

# Corporate governance or globalization: What determines CEO compensation in China?

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## Abstract

This paper examines the relationship between corporate governance and CEO compensation in China. In contrast to results derived from U.S. data, we find little evidence that Chinese CEOs take advantage of weaker board structures or less demanding shareholders to extract higher compensation packages. Instead, our results lend support to the view that the increasingly global managerial labor market and compensation standards have a greater impact on CEO pay level. Our study suggests that CEOs in developing economies like China, in our case, benefit more from their degree of exposure to these changes than from corporate governance imperfections.

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## 1. Introduction

Over the past two decades, China has experienced a dramatic transformation from a command economy to a society responsive to market forces. Groves et al. (1994, 1995) emphasize that corporate reforms initiated in the 1980s have handed plant managers autonomy in decision-making, reduced state interference in the production process, and significantly improved the managerial resource allocation system. Many state-owned enterprises have been transferred to the private sector, although the state and other government institutions have typically retained

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a majority stake in privatized firms.<sup>1</sup> Corporate governance rules have been revised in order to accentuate the role of directors and strengthen their control power over managers, and provide better protection for investors (Tenev and Zhang, 2002). Overall, the reforms are considered to have paved the way for a surge in China's growth rate and productivity. Sun and Tong (2003) find evidence that ownership and corporate governance structures have significantly contributed to the performance of the production sector through increased profitability and market value.

Nonetheless, critics underline the lack of checks and balances in Chinese companies. Chen and Strange (2004) doubt that the interests of minority shareholders can be effectively protected given the fact that the largest shareholder, usually the state, appoints the majority of directors. Because of the state's pervasive involvement, managers are often criticized for spending more time pleasing government officials than acting in the best interest of their company. Also because of the state's large ownership in most companies, Thian (2005) suggests that it is difficult to distinguish between its actions as shareholder and its administrative actions.

In this paper, we analyze the importance of the corporate governance environment by testing the relationship between CEO compensation and board/shareholding characteristics. According to the agency literature (Jensen and Meckling, 1976), weak corporate governance structures result in a variety of agency costs. Because of the separation of ownership and control, managers have incentive to distract corporate resources for their own benefits, at the expense of shareholders. Agency problems are more severe when managers have a strong influence over board members. This is particularly so when the CEO is also Chairman of the board and when the board is mostly composed of insiders who can be expected to be more compliant because of their lower position in the hierarchy. The problem is particularly critical in Chinese firms, given the dominance of executive directors. In addition, Thian (2005) points out that the limited knowledge and expertises of independent directors, as well as their lack of legal protection, make them unlikely to challenge management decisions.

When shareholders are dispersed, the cost of monitoring the firm also prevents its effective control, and thus offers more opportunities for managers to extract private benefits. Jensen and Murphy (1990) argue that U.S. CEOs have abused their positions by awarding themselves generous pay packages neither explained by higher managerial skills nor related to a meaningful contribution to the firm's performance. Based on more recent U.S. data, Core et al. (1999) find that weaker governance structures are associated with significantly higher CEO compensations. Firth et al. (1999) show that ownership concentration, which is usually associated with more effective monitoring, has a moderating influence on CEO compensation in Hong Kong. In Mainland China, ownership concentration is instead synonymous with government control. As a result, similarly monitoring benefits can hardly be expected.

In fact, our analysis of CEO compensation suggests that the conclusions derived from a developed economy, like the U.S.; do not readily apply to a developing economy, like China. Although corporate governance variables explain up to 30% of cross-section variance in CEO compensation, some important variables (e.g. Chairman/CEO duality, board size, state ownership) appear to be statistically insignificant. Furthermore, some variables have the opposite influence to that predicted by the agency literature.<sup>2</sup> Our results are not opposed to the view that sound corporate governance systems are positively associated with firm performance. However, they clearly

<sup>1</sup> Lin et al. (1998) indicate that the share of state owned enterprises in China's total industrial output declined from 77.6 in 1978 to 28.8 in 1996.

<sup>2</sup> For example, foreign shareholding is positively associated with CEO compensation.

indicate that corporate governance falls short of explaining differences in CEO compensation. In contrast, variables that reflect a closer adherence of the firm to global executive pay standards (in addition to corporate governance standards) all have significant coefficients. The results suggest that powerful trends in executive compensation have more impact than corporate governance differences.

Murphy (1999) observes that two forceful transformations are currently under way. The first is the acceptance of a greater dispersion in workers' compensation. Hall and Liebman (1998) show that, between 1982 and 1994, the average compensation for U.S. CEOs increased by 175% in real terms, whereas the average compensation for all U.S. workers barely increased (by only 0.6% a year). Conyon et al. (1995) document that CEO compensation in the UK also increased by 149% between 1980 and 1993. For the larger FTSE 100 companies, the increase is even more impressive (about 336%). There is no doubt that similar changes are taking place all over the world and, specifically, in China, given the increasingly global market for managerial talent (Murphy, 1999; *Business Week*, 2001). Koen (2004) argues that these adjustments are necessary for a country affected by globalization to preserve its core characteristics. The second trend is the higher sensitivity of CEO compensation to firm performance. While Jensen and Murphy (1990) and Rosen (1992) found CEO compensation to be weakly associated with performance and value creation, the more comprehensive and recent study of Hall and Liebman (1998) shows that differences in CEO compensation are now essentially generated by stock performance following the widespread introduction of stock options plans in U.S. firms. Again, this trend is perceptible in many other countries. For example, Japanese firms have recognized the need to link the pay and performance of senior executives, who can now receive stock options after legal restrictions were lifted in 1997. In the case of China, Groves et al. (1994, 1995) indicate that plant manager careers and compensations are more effectively linked to firm performance. Managers can even lose the security deposit they are required to put up at the time they are appointed should they miss their stated performance objectives.

Our results suggest that the degree of exposure to globalization is more significant for CEO compensation than differences in corporate governance. In fact, Chinese managers do not appear to take advantage of weak governance structures to misappropriate corporate resources through higher compensation. The tidal changes in executive pay seem to offer better prospects for achieving higher compensation in the long run. In addition, the potential threat of being charged for corruption by the Chinese authorities may have considerably restrained the appropriation of corporate resources.<sup>3</sup>

The rest of the paper is organized as follows. Section 2 presents and discusses the conceptual and empirical association between CEO compensation and corporate governance structures. Section 3 describes the data and the sample's characteristics. Section 4 contains the empirical results. Section 5 provides concluding remarks.

## **2. Model and hypotheses**

In this section, we review and discuss the corporate governance variables involved in CEO compensation. A first set of variables is related to the board's composition; a second set describes the firm's ownership structure. The influence of independent variables is assessed from the agency

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<sup>3</sup> Corporate governance regulations recently introduced have increased management obligations to report all major transactions, making more difficult to tunnel valuable assets out from the firm's control.

cost perspective and, when applicable, from the perspective of converging managerial labor markets. As in comparable studies, control variables include CEO and firm characteristics.

### 2.1. Board structure variables

CEO duality indicates that the CEO is also Chairman of the board. The influential Cadbury Report (1992) recognizes that CEO duality undermines the firm's governance standards. Jensen (1993) argues that personal interests seriously impair the CEO's faculty to carry out some of the Chairman's duties, such as evaluating and compensating key executives. In other words, duality puts the CEO in a position of evaluating his own performance.<sup>4</sup> Moreover, Ryan and Wiggins (2001) suggest that duality can give the CEO excessive influence over the board; hence compromising the latter's ability to exert proper control over the firm's compensation policy. As a result, CEOs may be less constrained to extract higher compensation. Core et al. (1999) provide empirical evidence that CEO duality is associated with significantly higher CEO compensation. The reasoning naturally applies to the case of Chinese firms.

Board size is known to unfavorably affect the board's ability to discipline the CEO; in particular prevent excessive CEO compensation. Lipton and Lorsch (1992), Jensen (1993) and Yermack (1996) call attention to the fact that communication and coordination problems intensify as board size increases. As a result, firm performance tends to be negatively associated with board size. Jensen (1993) also points out that it is more difficult for larger boards to have a candid discussion about managerial performance and decide on disciplinary actions against the CEO, which offers the latter some autonomy to increase his compensation. Indeed, Core et al. (1999) document a positive association between board size and CEO compensation in the U.S.

Supervisory boards (SBs) represent an additional control layer in the governance structure of Chinese firms, whose purpose is to monitor managers and directors alike. Members of SBs typically hold shares and consist of shareholders' and workers' representatives.<sup>5</sup> Since they also represent workers' interests, SBs tend to oppose high CEO compensation. In Germany where they have reserved seats on the board, workers' representatives have habitually voiced their opinion against excessive CEO compensation. Given that larger supervisory boards will give more importance to workers' pay grievances, it is natural to expect large SBs to be associated with lower CEO compensation levels. However, Dahya et al. (2002) find that SBs lack adequate information and resources to carry out their mission. In particular, their information is often limited to working reports from the CEO. This leads Tam (2000) and Tenev and Zhang (2002) to suggest that CEOs can easily manipulate SB expectations to extract higher compensation.

Outside directors are supposedly more independent and concerned about shareholders' protection than executive directors. For that reason, Rosenstein and Wyatt (1990) and Hermalin and Weisbach (1998) argue that outside directors provide better monitoring. Crystal (1991) expresses some reservations: since outside directors are essentially hired by the CEO, they may be less effective in controlling his compensation. Fama (1980) and Fama and Jensen (1983) suggest that

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<sup>4</sup> Brickley et al. (1997) quote the director of corporate affairs for London's Institute of Directors as saying: "One of the major functions of the board is to supervise management. If the chairman of the board is also in management, then he is in effect marking his own exam papers."

<sup>5</sup> The structure is similar in German corporations. Elston and Goldberg (2003) document that for German firms with fewer than 2000 employees, employees elect one-third of SB members. For firms with more than 2000 employees, employees elect half of the SB members.

outside directors add value to the firm by providing expert knowledge. This link between outside directors and corporate performance is not, however, clearly established. In fact, Finkelstein and Hambrick (1989) and Yermack (1996) find no evidence that outside directors increase firm value. Nonetheless, a large proportion of outside directors may be a sign that the firm requires outside expertise that cannot be found in-house. In addition, a close working relationship with outside experts is likely to enhance the CEO's managerial value relative to other executives. This would hence justify a relatively higher CEO compensation. Lambert et al. (1993), Boyd (1994) and Core et al. (1999) provide evidence of a positive relationship between CEO compensation and the proportion of outside directors. In the case of China, outside expertise, and especially foreign know-how, can be critical to a firm's success. The proportion of outside directors should therefore be positively associated with CEO compensation. Still, the presence of outside directors is limited among Chinese firms. Most of them are state and/or legal person representatives.<sup>6</sup> The situation is likely to change, however, following new corporate governance rules drafted by the Chinese government.<sup>7</sup> For that reason, a high proportion of outside directors can be seen as an indicator that firms are already adhering to global management standards. Since those standards also imply a higher degree of acceptance of large CEO-average employee pay differential, we expect CEO compensation to increase with the proportion of outside directors.

## 2.2. Ownership variables

CEO shareholding measures the proportion of the firm's equity held by the CEO. Jensen and Meckling (1976) emphasize the role of executive stock ownership as a mechanism to align the interests of managers and shareholders, and promote greater managerial efforts as well as stricter value enhancing decisions. When managers have only a small stake in the firm, executive stock ownership plans can be used for reducing the fixed (cash) portion and increasing the variable (stock-related) portion of CEO compensation. As a result, there should be a negative relation between cash compensation and share ownership. Allen (1981), Lambert et al. (1993) and Core et al. (1999) confirm that the level of U.S. CEOs' compensation is typically a decreasing function of the equity held by the CEO. In start up firms, where cash is habitually limited and the objective is to create share value, stock ownership and stock options plans are extensively used as substitutes for cash compensation (Ittner et al., 2003; Murphy, 2003). Newly privatized Chinese firms, however, consist mostly of manufacturing firms that have yet to develop the culture of stock option plans.<sup>8</sup> Cash compensation and stock ownership plans are used concurrently to remunerate top managers. In fact, stock ownership can serve to identify and retain the best managers and defer, but not reduce, cash compensation. We therefore expect to find a positive association between CEO share ownership and compensation in China, in contrast to the case of U.S. firms.

Only large shareholders have the incentive to monitor managers compared with dispersed shareholders whose monitoring costs are too high to justify the effort considering their small

<sup>6</sup> See Table 2 for further details.

<sup>7</sup> Following a report prepared by Lehman Brothers, a U.S. investment bank, the Chinese authorities have drafted new rules requiring at least one-third of company board members to be independent appointees, and at least one independent director to be a professional accountant. In the current ownership system, only the first and second largest shareholders have the right to nominate outside directors.

<sup>8</sup> About two-third of our sample consists of industrial (manufacturing) firms. This proportion reflects the developing status of the Chinese economy as well as the greater likelihood of industrial firms to be privatized because of their higher profitability.

equity stakes. Shleifer and Vishny (1986) provide a theoretical argument for large shareholders to exercise monitoring efforts in the spirit of Diamond's (1984) model of financial intermediaries.<sup>9</sup> Santerre and Neun (1986) and Dyl (1988) document a negative empirical relationship between ownership concentration and CEO compensation. However, the identity of major shareholders may have a distinct effect on firm performance and CEO compensation. For example, U.S. pension funds have earned a reputation for enhancing corporate governance, whereas state ownership is deemed to have the opposite effect. We control for the blockholder's identity by way of two dummy variables: state shareholding and legal person shareholding.

State shareholding denotes the proportion of shares held by the central and local governments. In the privatization process, non-tradable shares have been issued to the government as a way of preserving the economy's socialist structure. Average state ownership in privatized firms is estimated at about 30% of total shares (Sun and Tong, 2003). Local financial bureaus, state asset management companies, or investment companies assume the state's representation in privatized firms. Although substantial empirical evidence suggests that state ownership has a negative effect on firm performance, it is perceived that government control could be beneficial, essentially as a way to control managers (Qi et al., 2000). Jefferson (1998) and Sun and Tong (2003) point at the absence of established property rights markets, as well as competitive labor and product markets to underline the benefits of partial privatizations. As a rule, state ownership is considered to negatively influence CEO compensation. After reviewing the compensation policies of regulated firms, Carroll and Ciscel (1982), and Joskow et al. (1996) conclude that the political environment is influential in setting CEO compensation levels. Murphy (1999) indicates that median CEO compensation in U.S. electric utilities is only one-third the level in financial services. In the case of Chinese firms, the involvement of low paid bureaucrats as state representatives can be expected to add downward pressure on CEO compensation.

Legal person shares are similar to state shares. They are shares owned by domestic institutions, most of which are partially owned by the central or local government. Qi et al. (2000) suggest that because legal person representatives are from diverse professional backgrounds, they have the expertise to monitor managers more effectively. In addition, Sun and Tong (2003) point out that the legal person is usually the largest shareholder of one firm. It has therefore the option to direct all its resources to monitor the management of that firm. In contrast, the provincial branch of the Bureau of State Asset Management that represents the state's ownership in a firm is usually involved in monitoring many other firms. In support of this view, Xu and Wang (1999) find a positive relationship between firm's profitability and legal person shareholding. Sun and Tong (2003) also document similar findings suggesting that legal persons have a positive impact on the firm performance. To the extent that it is promotes better governance standards, we assume that legal person shareholding has a negative effect on CEO compensation.

B shares represent the shares of Chinese firms listed in Shanghai and Shenzhen held by foreign investors. Up until 2001, trading of B shares was prohibited to Chinese residents. However, the restriction could be bypassed by setting up illicit overseas accounts.<sup>10</sup> B shares ownership

<sup>9</sup> Diamond (1984) rationalizes the existence of financial intermediaries on the basis of monitoring costs. Small depositors have little incentive to acquire costly information about borrowers. This situation creates a free-riding problem whereby no lender monitors the borrowers. On the other hand, banks can achieve economies of scale by collecting the information and spreading the cost over a large number of depositors.

<sup>10</sup> Some Chinese nationals have purchased B shares through illicit foreign accounts to realize substantial capital gains, regardless of their ability to exert proper shareholder control. Initial returns on Chinese IPOs were estimated around 200–300%. Chi and Padgett (2005) evaluate the average underpricing at about 129% over the period 1996–2000.



may therefore slightly over-estimate the proportion of shares truly under foreign control. We use B shares ownership as one measure of the proportion of shares held by foreign investors (the other being H shares). Foreign shareholding is generally considered beneficial because foreign shareholders are more effective in monitoring the firms in which they put their money. Hence, from a corporate governance viewpoint, foreign shareholding can be viewed as restraining CEO compensation. However, in terms of managerial compensation practice, significant foreign shareholding suggests that the firm is closer to international pay standards, which calls for higher wage dispersion, and therefore suggests a higher, as opposed to a lower CEO compensation.

H shares represent the shares of companies incorporated in China, but listed in Hong Kong. We use H shares ownership to measure the proportion of H shares over total shares. As a result of Hong Kong's strict listing regulations, only the larger and more profitable Chinese firms have issued H shares. As for B shares, we assume that H shares indicate that the firm is closer to international pay standards which call for higher wage dispersion and, therefore, higher CEO compensation.

### *2.3. Control variables*

We use four variables to control for CEO compensation: CEO age and years in tenure, firm size and growth rate.

CEO age has a significant positive association with CEO compensation. Recent research suggests that compensation schemes should explicitly include CEO age in order to mitigate CEO horizon problems. In fact, [Dechow and Sloan \(1991\)](#) and [Gibbons and Murphy \(1992\)](#) indicate that older CEOs have a bias towards short-term projects whose payoffs are due before their retirement. Firms should therefore make use of deferred compensation schemes instead of cash payments to restore CEO preferences for long-term value-creating investments ([Ryan and Wiggins, 2001](#)).

CEO tenure is also positively associated with CEO compensation, not only for firms known to reward employees for their loyalty. [Ryan and Wiggins \(2001\)](#) present two reasons for this association. The first is that CEO tenure may be due to consistent performance, which also warrants a higher compensation. The second is that CEO tenure increases the CEO's influence on the board, and facilitates the awarding of higher compensation. However, in the case of a rapidly changing economy like China, age and tenure may be less positively associated with competence as younger managers may more easily acquire modern management skills.

According to [Murphy \(1999\)](#), the association between firm size and CEO compensation is one of the best-documented stylized facts regarding CEO pay. [Rosen \(1992\)](#) argues that larger firms have more growth opportunities and complex operations, which require higher quality managers who should receive higher compensation. [Ciscel and Carroll \(1980\)](#), [Baker et al. \(1988\)](#) and [Core et al. \(1999\)](#) provide empirical evidence that managers are paid more in larger firms. [Bliss and Rosen \(2001\)](#) observe that managers increased their compensation after mergers, because of the resulting larger firm size, even though the firm's performance did not improve. Outside the U.S., [Kaplan \(1994\)](#) shows that Japanese firms also compensate their CEO largely according to their size. [Firth et al. \(1999\)](#) document a similar relationship for Hong Kong firms.

Agency theory indicates that CEO compensation should be tied to firm performance so as to align managers with shareholders' interests. Earlier evidence of a pay–performance relationship has been mixed. Among significant studies, [Ciscel and Carroll \(1980\)](#), [Jensen and Murphy \(1990\)](#)

Table 1  
Influence of board and shareholding structure on CEO compensation

Explanatory variables	Expected sign	
	Corporate governance	Managerial labor market
Board structure		
Duality	+	
Board size	+	
Supervisory Board size	+	
Proportion of outside directors	–	+
Shareholding structure		
CEO shareholding	–	+
State shareholding	–	–
Legal person shareholding	–	–
B shares shareholding	–	+
H shares shareholding	–	+
Control variables		
Firm size		+
Firm performance	+	+
CEO age	+	–
CEO tenure	+	+

The signs in the corporate governance column indicate the expected influence of the explanatory variables on CEO compensation according to the agency viewpoint. The signs in the managerial labor market column suggest the influence of the same variables from the perspective of China's convergence towards global pay standards for managerial talent.

and Core et al. (1999) find that executive total compensation is positively related to firm performance. Hall and Liebman (1998) indicate that the pay–performance relationship has strengthened over time, and is now mostly generated by share and stock options ownership. In the case of China, the little use of stock market-based compensation schemes argues in favor of a stronger relationship between performance and CEO compensation through cash (bonus) payments.<sup>11</sup>

#### 2.4. Summary

Table 1 summarizes the influence of the explanatory variables on CEO compensation. The second column indicates the expected effect on CEO compensation from a corporate governance perspective. The third column provides the expected effect on CEO compensation from the viewpoint of China's managerial labor market convergence towards global pay standards. Some explanatory variables may have the same effect, regardless of the selected perspective. For example, the negative association between state or legal person shareholding and CEO compensation is deemed to hold in both views. Other explanatory variables, e.g. CEO shareholding, have been hypothesized to have opposite effects depending on the chosen perspective. The sign and significance of the empirical relation between CEO compensation and the explanatory variables thus determine the relevance of each perspective.

<sup>11</sup> Stock options plans started to be adopted as part of executive compensation packages from 2003, when the China Securities Regulatory Commission (CSRC) picked two pilot firms to test run a stock option plan (Source: International Finance News, 28 April 2003).



### 3. Data and methodology

#### 3.1. Data source and description

Our data come from the China Stock Market and Accounting Research (CSMAR) database and the China Corporate Governance Research (CCGR) database. The first database provides financial information of listed companies. The second contains information on CEO compensation, board composition and the percentage of shares held by the top 10 shareholders for the period covering 2000–2001. Unfortunately, director compensation, and in particular CEO compensation, is not systematically reported. We therefore restrict our sample to firms with available CEO compensation data as well as a complete set of board and shareholding information. In the end, the sample consists of 296 observations representing a total of 206 firms listed on the Shanghai Stock Exchange (SHSE) and the Shenzhen Stock Exchange (SZSE).

Summary statistics are presented in Table 2. Panel A indicates that the sample is slightly over-weighted towards the year 2001 due to the listing of new firms (178 observations are for year 2001 against 120 observations for year 2000). Consistent with the fact that China is an emerging economy; a majority of firms comes from the manufacturing/industrial sector (about two-thirds). The majority of firms have distinct CEOs and Chairmen of the board. Only 12.5% of firms in the sample have CEOs holding dual positions. Finally, it is clearly seen that the Chinese authorities maintain a controlling position in privatized firms by being the largest shareholder, either directly in nearly 40% of cases, or indirectly through other state owned companies in nearly 60% of cases. In only three cases (about 1%) are foreign investors the largest shareholders.

In Table 2, panel B shows that sample firms are from widely different sizes, with annual sales ranging from a low of RMB 4.2 million to a high of RMB 14,386 million. CEO compensation also exhibits significant variations across firms. The lowest paid CEO received only RMB 3200 while the highest paid CEO is reported to have earned RMB 400,000. Obviously, the introduction of a market system has resulted in a significant dispersion of management compensation.<sup>12</sup> In contrast to Japanese CEOs, Chinese CEOs are relatively young; the median age being 45-years old. The average tenure appears to be slightly over 3 years, with a maximum of 7 years, which is significantly lower than the average tenure of U.S. CEOs (see, e.g. Murphy, 1999).

Chinese boards turn out to be relatively compact and dominated by executive directors. The typical board consists of about 9–10 directors, an overwhelming majority of whom are executive directors. On average, just 3.62% of board seats are occupied by outside directors. Supervisory boards are about half the size of boards of directors.<sup>13</sup> Some may consist of only one supervisor. CEOs in the sample have negligible shareholding in their firms with a median of 0.008% and a maximum of only 0.207%. All firms in the sample have a majority shareholder with a stake of more than 5%. Legal persons are the biggest shareholders in most cases (61.41%) followed by the State in the remaining cases (38.59%). The median ownership by legal persons is 48.18% against 36.10% for State ownership. B shares and H shares owners are majority shareholders in

<sup>12</sup> Firth et al. (2005) report a similar level of CEO pay dispersion over the period 1998–2000 with a minimum of RMB 8000 and a maximum of RMB 1,000,000.

<sup>13</sup> The situation has changed significantly after the China Securities Regulatory Commission (CSRC) issued new guidelines mandating that companies have three independent board members by 2003.

Table 2  
Summary statistics

	Number of observations	Percentage of sample (%)		
Panel A: Distribution of the sample				
Distribution of sample by year				
Year 2000	120	40.54		
Year 2001	176	59.46		
Distribution of sample by industry				
Utility	24	8.11		
Real estate	8	2.70		
Miscellaneous	39	13.18		
Industrial	199	67.23		
Trading	26	8.78		
Distribution of sample by duality status				
CEO and Chairman are the same	37	12.50		
CEO and Chairman are different	259	87.50		
Distribution of sample by majority ownership				
Legal person is majority shareholder	169	59.09		
State is majority shareholder	114	39.86		
H shareholders are majority shareholder	2	0.70		
B shareholders are majority shareholder	1	0.35		
	Mean	Median	Minimum	Maximum
Panel B: Descriptive statistics				
CEO compensation (RMB)	64498	48000	3200	400000
Firm size by sales (RMB millions)	729.8	331.9	4.2	14386.5
Firm performance (% return on asset)	4.37	4.77	-26.28	27.04
CEO age (years)	44.56	45	30	60
CEO tenure (years)	3.15	3.05	0.67	7.03
Board size (number)	9.58	9	5	19
Outside directors (% of total number)	3.62	0.00	0.00	72.73
Supervisory board size (no.)	4.56	5	1	9
CEO ownership (% shareholding)	0.0174	0.008	0.000	0.207
State ownership (% shareholding)	35.42	36.10	0.000	75.00
Legal person ownership (% shareholding)	41.44	48.18	0.00	82.09
B shares ownership (% shareholding)	5.71	5.91	0.00	9.71
H shares ownership (% shareholding)	23.36	26.98	0.00	29.54

only three cases. At best, their ownership is under 9.71% for B shares and 29.54% for H shares. The statistics clearly highlight the fact that Chinese privatizations have been only partial, and that the authorities have sought to keep the process under control by retaining a dominant stake in the capital of privatized firms. Finally, our sample appears equivalent to the sample used by Firth et al. (2005). In addition to comparable CEO compensation, board structure and shareholding levels, firms in our sample exhibit similar sales and profitability ratios.<sup>14</sup>

<sup>14</sup> For instance, sales average is about RMB 730 million, compared with a range of RMB 697–918 million. Median ROA is 4.77% against a median range of 3.9–4.92%. In Firth et al. (2005), average ROA appears to be biased downwards by extremely negative observations. Our sample does not appear to contain such outliers. In particular, minimum ROA is about -26% against -98.23%.

### 3.2. Econometric specification

Three models are estimated. Model 1 restricts the set of explanatory variables to the firm's board structure characteristics. In Model 2 the set of explanatory variables is related to the firm's ownership structure. Model 3 jointly considers the firm's board composition and ownership structure. All models include industry dummies and a time dummy to control for industry and time effects. The specifications are as follows:

- Model 1:

$$\begin{aligned} \text{CEO compensation} = & \alpha_0 + \sum \beta_i \text{board structure} + \sum \phi_i \text{control variables} \\ & + \lambda \text{time dummy} + \mu_{1-4} \text{industry dummies} + \varepsilon \end{aligned}$$

- Model 2:

$$\begin{aligned} \text{CEO compensation} = & \alpha_0 + \sum \gamma_i \text{ownership structure} + \sum \phi_i \text{control variables} \\ & + \lambda \text{time dummy} + \mu_{1-4} \text{industry dummies} + \varepsilon \end{aligned}$$

- Model 3:

$$\begin{aligned} \text{CEO compensation} = & \alpha_0 + \sum \beta_i \text{board structure} + \sum \gamma_i \text{ownership structure} \\ & + \sum \phi_i \text{control variables} + \lambda \text{time dummy} \\ & + \mu_{1-4} \text{industry dummies} + \varepsilon \end{aligned}$$

Heteroskedasticity of residuals is addressed by using two robust regression methods: (1) OLS regression with robust errors based on White's (1980) heteroskedasticity-consistent estimators, (2) iteratively reweighted least-squares (IRLS) regression. Unlike OLS, which assigns equal weight to all observations, IRLS regression involves an iterative procedure that assigns higher weights to well-behaved observations and lower weights to outliers.<sup>15</sup>

## 4. Empirical results

Table 3 presents the regression results of CEO compensation on board and ownership structure using OLS regression with robust errors. The results in Table 4 are based on IRLS regression. In each Table, Model 1 analyzes the effects of board structure determinants on CEO compensation. Model 2 investigates how CEO compensation is related to the firm's ownership structure. Model 3 jointly considers board composition effects and ownership structure effects. All reported *p*-values are based on White's (1980) heteroskedasticity-consistent standard errors. Coefficients for time and industry dummies are not presented, as they are not essential to this study.

<sup>15</sup> The best-known weighting procedure is from Huber (1981). An alternative is Beaton and Tukey (1974) in which observations with large residuals are assigned a zero weight, and thus eliminated. Due to each of these procedures' respective limitations, we use them in combination. Huber's weights are used in the early iterations, while Beaton and Tukey's (1974) weights are used in the later iterations of the regression until convergence is achieved.

Table 3  
Ordinary-least-squares regressions with robust errors for CEO compensation

Dependent variable is CEO compensation (RMB thousands)	Model 1	Model 2	Model 3
<b>Control variables</b>			
Firm size	0.008 <sup>***</sup> (0.001)	0.010 <sup>***</sup> (0.000)	0.011 <sup>***</sup> (0.000)
Firm performance	75.266 <sup>*</sup> (0.051)	59.305 (0.141)	59.631 (0.109)
CEO age	−0.466 (0.311)	−0.685 (0.131)	−0.397 (0.367)
CEO tenure	12.573 <sup>**</sup> (0.014)	9.209 <sup>*</sup> (0.081)	12.265 <sup>**</sup> (0.015)
<b>Board composition</b>			
CEO duality	12.497 (0.340)		10.702 (0.386)
Board (of directors) size	−1.678 (0.216)		−1.387 (0.307)
Supervisory board size	−4.748 <sup>*</sup> (0.065)		−2.053 (0.423)
Outside directors	1.204 <sup>**</sup> (0.013)		1.853 <sup>***</sup> (0.002)
<b>Ownership structure</b>			
CEO ownership		707.056 <sup>***</sup> (0.000)	761.120 <sup>***</sup> (0.000)
Legal person ownership		−0.093 (0.495)	−0.013 (0.927)
State ownership		−0.175 (0.282)	−0.090 (0.576)
B shares ownership		5.284 <sup>**</sup> (0.033)	5.688 <sup>**</sup> (0.019)
H shares ownership		−0.065 (0.933)	−2.047 <sup>*</sup> (0.088)
Intercept	120.575 <sup>***</sup> (0.000)	89.118 <sup>**</sup> (0.000)	89.003 <sup>***</sup> (0.005)
F-value	4.32 <sup>***</sup>	6.23 <sup>***</sup>	7.27 <sup>****</sup>
Adjusted R <sup>2</sup>	0.1391	0.1802	0.2622

CEO compensation is the CEO's annual compensation in year  $T$ , including base salary and cash bonus. Firm size is measured by total revenue in year  $T - 1$ . Firm performance is measured by return on assets in year  $T - 1$ . CEO age is measured at the end of year  $T$ . CEO tenure is the number of years the CEO has occupied his position at the end of year  $T$ . CEO duality is a dummy variable that is equal to 1 when the CEO is also Chairman of the board; 0 otherwise. Board size (supervisory board size) gives the number of directors (supervisors). Outside directors measures the percentage of non-executive directors among all directors. CEO ownership is the CEO's percentage shareholding of the firm. State ownership is the Chinese state's percentage shareholding of the firm. Legal person ownership is the percentage shareholding of legal persons. B shares ownership (H shares ownership) is the sum of the top 10 B shareholders' (H shareholders') ownership of the firm. Industry dummies and time dummies are included in the regressions, but are not reported below.  $P$ -values are shown in parentheses.

\* Statistical significance at 10% level.

\*\* Statistical significance at 5% level.

\*\*\* Statistical significance at 1% level.

#### 4.1. Influence of board structure

The regression results indicate no statistically significant association between CEO compensation and three of the four corporate governance variables related to board structure (CEO duality, board size, and SB size). The only statistically significant variable is the proportion of outside directors. CEOs do not seem to take advantage of their dual position and supposedly greater control over the board to extract significantly higher compensations. Board size and SB size do not appear to weaken or corrupt the control of directors and supervisors over CEOs as far as CEO compensation is concerned. CEOs do not take advantage from larger, thus potentially less vigilant, boards and SBs to extract significantly higher compensations.

In contrast, Yermack (1996) and Core et al. (1999) document that duality and larger board size are associated with higher CEO compensation. Also opposite to Brickley et al. (1994), and Hermalin and Weisbach (1998), who find that outside directors are better at restraining CEOs

Table 4  
Iteratively reweighted least squares regressions results for CEO compensation

Dependent variable is CEO compensation (RMB thousands)	Model 1	Model 2	Model 3
<b>Control variables</b>			
Firm size	0.008*** (0.000)	0.010*** (0.000)	0.010*** (0.000)
Firm performance	21.583 (0.461)	19.935 (0.453)	22.141 (0.397)
CEO age	0.270 (0.348)	0.177 (0.486)	0.336 (0.190)
CEO tenure	7.573*** (0.007)	4.150* (0.099)	4.597* (0.068)
<b>Board composition</b>			
CEO duality	0.626 (0.917)		0.222 (0.917)
Board (of directors) size	−0.712 (0.389)		−0.581 (0.432)
Supervisory board size	−3.715** (0.014)		−1.099 (0.423)
Outside directors	0.620*** (0.003)		1.054*** (0.000)
<b>Ownership structure</b>			
CEO ownership		669.280*** (0.000)	698.284*** (0.000)
Legal person ownership		−0.152 (0.113)	−0.142 (0.144)
State ownership		−0.356*** (0.001)	−0.315*** (0.005)
B shares ownership		5.614** (0.011)	5.713*** (0.009)
H shares ownership		−0.160 (0.746)	−1.479*** (0.007)
Intercept	65.658*** (0.000)	46.324*** (0.001)	48.217*** (0.003)
F-value	6.45***	15.53***	13.36***
Adjusted R <sup>2</sup>	0.1741	0.2162	0.3048

CEO compensation is the CEO's annual compensation in year  $T$ , including base salary and cash bonus. Firm size is measured by total revenue in year  $T - 1$ . Firm performance is measured by return on assets in year  $T - 1$ . CEO age is measured at the end of year  $T$ . CEO tenure is the number of years the CEO has occupied his position at the end of year  $T$ . CEO duality is a dummy variable that is equal to 1 when the CEO is also Chairman of the board; 0 otherwise. Board size (supervisory board size) gives the number of directors (supervisors). Outside directors measures the percentage of non-executive directors among all directors. CEO ownership is the CEO's shareholding in the firm. State ownership is the Chinese state's percentage shareholding of the firm. Legal person ownership is the total percentage shareholding of legal persons in the firm. B shares ownership (H shares ownership) is the sum of the top 10 B shareholders' (H shareholders') ownership of the firm. Industry dummies and time dummies are included in the regressions, but are not reported below. P-values are shown in parentheses.

\* Statistical significance at 10% level.

\*\* Statistical significance at 5% level.

\*\*\* Statistical significance at 1% level.

compensation, our results indicate that a higher proportion of outside directors has a positive effect on CEO compensation. The regression coefficient suggests that the substitution of one outside director for an internal executive on a board of 10 directors translates into an approximate RMB 18,520 increase in the CEO's compensation. In view of the median pay reported in Table 2 (RMB 48,000), the regression coefficient appears to be not only statistically significant, but economically important as well. Although CEO compensation is relatively low, and although Chinese CEOs are reported to be dissatisfied with their remuneration (Tam, 2000), there is no indication that CEOs take advantage of weak governance structures to extract significantly higher compensations.<sup>16</sup>

<sup>16</sup> The level of CEO compensation in China can be better appreciated by considering the fairly low workers' compensation levels and the relatively low pay differential between top managers and average workers of only 21 times, against 351 times in the U.S. (Business Week, 2001).

Conversely, CEOs do not seem to be restrained by a strong corporate governance environment to accept lower pay levels.

On the other hand, there are some indications that the convergence towards global pay standards suggested by [Murphy \(1999\)](#) and widely publicized in [Business Week \(2001\)](#) has a positive effect on CEO compensation. A large proportion of outside directors suggest that the firm is closer to international standards, thus more prepared to offer a higher compensation to retain a qualified CEO. [Murphy \(1999\)](#) points out that the pay practice adopted by U.S. companies in their foreign subsidiaries puts pressure on their local competitors to revise their own pay policies upward. In contrast, firms characterized by a low proportion of outside directors, may signal their slower adjustment to the external competitive environment, or may be closer to traditional socialist ideal ideals of equal treatment, and thus more reluctant to provide higher CEO compensation levels. In a study of CEO pay in Germany, [Elston and Goldberg \(2003\)](#) document that higher economic integration has also led to substantial pay increases. Indeed, CEOs of German companies making acquisitions in the U.S. have been confronted with the thorny issue of seeing the head of their new subsidiaries or local units earn a multiple of their own compensation.<sup>17</sup> In essence, economic integration opens the gates to a convergence in world prices for every production factor including, in this case, managerial talent. Another related example is the collapse of the USSR in the early 1990s, which triggered an adjustment of the internal price system towards the international price system (e.g. for commodities).

Overall, our results suggest that CEOs of Chinese firms may expect to benefit much more from the realignment of China's internal price (and pay) system than take the opportunity of ineffective board supervision to extract private gains, including higher pay.

#### *4.2. Influence of ownership structure*

Among the variables describing the firm's ownership structure, CEO shareholding and foreign B and H shares ownership are statistically significant at the conventional level. State shareholding also becomes statistically significant in IRLS regressions, which lowers the weights on outliers.

The significant positive coefficient of CEO shareholding suggests that a 0.01% increase in CEO shares ownership is associated with a RMB 7611.2 pay increase (with Model 3). In view of the median CEO shareholding (0.008%) and median CEO compensation (RMB 48,000), CEO shareholding appears to produce only a modest pay difference. Nonetheless, the result is opposite to the agency theory's prediction that share ownership contributes to restraining CEOs' private gains, in particular a higher compensation, by aligning managers and shareholders' interests ([Allen, 1981](#); [Lambert et al., 1993](#); [Core et al., 1999](#)). The result is also unlikely to derive from the entrenchment hypothesis suggested by [Morck et al. \(1988\)](#) given the negligible and rather recent experience of CEO shareholding in China. A more likely explanation is that CEO stock compensation is used to attract and retain talented managers who may command high-paid jobs in foreign-owned companies. In that case, CEO stock compensation is a way of enhancing the CEO's total compensation and of reducing the need to pay out higher cash salaries and bonuses. In support of this view, [Tenev and Zhang \(2002\)](#) document that the Chinese government allocates shares to the CEO based on his rank in the managerial hierarchy. CEO shareholding thus provides

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<sup>17</sup> This has been the case at Daimler Benz following its acquisition of Chrysler. Jurgen Schremp, the head of Daimler Benz, was reportedly paid DEM 3 million, while Robert Eaton, the president of Chrysler, was taking home the equivalent of DEM 20 million ([Elston and Goldberg, 2003](#)).

an indication of the CEO's value in the managerial labor market and should be positively associated with his compensation.

There is a positive association between B shares ownership and CEO compensation, but a negative association between H shares ownership and CEO compensation. For B shares, the coefficients are statistically significant across models and estimation procedures. For H shares, the coefficients are less significant, except when using Model 3 with IRLS regression. The results show that a 1% increase in B shares ownership increases the CEO's compensation between RMB 5284 and RMB 5713 depending on the model and estimation procedure. Hence, an increase in foreign (B shares) shareholding in the order of magnitude of 10% more than doubles the median CEO compensation (RMB 48,000). The effect of H shares ownership is weaker as CEO compensation decreases by a maximum of RMB 2046 for a 1% increase in H shares ownership. Considering that both B and H shares ownership represent foreign investments in Chinese firms, the result suggests that foreign ownership is positively correlated with CEO compensation overall. This, obviously, is inconsistent with the agency theory's prediction that foreign ownership should be associated with lower CEO compensation since it induces better corporate governance practice. However, considering that foreign ownership does not necessarily lead to increased performance (Sun and Tong, 2003), there can be some doubts concerning the corporate governance's contribution of foreign investors.

From another perspective, a large foreign shareholding may be indicative that the firm is more integrated in the global marketplace. Hence, its closer adherence to global standards including the remuneration of critical production factors such as human resources. Anecdotal evidence suggests that subsidiaries of global firms such as investment banks and consulting companies offer higher compensation packages compared with domestic firms. Moreover, a large foreign shareholding offers higher visibility for the CEO, and hence is likely to increase his value on the managerial labor market.

Both state shareholding and legal person shareholding are negatively associated with CEO compensation. However, the coefficients regarding legal person shareholding are not statistically significant, and the coefficients regarding state shareholding are only significant in the IRLS regressions. From a corporate governance perspective, the more professional monitoring by legal persons evidenced in Xu and Wang (1999) and Sun and Tong (2003) by the higher profitability of the firms in which they hold shares should translate to lower CEO compensation for legal person shareholding compared with state shareholding. Hence, better corporate governance contributes to improve firm profitability but falls short of significantly affecting CEO compensation. The stronger influence of state shareholding tends to support the view that CEO compensation is sensitive to the political environment described by Carroll and Ciscel (1982) and Joskow et al. (1996) in their studies of pay policies in regulated U.S. industries. Since state ownership does not improve firm performance, it may not be a good means of inducing better management effort, but may serve as a mechanism to prevent opportunistic appropriation of firm resources by management (Jefferson, 1998; Tenev and Zhang, 2002; Sun and Tong, 2003). In contrast to larger foreign shareholdings that may indicate a higher degree of acceptance of pay dispersion, larger state shareholdings may impose a constraint on differential pay that should result in lower CEO compensation.

In summary, the results show that the firm's ownership structure does not exactly have the implications predicted by the agency literature. The presence of large shareholders may increase or decrease CEO compensation. The effect depends on their political nature. State and legal person shareholding have a moderating effect, whereas a large foreign shareholding appears to signal a higher CEO value as well as the willingness to remunerate him accordingly. CEO stock ownership can be interpreted in the same way as signaling a higher CEO value.



## 5. Conclusion

This paper investigates the relationship between CEO compensation and corporate governance attributes in China. The agency literature suggests that inadequate governance structures can distort the incentives of the firm's management and generate economic inefficiencies that are detrimental to the firm's shareholders. Excessive CEO compensations are evidence of poor governance. Because of the separation of ownership and control, managers have an incentive to extract private benefits when shareholders' monitoring is low. Identifying the determinants of CEO compensation contributes therefore towards exposing the sources of governance imperfections. Indeed, if excessive CEO compensation is associated with insider-dominated boards, and not related to performance factors, the policy implication must be to emphasize the role of outside directors, not only in order to restrain CEO compensation, but more generally to enhance the firm's governance structures.

Few studies have analyzed the corporate governance of Chinese firms despite the growing importance of China as a manufacturing powerhouse. The issue is also significant given the fact the China has adopted a controlled approach to the restructuring of its economy compared to the former socialist countries in Eastern Europe. As a result, the transition from a command economy has proceeded rather smoothly. The evidence produced in this paper indicates that there have been few abuses in China.<sup>18</sup> To the extent that excessive CEO compensation reflects the quality of corporate governance, there is little indication that CEOs have taken advantage of less effective governance structures to award themselves higher compensations. Our results are in contrast to [Core et al. \(1999\)](#) who studied the compensation of U.S. CEOs. In particular, we show that CEO compensation is uncorrelated with CEO duality and board size. We also find a positive association between CEO compensation and CEO ownership, as well as a positive influence of foreign investors on CEO compensation, whereas Core et al. document a negative association.

The variables concerned can be related to the degree of proximity of the firm with global executive compensation standards. It is well known that average earnings are extremely low in China, regardless of the quality or productivity of the workforce. As a result, there happens to be a huge discrepancy between domestic wages and foreign wages. [Business Week \(2001\)](#) indicates that CEO compensation in China is only 21 times the average employee compensation, as compared to 531 times in the U.S. In most Latin–American countries, the ratio is also higher, between 48 (Argentina) and 57 (Brazil). By being employed in firms whose compensation policies are closer to foreign standards, CEOs are likely to receive higher compensation levels. Given the increasing globalization of China's economy, a convergence towards foreign compensation levels can be expected (as in [Murphy's \(1999\)](#) monograph). [Rawski \(2002\)](#) indicates that foreign businesses have contributed substantially to expanding the scope of market forces in determining patterns of employment and compensation, especially in large cities and along China's central and southern coast. Of particular significance, state enterprises, which were once considered as the bastions of egalitarianism, have started to recruit professionals at wages close to U.S. standards.<sup>19</sup>

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<sup>18</sup> Although the popular press seems to abound with stories of government bureaucrats plundering the assets of the firms they were in charge of administering. [Liu \(2005\)](#) gives the example of Meiyera and Sanjiu Pharma, two successful companies drained of their capital by the collusion of insiders and the firms' largest shareholders. Nonetheless, the problem looks mild in comparison with Russia's privatization experience. In any case, defrauded amounts are measured in millions of U.S. dollars, not in billions.

<sup>19</sup> [Xia \(2001\)](#) documents the case of Baosteel.

Overall, our results suggest that CEOs have benefited from the overwhelming effects of globalization rather than taken advantage of corporate governance flaws to boost their compensation. This, of course, does not mean that corporate governance mechanisms must not be improved. In fact, the Chinese authorities have clearly recognized the importance of addressing the problem. Effective internal controls appear particularly needed given the inadequacy of external control mechanisms. Most notably, shareholders are relatively unsophisticated. In addition, the legal system offers little recourse against corporate abuses. However, as corporate governance standards gradually improve, one may expect CEO compensation to be less determined by board duplicity or shareholder passivity. Quite the opposite, as China becomes ever more integrated in the world economy, as emphasized by its recent accession to the WTO, CEO compensation will increasingly be determined by market forces. Our results already reflect this reality and are likely to receive further support as time passes by.

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