thus, after this bargaining process, the owners of the formerly nontradable shares could begin to sell their remaining 61 shares on the stock market, while the former minority shareholders would now own 39 tradable shares.

[22] Since senior managers' holdings of nontradable shares are predicted to create different incentive effects from holdings of tradable shares, we collected this information by hand from each listed firm's annual reports and its reform plan document. This level of disaggregation of ownership information is not available in standard databases such as the Chinese Listed Firms Corporate Governance Database at CSMAR. All firm-level financial variables are pre-reform data unless otherwise mentioned.

[23] These documents are available online at gqfz.p5w.net.

[24] Part of the Corporate Governance database is now available through WRDS at The Wharton School.

[25] Although both CSMAR and WIND provide compensation ratio information in their databases, Haveman and Wang (2009) show that the ratios are not consistently defined across firms, and so, instead, they collect these values by hand from each listed firm's reform document. These hand-collected measures are also used in this paper. The sample mean and standard deviation are very similar to the sample taken from WIND used in Li et al. (2011), as shown in their Table 1.

Table 1, Panel A presents summary statistics for the compensation ratio and the independent variables of interest and controls for all firms; for all state-controlled firms located in cities included in the World Bank survey; and for the subset of these state-controlled firms that the local government controls. The mean compensation ratio among the 1079 non-financial firms that had passed the reform by July 18, 2007 was 0.305; the standard deviation was 0.079. State-controlled firms make up 71.6 percent of our total sample. Among the 773 state-controlled firms in the data, the mean compensation ratio was 0.311, and the standard deviation was 0.065. The last panel of the table shows that the compensation ratio was very similar among the subset of state-controlled firms controlled by local government.[26]

We match the sample of firms adopting a compensation ratio as part of their reform process with the city-level index of average entertainment and travel cost expenses described in Section 2. We have a matched city-level government inefficiency index for 647 of the 773 state-controlled firms that use a compensation ratio. Among these firms, the mean value of the local entertainment and travel costs index was 1.171, and the standard deviation was 0.433. The last set of columns shows that, for local-government-controlled firms, the mean local entertainment cost index is slightly lower, at 1.147, with a standard deviation of 0.438.

A set of firm-level and city-level control variables, thought to possibly have independent effects on the compensation ratio and summarized in Table 1A for different groups of firms, are used throughout the analysis. Firm-level controls related specifically to the reform process are the fraction of nontradable shares, the proportion of independent directors, the concentration of the top ten owners of nontradable shares and the concentration of the top ten owners of tradable shares. The fraction of nontradable shares in the firm is predicted to have a positive effect on the compensation ratio since it measures the magnitude of the supply shock on the price of tradable shares. The proportion of independent directors is also predicted to have a positive effect on the compensation ratio since independent directors are thought to safeguard the interests

[26] Appendix Table 1 gives the summary statistics for all 773 state-controlled firms in the data. The subset of these firms located in a city included in the World Bank survey is very similar in terms of these summary variables.

of the minority shareholders. The concentration level of the top ten owners of tradables (nontradables) could be positively or negatively associated with bargaining outcomes, as described in Wang (2010). A high level means that fewer individuals each face a larger incentive to increase (decrease) the compensation ratio. However, a high concentration level could also suggest that only a few key individuals would need to be open to receiving side-payments to lead to a decreased (increased) compensation ratio. We control for these effects to focus on the additional effects of agency among nontradables shareholders.

Table 1, Panel B presents pairwise correlation coefficients between the key independent variables of interest—namely, entertainment and travel expenditures and senior managers' financial incentives, as described in Section 2—and the various control variables at the firm level. While firms in cities with high entertainment costs tend to have lower levels of senior manager shareholdings and salaries, the magnitudes of the correlation coefficients are small. Other firm-level controls include the log of firm assets, as a measure of firm size, and the return on equity to proxy for firm performance. Also included is the time between the initial policy reform announcement—April 29, 2005—and the firm-level bargaining agreement. City-level controls include the log of GDP per capita and the log of city population.[27] This panel shows that the entertainment costs variable is negatively correlated with both the log of GDP per capita and the log of city population, but the correlation coefficients are, again, relatively small.

The unit of analysis in each empirical specification is the firm. We conduct ordinary least squares regressions, with standard errors clustered at the city level. We analyze, first, the variation in the compensation ratio among the whole set of non-financial services firms agreeing to a compensation ratio as part of their reform process, and then the subset of these firms that are state-controlled. Specifically, we estimate different versions of the following equation, where y_i is the firm-level compensation ratio:

$$y_i = \alpha + \beta_m X_m + \beta_i X_i + \beta_m \left(X_m X_i\right) + \varepsilon_i. \tag{1}$$

[27] These data come from the CSMAR Regional Economy Database.

X_m are city-level factors—the entertainment and travel costs variable, and the various control variables, or city fixed effects. X_i are firm-level variables, including senior manager incentives measures, along with the control variables described above, and fixed effects for 73 industry codes. The key interaction variable included in $X_m X_i$ is the interaction of city-level entertainment and travel costs and firm-level senior manager incentives. We also conduct robustness tests by estimating equation (1) with the set of privately-controlled firms agreeing to a compensation ratio.[28]

Supporting analysis includes an event study of the returns in tradable shares around the time of the two policy announcements described in Section 2. In these estimations, the dependent variable is the return over a two-day window centered on the two event dates, and then on the day of each event. We test whether the extent of abnormal returns is correlated with the firm- and city-level variables of interest. Finally, we also conduct an analysis of CEO turnover, using a probit analysis where the dependent variable is equal to 1 if the CEO loses his position in the year following the firm-level reform.

4 Results

The Compensation Ratio in State-Controlled Firms

The first column of Table 2 shows that the compensation ratio for state-controlled firms is significantly higher than for privately-controlled firms, replicating the finding in Li et al. (2011). Column 2 includes controls for characteristics of the firm in the year prior to the reform: firm performance (proxied with return on equity); firm size (proxied with the log of assets); and industry fixed effects. It also controls for the time taken to pass the reform. Column 3 adds control variables that reflect aspects of the bargaining game: the fraction of independent directors; the percentage of nontradable shares; and the concentration ratio of the top ten owners of nontradable and tradable

[28] In another set of robustness tests, we winsorize the main dependent variable—the compensation ratio—at both the first percentile and the 99th percentile to rule out the possibility that extreme observations drive our results. The results of these tests are unchanged from the main results and are available from the authors on request.

shares. Columns 4 and 5 add controls for city-level factors: the log of GDP per capita and population in Column 4, and city fixed effects in Column 5.

In each specification, state-controlled firms are shown to have a compensation ratio that is two- to three-percent higher than that of privately-controlled firms. Columns 6 and 7 include indicator variables that distinguish between local- and central-government control. In the first new result of this paper, the compensation ratio is shown to be significantly higher for local-government-controlled firms than for privately-controlled firms, even within-city. While there is some evidence that the compensation ratio is also significantly higher for central-government-controlled firms than for privately-controlled firms, this is not the case when controlling for city fixed effects. We conduct an F-test of the hypothesis that the coefficients corresponding to the variables indicating local- and central-government-control are equal. The test reveals that the correlation between local-government control and the compensation ratio is significantly higher than the correlation between central-government control and the compensation ratio (with a p-value of 0.06).

As mentioned earlier, one hypothesis for why state-controlled firms had higher compensation ratios was that bureaucrat managers faced particular pressure to complete the reform in a timely manner. Since the reform requires the agreement of both tradables and nontradables shareholders, nontradables shareholders can ensure a more rapid agreement by agreeing to a higher compensation ratio. In line with this idea, we see that a longer time to agreement is significantly associated with a lower compensation ratio. However, even controlling for the time taken to pass the reform, state-controlled firms show a higher compensation ratio. Other control variables take on the expected sign: For example, the proportion of a firm's shares that were formerly nontradable has a positive effect on the compensation ratio, reflecting the magnitude of the supply shock experienced by the tradables shareholders.[29]

[29] The share of independent directors for the firm is positively associated with the compensation ratio for state-controlled firms, perhaps reflecting their monitoring role, but this association is not significant. It is interesting to note that the concentration of ownership among the top ten tradables and nontradables shareholders is negatively and positively associated with the compensation ratio, respectively. This suggests that key individuals within each group are not willing or able to bargain for outcomes that favor the interests of each group, and is explored in further detail in Wang (2010).

Table 3 presents the second set of new findings, relating to the relationship between city-level entertainment and travel costs and the firm-level compensation ratio.[30] Column 1 shows that, on average, there is no association between local government efficiency, as measured by these costs, and the compensation ratio. However, Column 2 shows that the compensation ratio is significantly higher for state-controlled firms in cities with high entertainment costs than for privately-controlled firms in these cities. Specifically, in cities where this variable is above the median level, the compensation ratio is an average of three-percent higher than for privately-controlled firms. Column 3 reveals that this is due to the high compensation ratios observed in local-government-controlled firms in cities with inefficient local governments. F-tests demonstrate that these firms' outcomes were significantly higher than those of local-government-controlled firms in cities with efficient local bureaucracies and higher than those of central-government-controlled firms in the same inefficient local bureaucracies.

Columns 4 to 7 of Table 3 include entertainment costs as a continuous variable and establish a positive association between the level of entertainment costs and the compensation ratio only for state-controlled firms. Column 5 shows that this finding is present within-city. Columns 6 and 7 show that the positive association between entertainment costs and the compensation ratio is present in both central- and local-government-controlled firms, but the association is stronger in local-government-controlled firms.[31] Overall, Table 3 establishes that the compensation ratio is higher, on average, in state-controlled than in privately-controlled firms because of the high observed outcomes in local-government controlled firms located in cities with inefficient local bureaucracies.

Tables 4 and 5 present the results that are the focus of this paper, offering an explanation for the association between entertainment costs and outcomes in state-controlled firms. Restricting attention to the set of state-controlled firms, Table 4 explores the

[30] The same firm- and city-level controls are included as in Table 2 but, to save space, we do not report the coefficients.

[31] The estimated coefficients on the interaction between state control and entertainment costs in Columns 4 to 7 are unaffected when futher interaction controls for the interaction of state control (at the relevant level) and firm size, as well as state control (at the relevant level) and the time taken to pass the reform, are included (results are available from the authors on request).

role of different measures of senior manager incentives. Panel A presents the results for all state-controlled firms; Panel B includes only local-government-controlled firms; Panel C includes only central-government-controlled firms. All columns include industry fixed effects, and Columns 2 and 4 also include city fixed effects. Columns 1 and 2 in each panel include the level of senior managers' salary and the value of senior management's shareholding of nontradable shares. Columns 3 and 4 include the relative measures of financial incentives to exert effort on behalf of the state: managers' salary divided by firm size and the percent of the firm owned by managers in nontradable shareholdings.[32]

In Column 1 of Table 4, Panel A, both managers' salary and the value of nontradable shareholdings are shown to be negatively and significantly associated with variation in the compensation ratio. On average, across all state-controlled firms, managers who are better paid by the state and who have a larger value of nontradable shareholdings achieve lower compensation ratios. A one standard deviation increase in the level of senior managers' salary is associated with a 1.13-percent decrease in the compensation ratio achieved. In Column 2, which includes city fixed effects, the coefficient on managers' salary remains negative but is no longer significant. This suggests that some of the variation in salary level is correlated with city-level variation in the average compensation ratio. Panels B and C show that the coefficient on salary levels is negative but not significantly different from zero in either local- or central-government-controlled firms. However, the value of nontradable shareholdings remains negatively and significantly associated with the compensation ratio, even within-city. As shown in Panel B, this is due to the value of nontradables shareholdings in local-government-controlled firms.[33]

Columns 3 and 4 reveal that financial incentives to exert effort on behalf of the state, as measured by salary relative to firm size and by the extent of nontradables shareholdings, are negatively and significantly associated with the compensation ratio. Using the estimated coefficients in Column 3, a one standard deviation increase in the

[32] The firm-level control variables included in Table 2 are also included in these specifications, but the estimated coefficients on these controls are not presented to save space.

[33] No senior managers own nontradable shares in central-government-controlled firms.

ratio of managers' salary to firm value leads to a 2.6-percent decrease in the compensation ratio. Column 4 shows that these results hold within-city. Panels B and C show that this finding is present only in the subset of local-government-controlled firms. While the coefficient on salary relative to firm size is significant only at 12 percent in Column 4 of Panel B, it is of similar magnitude to the equivalent coefficient in Panel A. This finding is not present in the smaller subset of central-government-controlled firms.

On average, then, the results show that the firm-level outcomes in state-controlled firms, and particularly in local-government-controlled firms, are associated with the strength of management's private incentives. There is some evidence that the absolute values of salary and nontradable shareholdings are negatively associated with firm-level outcomes, but there is a stronger association between the observed compensation ratios and the value of managers' salary and shareholdings relative to firm size. These findings offer some of the first evidence consistent with bureaucrat agency in response to an exogenous policy shock in a setting where there is predetermined variation in the strength of incentives to work on behalf of the principal, who, in this case, is the state.

Having established that local government efficiency and managers' financial incentives are each related to observed compensation ratios in state-controlled firms (in Tables 3 and 4, respectively), we now turn to whether these two variables interact in their effect on firm-level outcomes. The results in Table 4 suggest that managers' salary relative to firm size is the measure of managers' financial incentives that is most correlated with the compensation ratio. Thus, we focus on the how the quality of the local bureaucracy affects this relationship. Table 5 presents these findings. As in Table 4, Panel A includes all state-controlled firms; Panel B includes the subset of local-government-controlled firms; and Panel C includes only central-government-controlled firms. All columns include the firm-level control variables (coefficients not shown), as well as industry fixed effects. Column 5 also includes city fixed effects.

Column 1 presents the relationship between local-government efficiency and firm-level compensation ratios. As Table 3 also shows, this variable is positively associated with outcomes in local-government-controlled firms but not in central-government-

controlled firms (Panels B and C). Columns 2 and 3 divide the data into firm-level observations in cities with low and high levels of entertainment and travel costs—that is, efficient and inefficient local governments—and examine the relationship between managers' financial incentives and firm-level outcomes in each group. These two specifications allow the estimated coefficients that correspond to other reform-related firm-level characteristics to differ in cities with low and high entertainment and travel costs. The negative association between salary relative to firm size and compensation ratios identified in Table 4 is present only in firms located in cities with inefficient local governments. A one standard deviation increase in managers' salary relative to firm size is associated with a 3.1-percent decrease in the compensation ratio in firms with inefficient local bureaucracies. The same increase in managers' relative salary in cities with low entertainment costs has no significant effect on the compensation ratio. Moreover, Panel B shows that this effect is significant only in local-government-controlled firms in these cities.

Columns 4 and 5 explore this result further by including managers' financial incentives and the interaction of entertainment costs and financial incentives. The results show that, even within-city (in Column 5), the negative relationship between the compensation ratio and managerial incentives is much stronger in cities with higher entertainment costs.[34] Noting that the values of the managerial incentives variable are much smaller than the value of the entertainment costs variable (the mean value of the managerial incentives variable in this sample is 0.037, and the mean value of entertainment costs is 1.171), and using the values of the estimated coefficients in Column 5 Panel A, increasing managers' salary relative to firm size by one standard deviation in a city at the 10th percentile of entertainment costs is associated with a 1.8 percent increase in the compensation ratio. Doing the same in a city at the 90th percentile of entertainment costs is associated with a decrease of 7.7 percent in the compensation ra-

[34]Including further interaction terms to measure the interaction between entertainment costs and time to pass the reform, as well as the interaction between managers' salary and time to pass the reform, does not change these results (results available from the authors on request). In particular, the coefficient on the interaction of managers' relative salary and entertainment costs remains negative and significant in Panel A (all state-controlled firms) and in Panel B (local-government-controlled firms).

tio. That is, the effect of increasing managers' salary relative to firm size is four times larger and of the opposite sign for state-controlled firms in inefficient bureaucracies compared to those in efficient bureaucracies.[35]

The Compensation Ratio in Privately-Controlled Firms

In Table 6, we present the results from repeating the main analysis with the subsample of privately-controlled firms. In these firms, the compensation ratio agreed to by the owners of tradable and nontradable shares is the outcome of a bargaining game between two sets of private individuals and is, perhaps, more likely to be influenced by the quality of the horizontal institutions rather than that of vertical institutions (as characterized by Acemoglu and Johnson, 2005) in the relevant city. Column 1 of Table 6 shows that the entertainment and travel costs index is unrelated to the compensation ratio in privately-controlled firms.[36]

Columns 2 to 7 show that there is also no association between the level of senior managers' salary, or the ratio of this variable to firm size, and the compensation ratio in privately-controlled firms. The coefficient on the interaction of each salary measure of incentives and entertainment costs, in contrast to the analogous coefficient for state-controlled firms (shown in Table 5, Columns 4 and 5), is actually positive in this sample of privately-controlled firms, but not significant in either case. These findings serve to undermine the possibility that there is an omitted variable correlated with both management's private interests and the observed compensation ratio across all firms—such as manager ability—that explains our findings for state-controlled firms. It also suggests that while there may certainly be agency problems at work in the bargaining game between private individuals (see Wang, 2010), they differ from those at work in state-controlled firms.

[35] The coefficient estimates imply that managers would have to receive very high salaries to offset the overall negative effect on the compensation ratio of being in a city with high entertainment costs. It is very rare in these cities that the compensation ratio in state-controlled firms is lower than the compensation ratio for privately-controlled firms. This suggests that local governments can mitigate but not fully resolve the agency problem in these cities by paying high salaries.

[36] This finding is consistent with the results in the first column of Table 3, which show that there is no relationship between these two variables, on average, across privately- and state-controlled firms.

One type of horizontal institution that mediates outcomes between private individuals is the courts system. Cull and Xu (2005) analyze the role of the varying percentage of disputes over payment that were resolved by court action (as reported by the manager). They interpret this measure as summarizing perceptions of the courts' ability to resolve payment disputes. The 2004 World Bank survey also contains a variable that summarizes managers' confidence in the local courts system.[37] The final two columns of Table 6 examine the relationship between this variable and the compensation ratio, first in the subset of privately-controlled firms, and then in state-controlled firms. Column 8 shows that minority shareholders in privately-controlled firms fare better, that is, they receive a higher compensation ratio, in cities in which firms have confidence in the courts.[38] There is no similar association between the quality of this local horizontal institution and the compensation ratio for state-controlled firms, either on average, or for the subset of local-government-controlled firms (not reported).

Event Studies

An event study analysis corroborates the interpretation of the results in the previous subsection. We analyze the response of returns in tradable shares to the two separate events described in Section 2. The first event is the central government's announcement on April 29, 2005. Although this announcement left the details of the reform process unclear, it did make clear that nontradables and tradables shareholders would have to bargain over an agreement. The first two columns of Table 7 show that when the bureaucrat managers owned nontradable shares (the variable is the percent owned in nontradable shares), traded shares exhibited abnormal negative returns over different windows centered on the announcement date. The estimated coefficients are similar in the subset of local-government-controlled firms (results available from the authors on request). This suggests that when the bureaucrat manager faced private incentives

[37] Long (2010) shows how this measure is positively related to other firm-level outcomes, such as investment and innovation.

[38] Acemoglu and Johnson (2005) also argue that the quality of the horizontal institutions governing private party transactions matters less than the quality of vertical institutions for economic growth since private parties on both sides of the transaction find it worthwhile to alter the terms of the contracts to circumvent the impact of low-quality horizontal institutions.

to push for a lower compensation ratio because he owned nontradable shares, this fact is reflected in the response of tradable share prices to the announcement. There is no association between entertainment costs and changes in returns in state-controlled firms following this announcement.

The second event, on September 4, 2005, revealed more details about reform requirements. The response of state-controlled firms' traded shares to this announcement is given in the last two columns of Table 7. State-controlled firms in which the senior management owned nontradables experienced a further negative abnormal return in response to this announcement, though smaller in magnitude than for the first announcement. Firms in cities with high entertainment costs showed a small but significant positive abnormal return at the same time.[39] This is consistent with the market anticipating relatively favorable outcomes for minority shareholders in state-controlled firms in cities where the local bureaucracy is known to be inefficient.

5 Robustness Tests

The results reported in the previous section establish that the firm-level compensation ratio in state-controlled firms is correlated with the private financial incentives faced by bureaucrat managers in firms located in cities described by the World Bank as having inefficient bureaucracies. Although managers' incentives and the extent of local-government inefficiency were determined prior to the policy reform announcement, we do not have an exogenous source of variation for either variable. In this section, we ask whether the available data support any alternative explanations for the observed correlations in the data.

First, we ask whether the relationship between managers' financial incentives and the compensation ratio could be due to other firm-level factors. We focus on factors that might plausibly also vary, on average, by city and might also be correlated with city-level entertainment and travel costs. Second, we ask whether the relationship

[39] The association between abnormal returns around the second event and entertainment costs is not significant in the subset of local- or central-government-controlled firms. The sample sizes are smaller in each case.

between entertainment and travel costs and the compensation ratio could be due to other city-level factors, particularly ones that might vary with managers' incentives.

Factors correlated with variation in managers' financial incentives

It is quite feasible that bureaucrats' financial incentives are positively correlated with manager ability. If the managers who face the strongest incentives to achieve a low compensation ratio also find it less costly to do so because they have greater ability, it would not be possible to distinguish between these two reasons for the observed correlation between incentives and outcomes. However, for variation in managers' ability to explain all the findings presented in Section 4, it would also have to be true that there is greater variation in manager ability in cities with inefficient bureaucracies. In the data, there is no relationship between city-level efficiency and variance in managers' salaries.

Bureaucrat managers' behavior is also likely to be influenced by personal career concerns other than financial incentives. Because these concerns may interact with the relationship between financial incentives and outcomes, we examine whether the probability that a CEO retains his post is related to the compensation ratio outcome. A probit analysis shows that there is no significant relationship between the probability of CEO turnover in state-controlled firms in the year following the firm-level reform and the compensation ratio achieved. The estimated coefficient on the interaction between entertainments costs and compensation ratio on the probability of CEO turnover is negative, so higher compensation ratios are less likely to lead to turnover in the most corrupt cities, but, again, this coefficient is insignificant.[40]

While the ex post likelihood of retaining the CEO position appears to be unrelated to the bargaining game outcome, the threat of turnover may play a role in CEO behavior ex ante. In Section 2, we noted that CEO salary is often tenure-based, which would mean that CEOs with the longest remaining time in their career, whose actions are

[40] These results, for all matched state-controlled firms and then for local- and central-government-controlled firms, are available from the authors on request.

perhaps more likely to be influenced by career concerns, also have the lowest salaries. In that case, we would expect low-paid bureaucrat CEOs to work harder on behalf of their employer to obtain a low compensation ratio, working against the effect we document in the data. It is, hence, unlikely that differences in the effects of career concerns can explain the observed variation in the firm-level compensation ratio.

City-level factors correlated with entertainment and travel costs

Li et al. (2011) also observe that the compensation ratio is higher, on average, for state-controlled than for privately-controlled firms, and they suggest that this is because the nontradables shareholders' objective function differed in these firms in that bureaucrat managers were under pressure to implement the reform quickly. They comment that agreeing to a high compensation ratio was one way senior managers could ensure that minority shareholders passed the reform. This hypothesis would require two additional assumptions to explain the full set of findings in our paper: first, that cities with more inefficient bureaucracies placed a higher weight on this variable in their objective function; and second, that executives facing weaker incentives were better able to implement these government objectives. While we have no direct evidence on the first of these necessary assumptions, the second requirement seems implausible.

The local governments' objective functions may differ across cities in other ways.[41] For example, state-controlled firms, as a group, may vary in importance in the local economy. To control for this source of variation, we repeat the analysis in Section 4 and include the percentage of all firms that are privately controlled in the city, using data from the same World Bank survey. Including this variable does not qualitatively change the results.

Another possibility is that inefficient local governments face stronger incentives to signal to outside investors that they will receive favorable treatment in the future.[42]

[41] Some of the most plausible candidate city-level omitted variables predict that the compensation ratio should be smaller, on average, within inefficient bureaucracies—the opposite of what we see in the data. One example is the local government's protection of property rights (as discussed in other parts of the paper).

[42] Montinola et al. (1995) discuss the role played by competition for capital among local governments in China in creating "market-preserving federalism." Qian and Roland (1998) show how competition

One reason for this would be if these cities had larger fiscal deficits. We collect city-level GDP data from the CSMAR Regional Economy database and, for each city, calculate GDP growth in the five years before the reform. This variable and the measure of local fiscal deficits are unrelated to the compensation ratio in state-controlled firms; nor do these variables affect the relationship between entertainment costs, managers' private financial interests, and the compensation ratio.

An additional alternative hypothesis for variation in the average compensation ratio across cities is that tradables shareholders differ in the average extent to which they are politically connected. For example, it may be that individual investors are more likely to be members of the same family as local-government officials in some cities. If minority shareholders are more politically connected in cities with inefficient bureaucracies, the correlation between entertainment costs and compensation ratios could reflect tunneling directly from the government to the agent's relatives. However, this hypothesis is unlikely for two reasons: First, tradables shareholders are very diversified. If government officials did seek to tunnel revenues to family members, it would be more effective for them to choose a different channel to do this, such as providing them with insider information. Second, under this hypothesis, the interaction of individual ownership among the top ten tradables shareholders with entertainment costs would have a positive effect on the compensation ratio, all else equal.[43] The data show that the coefficient on this interaction term is negative and insignificant (results available from the authors on request).

6 Conclusion

This paper reports that the minority shareholders of state-controlled firms appear less likely to have been expropriated during the 2005 Chinese ownership reform when the firm was located in a city where the local government was known to be inefficient.

between local governments increases the costs associated with subsidizing inefficient projects. Cai and Treisman (2006), however, find little empirical evidence of local government competition of this kind.

[43] We look at individual ownership among the top ten tradables shareholders because the incentive for local-government officials to set a high compensation ratio to benefit their relatives is positively associated with their relatives' holdings of tradable shares.

Since the reform process of these firms entailed a contract renegotiation between the local government (controlling shareholder) and minority investors (private citizens), it presented the local government with an unanticipated opportunity for minority expropriation. Cities with inefficient local bureaucracies are also the cities in which there is thought to be a high risk of expropriation. The fact that there is no evidence of such expropriation suggests that local governments were either unwilling or unable to benefit financially from this opportunity.[44]

To explain this finding, we examine the relationships between the firm-level compensation ratio agreed to in the reform process and three firm-level characteristics: state (local- or central-government) control versus private control, firm location, and senior manager financial incentives. We document that compensation ratios are associated with senior manager incentives, but only in firms controlled by the local government (where managers are less stringently monitored than in firms controlled by the central government), and only in cities with inefficient local governments. In these cities, the minority shareholders' ability to achieve a favorable outcome in local-government-controlled firms is reduced when bureaucrat managers face stronger private incentives to serve the interests of the nontradables shareholder—the local government that employs them. The measure of the strength of managerial incentives that is most strongly related to firm-level outcomes in inefficient bureaucracies is managers' salary relative to firm size, rather than the absolute level of senior managers' salary.

The full set of results is consistent with the presence of agency in inefficient bureaucracies, which may have prevented these local governments from using this opportunity to expropriate private citizens. We find a relationship between manager incentives and reform outcomes only in locations where side-payments to officials are very much the norm. Rather than interpreting our results as direct evidence that bureaucrat managers take side-payments from minority shareholders in these cities, we emphasize that our results are also consistent with low-paid managers in these cities exerting less ef-

[44]The Chinese bureaucracy does poorly in cross-country rankings of the risk of expropriation, as documented in Calomiris et al. (2010) and elsewhere, and yet, the relatively high observed compensation ratio for state-controlled firms overall, compared to privately-controlled firms, suggests that expropriation at the time of this reform was limited overall.

fort during the reform process than their counterparts in cities with high-quality local governments.

The findings in the paper are robust to including other firm- and city-level variables thought to have independent effects on the outcomes of the bargaining game prompted by the ownership reform. We also find that management incentives and city-level measures of payments to officials have no effect on the compensation ratio in privately-controlled firms. In contrast, the quality of contracting institutions at the city level is positively associated with the compensation ratio in privately-controlled firms.

One implication of our findings is that internal agency within the bureaucracy is prevalent precisely when the risk of expropriation is particularly high. That is, individual bureaucrats may respond to private incentives—and may even be more likely to be corrupt—in settings with poor property rights protection. Political scientists (Leff, 1964; Huntington, 1968; De Soto, 1989) describe how corruption within a government can help mitigate the impact of policies that might otherwise have negative consequences. Becker and Stigler (1974) also note that malfeasance is not necessarily undesirable from a welfare point of view. Svensson (2005) comments that this is a possible explanation of the "puzzle" presented by the low correlation between corruption and economic growth in cross-country data. While we are unable to comment on the welfare implications of our results, our findings do suggest that the adherence of the bureaucracy to government objectives can be negatively correlated with the risk of expropriation.

North (1981) makes the theoretical distinction, and Acemoglu and Johnson (2005) the empirical distinction, between institutions related to contracting (horizontal institutions) and those designed to safeguard property rights (vertical institutions). When government power is unilateral, poor-quality vertical institutions are viewed as detrimental to economic outcomes. If agency is particularly common within poor-quality institutions, as in this empirical setting, private citizens have a potential channel to circumvent their unilateral power.

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Figure 1: The Reform Process Timeline

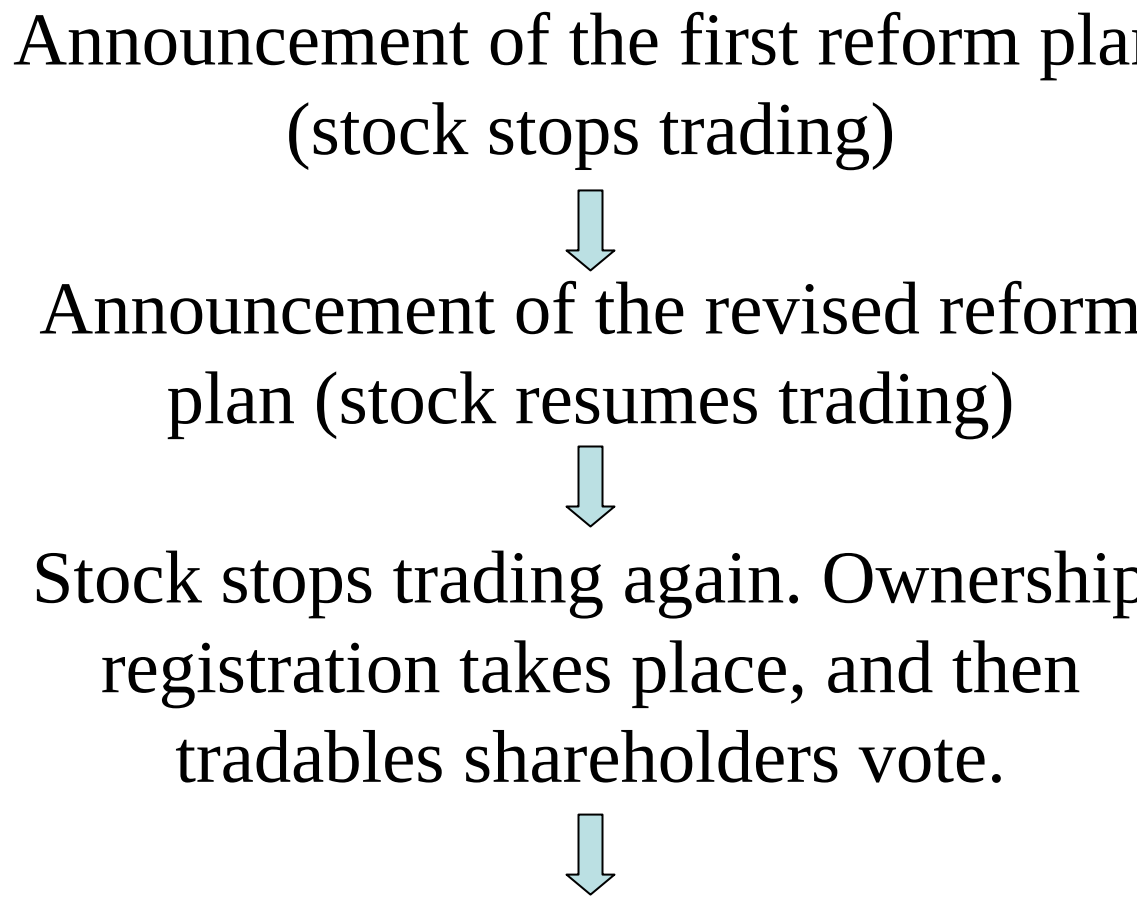
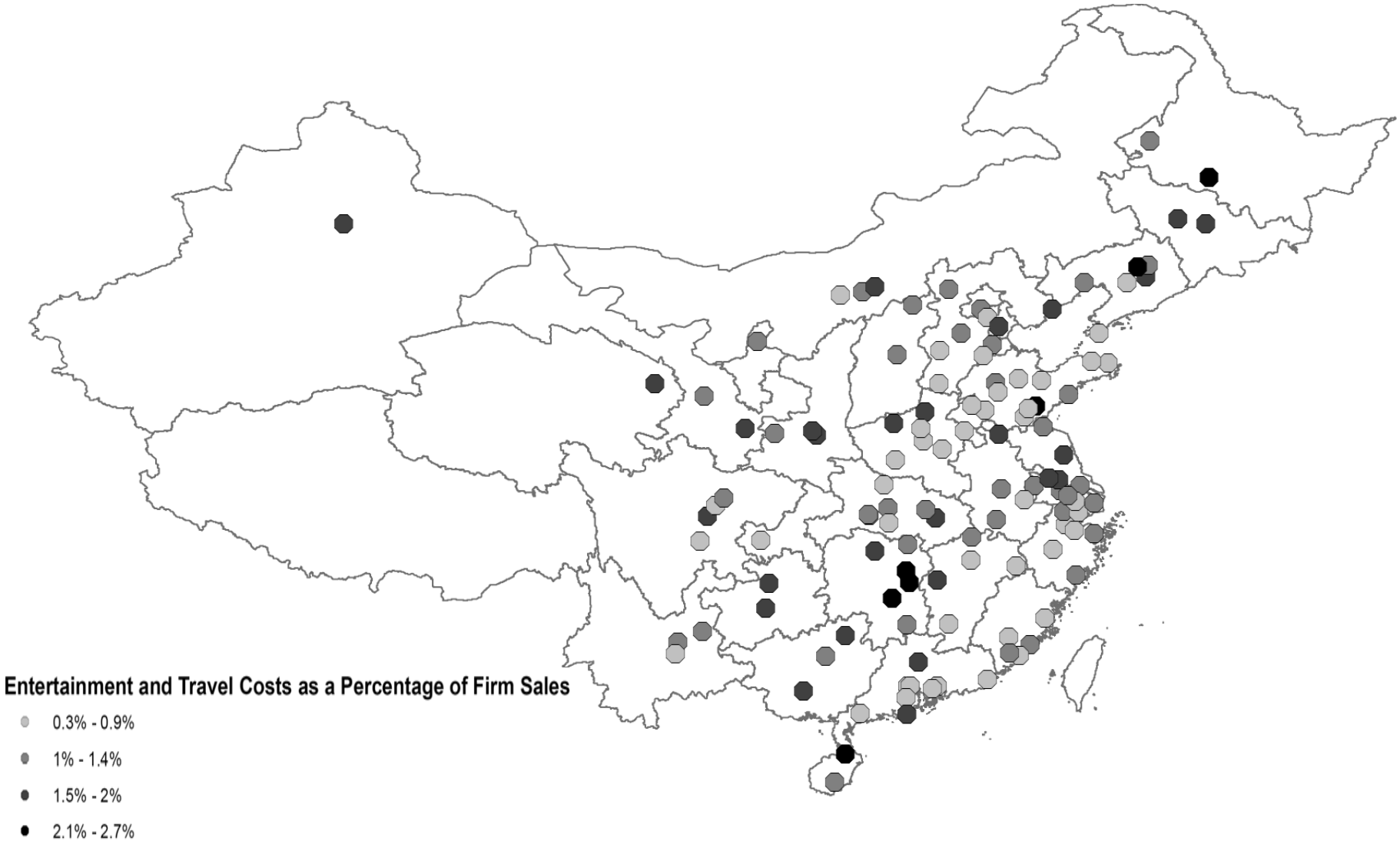


Figure 2: Entertainment and Travel Costs, by City



Source: World Bank (2006).

Table 1A - Summary Statistics

	All Firms			State-controlled Firms with matched WB index			Local State-controlled Firms with matched WB index		
Variable	**Mean**	**SD**	**Obs**	**Mean**	**SD**	**Obs**	**Mean**	**SD**	**Obs**
Compensation Ratio	0.305	0.079	1079	0.309	0.068	647	0.309	0.071	488
Entertainment costs	1.164	0.457	904	1.171	0.433	646	1.147	0.438	488
Manager Salary/10^8	0.006	0.006	1051	0.006	0.006	632	0.006	0.007	478
Manager NT-share value/10^8	0.071	0.524	1058	0.010	0.141	640	0.011	0.158	485
(Manager Salary/Firm Size)*100	0.041	0.052	1051	0.037	0.035	632	0.036	0.033	478
Manager NT-shares*100	0.565	3.298	1060	0.063	0.928	640	0.067	1.004	485
Ind-Directors	0.342	0.048	1065	0.337	0.047	643	0.337	0.050	487
Log(Assets)	21.267	0.959	1079	21.415	0.983	647	21.381	0.894	488
ROE	-0.051	0.818	1077	-0.003	0.543	647	-0.013	0.614	488
Nontradables	0.613	0.110	1078	0.611	0.111	646	0.606	0.110	488
Log(Time)	5.829	0.406	1079	5.865	0.352	647	5.852	0.353	488
Top10_NT	0.603	0.273	1079	0.648	0.270	647	0.632	0.268	488
Top10_T	0.006	0.030	1079	0.007	0.037	647	0.006	0.021	488
Log(GDP/Capita)	9.491	0.619	904	9.476	0.626	646	9.447	0.637	488
Log(Population)	6.492	0.645	904	6.545	0.630	646	6.504	0.642	488
State Dummy	0.716	0.451	1079						
CAR[-1, 1]: Event 1	-0.047	0.055	1052	-0.046	0.054	639	-0.047	0.054	486
CAR[0, 1]: Event 1	-0.035	0.045	1052	-0.034	0.045	639	-0.035	0.045	486
CAR[-1, 1]: Event 2	0.003	0.035	1073	0.004	0.036	645	0.003	0.035	487
CAR[0, 1]: Event 2	-0.008	0.030	1073	-0.006	0.030	645	-0.006	0.029	487

Notes: The compensation ratio is defined as the ratio of shares that tradables shareholders received from nontradables shareholders to total formerly tradable shares; Entertainment costs is a city-level index from World Bank (2006); Manager Salary is total cash and bonus paid to the top three senior managers, scaled by total assets when divided by Firm Size; Manager NT-share value is the value of managers' nontradables shareholdings, and Manager NT-shares is the proportion of nontradable shares held; Ind-Directors is the proportion of independent directors among all directors; Log(Assets) is the log value of total assets before the reform for each firm; ROE is the ratio of net profits (after taxes) over total equity before the reform; Nontradables is the proportion of nontradable shares over total shares; Log(Time) is the log of the number of days the firm takes to complete its reform from April 29, 2005 when this nationwide reform was announced by the central government; Top10_NT is the ownership concentration of top ten nontradables shareholders (if any) among nontradable shares; Top10_T is the ownership concentration of top ten tradables shareholders among all the tradable A-shares; Log(GDP/Capita) is the log value of GDP per capita of each city; Log(Population) is the log value of total population of each city;

CARs are cumulative abnormal event returns over event windows where abnormal return is calculated using a standard market model; Event 1 (April 29, 2005) refers to the first key policy announcement by central government, which introduced this nationwide reform among listed firms; Event 2 (September 4, 2005) refers to the second milestone policy announcement, which describes the detailed rules governing the bargaining process for each listed firm.

Table 1B - Summary Statistics, Pairwise Correlations

All Firms

	Compensation Ratio	Manager Salary	Manager NT-share market value	Manager Salary /Firm Size	Manager NT-shares/Total Shares	Ind-Directors	Log(Assets)	ROE	Nontradables	Log(Time)	Top10_NT	Top10_T
Compensation Ratio	1.00											
Manager Salary	-0.03	1.00										
Manager NT-share market value	0.02	0.03	1.00									
Manager Salary/Firm Size	0.02	0.40	0.08	1.00								
Manager NT-shares/Total Shares	0.08	0.01	0.75	0.15	1.00							
Ind-Directors	0.04	0.10	0.05	0.09	0.06	1.00						
Log(Assets)	-0.04	0.30	-0.02	-0.54	-0.10	0.00	1.00					
ROE	0.07	0.06	0.03	-0.06	0.03	-0.04	0.16	1.00				
Nontradables	0.40	-0.04	0.12	0.12	0.14	0.01	-0.11	0.04	1.00			
Log(Time)	-0.20	-0.08	-0.25	0.00	-0.25	-0.10	-0.11	-0.17	-0.16	1.00		
Top10_NT	0.06	0.01	-0.15	-0.25	-0.19	-0.01	0.30	0.08	-0.08	-0.09	1.00	
Top10_T	-0.09	0.03	0.04	0.00	0.02	0.01	0.02	0.03	-0.02	0.02	0.02	1.00

State--controlled firms with matched World Bank index

	Compensation Ratio	Entertainment costs	Manager Salary	Manager NT-share market value	Manager Salary /Firm Size	Manager NT-shares/Total Shares	Ind-Directors	Log(Assets)	ROE	Nontradables	Log(Time)	Top10_NT	Top10_T	Log(GDP/Capita)	Log(Population)
Compensation Ratio	1.00														
Entertainment costs	0.11	1.00													
Manager Salary	-0.02	-0.13	1.00												
Manager NT-share market value	-0.03	-0.03	0.03	1.00											
Manager Salary/Firm Size	-0.03	-0.04	0.36	0.02	1.00										
Manager NT-shares/Total Shares	0.00	-0.01	0.00	0.73	0.09	1.00									
Ind-Directors	0.09	-0.08	0.14	0.01	0.06	0.00	1.00								
Log(Assets)	0.01	-0.09	0.33	0.05	-0.55	-0.05	0.04	1.00							
ROE	0.10	-0.01	0.08	0.00	0.04	0.01	0.02	0.11	1.00						
Nontradables	0.41	0.06	-0.01	0.03	0.09	0.05	0.01	-0.03	0.09	1.00					
Log(Time)	-0.21	0.04	-0.15	-0.04	0.08	-0.08	-0.06	-0.21	-0.17	-0.11	1.00				
Top10_NT	0.09	-0.04	0.02	-0.10	-0.17	-0.08	0.02	0.21	-0.01	-0.06	-0.19	1.00			
Top10_T	-0.12	0.03	0.01	0.01	-0.01	0.02	0.01	0.02	0.03	-0.03	0.03	0.02	1.00		
Log(GDP/Capita)	0.03	-0.19	0.26	0.01	0.13	0.03	0.14	0.15	0.02	0.00	-0.15	-0.01	-0.02	1.00	
Log(Population)	0.12	-0.01	0.13	-0.03	0.07	0.01	0.02	0.07	0.01	0.09	-0.08	0.06	0.00	0.30	1.00

Local State--controlled firms with matched World Bank index

	Compensation Ratio	Entertainment costs	Manager Salary	Manager NT-share market value	Manager Salary /Firm Size	Manager NT-shares/Total Shares	Ind-Directors	Log(Assets)	ROE	Nontradables	Log(Time)	Top10_NT	Top10_T	Log(GDP/Capita)	Log(Population)
Compensation Ratio	1.00														
Entertainment costs	0.12	1.00													
Manager Salary	0.00	-0.10	1.00												
Manager NT-share market value	-0.03	-0.03	0.03	1.00											
Manager Salary/Firm Size	-0.03	-0.01	0.38	0.03	1.00										
Manager NT-shares/Total Shares	-0.01	0.00	0.00	0.73	0.11	1.00									
Ind-Directors	0.11	-0.08	0.14	0.01	0.10	0.00	1.00								
Log(Assets)	0.02	-0.09	0.32	0.07	-0.55	-0.06	0.02	1.00							
ROE	0.13	0.00	0.07	0.00	0.03	0.01	0.04	0.12	1.00						
Nontradables	0.43	0.06	-0.04	0.04	0.10	0.06	0.04	-0.10	0.10	1.00					
Log(Time)	-0.27	0.02	-0.13	-0.04	0.10	-0.08	-0.07	-0.25	-0.17	-0.12	1.00				
Top10_NT	0.09	-0.08	0.04	-0.11	-0.17	-0.09	0.03	0.22	-0.02	-0.07	-0.23	1.00			
Top10_T	-0.11	-0.05	0.05	0.02	0.01	0.03	-0.01	0.05	0.04	-0.05	0.01	-0.02	1.00		
Log(GDP/Capita)	0.05	-0.15	0.24	0.01	0.10	0.03	0.14	0.17	0.01	0.00	-0.19	-0.01	0.01	1.00	
Log(Population)	0.14	-0.02	0.12	-0.03	0.08	0.02	0.01	0.04	0.00	0.08	-0.12	0.06	-0.05	0.29	1.00

Notes: The compensation ratio is defined as the ratio of shares that tradables shareholders received from nontradables shareholders to total formerly tradable shares; Entertainment costs is a city-level index from World Bank (2006); Manager Salary is the total cash and bonus paid to the top three senior managers, scaled by total assets when divided by Firm Size; Manager NT-share value is the value of managers' nontradable shareholdings, and Manager NT-shares is the proportion of nontradable shares held; Ind-Directors is the proportion of independent directors among all directors; Log(Assets) is the log value of total assets before the reform for each firm; ROE is the ratio of net profits (after taxes) over total equity before the reform;
Nontradables is the proportion of nontradable shares over total shares; Log(Time) is the log of the number of days the firm takes to complete its reform from April 29, 2005 when this nationwide reform was announced by the central government; Top10_NT is the ownership concentration of top ten nontradables shareholders (if any) among nontradable shares; Top10_T is the ownership concentration of top ten tradables shareholders among all the tradable A-shares; Log(GDP/Capita) is the log value of GDP per capita of each city; Log(Population) is the log value of total population of each city;

Table 2 - Regressions of compensation ratio on the state-controlled indicator variables

	Dependent Variable: Compensation Ratio						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
State-controlled	0.020***	0.029***	0.026***	0.024***	0.020**		
	(0.006)	(0.007)	(0.007)	(0.009)	(0.009)		
Local State						0.025***	0.022**
						(0.009)	(0.009)
Central State						0.018*	0.011
						(0.010)	(0.010)
ROE		0.003	0.002	0.007*	0.004	0.007**	0.004
		(0.005)	(0.004)	(0.004)	(0.003)	(0.004)	(0.003)
Log(Assets)		-0.007***	-0.004	-0.004	-0.004	-0.003	-0.003
		(0.003)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
Log(Time)		-0.044***	-0.030***	-0.031***	-0.026***	-0.030***	-0.025***
		(0.007)	(0.007)	(0.008)	(0.009)	(0.008)	(0.009)
Ind-directors			0.066	0.085	0.087	0.085	0.089
			(0.053)	(0.060)	(0.066)	(0.060)	(0.066)
Nontradables			0.272***	0.267***	0.278***	0.268***	0.281***
			(0.022)	(0.025)	(0.027)	(0.025)	(0.027)
Top10_NT			0.013	0.017	0.018	0.018	0.020
			(0.010)	(0.012)	(0.014)	(0.012)	(0.014)
Top10_T			-0.223***	-0.218***	-0.192***	-0.213***	-0.187***
			(0.064)	(0.060)	(0.055)	(0.060)	(0.056)
Log(GDP/Capita)				0.005		0.005	
				(0.004)		(0.004)	
Log(Population)				0.006		0.006	
				(0.004)		(0.004)	
Fixed Effects	No	Industry	Industry	Industry	Industry&City	Industry	Industry&City
Observations	1079	1077	1062	890	1053	890	1053
R-squared	0.01	0.09	0.23	0.23	0.36	0.23	0.36

Notes: The dependent variable CR, compensation ratio, is the number of total shares received by tradables shareholders from the nontradables shareholders over all tradable A-shares before this compensation; State-controlled is a dummy variable indicating whether the listed firm is controlled by the state; ROE is the ratio of net profits over total equity in the previous year; Log(Assets) is the log value of total assets in the previous year; Log(Time) is the log of the days taken to pass the reform, where the ending point is the day when the firm passed its reform plan and the starting point is April 29, 2005; Log(GDP/Capita) is the log value of GDP per capita of each city; Log(Population) is the log value of total population of each city. A constant term is included in the regression, but the associated coefficient is not reported. Standard errors, reported in parentheses, are clustered at the city level for all specifications with city-level independent variables. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 3 - Regressions of compensation ratio on entertainment costs and the state-controlled indicator variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Entertainment costs	0.004			-0.021		-0.021	
	(0.008)			(0.015)		(0.015)	
State-controlled with High Entertainment		0.032***					
		(0.006)					
State-controlled with Low Entertainment		0.006					
		(0.013)					
Local-State with High Entertainment			0.032***				
			(0.008)				
Local-State with Low Entertainment			0.007				
			(0.011)				
Central-State with High Entertainment			0.013				
			(0.010)				
Central-State with Low Entertainment			0.006				
			(0.018)				
State-controlled				-0.021	-0.021		
				(0.021)	(0.020)		
State-controlled * Entertainment Costs				0.039***	0.036***		
				(0.014)	(0.013)		
Local-State-controlled						-0.021	-0.0215
						(0.022)	(0.0194)
Central-State-controlled						-0.023	-0.0415*
						(0.024)	(0.0226)
Local-State-controlled * Entertainment Costs						0.040***	0.0443***
						(0.014)	(0.0162)
Central-State-controlled * Entertainment Costs						0.036**	0.0395***
						(0.017)	(0.0129)
Fixed Effects	Industry	Industry&City	Industry&City	Industry	Industry&City	Industry	Industry&City
Observations	890	890	890	890	890	890	838
R-squared	0.21	0.33	0.33	0.24	0.34	0.24	0.21

Notes: The dependent variable CR, compensation ratio, is the number of total shares received by tradables shareholders from the nontradables shareholders over all tradable A-shares before this compensation; Entertainment costs is a city-level index based on the survey by World Bank for the city where the focal firm is headquartered; high and low entertainment costs indicate whether the city is above or below the median level; The following variables are included as controls, but the estimated coefficients are not reported: Independent Directors (the ratio of independent directors over all the directors of the focal firm); ROE (the ratio of net profits over total equity in the previous year); Log(Assets) (the log value of total assets in the previous year); Log(Time) (the log value of reforming time at the firm level, where the ending point is the day when the firm passed its reform plan and the starting point is April 29, 2005). Nontradables (the percentage of outstanding nontradable shares). Columns 1 and 4 also include: Log(GDP/Capita) - the log value of GDP per capita of each city and Log(Population) - the log value of total population of each city. A constant term is also included in the regressions.

Standard errors, reported in parentheses, are clustered at the city level for all specifications with city-level independent variables.* significant at 10%; ** significant at 5%; *** significant at 1%

Table 4 - Regressions of compensation ratio on CEO compensation in state-controlled firms

Panel A - All matched State-controlled firms

	(1)	(2)	(3)	(4)
Salary-related incentives	-0.596**	-0.338	-22.360***	-21.092**
	(0.300)	(0.304)	(7.520)	(9.798)
Manager NT-shares	-0.019***	-0.017***	-0.217***	-0.111**
	(0.003)	(0.007)	(0.082)	(0.051)
Incentives: Absolute or Relative Value	Absolute	Absolute	Relative	Relative
Fixed Effect	Industry	Industry&City	Industry	Industry&City
Observations	628	628	628	628
R-squared	0.25	0.37	0.26	0.37

Panel B - All matched Local-government-controlled firms

	(1)	(2)	(3)	(4)
Salary-related incentives	-0.406	-0.231	-20.714**	-19.298
	(0.306)	(0.285)	(9.838)	(12.287)
Manager NT-shares	-0.023***	-0.031***	-0.287***	-0.236***
	(0.004)	(0.009)	(0.102)	(0.067)
Incentives: Absolute or Relative Value	Absolute	Absolute	Relative	Relative
Fixed Effect	Industry	Industry&City	Industry	Industry&City
Observations	476	476	476	476
R-squared	0.28	0.44	0.29	0.44

Panel C - All matched Central-government-controlled firms

	(1)	(2)	(3)	(4)
Salary-related incentives	-1.092	-1.768	-12.637	-21.265
	(0.987)	(1.835)	(9.466)	(17.732)
Manager NT-shares	-	-	-	-
Incentives: Absolute or Relative Value	Absolute Value	Absolute Value	Relative Value	Relative Value
Fixed Effect	Industry	Industry&City	Industry	Industry&City
Observations	152	152	152	152
R-squared	0.38	0.51	0.38	0.51

Notes: The dependent variable CR, compensation ratio, is the number of total shares received by tradables shareholders from the nontradables shareholders over all tradable A-shares before this compensation; Absolute Manager Salary is total cash and bonus received by senior managers, and Relative Manager Salary is this measure divided by total firm assets; Absolute Manager NT-shares is the value of the nontradable shareholding owned by senior managers, and Relative Manager NT-shares is the percentage of shares owned. Other controls included, but with the coefficients unreported are: Independent Directors (the ratio of independent directors over all the directors of the focal firm); ROE (the ratio of net profits over total equity in the previous year); Log(Assets) (the log value of total assets in the previous year); Log(Time) (the log value of reforming time at the firm level, where the ending point is the day when the firm passed its reform plan and the starting point is April 29, 2005). In columns 1 and 3, also included are: Log(GDP/Capita) - the log value of GDP per capita of each city; and Log(Population) -the log value of total population of each city. A constant term is included in each regression.

Standard errors, reported in parentheses, are clustered at the city level for all specifications with city-level independent variables.* significant at 10%; ** significant at 5%; *** significant at 1%

Table 5 - Effects of entertainment costs and CEO incentives on compensation ratio in state-controlled firms

Panel A - All matched State-controlled firms

	(1)	(2)	(3)	(4)	(5)
Entertainment costs	0.019***			0.032***	
	(0.005)			(0.007)	
Salary-related relative incentives		-3.501	-27.651***	33.599**	40.575***
		(12.311)	(9.472)	(14.710)	(14.830)
Entertainment costs *Salary-related relative incentives				-45.237***	-49.833***
				(11.313)	(11.764)
Sample of Cities included	Full	Low Entertainment costs	High Entertainment costs	Full	Full
Fixed Effect	Industry	Industry	Industry	Industry	Industry & City
Observations	642	255	373	628	628
R-squared	0.27	0.41	0.22	0.28	0.38

Panel B - All matched Local-government-controlled firms

	(1)	(2)	(3)	(4)	(5)
Entertainment costs	0.021***			0.038***	
	(0.007)			(0.008)	
Salary-related incentives		0.183	-29.038**	49.560**	65.984***
		(17.034)	(11.148)	(22.539)	(21.207)
Entertainment costs *Salary-related relative incentives				-56.465***	-66.453***
				(16.075)	(14.662)
Sample of Cities included	Full	Low Entertainment costs	High Entertainment costs	Full	Full
Fixed Effect	Industry	Industry	Industry	Industry	Industry & City
Observations	487	218	260	476	476
R-squared	0.30	0.42	0.24	0.32	0.46

Panel C - All matched Central-government-controlled firms

	(1)	(2)	(3)	(4)	(5)
Entertainment costs	0.006			0.009	
	(0.008)			(0.013)	
Salary-related incentives		2.762	-20.103	3.493	7.570
		(16.544)	(14.684)	(16.083)	(29.329)
Entertainment costs *Salary-related relative incentives				-13.597	-25.296
				(16.370)	(30.259)
Sample of Cities included	Full	Low Entertainment costs	High Entertainment costs	Full	Full
Fixed Effect	Industry	Industry	Industry	Industry	Industry & City
Observations	155	39	114	152	152
R-squared	0.38	0.84	0.34	0.39	0.52

Notes: The dependent variable CR, compensation ratio, is the number of total shares received by tradables shareholders from the nontradables shareholders over all tradable A-shares before this compensation; Manager Salary is total cash and bonus senior managers received, divided by total assets- that is, the relative measure of incentives from salary; Entertainment costs is a city-level index based on the survey by World Bank for the city where the focal firm is headquartered; Other controls (coefficients unreported) include: Independent Directors (the ratio of independent directors over all the directors of the focal firm); ROE (the ratio of net profits over total equity in the previous year); Log(Assets) (the log value of total assets in the previous year); Log(Time) (the log value of reforming time at the firm level, where the ending point is the day when the firm passed its reform plan and the starting point is April 29, 2005); The percentage of nontradable shares, and this variable interacted with entertainment costs. Columns 1, 2 and 3 also include Log(GDP/Capita) - the log value of GDP per capita of each city; and Log(Population) - the log value of total population of each city. A constant term is included in each regressions.

Standard errors, reported in parentheses, are clustered at the city level for all specifications with city-level independent variables.* significant at 10%; ** significant at 5%; *** significant at 1%

Table 6 - The compensation ratio in privately-controlled firms

	Dependent variable: CR								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Entertainment costs (%)	-0.024	-0.022	-0.026	-0.023	-0.046				
	(0.019)	(0.018)	(0.023)	(0.019)	(0.030)				
Manager Salary		0.711	0.217	-0.075	-46.831	-6.889	-71.969		
		(0.693)	(1.724)	(12.464)	(33.263)	(25.638)	(50.334)		
Manager NT-shares		-0.008*	-0.008*	-0.002	0.001	-0.052	-0.042		
		(0.004)	(0.004)	(0.101)	(0.099)	(0.128)	(0.124)		
Entertainment costs * Manager Salary			7.358		43.727		62.119		
			(19.839)		(26.990)		(39.035)		
Court solving (%)								0.617*	-0.075
								(0.343)	(0.065)
Log(Assets)	-0.009	-0.010	-0.006	-0.009	-0.011	-0.014	-0.015	-0.005	0.005
	(0.007)	(0.007)	(0.013)	(0.009)	(0.009)	(0.016)	(0.016)	(0.025)	(0.005)
ROE	0.010***	0.010***	0.010***	0.010***	0.009***	0.010***	0.008***	0.010**	-0.087*
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.005)	(0.046)
Log(Time)	-0.028*	-0.037**	-0.037**	-0.029*	-0.031**	-0.016	-0.022	0.019	-0.048***
	(0.014)	(0.015)	(0.015)	(0.016)	(0.015)	(0.022)	(0.021)	(0.032)	(0.013)
Ind-directors	0.091	0.104	0.104	0.093	0.120	0.119	0.115	0.355	0.097
	(0.156)	(0.153)	(0.154)	(0.152)	(0.163)	(0.228)	(0.223)	(0.323)	(0.091)
Nontradables	0.318***	0.326***	0.327***	0.320***	0.325***	0.358***	0.361***	0.370*	0.270***
	(0.049)	(0.049)	(0.049)	(0.049)	(0.049)	(0.093)	(0.095)	(0.186)	(0.049)
Top10_NT	0.010	0.005	0.007	0.009	0.015	0.022	0.033	0.040	0.021
	(0.033)	(0.033)	(0.035)	(0.036)	(0.038)	(0.065)	(0.067)	(0.108)	(0.017)
Top10_T	-0.734*	-0.784*	-0.777**	-0.739*	-0.727	-0.340	-0.292	-1.443	-0.142***
	(0.408)	(0.394)	(0.383)	(0.439)	(0.438)	(0.675)	(0.664)	(0.908)	(0.020)
Incentives: Absolute or Relative Value		Absolute	Absolute	Relative	Relative	Relative	Relative		
Sample	Private	Private	Private	Private	Private	Private	Private	Private	State
Fixed Effect	Industry	Industry	Industry	Industry	Industry	Industry&City	Industry&City	Industry	Industry
Observations	248	245	245	246	246	246	246	69	177
R-squared	0.24	0.25	0.25	0.24	0.25	0.40	0.41	0.36	0.35

Notes: The dependent variable CR, compensation ratio, is the number of total shares received by tradables shareholders from the nontradables shareholders over all tradable A-shares before this compensation; Manager Salary is total cash and bonus senior managers received, divided by total assets in Columns 4-7 the relative measure of incentives from salary; Manager NT-shares is the vale of the nontradable shares held by management in Columns 2 and 3 and the percentage of shares held by management in nontradable form in Columns 4-7; Entertainment costs is a city-level index based on the survey by World Bank for the city where the focal firm is headquartered; Independent Directors is the ratio of independent directors over all the directors of the focal firm; ROE is the ratio of net profits over total equity in the previous year; Log(Assets) is the log value of total assets in the previous year; Log(Time) is the log value of reforming time at the firm level, where the ending point is the day when the firm passed its reform plan and the starting point is April 29, 2005. Columns 1-5 and 8 and 9 also include Log(GDP/Capita), the log value of GDP per capita of each city, and Log(Population), the log value of total population of each city. A constant term is included in each regressions.

Standard errors, reported in parentheses, are clustered at the city level for all specifications with city-level independent variables.* significant at 10%; ** significant at 5%; *** significant at 1%

Table 7 - Event Studies: April 29, 2005 & Sep 04, 2005

	(1)	(2)	(3)	(4)
	CAR[-1,1]	CAR[0,1]	CAR[-1,1]	CAR[0,1]
	April 29, 2005		Sep 04, 2005	
	State-controlled firms			
Entertainment costs	-0.000	-0.003	0.007**	0.005*
	(0.004)	(0.003)	(0.003)	(0.003)
Manager NT-shares	-0.545***	-0.404**	-0.132**	-0.133***
	(0.176)	(0.171)	(0.051)	(0.049)
Manager Salary	3.008	3.073	-1.850	-2.173
	(7.652)	(7.535)	(5.640)	(4.626)
Log(Assets)	0.007**	0.006**	-0.003**	-0.001
	(0.003)	(0.003)	(0.001)	(0.001)
ROE	0.008*	0.009**	-0.007**	-0.005***
	(0.004)	(0.003)	(0.003)	(0.001)
Ind-Directors	0.049	0.074**	-0.006	0.002
	(0.045)	(0.037)	(0.022)	(0.020)
Nontradables	0.025	0.009	-0.003	-0.002
	(0.021)	(0.019)	(0.009)	(0.008)
Top10_NT	0.012	0.007	-0.008	-0.004
	(0.009)	(0.007)	(0.006)	(0.005)
Top10_T	0.090***	0.079**	0.192***	0.177**
	(0.028)	(0.031)	(0.066)	(0.070)
Log(GDP/Capita)	-0.000	0.002	0.004*	0.004*
	(0.003)	(0.002)	(0.002)	(0.002)
Log(Population)	0.001	0.002	0.008***	0.005**
	(0.003)	(0.002)	(0.003)	(0.002)
Fixed Effect	Industry	Industry	Industry	Industry
Observations	626	626	627	627
R-squared	0.10	0.09	0.12	0.15

Notes: The dependent variable CARs are abnormal event returns around the first policy announcement (April 29, 2005) when the central government allowed this nationwide reform; Manager Salary is total cash and bonus senior managers divided by the value of firm assets--that is, relative salary; Manager NT-shares is the proportion of nontradable shares held by senior managers; Independent Directors is the ratio of independent directors over all the directors of the focal firm; Entertainment costs is a city-level index based on the survey by World Bank(2006) for the city where the focal firm is headquatered; ROE is the ratio of net profits over total equity in the previous year; Log(Assets) is the log value of total assets in the previous year; Log(Time) is the log value of reforming time at the firm level, where the ending point is the day when the firm passed its reform plan and the starting point is April 29, 2005. Nontradables is the percentage of non-tradable shares. Log(GDP/Capita) is the log value of GDP per capita of each city; Log(Population) is the log value of total population of each city. A constant term is included in the regressions, but the associated coefficient is not reported. Standard errors, reported in parentheses, are clustered at the city level.* significant at 10%; ** significant at 5%; *** significant at 1%

Appendix Table 1A - Summary Statistics for State-Controlled and Local State-Controlled Firms, not only those matched to cities in WB sample.

	State-controlled Firms			Local State-controlled Firms		
Variable	**Mean**	**SD**	**Obs**	**Mean**	**SD**	**Obs**
Compensation Ratio	0.311	0.065	773	0.311	0.067	605
Entertainment costs	1.171	0.433	646	1.147	0.438	488
Manager Salary/10^8	0.006	0.006	755	0.006	0.006	593
Manager NT-share value/10^8	0.008	0.129	763	0.009	0.142	599
(Manager Salary/Firm Size)*100	0.035	0.034	755	0.034	0.033	593
Manager NT-shares*100	0.055	0.851	763	0.057	0.905	599
Ind-Directors	0.337	0.047	767	0.338	0.050	602
Log(Assets)	21.398	0.966	773	21.369	0.893	605
ROE	-0.004	0.540	773	-0.013	0.602	605
Nontradables	0.614	0.107	772	0.610	0.106	605
Log(Time)	5.862	0.369	773	5.845	0.373	605
Top10_NT	0.652	0.272	773	0.641	0.271	605
Top10_T	0.006	0.034	773	0.005	0.019	605
Log(GDP/Capita)	9.476	0.626	646	9.447	0.637	488
Log(Population)	6.545	0.630	646	6.504	0.642	488
State Dummy						
CAR[-1, 1]: Event 1	-0.046	0.054	760	-0.047	0.054	598
CAR[0, 1]: Event 1	-0.034	0.044	760	-0.035	0.044	598
CAR[-1, 1]: Event 2	0.004	0.036	770	0.003	0.035	603
CAR[0, 1]: Event 2	-0.006	0.030	770	-0.007	0.029	603

Notes: The compensation ratio is defined as the ratio of shares that tradables shareholders received from nontradables shareholders to total formerly tradable shares; Entertainment costs is a city-level index from World Bank (2006); Manager Salary is total cash and bonus paid to the top three senior managers, scaled by total assets when divided by Firm Size; Manager NT-share value is the value of managers' nontradables shareholdings, and Manager NT-shares is the proportion of nontradable shares held; Ind-Directors is the proportion of independent directors among all directors; Log(Assets) is the log value of total assets before the reform for each firm; ROE is the ratio of net profits (after taxes) over total equity before the reform;

Nontradables is the proportion of nontradable shares over total shares; Log(Time) is the log of the number of days the firm takes to complete its reform from April 29, 2005 when this nationwide reform was announced by the central government; Top10_NT is the ownership concentration of top ten nontradables shareholders (if any) among nontradable shares; Top10_T is the ownership concentration of top ten tradables shareholders among all the tradable A-shares; Log(GDP/Capita) is the log value of GDP per capita of each city; Log(Population) is the log value of total population of each city;

CARs are cumulative abnormal event returns over event windows where abnormal return is calculated using a standard market model; Event 1 (April 29, 2005) refers to the first key policy announcement by central government, which introduced this nationwide reform among listed firms; Event 2 (September 4, 2005) refers to the second milestone policy announcement, which describes the detailed rules governing the bargaining process for each listed firm.

Appendix Table 1B - Summary Statistics, Pairwise Correlations, for all State-controlled and Local State-controlled firms, including those not in cities matched with WB sample.

State-controlled Firms

	Compensation Ratio	Manager Salary	Manager NT-share market value	Manager Salary /Firm Size	Manager NT-shares/Total Shares	Ind-Directors	Log(Assets)	ROE	Nontradables	Log(Time)	Top10_NT	Top10_T
Compensation Ratio	1.00											
Manager Salary	-0.03	1.00										
Manager NT-share market value	-0.03	0.03	1.00									
Manager Salary/Firm Size	-0.03	0.38	0.02	1.00								
Manager NT-shares/Total Shares	-0.01	0.00	0.73	0.09	1.00							
Ind-Directors	0.08	0.14	0.01	0.05	0.00	1.00						
Log(Assets)	0.00	0.32	0.05	-0.55	-0.05	0.07	1.00					
ROE	0.08	0.08	0.00	0.02	0.01	0.07	0.13	1.00				
Nontradables	0.40	-0.03	0.03	0.07	0.04	0.01	-0.03	0.09	1.00			
Log(Time)	-0.19	-0.12	-0.04	0.07	-0.07	-0.10	-0.20	-0.19	-0.08	1.00		
Top10_NT	0.08	0.01	-0.09	-0.19	-0.08	0.03	0.24	0.02	-0.04	-0.20	1.00	
Top10_T	-0.12	0.01	0.01	-0.01	0.02	0.01	0.02	0.03	-0.03	0.02	0.02	1.00

Local State-controlled Firms

	Compensation Ratio	Manager Salary	Manager NT-share market value	Manager Salary /Firm Size	Manager NT-shares/Total Shares	Ind-Directors	Log(Assets)	ROE	Nontradables	Log(Time)	Top10_NT	Top10_T
Compensation Ratio	1.00											
Manager Salary	-0.01	1.00										
Manager NT-share market value	-0.03	0.04	1.00									
Manager Salary/Firm Size	-0.02	0.39	0.03	1.00								
Manager NT-shares/Total Shares	-0.01	0.00	0.73	0.10	1.00							
Ind-Directors	0.09	0.14	0.01	0.08	0.00	1.00						
Log(Assets)	0.01	0.31	0.06	-0.54	-0.05	0.07	1.00					
ROE	0.11	0.07	0.00	0.02	0.01	0.09	0.14	1.00				
Nontradables	0.41	-0.06	0.03	0.08	0.05	0.03	-0.09	0.10	1.00			
Log(Time)	-0.24	-0.10	-0.04	0.08	-0.07	-0.11	-0.24	-0.19	-0.09	1.00		
Top10_NT	0.08	0.02	-0.10	-0.20	-0.08	0.04	0.26	0.02	-0.04	-0.24	1.00	
Top10_T	-0.11	0.05	0.02	0.02	0.03	-0.01	0.06	0.04	-0.05	0.00	-0.02	1.00

Notes: The compensation ratio is defined as the ratio of shares that tradables shareholders received from nontradables shareholders to total formerly tradable shares; Entertainment costs is a city-level index from World Bank (2006); Manager Salary is total cash and bonus paid to the top three senior managers, scaled by total assets when divided by Firm Size; Manager NT-share value is the value of managers' nontradables shareholdings, and Manager NT-shares is the proportion of nontradable shares held; Ind-Directors is the proportion of independent directors among all directors; Log(Assets) is the log value of total assets before the reform for each firm; ROE is the ratio of net profits (after taxes) over total equity before the reform;
Nontradables is the proportion of nontradable shares over total shares; Log(Time) is the log of the number of days the firm takes to complete its reform from April 29, 2005 when this nationwide reform was announced by the central government; Top10_NT is the ownership concentration of top ten nontradables shareholders (if any) among nontradable shares; Top10_T is the ownership concentration of top ten tradables shareholders among all the tradable A-shares; Log(GDP/Capita) is the log value of GDP per capita of each city; Log(Population) is the log value of total population of each city;