Going (More) Public: Institutional Isomorphism and Ownership Reform among Chinese Firms

Heather A. Haveman[1] and Yongxiang Wang (汪勇祥)[2]

[1]*University of California-Berkeley, USA, and* [2]*University of Southern California, USA*

ABSTRACT   Publicly traded Chinese firms recently reformed their ownership structures by converting non-tradable shares, which constituted two-thirds of shares outstanding and were held largely by the state, into shares that could trade on domestic exchanges. To facilitate this reform, tradable shareholders were compensated with stock grants from non-tradable shareholders. Our analysis focuses on the level of compensation, the *compensation ratio*, the ratio of new tradable shares granted to tradable shares outstanding before the reform. Contrary to the predictions of asset-pricing models, most firms set the compensation ratio around 0.3. We explain this surprising convergence using institutional theory. In doing so, we analyze the power and interests of all relevant actors – not just owners, but also state regulators, executives, and other agents – and draw on insights from resource-dependence and agency theories. We find strong evidence of coercive and mimetic isomorphism, but no evidence of normative isomorphism. Because our dependent variable is continuous (a ratio), we are able to show that the mimetic effects we observe cannot be attributed to coercion or norms. Thus, we not only explain an empirical puzzle, we also advance institutional analysis of isomorphism by clearly distinguishing three isomorphic forces that have been conflated in much previous research.

KEYWORDS   agency, corporate governance, isomorphism, reform, resource dependence

(更多的)上市流通：制度同构与中国公司的股权改革

摘要

中国上市公司最近对他们的股权结构进行变革。原先占总股权三分之二比例的非流通股在改革之后将被允许上市流通。为推动改革的顺利进行，非流通股股东根据监管要求，需要支付对价给流通股股东。我们的分析关注于这一对价。有别于经典的资产定价模型，我们发现对价大部分被定在0.3左右，即每10股流通股平均可以从非流通股股东获得3股的补偿。我们利用社会学中的制度理论解释这一奇怪的对价高度聚集现象。为此，我们分析了参与谈判的各方 – 不仅包括股东，还包括政府监管机构等 – 的权力和各自的利益关系；同时，我们还将资源依赖理论以及委托代理理论引入制度理论。初步分析表明，模仿性同构和强制性同构可以解释对价聚集现象，而规范性同构不能解释它。由于我们的被解释变量是一个连续变量(比率)，因此，我们通过进一步的分析表明强制性同构的影响事实上也是微弱的。这样，我们不仅利用制度理论解释了对价高度聚集的奇怪现象，而且还把制度同构理论中的三种不同的因素   已有的研究很难区分它们 – 分解开，从而推动制度同构相关研究的发展。

关键词：委托代理问题，公司治理，同位现象，改革，资源依赖理论

INTRODUCTION

Until recently, publicly traded Chinese firms had two main kinds of shares: tradable shares, which were owned by domestic or foreign investors, and non-tradable shares, which were owned by the state or non-state institutional investors. As a result, ownership and control in these firms, which dominate most industries, was complex (Li, Xia, Long, & Tan, 2012; Walder, 2011): they were neither purely public nor purely private, and shares were neither fully liquid nor fully illiquid. In April 2005, the China Securities Regulatory Commission (CSRC) announced a plan to convert non-tradable shares into tradable shares. Thus, publicly traded Chinese firms were to go *more* public. This proposed reform was enthusiastically supported by non-tradable shareholders because the prices of their shares would rise sharply, so they would earn windfall profits. But this proposed reform was delicate because it could create a serious problem: unless managed carefully, a flood of new shares (on average, the number of tradable shares would triple) could depress tradable share prices and erode the property rights of tradable shareholders. To safeguard the property rights of tradable shareholders and obtain agreement from them to undertake reform, non-tradable shareholders compensated tradable shareholders for their expected losses. In most firms, non-tradable shareholders offered tradable shareholders compensation in the form of grants of new tradable shares. This compensation is the focus of our analysis.

The amount of compensation offered – specifically, the *compensation ratio*, the ratio of new tradable shares granted to tradable shares outstanding before reform – was critical to the reform's success. Most firms set compensation ratios around 0.3. The distribution of compensation ratios was surprisingly compact: the interquartile range ran from 14 percent below the median to 13 percent above the median. Such strong isomorphism is surprising. Financial-economic asset-pricing models predict that compensation ratios should have varied greatly, because they should depend on several financial factors that varied greatly across reforming firms: the ratio of non-tradable to tradable shares before reform, the volatility of the reforming firm's stock price, and the correlation between the reforming firm's stock-return volatility and market return (Kahl, Liu, & Longstaff, 2003; Wu & Wang, 2005).

To explain the compensation ratios' surprising isomorphism, we turn to institutional theory (DiMaggio & Powell, 1983), which explains how coercive, normative, and mimetic forces can drive firms to behave in similar ways. We first identify the power and interests of *all* actors involved in this ownership reform and then assess the ability of each set of actors to push for compensation ratios in the direction each preferred – higher or lower. Thus, we analyze not just the owners of tradable and non-tradable shares, but also the state regulators who pushed for reform and designed the reform process, the corporate executives who brokered negotiations between the two groups of owners, the outside advisors called in by

executives to help set compensation ratios, and the people who worked for the two groups of owners as employees and investment managers. As in DiMaggio and Powell's original analysis, we combine insights into the power and interests of all these actors from resource-dependence theory (Pfeffer & Salancik, 1978) and institutional theory (March & Olsen, 1976; Meyer & Rowan, 1977). Because the phenomenon we study involves corporate governance, we also use ideas from agency theory (Fama, 1980; Jensen & Meckling, 1976).

Our study advances institutional analysis of isomorphism by distinguishing, theoretically and empirically, between coercive, normative, and mimetic isomorphism. Thus, our analysis improves on much previous research, which has conflated the three isomorphic forces (Mizruchi & Fein, 1999). We begin by mapping the power and interests of all actors involved in the reform onto empirically observable indicators of all three isomorphic forces on compensation ratios, and testing hypotheses about all three forces. We then take advantage of the fact that we study a continuous dependent variable (a ratio), rather than the dummy variables analyzed in most previous studies of isomorphism. With a continuous dependent variable, we can assess statistically whether one empirical indicator of isomorphism – conformity with other organizations – is consistent with mimetic, coercive, or normative forces. It is precisely this variable that has been interpreted in different ways in previous studies.

We proceed as follows. To ground our analysis, we begin by describing the context of this reform. We then develop hypotheses predicting compensation paid to tradable shareholders. Next, we explain our methods and present the results of our empirical analysis. After discussing these results, we conclude by considering the implications of our study for research on institutional isomorphism and for explanations of China's transition toward a market-based economy with a mix of state and private ownership.

THEORETICAL BACKGROUND AND HYPOTHESES

Ownership of Publicly Traded Firms in China

Publicly traded companies in China, which are the largest firms in the country, dominating most industrial sectors, have several different types of shares owned by several different types of shareholders. Until recently, share types varied in their liquidity, with most basically, state shares (*guojia gu* 国家股), derived from investments made before state-owned enterprises went public. These shares did not trade on the stock exchanges; instead, they traded through negotiation between state agencies. Three other kinds of shares were held by three groups of non-state investors. First, individual shares (*geren gu* 个人股), also called A shares, were sold to mainland Chinese investors, both individuals and institutions, and traded on the Shanghai and Shenzhen exchanges. Second, institutional shares (*faren gu* 法人股), also known as legal-person shares, were offered to domestic institutions (mostly

investment companies) and firms that had at least one non-state owner. Trading in institutional shares was highly restricted; they could be purchased only through negotiation or auction and only with state approval. Third, foreign (B, N, and H) shares were offered to foreign individuals and institutions. B shares were traded on the Shanghai and Shenzhen exchanges in separate markets from A shares, while H and N shares were traded on the Hong Kong and New York exchanges, respectively.

Non-tradable shares constituted almost two-thirds of all shares in publicly traded firms and of these, about two-thirds were state shares and one-third were institutional shares (Wang, 2004). Many institutional shares were held by domestic investment companies controlled by private interests, but some were held by ostensibly non-state institutions that were nonetheless state-controlled (Li et al., 2012; Walder, 2011). Tradable shares constituted about one-third of all shares; of these, three-quarters were individual (A) shares and one-quarter were foreign (B, N, or H) shares. This system of split ownership (partly state, partly non-state) enabled industrial enterprises to raise capital while maintaining state control, similar to the situation in France (Fligstein & Zhang, 2011).

Going more public: Converting non-tradable shares to tradable shares. Because of their split ownership structure, publicly traded Chinese firms were actually only *partially* publicly traded. Many argued that reforming the ownership structures of these firms – specifically, converting non-tradable shares into tradable ones – was necessary to eliminate conflicts of interest between tradable and non-tradable shareholders, and to focus attention on economic rather than political goals, reduce stock-price volatility, promote effective corporate governance, and raise stock prices (Green, 2003; Wang & Chen, 2006). But Chinese officials struggled with the question of how to accomplish such a reform. Several previous attempts had failed utterly. In 1992, when officials suggested that institutional shares be allowed to trade on domestic markets, prices of A shares dropped because supply was expected to swamp demand. The same thing happened in 1999, when officials announced that state-owned shares of two firms would be made tradable. In 2001, the CSRC (2001) announced that it would accelerate privatization by requiring the conversion of some non-tradable shares (10 percent of total shares outstanding) to tradable status at A-share prices. Although only seventeen firms participated in this reform, the stock markets plunged 30 percent in three months. Pressure from investors and securities firms forced the cancellation of this reform four months later (Walter & Howie, 2006).

Given these failed reform attempts, it is clear that ownership reform would succeed only if the central state recognized the right of tradable shareholders to be compensated for the losses they expected to incur when non-tradable shares became tradable and flooded the market. Such a compensation policy, which the CSRC unveiled in April 2005, is the centrepiece of the reform we study. The

CSRC encouraged non-tradable shareholders to compensate tradable shareholders, which would ensure that the latter's ownership rights were upheld. Because firms had to obtain approval for reform from *both* non-tradable shareholders and tradable A shareholders, reform required serious negotiation between the two groups of owners (Inoue, 2005; Walter & Howie, 2006; Wang & Chen, 2006). The CSRC did not specify *how* or *how much* firms should compensate tradable shareholders; it left those decisions to be negotiated (Inoue, 2005). The *Directive* of April 29 stated that companies should 'decide for themselves how they will sell non-tradable shares' (CSRC, 2005a). Guidance notes released 23 August 2005 declared that the CSRC's aim was 'independent decision making with respect to specific share reform scheme to suit circumstances' (CSRC, 2005b). At a press conference held on 4 September of the same year, the CSRC reinforced this stance, stating that 'the principle approach and operating principle for the reform' was 'flexible decision making to suit different circumstances under centralized co-ordination' (CSRC, 2005c). These official statements accord with what one officer at the CSRC told us:

> You know we failed to do this reform in 2001, right? It was a big lesson for us. From then on, we realized that there is no way for us to set a uniform reform plan that will fit all firms. That's exactly why now we only set the basic rules and let the firms decide on the details. Firms are simply different, in many aspects. I do think we are doing the right thing and the firm knows how to do it. (Interview, July 18, 2006)

Two other aspects of this reform helped it succeed. First, it was rolled out in stages. Four firms served as a pilot project. After their ownership reform was completed, forty-two large firms, which together accounted for 10 percent of the overall domestic stock-market valuation, undertook reform. Only after those forty-two finished did other firms proceed. Second, the CSRC mandated a one-year lock-up period for formerly non-tradable shares. After the lock-up period, owners with over 5 percent of outstanding shares could sell no more than 5 percent in the next twelve months and no more than 10 percent in the following twenty-four months. This provision reduced the volume of shares entering the market and signaled state intentions to retain sizeable ownership stakes in many firms.

Ownership reform began with a vote by non-tradable shareholders; a two-thirds majority was required to initiate reform. After developing and announcing a reform plan, tradable and non-tradable shareholders negotiated. If the plan was approved by a two-thirds majority vote of participants in both meetings, it passed. After reform, the formerly non-tradable shares were reclassified as G shares, for *gugai* (股改), meaning share reform.

This 2005 reform tested the institution of property rights, which is critical to the transition from a state-run economy to one where private owners play an

important role. At the time this reform unfolded, the property rights of tradable shareholders were not well understood, much less accepted as permanent, and the property rights of non-state owners of non-tradable shares were only slightly less tenuous (Oi & Walder, 1999; Putterman, 1995); hence, this reform was highly uncertain. Moreover, this reform exemplified the continuing transition from state-mandated to market-mediated pricing, as the price of reform – the compensation paid to tradable shareholders by non-tradable shareholders – was set through a negotiated exchange between the two groups of owners.

This reform effort was hugely successful. Within two years, 1,234 firms (93 percent of the 1,321 with split ownership structures) had reformed their owner-ship structures. Analysis of the reform during the first eleven months of the process showed that share prices increased by 8 percent, after adjusting for the compensa-tion paid to tradable shareholders (Beltratti & Bortolotti, 2006).

What price reform? The first 'pilot' firms' ownership reforms involved grants of extra equity to tradable shareholders, which were paid by non-tradable shareholders. To determine the appropriate compensation ratio for their situation, each pilot firm estimated the share price after reform and non-tradable shareholders offered tradable shareholders enough shares so that the market value of the shares the latter owned would be the same as before the reform. The method used to estimate the share price after reform differed across firms (Inoue, 2005). One firm based its calculation on the price-earnings (P/E) ratios of international competitors, the shares of which were all tradable. A second did not explain how it estimated the post-reform P/E ratio. A third estimated the firm's total market capitalization, based on the net asset value for non-tradable shares and the average share price in the thirty days before reform for tradable shares, and divided this by the total number of shares (tradable and non-tradable). The compensation ratios for these firms – the number of new shares offered for every ten existing tradable shares – were set at 0.3501, 0.25, and 0.30, respectively.[1] Soon after, forty-two more firms announced reforms. Subsequently, reform was open to all other firms with split ownership structures. By 18 July 2007, 1,238 of the 1,321 firms with split ownership structures (94 percent) had undertaken ownership reform. Of these, 1,086 (88 percent) firms compensated tradable shareholders with stock grants. The other 152 firms used other, incommensurate means of leveling the playing field: offering call or put warrants, guaranteeing stock buy-backs at pre-set prices, or cancelling a fraction of non-tradable shares. Figure 1 plots compensation ratios for the 1,086 firms that used stock grants: the cumulative distribution function on the top (Fig. 1a), compensation ratios over time on the bottom (Fig. 1b). As Figure 1a shows, the median compensation ratio was 0.31; the inter-quartile range ran from 14 percent below the median to 13 percent above the median. Notwith-standing this strong convergence, the distribution ranged widely, from 0.02 to 0.70. As Figure 1b shows, there was no obvious time trend.

Figure 1. (a) The cumulative distribution of compensation ratios. (b) The distribution of compensation ratios over time

a

b
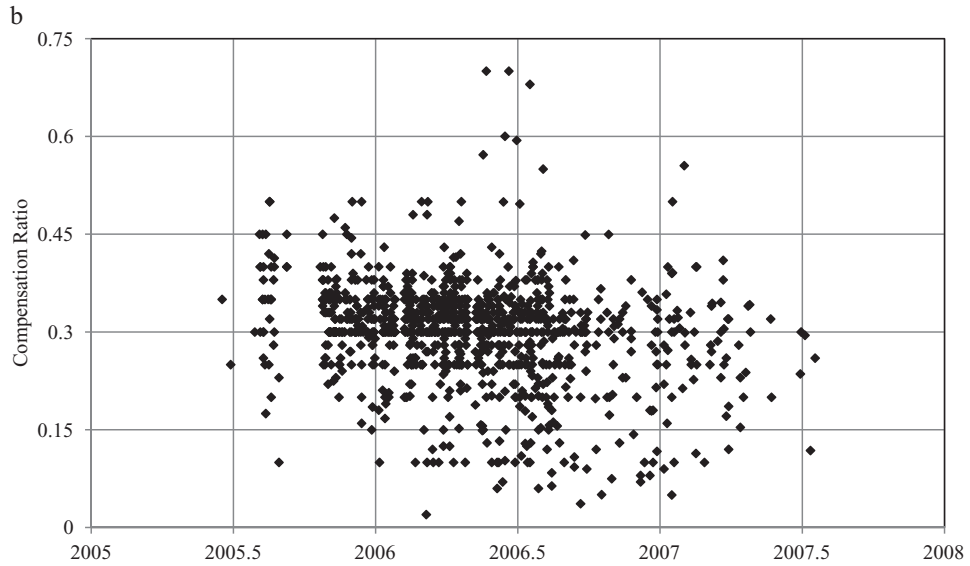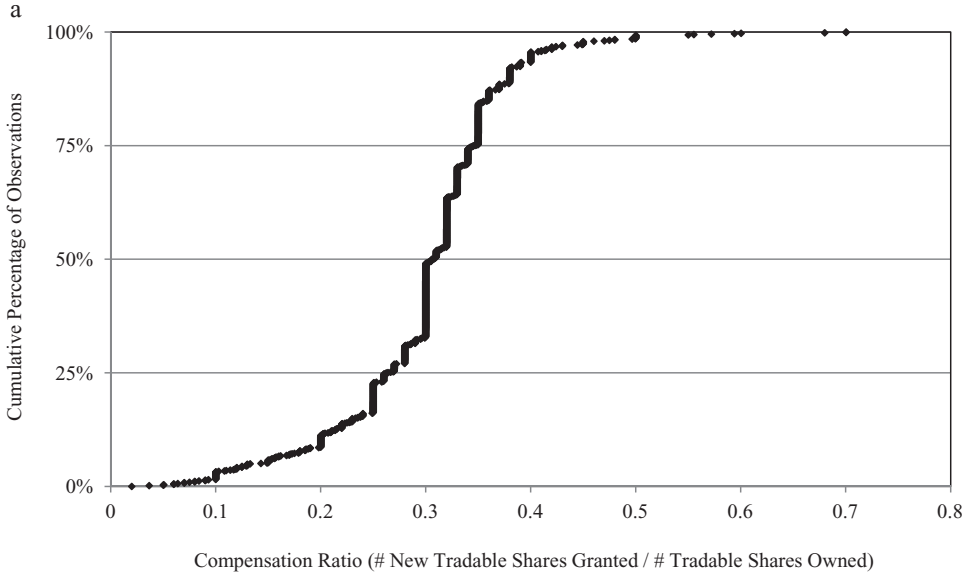
Notes: These figures plot data on all 1,086 publicly traded Chinese firms that reformed their ownership structure and compensated tradable shareholders with grants of new tradable shares between 1 May 2005, when the first plan was announced, and 18 July 2007. For 54 plans that included cash grants, we translated cash into an equivalent number of shares using the closing stock price the day before reform was announced. Each point on the graph represents one firm's compensation ratio. For example, the median firm's compensation ratio was 0.306, meaning that the median firm's tradable shareholders were granted 3.06 shares for every 10 shares they held before reform.

Hypotheses about Coercive Effects on Compensation Ratios

The state, collective actors, and interorganizational relations all promote isomorphism, meaning similarity in structure or behaviour (DiMaggio & Powell, 1983). Isomorphism brings legitimacy, which improves access to resources and acceptance, and so contributes to survival, even though it may not be efficient (Meyer & Rowan, 1977). Organizations become isomorphic in three ways (DiMaggio & Powell, 1983). Coercion works through pressures exerted on a focal organization by other organizations on which it depends (Pfeffer & Salancik, 1978). State laws that constitute the basic rules governing transactions are major sources of coercive isomorphic pressures (Meyer & Rowan, 1977), but coercive pressures also derive from state ownership (Edelman, 1990). Norms work through 'expert' sources of information about fields, values (shared understandings of what is important and good), and expectations (shared understandings of how things should be done). Professions and other collective actors are major sources of normative isomorphic pressures (Larson, 1977; Useem, 1979). Imitation works through observation of others and stems from responses to uncertainty (March & Olsen, 1976). Copying others is an efficient way to handle situations with ambiguous causes and unclear solutions.

Because of the central state's great importance in China, we begin by discussing its coercive power during this reform. We then discuss other coercive forces before turning to consider imitation and norms. Because the phenomenon we study involves corporate governance, we also draw insights from agency theory (Fama, 1980; Jensen & Meckling, 1976), which predicts how the interests and resources of owners differ from those of their agents (for a review, see Shapiro, 2005). In this case, the owners include state and non-state owners of non-tradable shares, and owners of tradable A and foreign shares. The most important agents were the executives of publicly traded firms, who managed the reform process, the bureaucrats who oversaw state ownership interests, and the managers of mutual funds, who managed many private owners' interests. Agency theory's distinction between types of owners and agents adds phenomenon-specific richness to the general predictions of institutional isomorphism theory.

The central state as regulator. The CSRC is a powerful coercive force for all Chinese firms. Publicly traded firms require CSRC approval for equity offerings and loans, while private firms require CSRC approval to become publicly traded. It is clear that the CSRC coerced publicly traded firms into reforming their ownership. The CSRC and the central State-owned Assets Supervision and Administration Commission (SASAC), which held and managed shares of firms owned by the central state, issued a joint statement stressing the importance of the ownership reform program and stating that all those involved should give it their support. In addition, the CSRC offered priority to reformed companies seeking to raise capital by borrowing from state-controlled banks, floating new equity issues, or offering new

rights issues. The CSRC also determined which owners could participate in the reform and designed the reform process.

Yet the coercive power of the central state was limited. As explained above, three previous reform attempts had to be abandoned in the face of resistance from shareholders and securities firms. The central state depended on non-state investors for the infusions of capital needed to modernize industrial enterprises and make them competitive (Walter & Howie, 2006), so it co-opted those investors by inviting suggestions for the 2005 reform; it received over 4,000 suggestions, and adopted many, including the suggestion of actively encouraging firms to design compensation schemes appropriate for their particular situations (Inoue, 2005; Walter & Howie, 2006; Wang & Chen, 2006). In interviews, Chinese investment bankers revealed a widespread belief that firms had leeway to design idiosyncratic compensation schemes.[2] As one banker said:

> We usually told our customers that this compensation plan is very firm-specific, so other plans proposed by another investment bank for another firm may not work very well for you, as each firm in China has its unique historical pattern in term of ownership structure evolution. If another bank set a lower compensation ratio for his customer, it does NOT mean that you can also set such a low compensation for your tradable shareholders and *vice versa*. (Interview, July 15, 2006)

In sum, the historical record, the business press, and interviews with Chinese investment bankers lead us to conclude that although the *occurrence* of reform *was* coerced by the central state, the *price* of reform – the compensation ratio – *was not*. To explain the compensation ratio, we must look for state coercion *within* firms, specifically, at the state as owner.

Although most institutional analyses of isomorphism involve external coercive actors like the state and resource providers, in our case two internal groups – non-tradable and tradable shareholders – were important coercive actors. (See Edelman, 1990 for another analysis of coercion through state ownership.) Each group of owners pushed the other in the negotiation mandated by the CSRC, and both groups of owners coerced the executives who mediated their negotiation. In addition, both groups of owners coerced other agents: the employees of state owners and other institutions that owned non-tradable shares, the employees of the SASACs that oversaw state owners' interests, and the employees of the mutual funds that held large blocks of tradable shares.

State agencies as owners. As non-tradable shareholders, many state agencies (central, provincial, and municipal) played direct roles in negotiations with tradable shareholders. The interests of the two groups of owners were opposed: all non-tradable shareholders, including state agencies, preferred to offer lower compensation ratios, while all tradable shareholders preferred to receive higher compensation

ratios. But the situation was complicated by the fact that state owners of non-tradable shares had more complex goals than their non-state counterparts. State owners sought not only to maximize their own economic interests, but also to enhance political goals, such as maintaining employment, providing social welfare benefits like housing and healthcare, and controlling sensitive industries (Green, 2003; Naughton, 2007; Wang & Chen, 2006). It was in the interests of all state owners to get this reform done, even if the price was high (Wang & Chen, 2006). Because of their mixed interests, state owners were more likely than non-state owners to accept higher compensation ratios to ensure reform succeeded.

This reform involved complex calculations. Although gains to non-tradable share prices could be calculated using an asset-pricing model (Kahl et al., 2003; Wu & Wang, 2005), declines in tradable share prices could not be calculated precisely because no asset-pricing model existed. Thus compensation ratios were *observable* but not *verifiable*: observable because they were divulged, but not verifiable because claims of optimality could not be checked by objective calculation (Bolton & Dewatripont, 2005). As a result, negotiations between the two groups of owners offered many opportunities for self-interested manipulation, especially by the corporate executives who brokered these negotiations. Since no-one knew how much compensation was reasonable, corporate executives could be held accountable *only* for the verifiable outcome of successful reform, not for the unverifiable outcome of the compensation level.

Executives wanted reform to succeed so they would be viewed favorably by the CSRC and their firms would receive preferential terms on loans and future equity offerings. Executives were concerned with getting reform done at almost any price, not some optimal price.[3] The probability of reform succeeding, which hinged on a two-thirds majority vote by tradable shareholders, increased with the compensation offered. Executives' preferences for reform at almost any price put them at odds with non-tradable shareholders' preference for reform at the lowest price. Executives were offered few, if any, incentives to do what owners wanted (Walter & Howie, 2006; Wang & Chen, 2006): executives were appointed for only a few years, they usually did not hold shares in the firms they managed, and their performance evaluations occurred annually and at the end of their terms in office, so they pursued short-term gains at the expense of long-term risks. Moreover, non-tradable shareholders, not executives, paid the price of reform.

Among non-tradable shareholders, state owners not only had mixed interests (political and economic), they also had limited capacity to monitor executives. State ownership interests were handled by SASACs, which appointed directors, approved major operating decisions, and reported on firm performance to state owners (Wang, Guthrie, & Xiao, 2012). Because each SASAC represented ownership interests in many firms, SASACs themselves had limited ability to monitor any particular firm (Naughton, 2007; Sun & Tong, 2003). In contrast, most non-state, non-tradable shareholders owned large stakes in only a few firms,

so they were both better able and more motivated to monitor and coerce executives than SASACs (Green, 2003; Xu & Wang, 1999). As a result, state owners of non-tradable shares had less effective oversight than non-state owners. SASACs themselves were beset by internal agency problems (Wang & Chen, 2006): their managers held short-term appointments and their performance was evaluated annually, so they were motivated to pursue short-term goals at the expense of the long-term interests of state owners. SASAC managers were told repeatedly that this reform was important, so they may have been tempted to suggest high compensation ratios to ensure that tradable shareholders voted for reform. In the end, SASACs exerted little coercive power: although they had to approve reform plans, they seldom demanded any changes. This conclusion is bolstered by what an official in the central SASAC told the second author:

> At the very beginning, we were actually worrying about possible loss of state assets (*guoyou zichan liushi* 国有资产流失) in this process. That's why we issued several notes emphasizing that CEOs should try their best to work in the interests of the government. But as you know, we are just supervising them, and we are not directly involved in everyday management. (Interview, July 23, 2006)

Given these facts – state owners were less motivated by pure economic interests than non-state owners, state bureaucrats and SASAC managers were less able than agents of non-state owners to monitor executives in publicly traded firms, and the interests of SASAC managers were mixed – state owners should have been less likely and less able than non-state owners to push for low compensation ratios. If so, firms where higher fractions of non-tradable shares were owned by the state would have higher compensation ratios:

> *Hypothesis 1: The higher the fraction of non-tradable shares held by state owners (rather than non-state owners), the higher the compensation ratio.*

Conflict or co-operation between non-tradable shareholders. The Chinese state is not a monolithic entity: there are 33 province-level units, over 600 cities, and almost 3,000 counties. Because 'the state' consists of many different entities, we must consider not just aggregate coercive effects of state ownership but also whether state owners acted in concert or clashed (Naughton, 2007; Walter & Howie, 2006). Reforming firms varied greatly in the extent to which state ownership was concentrated in the hands of a few entities, and therefore in the extent to which state owners were a cohesive force. The issue of owner cohesion extends to all non-tradable shareholders, state and non-state alike. Two-thirds of all non-tradable shareholders had to agree on how much compensation to offer tradable shareholders. The more concentrated the ownership of non-tradable shares, the less free-riding limited their shareholders' ability to agree on and offer low levels of

compensation (Darley & Latané, 1968; Jensen & Meckling, 1976). The less free-riding, the more likely the negotiation was to reflect the preferences of non-tradable shareholders rather than those of tradable shareholders. Therefore, net of the effects of the fraction of non-tradable shares held by state owners, the higher the concentration of non-tradable shares, the lower the compensation the two groups would agree on.

Moreover, when ownership of non-tradable shares was concentrated, large shareholders had sufficient power to ensure that their agents worked toward their interests. Because large shareholders capture large gains from monitoring agents, they are more likely than small shareholders to do so (Shleifer & Vishny, 1986). This is especially important in China, where corruption of executives and local officials is rampant (Ding, 2000a,b). The more concentrated non-tradable share-holding was, the easier it was for non-tradable shareholders to spot and stop corruption (Walder, 1995; Wang et al., 2012); specifically, to ensure that their own employees, the executives of the firms they owned, and investment bankers all pushed for lower compensation ratios. Thus we predict:

Hypothesis 2: The more concentrated ownership of non-tradable shares, the lower the compensation ratio.

Tradable shareholders. Reforming firms faced a second source of internal coercive pressure: tradable shareholders. When non-tradable shareholders calculated how much to offer tradable shareholders, they took into account tradable shareholders' power. The more power tradable shareholders had, the more compensation would be offered. And the more concentrated tradable shareholding, the less able free-riding limited tradable shareholders were to demand high levels of compensation.

But the interests of tradable shareholders may have conflicted with those of their own agents. Concentrated ownership of tradable shares was usually due to mutual funds owning large stakes. This introduces a new set of players, mutual-fund managers, who often had different interests to those of mutual-fund investors. Specifically, mutual-fund managers could be bribed to persuade them to accept, on behalf of their investors, less compensation than they would otherwise demand. Such bribery was possible because compensation schemes were not verifiable outcomes, so investors could not hold mutual-fund managers accountable for compensation levels. This should not be surprising because in China corruption is rampant (Ding, 2000a,b). Interviews at two leading investment banks, CITIC and Guosen, confirmed that such side payments occurred during the reform process. These interviews were corroborated by a widely read article in an influential financial newspaper (Li, Guo, & Sun, 2006), in which a spokesperson for the controlling shareholder, Mr Jianwei Shan of Newbridge Asia AIV III LP, flatly recounted attempted bribery by mutual-fund managers who held tradable shares in his firm: 'Those guys are not interested in discussing the reform plan at all. They

just want you to give some blood to fill their own pockets'. Mutual-fund managers' efforts to extract side payments from non-tradable shareholders led to a call to repeal mutual funds' voting rights during this negotiation (Huang, 2006). One study showed that in firms where mutual funds held large blocks of tradable shares, entertainment costs (a form of side payment to mutual-fund managers) rose significantly during the reform process; moreover, the effect of concentrated mutual-fund share ownership on compensation ratios was most pronounced in firms that were most vulnerable to bribery – those that had a lot of cash on hand (Wang, 2011). Given this evidence, we expect that concentration of tradable shareholding should result in low compensation, since bribery of mutual-fund managers was more likely when mutual-fund managers voted large blocks of shares:

> *Hypothesis 3: The more concentrated ownership of tradable shares, the lower the compensation ratio.*

Hypotheses about Mimetic Effects on Compensation Ratios

General imitation. This reform was a very uncertain proposition because several earlier efforts failed, the rights of tradable shareholders were recent social inventions, and there was no way to calculate objectively the 'correct' level of compensation. Faced with such uncertainty, both tradable and non-tradable shareholders (and their agents) would look for clues about what compensation ratio to set in the compensation ratios set by other firms that had previously gone through this reform (DiMaggio & Powell, 1983; March & Olsen, 1976). Thus we propose:

> *Hypothesis 4a: The higher the compensation ratios set by other firms that had previously reformed their ownership, the higher the compensation ratio set by the focal firm.*

Targeted imitation of role-equivalent and cohesive firms. Imitation in the face of uncertainty should not be indiscriminant; instead, it should be seen primarily within sets of organizations that play similar roles or that are tied directly to each other (DiMaggio & Powell, 1983). Consider first imitation of organizations that play similar roles. Decision making relies on the cognitive categories people construct as they label and make sense of the environment. Among corporate decision makers, industry is a powerful cognitive category. Decision makers attend to the actions of firms in their own industry more than other industries because the segregating mechanisms (Hannan & Freeman, 1989) that create and maintain industry boundaries also focus attention. Because firms in the same industry are viewed as more salient than firms in other industries, decision makers monitor the actions of firms in the same industry more closely than the actions of firms in other industries; for example, executives and shareholders evaluate their own firm's performance

relative to that of other firms in their industry (Murphy, 1999). Assuming industry boundaries shaped decision making, we would expect firms to imitate other firms in the same industry:

Hypothesis 4b: The higher the compensation ratios set by firms in the same industry that previously reformed their ownership, the higher the compensation ratio set by the focal firm.

Location also matters. Decision makers can more easily observe the actions of organizations nearby than those far away. Investors and executives talk with each other in local social settings like clubs and religious gatherings (Hong, Kubik, & Stein, 2004) where they discuss important issues, like ownership reform. This suggests that decision makers most closely observe firms in the same region. Region is important in China, the land mass of which is 2 percent larger than the U.S., with mountains that divide regions from one another and engender strong regional cultures. To the extent that decision makers' cognitive maps conformed to regional boundaries, they would focus on the actions of firms in their own region and ignore the actions of firms in other regions. Accordingly, we expect imitation within regional boundaries:

Hypothesis 4c: The higher the compensation ratios set by firms in the same region that previously reformed their ownership, the higher the compensation ratio set by the focal firm.

Imitation of organizations tied to the focal firm. Director interlocks are important sources of information for decision makers in Chinese firms, just as they are in Western ones. CSRC guidelines entrusted boards of directors to oversee ownership reform. Directors typically discussed all issues related to this reform, including compensation of tradable shareholders. Conversations with directors of other firms that succeeded at this complex and uncertain reform would offer vivid examples that were likely to influence directors' decisions and actions. Such vivid, case-based information is more influential than pallid, abstract statistics (Nisbett & Ross, 1980). Therefore, we predict that compensation set by firms with which the focal firm was interlocked influenced decisions in the focal firm:

Hypothesis 4d: The higher the compensation ratios set by firms with which the focal firm is interlocked, the higher the compensation ratio set by the focal firm.

Increased imitation under uncertainty. The influence of role-model organizations is more intense in situations of greater uncertainty (DiMaggio & Powell, 1983; Haunschild, 1994). When faced with uncertainty, decision makers economize on search costs (Cyert & March, 1963) and imitate the actions of other organizations, substituting

institutional rules for technical ones (March & Olsen, 1976; Meyer, Scott, & Deal, 1983). The greater the uncertainty about what to do, the more likely Chinese decision makers would have attended to information gained from salient others. Thus we propose:

> *Hypothesis 4e: The impact of all imitation targets will be stronger where and when uncertainty is greater.*

Hypotheses about Normative Effects on Compensation Ratios

Investment banks counsel firms on complex financial transactions, so they are a salient source of professional norms (Haunschild, 1994). For their part, investment bankers look to their own past experience to determine what advice to give clients. Investment banks were likely to advise Chinese firms to set compensation ratios close to the levels set by their previous clients. Accordingly, we predict:

> *Hypothesis 5a: The higher the mean compensation ratio set by other firms that used the same investment bank, the higher the compensation ratio set by the focal firm.*

Any relationship between the focal firm's compensation ratio and those set by other clients of its investment bank may be due to spurious causation (Haunschild, 1994), as some unobserved factor may influence all investment banks or all Chinese firms. For instance, all banks and all client firms may share some norms. Such a norm could arise if, in addition to looking at its own experience, each investment bank looked at the actions of other investment banks, especially prestigious ones. Interviews with Chinese investment bankers confirmed this tendency: they read reports from top domestic banks, such as the China International Capital Corporation (CICC), a joint venture of the China Construction Bank and Morgan Stanley, and some foreign investment banks, but they paid little attention to what less-prestigious domestic investment banks did. The actions of other investment banks were salient normative forces because most investment banks advising Chinese firms on this reform were small. Some prestigious investment banks advised only a handful of firms, for example, CICC advised just four firms. Small investment banks had shallow pools of talent and so faced great uncertainty about what compensation was appropriate. This uncertainty was likely to prompt them to imitate what other investment banks did to avoid an awkward situation: they simply did not know what to advise their clients. For this reason, we propose:

> *Hypothesis 5b: The higher the mean compensation ratio set by the client firms of other investment banks, especially prestigious banks, the higher the compensation ratio set by the focal firm.*

Investment banks are hired by executives and so are beholden to them. Because many banks advising Chinese firms on this reform were much smaller than their client firms, it was unlikely that investment banks exerted much influence on executives. Instead, executives in client firms may have exerted great influence on investment banks, pushing them to suggest compensation levels that fit executives' own preferences. In other words, investment banks may not have been normative influences; instead, they have been used by executives to put forward executives' own preferences. This claim is supported by our interview with a banker in a small Chinese investment bank who said:

> Our main task is to communicate between the firm (the CEO) and the non-tradable shareholders. When we actually made a presentation about what compensation ratio the firm should set, it turned out we were shadows of the firm. You must know 'Shuanghuang' 双簧 show?[4] Then you see what I mean, right? Those CEOs really think that they can manage everything by themselves and that they are the real controllers of their firms who can decide on everything. . . Why do they hire us? Oh, do you think the tradable shareholders would believe that compensation ratio is fair and acceptable if they are told that the CEO sets it? After all, we're called financial intermediaries. (Interview, July 15, 2006)

This indicates that investment banks told owners what the firms' executives wanted them to hear. Executives' ability to use investment banks to transmit their desired messages to shareholders depended on ownership structure, specifically the percentage of non-tradable shares owned by the state and the concentration of non-tradable shareholding. If agency problems eliminate any normative influence of investment banks, net of the effects of ownership structure, then there will be no effect of investment banks on compensation ratios.

METHOD

Sample

We analyzed data on all completed reforms by Chinese firms between June 12, 2005, when the first reform was announced, and July 18, 2007. The study period includes 94 percent of the 1,321 publicly traded firms subject to this reform. Late-reforming firms excluded from our analysis either had complex ownership structures (B, H, or N shares in addition to A shares and non-tradable shares) or performed poorly ('Special Treatment' firms). We analyzed 88 percent of reforming firms (1,086): those that offered stock grants (or stock plus cash) because the compensation schemes of the remaining 12 percent (which involved call or put warrants, stock buy-backs, or cancellation of non-tradable shares) were simply incommensurate.[5]

Measures

Our main sources of data were the Guo Tai An Information Technology Company (GTA), a Hong-Kong-based firm that develops databases for academic and industrial research, and Wind Information Corporation, a Shanghai-based provider of financial data used by most investment banks in China. Because they provided similar information, we could cross-check their databases for consistency and completeness. The second author's reading of over 400 ownership reform plans indicated that Wind provided more detailed ownership data than GTA, so we gathered data on compensation ratios, details of reform plans, the reform's completion date (if successful), director names, investment bank names, ownership of all non-tradable shareholders, region, and industry from Wind; we gathered data on firms' assets, financial performance, beta, and the ownership stakes of the ten largest tradable shareholders from GTA.

The dependent variable. Our dependent variable is the *compensation ratio*, the ratio of shares granted to tradable shares held before ownership reform. For instance, if an investor held ten shares of tradable stock and was granted three new shares, the compensation ratio would be 3:10, or 0.30. A few plans (5 percent of those we study) also included cash grants; for these, we translated cash into shares using the closing stock price the day before the compensation scheme was announced.

Independent variables. To measure coercion due to state ownership (H1), we calculated the *percentage of non-tradable shares that were state-owned*. To measure coercive pressure due to cohesion among non-tradable shareholders (H2), we calculated *the concentration of ownership of non-tradable shares* using the Herfindahl index. To measure coercive pressure from tradable shareholders (H3), we calculated *concentration among the top ten tradable shareholders*.

Most studies of mimetic isomorphism have focused on the diffusion of particular types of practices or structures – binary variables – so researchers have counted the number of organizations within some reference groups that adopted the innovation in question. But our dependent variable is continuous (*cf.* Haunschild, 1994): firms could set compensation ratios at an infinite number of levels, so we measured mimetic isomorphism targets as *the mean compensation ratio set by firms in a reference group*. The mean of any distribution captures its central tendency (what the typical firm did) so the mean compensation ratio in a firm's reference group is its benchmark (the most typical member of the group). This measurement strategy accords with cognitive psychology research showing that people use averages to assess how typical entities are of their group (Barsalou, 1985).

Our hypotheses (H4a to H4d) considered four reference groups that firms might imitate. First, we assessed general imitation by including in the reference

group *all firms* that finished reform before the focal firm began. Next, to capture imitation through role similarity, we included only prior reformers in the *same industry* as the focal firm, and then only prior reformers headquartered in the *same province*. Finally, to capture imitation through direct ties, we included only prior reformers with which the focal firm was *interlocked*. For each reference group analysis, firms that began ownership reform before anyone in their reference group had finished had no reference group. These firms dropped out of the analysis when we included the reference-group variable. And firms with no board interlocks dropped out of the analysis when we included the interlock reference-group variable.

Finally, we measured normative effects (H5a and H5b) with the mean compensation ratio set by clients of the focal firm's investment bank and the mean compensation ratio set by clients of other investment banks. The only client firms considered were those that finished reforming their ownership structures before the focal firm began to reform its own. Since the actions of top-ranked investment banks mattered more than the actions of other investment banks, we weighted data for investment banks ranked higher than the focal firm's at 0.7 and weighted data for lower-ranked banks at 0.3. (Our results are robust to weights of 0.8:0.2 and 0.6:0.4.) Investment-bank rankings came from the Securities Association of China. We used 2006 rankings, which were based on net profits per worker and so capture worker ability. Because these rankings did not change much from year to year, a static measure for 2006 is reasonably accurate.

The moderator variable (H4e).   Uncertainty is due to the lack of information about how to make a decision (Duncan, 1972). Since decision makers often rely on information about what role-model organizations do, their uncertainty is reduced when those role models do the same thing, and increased when they do different things. Accordingly, we measured uncertainty as the *standard deviation of the compensation ratio among firms in each reference group*. The greater the standard deviation, the greater the variety of answers to the question about what was the 'right' compensation ratio, and thus the greater the uncertainty facing decision makers who relied on prior reformers' actions to guide their own. We created four uncertainty measures, one for each reference group: general, industry, province, and interlock. All uncertainty measures are firm-specific. We could not calculate standard deviations for firms with reference groups containing only one firm; therefore, such firms dropped out of the analysis when we included these measures.

For each reference group, we created interaction terms by multiplying the standard deviation (uncertainty) and the mean (imitation target). Interaction terms are often highly correlated with their components, causing multicollinearity (Jaccard, Turrisi, & Wan, 1990). Coefficients on collinear variables are poorly estimated, so small measurement errors can have large effects. To avoid these problems, we subtracted the sample means from both interaction components

before multiplying them together to create mean-centered interactions (Cohen, 1978).

Control variables. Our statistical models include several other factors that might influence compensation ratios. First, we controlled for firm size in terms of *market value*, measured just before reform began. The shares of large firms were more likely to trade often and in large quantities than were the shares of small firms. If so, tradable shareholders in large firms would be less affected by the conversion of formerly non-tradable shares than those in small firms (Brav & Gompers, 2003; Field & Hanka, 2001). Therefore, tradable shareholders in large firms were likely to accept lower compensation ratios. We also controlled for the focal firm's stock-price performance using the *mean return* over the twelve months before that firm began reform. The higher the return, the more tradable shareholders had already benefitted from increases in the stock price and the less potential there was for future increases. So the higher the return, the less incentive non-tradable share-holders had to initiate ownership reform, and the lower the compensation ratios they were likely to offer to tradable shareholders. We gathered data on returns from Sinofin, a financial-market database created by the Center for China Economic Research at Beijing University, which was devised to conform to the standards of the University of Chicago's Center for Research in Security Prices.

We controlled for three variables that financial asset-pricing models (Kahl et al., 2003; Wu & Wang, 2005) predict would affect compensation ratios. First, we controlled for stock-price volatility using the *standard deviation of the firm's stock price* over the twelve-month period before its reform process began. The more volatile the stock returns, the lower the implied value of non-tradable shares (controlling for the level of past stock returns) and the more removing trading restrictions increased their value. The larger potential windfalls for non-tradable shareholders, the higher the compensation ratios they would be willing to offer tradable shareholders. Some firms were recently listed and so lacked a full year's track record, so we could not calculate stock-price volatility. These firms dropped out of our analysis. Our second financial control is *beta*, the association between the focal firm's stock-price return and overall market return. Net of prior-year returns, the higher the beta, the riskier the stock and the lower the compensation ratios non-tradable shareholders would be likely to offer. We measured beta over the twelve months before each firm's ownership-reform process began. Some firms were highly illiquid: their stock did not trade at all in the year before they undertook reform, so we lacked the data needed to calculate beta. These firms dropped out of the analysis. Our third financial control is *the ratio of non-tradable to tradable shares*, measured on the day before the focal firm's ownership-reform process began. The higher this ratio, the more reform would flood the market with newly tradable shares, so the higher the compensation ratios non-tradable shareholders would have to offer tradable shareholders.

Analyses

Statistical analysis. Our data are cross-sectional and our dependent variable is continuous, so we estimated linear regressions. Firms varied greatly in size and performance, so we tested and corrected for heteroscedasticity.

Qualitative analysis: Interviews. We augmented our statistical analysis with interviews conducted by the second author in the summer of 2006 with seven Chinese investment bankers, one bureaucrat at the central SASAC, four officials at the CSRC, and one officer of the Shanghai Stock Exchange. Our goal was to clarify our understanding of the reform process; specifically, the ways that people in different roles (owner, manager, advisor, regulator) interacted, their goals, and their perceived degree of power. We selected these interview subjects because they were well positioned to provide an insider's view of the reform process. The investment bankers were senior managers in two prestigious firms, CITIC and Guosen, who participated in designing compensation plans for client forms; their duties included communicating with entities (mainly institutional investors like mutual funds) that held large blocks of tradable shares. The bureaucrat from the central SASAC oversaw investments in many firms where the controlling shareholder was the central state. The CSRC officials oversaw the ownership reform process. Finally, the officer of the Shanghai Stock Exchange was in charge of monitoring the stock market (to see whether there was insider trading or market manipulation), making sure market participants played a fair game, and setting regulations to improve corporate governance, including this ownership reform. In combination, our interview subjects offered a holistic view of this process from the point of view of state owners, corporate advisors, and regulators.

The interviews were semi-structured: the second author arrived with a set of questions based on his reading of over 400 reform plans and a preliminary (descriptive) analysis of compensation ratios. He asked how the process unfolded, what the interviewees' goals were, how much power the interviewees had at different stages during the reform process, how firms set compensation ratios, what kind of factors affected compensation ratios, and how different actors interpreted CSRC reform policies. When the interviewees gave him unexpected answers – when they said things he had not anticipated – he asked open-ended questions to make sure that he understood the reform process and his interviewees' views on it. He took notes of the interviews on a laptop computer.

These interviews ensured that our analysis took into consideration the power and interests of all relevant actors and that our measures were reasonable. The interviews also helped us make sense of our results, by allowing us to check our interpretation of the parameter estimates in our models against the experiences and perceptions of participants in this reform during and shortly after the reform unfolded.

RESULTS

Table 1 presents descriptive statistics on all variables used in our analysis. Table 2 presents the results of our multivariate analysis. Model 1 includes only control variables. Model 2 includes all main effects. Models 3 to 5 test interactions between each imitation target and uncertainty.

In Model 1, four control variables have effects in the expected direction. Firms with larger market capitalizations and better financial performance (returns to stock price) set significantly lower compensation ratios than smaller and worse-performing firms because the former were better bets for tradable shareholders. Firms with higher ratios of non-tradable to tradable shares set significantly higher compensation ratios than firms with lower ratios. Stock-price volatility has the expected positive effect, but is sometimes non-significant. The effect of beta is unexpectedly positive and non-significant.

In Model 2, the percentage of non-tradable shares owned by state shareholders has a positive and statistically significant effect, which supports Hypothesis 1. This result indicates that state owners' political interests, their limited capacity to monitor corporate executives, and agency problems within SASACs reduced state owners' interest in offering, and ability to offer, low compensation ratios, relative to the interests and abilities of non-state owners. Concentration of non-tradable shareholding has a negative and statistically significant effect, which supports Hypothesis 2. This indicates that the more non-tradable share ownership was concentrated among a few owners, the more bargaining power non-tradable shareholders had over tradable shareholders, and the more monitoring power they had over agents (Walder, 1995; Wang et al., 2012), so compensation ratios were set lower (as preferred by non-tradable shareholders), not higher (as preferred by tradable shareholders, corporate executives, and SASAC managers). Concentration of tradable shareholding, which captures the coercive power of those owners, has a negative and statistically significant effect. This result supports Hypothesis 3, indicating that tradable shareholders had severe agency problems. Recall that concentration of tradable shares was often due to mutual funds owning large stakes. As confirmed by our interviews and media accounts, a high concentration of tradable shares led to low compensation ratios because mutual-fund managers were bribed.

Three of the four variables capturing the effects of reference groups that might have served as imitation targets (all firms, same industry, and same province) are statistically significant. These results support Hypotheses 4a, 4b, and 4c. The effect of the reference group encompassing all firms is eight times the same-industry effect and five times the same-province effect. The non-significant effect of interlocked firms fails to support Hypothesis 4d. These results indicate that Chinese firms attended to the actions of all firms that had previously undergone reform, as well as firms in their industry and region; however, after taking into account these imitation targets, Chinese firms did not attend to the actions of interlock partners.

Table 1. Descriptive statistics

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Mean	0.300	34.6	0.600	0.006	0.318	0.316	0.315	0.311	0.317	0.314	0.069	2.85	−0.0015	0.022	1.03	2.18
Standard deviation	0.079	26.8	0.274	0.030	0.012	0.032	0.027	0.049	0.031	0.030	0.007	12.1	0.0022	0.048	0.204	2.06
Minimum	0.020	0	0.049	0.000	0.300	0.100	0.200	0.100	0.100	0	0	0.272	−0.06	0.0075	0.075	0.268
Maximum	0.700	85.0	1.00	0.786	0.364	0.474	0.500	0.594	0.500	0.375	0.089	370	0.011	0.053	1.57	27.3
# observations	1086	1086	1086	1086	1085	1014	1055	821	1017	1086	1086	1077	1077	1076	1086	1085
1 Compensation ratio (CR)																
2 % State-owned shares	0.303															
3 Concentration[NT shares]	0.028	0.431														
4 Concentration[T shares]	−0.105	0.026	0.029													
5 Mean CR[all firms]	0.165	−0.008	0.121	−0.022												
6 Mean CR[same industry]	0.152	0.007	0.005	−0.009	0.304											
7 Mean CR[same province]	0.152	−0.031	0.043	−0.033	0.398	0.154										
8 Mean CR[interlocked firms]	0.064	0.025	0.057	−0.041	0.192	0.142	0.166									
9 Mean CR[same investment bank]	0.055	0.024	0.133	0.041	0.382	0.135	0.171	0.070								
10 Mean CR[other investment banks]	0.076	−0.018	0.035	0.013	0.417	0.043	0.225	0.110	0.083							
11 Std Dev CR[all firms]	−0.175	−0.087	−0.178	0.028	−0.771	−0.234	−0.313	−0.184	−0.276	−0.329						
12 Market capitalization/10[9]	−0.007	0.105	0.075	−0.002	−0.009	−0.090	0.031	−0.001	−0.042	0.018	−0.003					
13 Mean stock-price return	−0.171	0.074	0.095	0.078	0.193	−0.055	0.059	0.060	0.105	0.065	−0.201	0.064				
14 Stock price volatility	0.148	−0.057	−0.093	0.066	−0.060	0.098	−0.033	0.030	−0.055	−0.028	0.108	−0.107	−0.353			
15 Beta	0.166	0.016	−0.042	−0.047	0.038	0.156	0.037	0.036	0.021	−0.019	0.012	0.018	−0.407	0.575		
16 # NT shares/# T shares	0.324	0.183	0.056	−0.023	0.032	0.005	0.081	−0.005	0.049	0.019	−0.051	0.432	0.024	−0.001	−0.012	

Notes: This table is based on 1,086 observations of publicly traded Chinese firms' ownership reform plans that were completed between 1 May 2005 and 18 July 12007, and that offered compensation as grants of stock or cash. We converted cash grants into stock equivalents. Mean and std dev CR [] refer to the mean and standard deviation of the compensation ratios set by the reference group named in the square brackets. NT and T stand for non-tradable and tradable shares, respectively. To save space, we show only standard deviations of compensation ratios based on the general reference group, which includes all firms.

Table 2. Linear regression analysis of compensation ratios (CR)

	(1)	(2)	(3)	(4)	(5)
Market capitalization/10^{12}	−1.07*** (−5.26)	−0.911*** (−3.31)	−0.997*** (−3.65)	−1.04*** (−4.46)	−1.04*** (−4.56)
Mean stock-price return	−5.39** (−2.88)	−10.82*** (−4.98)	−9.67*** (−5.10)	−6.86*** (−3.61)	−7.27*** (−3.89)
Stock price volatility	0.746 (1.24)	1.22 (1.82)	1.40* (2.37)	1.30* (2.14)	1.12* (1.96)
Beta	0.031* (2.06)	0.015 (0.86)	0.007 (0.49)	0.011 (0.70)	0.019 (1.27)
#NT shares/# T shares	0.015*** (6.06)	0.012*** (4.90)	0.013*** (5.40)	0.012*** (5.44)	0.013*** (5.44)
%State-owned NT shares		1.08*** (8.84)	0.789*** (6.83)	0.818*** (6.16)	0.813*** (6.26)
Concentration [NT shares]		−0.037*** (−3.53)	−0.032*** (−3.67)	−0.026** (−2.74)	−0.026** (−2.84)
Concentration [T shares]		−0.206*** (−5.64)	−0.216*** (−5.27)	−0.232*** (−6.58)	−0.218*** (−5.42)
Mean CR [all firms]		1.59*** (3.64)	1.27*** (5.83)		
Mean CR [same industry]		0.185* (1.92)			
Mean CR [same province]		0.308** (2.60)			
Mean CR [interlocked firms]		0.028 (0.571)		0.382*** (4.71)	
Mean CR [same investment bank]		−0.061 (−0.522)			0.465*** (5.26)
Mean CR [other investment banks]		0.049 (0.283)			
Std Dev CR [reference group]			−1.03* (−2.56)	−0.232** (−2.70)	−0.114 (−1.31)
Mean CR [reference group] × Std Dev CR [reference group]			71.5*** (3.76)	4.80* (2.19)	4.47* (2.17)
# Observations	1,075	764	1,074	1,005	1,044
R^2	0.15	0.31	0.27	0.25	0.24

Notes: This table presents OLS regressions of compensation ratios set by all 1,086 publicly traded Chinese firms that were completed between 1 May 2005 and 18 July 2007, and that offered compensation in the form of grants of stock or cash. We converted cash grants into stock equivalents. NT and T stand for non-tradable and tradable shares, respectively. Mean CR and Std Dev CR [ ] refer to the mean and standard deviation, respectively, of the compensation ratios (CR) set by the reference group named in the square brackets. Robust t statistics are in parentheses below parameter estimates. * indicates p < 0.05, ** p < 0.01 and *** p < 0.001, two-tailed t-tests. Coefficients on the constant are omitted to save space.

Both variables capturing normative pressure from investment banks have non-significant effects. These results fail to support Hypotheses 5a and 5b. Instead, they suggest that for Chinese firms, investment banks were agents of executives and served mostly as sources of information about what other firms were doing. This conclusion is bolstered by interviews with Chinese investment bankers, who told us that when they presented research in the course of advising executives on ownership reform, the most common index of 'reasonable' behaviour they used was the average compensation ratio set by other firms. For example, a report written by the prominent investment bank CICC highlighted the average compensation ratio set by other firms.

Finally, Models 3 to 5 test for the moderating effect of uncertainty, using the three reference groups that had significant main effects in Model 2. In all three models, the main effects of the reference groups remain positive and statistically significant and the interactions with uncertainty (measured relative to each reference group) are positive and statistically significant. Together, these results support Hypothesis 4e.

Robustness Checks

We conducted several ancillary analyses to assess the robustness of these results. First, we measured financial performance using earnings per share, we logged size (market capitalization), and we measured size using assets. All three sets of alternative results were similar to those shown here. Second, we created an alternative measure of coercive pressures from state owners of non-tradable shares: a binary indicator set to one when the controlling shareholder was a state authority and zero otherwise (Li et al., 2012). Starting in 2004, each listed firm has been required to disclose its ultimate controlling shareholder in its annual report. From the Shanghai and Shenzhen Stock Exchange websites we downloaded annual reports filed the year before each firm undertook ownership reform. Results using this alternative measure of coercion due to state ownership did not differ materially from those shown here. Third, we distinguished between state shares (owned directly by the state) and state institutional shares (owned indirectly by the state through other state-owned firms). The percentage of shares held by both types of state owners had similar effects, which indicates that direct and indirect state ownership were similarly beset by agency problems.

Fourth, we checked whether results were driven by outliers by dropping firms with compensation ratios outside the (5 percent, 95 percent) interval. Our results are robust to trimming the sample. Fifth, we probed whether the results may have been skewed by the fact that seventy-five firms had only one non-tradable shareholder. When we dropped these firms from the analysis, all variables, including concentration of non-tradable shares, had effects of similar size and significance. Finally, we dealt with the fact that the ratio of non-tradable to tradable shares was

highly skewed, with a mean of 2.2 and a small number of very large values (maximum 28). When we dropped fifty-nine firms for which this variable was more than one standard deviation above the mean, all variables had effects of similar size and significance. The effect of the ratio of non-tradable to tradable shares increased greatly, which suggests that including outliers obscured the true power of this factor.

The Impact of Reference Groups: Coercion, Norms, or Mimesis?

So far, we have assumed that coercion came from owners, norms from professional advisors, and mimetic influences from reference groups. But imitation of reference groups can also be due to coercion or norms (Mizruchi & Fein, 1999). If so, each reference group's benchmark would set a floor (a lower limit on what is considered acceptable), rather than a ceiling (an upper limit on what is considered acceptable) because of asymmetries in decision making. Non-tradable shareholders and agents stood to gain from this reform; tradable shareholders stood to lose. To all decision makers, losses loom larger than gains (Kahneman & Tversky, 1979), so this reform was more salient to tradable shareholders than to non-tradable shareholders and agents. It is not surprising, then, that opposition by tradable shareholders caused earlier reform attempts to fail (Walter & Howie, 2006). Moreover, reform efforts were initiated by non-tradable shareholders and compensation plans were developed by them and their agents; only after developing reform plans did they seek agreement from tradable shareholders. This made tradable shareholders' vote the sticking point: either agents viewed the behaviour of other firms as a culturally valued norm that set a floor for their own reform, or owners viewed it as a norm and coerced agents into adhering to it. Note that because of the great uncertainty surrounding this reform, the imitation target exemplified by the behaviour of reference-group members was a 'soft' rather than 'hard' floor; therefore, compensation ratios would tend to be as high as, if not higher than, this floor. In the aggregate, if compensation ratios reflected normative conceptions of appropriate minimum compensation levels or coercion of agents by principals to achieve appropriate minimum compensation levels, the distribution of compensation ratios would centre on some point *above the average* of the salient reference group.

But if compensation ratios reflected imitation instead of norms, agents would not valorize the behaviour of other firms. And if compensation ratios reflected imitation instead of coercion, agents would not feel pressure from owners to conform to it. In other words, if compensation ratios reflected imitation in the face of great uncertainty, then agents would simply follow the behaviour of other firms because they didn't know what else to do. In that case, we would expect compensation ratios to be neither higher nor lower than this floor, but rather about the same. Such behaviour would, in the aggregate, yield a distribution *centered on the average* of the salient reference group.

To test these competing predictions, we performed Wilcoxon rank tests on the compensation ratio set by the focal firm minus the mean compensation ratio of its reference group. We focused on the three reference groups that had significant effects in Model 2 of Table 2. Table 3 shows these results. For all three reference groups, the compensation ratio set by the focal firm was far more likely to be lower than the group mean than it was to be higher than the group mean. We therefore conclude that firms were neither coerced by other firms' behaviour, nor did they interpret other firms' behaviour as instantiating cultural values; instead, they imitated other firms as a way out of uncertainty. The tendency of compensation ratios to be lower than the average of any salient reference group, rather than about equal to the reference-group average, occurred because tradable shareholders' fears that reform would cause big drops in share prices were assuaged by experience: among firms reforming in the first eleven months of the process, share prices increased by 8 percent on average, after adjusting for the compensation paid to tradable shareholders (Beltratti & Bortolotti, 2006).

To further probe the issue of coercion or norms vs. imitation, we conducted a multivariate analysis of the difference between each firm's compensation ratio and its reference group's mean compensation ratio, to investigate how the bargaining power of different shareholders pushed compensation ratios above or below reference-group means. We were most interested in testing three predictions concerning principal-agent conflicts that were extensions of our original analysis. Extending the logic of Hypothesis 1, we expect that firms controlled by state owners would offer more compensation, relative to their reference group, than firms controlled by non-state owners. Extending the logic of Hypothesis 2, we expect that concentrated non-tradable shareholding made firms more likely to offer less compensation than reference groups. Finally, extending the logic of Hypothesis 3, we expect that concentrated tradable shareholding made firms offer less compensation than reference groups.

The results of this analysis, shown in Table 4, are consistent across the three reference groups. Better-performing firms (those with larger market capitalizations and higher stock returns) set lower compensation ratios than their reference group, which suggests that tradable shareholders in better-performing firms were willing to settle for less than those in poorly performing firms. Firms with more volatile stock prices set higher compensation ratios than their reference groups, which suggests that when potential windfalls for non-tradable shareholders were larger, the more compensation they were willing to offer. In addition, firms with more non-tradable shares, which were more likely to see demand for tradable shares swamped by excess supply, set higher compensation ratios than their reference group. Firms with more state ownership set compensation ratios higher than their reference group, which supports the extension of Hypothesis 1. Concentrated ownership in both non-tradable and tradable shares reduced compensation ratios relative to the reference group, which support the extensions of Hypotheses 2 and 3.

Table 3. Testing for normative or coercive pressure from reference groups: The difference between the focal firm's compensation ratio and the reference group's average compensation ratio

Reference group	All firms	Firms in the same industry	Firms in the same province
# Observations			
Difference positive	471 (43%)	451 (44%)	465 (44%)
Difference negative	614 (57%)	559 (55%)	590 (56%)
Difference = 0	0	4	0
Total sample size	1,085	1,014	1,055
Wilcoxon test			
Median difference = 0 vs. median difference > 0	Pr(#positive ≥ 471) = Binomial (n = 1,085, x ≥ 471, p = 0.5) = 1.0000	Pr(#positive ≥ 451) = Binomial (n = 1,014, x ≥ 451, p = 0.5) = 0.9997	Pr(#positive ≥ 465) = Binomial (n = 1,055, x ≥ 465, p = 0.5) = 0.9999
Wilcoxon test			
Median difference = 0 vs. median difference < 0	Pr(#negative ≥ 614) = Binomial (n = 1,085, x ≥ 614, p = 0.5) = 0.0000	Pr(#negative ≥ 559) = Binomial (n = 1,010, x ≥ 559, p = 0.5) = 0.0004	Pr(#negative ≥ 590) = Binomial (n = 1,055, x ≥ 590, p = 0.5) = 0.0001
Conclusion	Focal-firm CR < Mean CR [all firms]	Focal-firm CR < Mean CR [same industry]	Focal-firm CR < Mean CR [same province]

Notes: This table is based on 1,086 observations on publicly traded Chinese firms' ownership reform plans that were completed between 1 May, 2005 and 18 July 2007, and that offered compensation in the form of grants of stock or cash. We converted cash grants into stock equivalents.

Table 4. Linear regression analysis of the difference between the focal firm's compensation ratio and its reference-group average compensation ratio

	(1)	(2)	(3)
Reference Group	All Firms	Firms in the Same Industry	Firms in the Same Province
Market capitalization/10^{12}	−1.03*** (−4.25)	−0.789*** (−3.29)	−0.997*** (−4.45)
Mean stock-price return	−7.73*** (−4.22)	−6.91*** (−3.45)	−8.34*** (−4.29)
Stock price volatility	1.27* (2.17)	1.20 (1.85)	1.16* (2.02)
Beta	0.014 (1.00)	−0.003 (−0.20)	0.017 (1.14)
#NT shares/# T shares	0.013*** (5.56)	0.012*** (5.12)	0.012*** (5.26)
% State-owned shares/10^3	0.797*** (8.12)	0.866*** (8.03)	0.859*** (8.35)
Concentration[NT shares]	−0.027** (−3.10)	−0.026** (−2.74)	−0.030*** (−3.34)
Concentration[T shares]	−0.23*** (−5.56)	−0.24*** (−7.05)	−0.22*** (−4.89)
# Observations	1,074	1,005	1,044
R^2	0.22	0.19	0.21

Notes: This table presents OLS regressions of compensation ratios set by 1,086 publicly traded Chinese firms that were completed between 1 May 2005 and 18 July 2007, and that offered compensation in the form of grants of stock or cash. We converted cash grants into stock equivalents. NT and T stand for non-tradable and tradable shares, respectively. Robust t statistics are in parentheses below parameter estimates. * indicates $p < 0.05$, ** $p < 0.01$, and *** $p < 0.001$, two-tailed t tests. Coefficients on the constant are omitted to save space.

DISCUSSION

In this article, we explain the outcome of a recent reform by Chinese publicly traded firms that converted non-tradable shares, which constituted about two-thirds of shares outstanding, into tradable shares. This reform was enthusiastically supported by non-tradable shareholders because the prices of their shares would rise sharply, so they would earn windfall profits. But tradable shareholders had, in the past, resisted similar reforms because they expected that a flood of new shares onto the domestic exchanges would cause their share prices to drop dramatically. The central state structured ownership reform to ensure that the interests of both sets of owners were met. Each set of owners had to agree to the reform by a two-thirds majority. And non-tradable shareholders were encouraged to win the agreement of tradable shareholders by compensating tradable shareholders for expected losses, financed out of non-tradable shareholders' windfall gains. Given the structure of this reform, the central issue was *how much compensation* non-tradable shareholders had to offer tradable shareholders for the reform to succeed – the *compensation ratio*, meaning the ratio of new tradable shares offered to tradable shares outstanding before reform.

The negotiation between non-tradable and tradable shareholders over compensation ratios took place in a fog of uncertainty because tradable shareholders' property rights were neither longstanding nor well understood (Oi & Walder, 1999; Putterman, 1995) and it was not possible to calculate the appropriate level of

compensation (Kahl et al., 2003; Wu & Wang, 2005). As a result, the reform offered many opportunities for self-interested manipulation by agents.

Most reforming firms offered compensation in the form of grants of shares to tradable shareholders – about three new shares for every ten existing shares. Our empirical analysis showed that two isomorphic forces – coercive and mimetic – explained observed patterns of compensation, but there was no evidence of normative isomorphic forces, net of coercion and imitation. We also showed that the effects of other firms' actions (i.e., the compensation ratios they had adopted), which we interpreted as mimetic, could not be reinterpreted as coercive or normative.

One of the most striking things to take away from our analysis is that the coercive power of the Chinese state is limited. As a regulator, the central state impelled the vast majority of publicly traded firms in China to reform their ownership between 2005 and 2007. But its power was not unlimited: three previous reform attempts failed due to push-back from investors, and this fourth attempt succeeded because in part it incorporated suggestions from the public. Importantly, the state did not dictate the form or amount of compensation for tradable shareholders, which accords with arguments that the central state is withdrawing from price-setting while continuing to set the rules by which markets function (Yusuf, Nabeshima, & Perkins, 2006). It seems that central state monitoring and sanctioning has declined due to the shift from a centrally planned economy to a market-mediated one (Walder, 1994; Zhao, 1997), and that dependence on the central state has declined with the development of external advisors (foreign lawyers and investment bankers) and external funding sources (the domestic and foreign stock markets) (Keister, 2004; Walder, 1994).

Our analysis also revealed that owners had varied capacity to monitor executives, and thus varied coercive power. Among non-tradable shareholders, non-state owners were better monitors than the SASACs that managed state-owned shares, for three reasons: state owners were less motivated by pure economic interests than non-state owners, state owners were less competent monitors than non-state owners, and the interests of SASAC employees were not fully aligned with those of state owners (Naughton, 2007; Wang & Chen, 2006). Compensation ratios were higher when a larger fraction of non-tradable shares were owned by the state. Sceptics might argue that coercion works through channels other than state ownership; for example, through pressure on investment banks to advise their clients to conform to state preferences. But the effect of investment banks disappeared after we took into account the impact of ownership structure and imitation targets, most likely due to agency problems. So even if investment banks channeled state coercion, they were not powerful. Our analysis also showed that non-tradable shareholders, both state and non-state, could *sometimes* band together to monitor and control reforming firms' executives and investment bankers, and demand low compensation ratios. This happened when non-tradable shareholding was highly

concentrated and non-tradable shareholders had sufficient power to ensure that their agents worked toward their interests.

We also investigated the power of tradable shareholders to push for high compensation, proxied again by ownership concentration. We found instead that when tradable shareholding was concentrated, compensation ratios were low. We attributed this result to two facts: concentration of tradable shareholding was due to mutual funds holding large blocks of shares, and mutual-fund managers were bribed by non-tradable shareholders to accept low compensation levels. This result highlights the need for better legal sanctions for corporate malfeasance.

We found evidence of three distinct imitation targets – all firms, firms in the same industry, and firms in the same region. These findings suggest that great uncertainty drove firms to imitate the actions of others, rather than to follow the advice of investment banks. Replicating previous research (Haunschild, 1994), we found that imitation of all three reference groups was more pronounced when uncertainty was greater. These results suggest that despite China's history of gradual reform, including trying 'pilot projects' on small numbers of firms before pushing general reform for all firms, many stages of political-economic transition lead to new territory where economic models and sociological theory can offer little advice. In this case, owners and executives in reforming firms could neither calculate the appropriate level of compensation nor predict the impact of reform on their firms' stock prices. On average, compensation ratios declined over time, compared to role-model firms; this trend was due to the fact that over time, reforming firms' stock prices did not fall as expected, but instead rose.

Limitations and Future Research Implications

Although our analysis revealed clear patterns, it leaves us with several puzzles. Studying Chinese publicly traded firms, with their split ownership structures, gave us a chance to study clear and persistent conflicts between different types of owners, which went beyond previous research on majority and minority owners. But these firms' complex ownership structures, characterized by cross-shareholding and multiple-layer business groups, make it difficult to precisely measure the power of different interest groups: the state, non-state institutions, and individual investors (Wang et al., 2012). Untangling power and interests is difficult because detailed data on non-tradable shareholders are simply not available.

Future research could try to disentangle the causal mechanisms we described to link local state ownership to firm behaviour: state owners' conflicting political and economic interests, their limited attention and capability to monitor the executives of publicly traded firms, and agency problems within SASACs. One way to do this would be to assess cross-sectional variation in state owners' ability to monitor managerial behaviour; specifically, we might expect that publicly traded firms located far from Beijing are less likely to be monitored by the central SASAC than

those located in special economic zones. Another way would be to investigate managers' political connections; specifically, we might expect politically connected executives to be monitored less closely by SASACs. Third, future research could leverage cross-sectional differences in the value placed by local governments on economic vs. social-welfare goals. It is likely that economic goals will dominate state decision making when there are no pressing social-welfare issues. For example, if unemployment is low in a province or municipality, economic interests may overshadow social-welfare concerns, but if unemployment is high, economic interests may take a back seat to social-welfare concerns.

Our study has clear implications for institutional analysis of isomorphism. Scholars have long investigated three institutional isomorphic forces – coercive, normative, and mimetic. But it is often quite difficult to draw sharp distinctions between the three processes because 'the typology is an analytical one: the types are not always empirically distinct' (DiMaggio & Powell, 1983: 150). It is not surprising, then, that these three processes have often been conflated in previous research (Mizruchi & Fein, 1999).

Such fuzziness in conceptualization and interpretation of evidence is problematic. Focusing mostly on one mechanism and downplaying the other two provides a biased view of this important phenomenon, toward understanding organizational actions as voluntary (mimesis is simply a response to uncertainty) rather than externally constrained (coercion is forced by powerful actors such as the state; norms are professional prescriptions reinforced by training and social interaction) (Mizruchi & Fein, 1999). As DiMaggio and Powell (1983: 150) noted, 'the mechanisms underlying the three institutional isomorphism processes. . .derive from different conditions and may lead to different outcomes'. Therefore, this bias in conceptualization and interpretation of evidence presents both theoretical and practical problems: if we get the mechanisms wrong, organizations scholars will focus on the wrong causal processes and the wrong outcomes, and will offer misleading advice to practitioners. Our study advances institutional analysis of isomorphism by showing how to distinguish between the three institutional isomorphism forces. Future research could build on our work by analyzing other continuous dependent variables, rather than the binary variables that have been studied in the past, and conducting statistical tests like the ones we conducted here, to determine whether imitation of other organizations indicates coercion or norms, rather than pure mimesis.

Policy Implications

In addition to its impact on institutional analysis, our study has clear implications for public policy. Most basically, it demonstrates that problems with 'one-size-fits-all' policy prescriptions that are forcibly implemented, such as the failed ownership reforms of 1992, 1999, and 2001, can be resolved by replacing them with flexible

policy prescriptions that are implemented through private bargaining among market actors. Our study also suggests that the central state's market transition goals can be achieved with the help of feedback and advice from firms and investment banks. Finally, our study indicates that future reforms that uphold the rights of property holders, such as the owners of tradable shares, would greatly improve corporate governance.

CONCLUSION

Our study of the reform of publicly-traded firms' ownership structures reveals how China's economic transition can have unexpected consequences. Since no model of asset pricing was available to calculate the appropriate level of compensation by tradable shareholders for non-tradable shareholders, both groups of owners and their agents (especially corporate executives, who brokered the negotiation between them) could manoeuvre to better their own position. But the Chinese state's increased dependence on external advisors (foreign lawyers and investment bankers) and external funding sources (the domestic and foreign stock markets) constrained state owners of tradable shares. In future research, scholars should assess where and when the power of state bureaus, as owners of industrial enterprises, is limited, and where and when it is not.

NOTES

[1] A fourth pilot firm's reform failed when less than two-thirds of tradable shareholders approved. No rationale was given for the compensation ratio (0.356) and the way the reform was described 'looked suspiciously like an attempt to make the number of shares offered to tradable shareholders appear greater than it really was' (Inoue, 2005: 11).
[2] We explain our interview methods in the research design section, below.
[3] Executives owned very few shares in these firms: on average, 0.002 percent of shares. Only 10 firms had CEOs as controlling shareholders, so most CEOs were purely agents. When we included a dummy for CEO controlling shareholder it had a non-significant effect. When we dropped the 10 firms with CEO controlling shareholders from the analysis, the results were the same as those reported below.
[4] Shuanghuang (双簧) is a traditional show with two players – one stands before the audience while the second hides. It looks like the first player is 'talking', but actually s/he is just moving her/his mouth and the second player is doing the talking.
[5] In results not shown here, we estimated logit models of offering stock grants vs. other compensation. Firms offering stock grants had larger market capitalizations, greater stock-price volatility, and higher betas, and simpler ownership structures (no B, N, or H shares). The analysis shown below controls for all of these factors.

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Heather Haveman (haveman@berkeley.edu) is Professor of Sociology and Business at the University of California, Berkeley. She studies how organizations, industries, and managers' careers evolve. Her work has appeared in the *Academy of Management Journal*, *Administrative Science Quarterly*, the *American Sociological Review*, the *American Journal of Sociology*, the *Annals of the American Academy of Political and Social Science*, *Journal of Business Venturing*, *Organization Science*, *Poetics*, and *Research in the Sociology of Work*.

Yongxiang Wang (yongxiaw@marshall.usc.edu) is Assistant Professor of Finance at the Marshall School of Business, University of Southern California. His research focuses on corporate governance and corruption, particularly in China and other developing economies. His research has been published in the *Journal of Financial Economics* and the *American Economic Review Papers and Proceedings*.