Rev Quant Finan Acc (2010) 35:445–471
DOI 10.1007/s11156-010-0168-1

ORIGINAL RESEARCH

Executive compensation, supervisory board, and China's governance reform: a legal approach perspective

Shujun Ding · Zhenyu Wu · Yuanshun Li · Chunxin Jia

Published online: 17 February 2010

Abstract China's corporate governance system implements both American and German style mechanisms, but the supervisory board, a typical feature of German style governance is generally considered dysfunctional. After 2006, the newly amended Chinese Corporate Law significantly enhances the role played by supervisory boards. Our study examines if the new Corporate Law improves supervisory board's monitoring over executive compensation, which becomes one of the main agency concerns in China's emerging market, thus providing a quasi-experimental testing of the legal approach of governance (La Porta et al. in J Financ Econ 58:3–27, 2000). We examine the effects of both size and meeting frequency of supervisory boards on executive compensations in Chinese listed companies, by using data before and after the new Corporate Law became effective in 2006. We find that before the new Corporate Law became effective, supervisory boards did not affect executive compensation, although their role after that became significant; both supervisory board size and meeting frequency affect total executive compensation, and supervisory board size also influences pay-performance sensitivity. Furthermore, we find that there exists a non-linear effect of supervisory board meeting frequency on executive pay, and an optimal range exists. Policy implications are discussed.

Keywords Supervisory boards · Legal approach · Executive compensation

S. Ding (✉)
School of Administrative Studies, York University, 4700 Keele Street, Toronto, ON M3J 1P3, Canada
e-mail: sjding@yorku.ca

Z. Wu
University of Saskatchewan, Saskatoon, SK, Canada
e-mail: wu@edwards.usask.ca

Y. Li
Ryerson University, Toronto, ON, Canada
e-mail: yuli@ryerson.ca

C. Jia
Peking University, Beijing, China
e-mail: cjia@gsm.pku.edu.cn

JEL Classification G34 · G38 · M4

1 Introduction

Executive compensation has been a key agency problem, and the inflation of executive pay also becomes a global issue (Lansing and Knoedgen 2007). A typical CEO at the beginning of the 1980s earned 40 times the compensation of an ordinary worker, but the gap increased to over 450:1 at the beginning of the twenty-first century (Lansing and Knoedgen 2007); people continue to perceive executives as overpaid. As commented by Mr. Levitt, the former Chairman of SEC, executive compensation could be the only issue that "engages the public today about the business community" (Levitt 2005, p. 41). Numerous studies are devoted to improving our understanding of executive compensation (e.g., Blackwell et al. 2007; Vafeas and Waegelein 2007; Bauman and Shaw 2006; Palia and Porter 2004; Vafeas et al. 2003; Chen 2002; Jensen and Murphy 1990), but few studies examine this issue in emerging markets. Our study continues this effort by examining executive compensation in China's emerging markets.

In China's stock markets, the agency problems could be more complex; the short history of China's capital markets has seen numerous cases in which minority shareholders are expropriated by the controlling (state-owned) shareholders, and executives are overpaid. With China's emerging markets entering the second decade, it is believed that controlling shareholders' expropriation, usually through related-party transactions, is ameliorated, possibly because of the unfolding privatization, the promulgation of a series of accounting and auditing standards, and the stricter enforcements. The issue of executives being overpaid seems to be getting worse, for example, the CEO of Ping'An Insurance was paid over RMB 66 million in 2007, which is more than USD 9 million (Yu 2008). Investors increasingly perceive excessive executive compensation as a key agency issue in China's markets. For instance, a recent disclosure of (excessive) compensation by Ping'An Insurance saw a dive of its stock price (Yu 2008). Prior studies examining determinants of executive compensation in China mainly focus on the pay-performance link (e.g., Firth et al. 2006; Kato and Long 2006). Given the crucial role played by corporate governance, our study is intended to examine executive compensation in China's listed companies from governance's perspective.

Examining the association between corporate governance and executive pay is not new, previous studies have investigated whether and how corporate governance mechanisms, such as features of board of directors, affect executive compensation (e.g., Boyd 1994; Core et al. 1999; Cyert et al. 2002; Hartzell and Starks 2003; Elston and Goldberg 2003; Ryan and Wiggins 2004). Ryan and Wiggins (2004), for instance, examines the association between board independence and executive/director pay, and find that powerful CEOs can exert strong influences on the board of directors so that CEOs overseen by a less independent board of directors receive less equity-based pay. Our study adds to this literature by examining executive compensation amid China's unfolding corporate governance reform. More specifically, we intend to shed light on the effect of supervisory boards, an important yet rarely covered corporate governance element, on executive compensation.

Supervisory boards are not new either. It is one of the typical features of the German two-tier board system, which, together with the Anglo-American governance system, is generally recognized as the most effective governance mechanisms (Shleifer and Vishny 1997). Chinese listed companies have a board of directors and supervisory board since the

inception of Chinese stock markets established at the beginning of 1990s, and the newly amended Corporate Law (the 2006 version) makes independent directorship a mandatory requirement for listed firms. As a result, China's emerging market could be the only jurisdiction that implements both American and German styles of corporate governance. By "borrowing" the best practices from mature economies, the Chinese authority intends to enhance corporate governance systems to address key agency concerns in the market, including excessive executive pay. However, little empirical evidence is available regarding supervisory board's effect on addressing key agency problems related to executive compensation. Our study will help fill in this void, and may contribute to the existing literature from multiple angles.

First, what constitutes effective corporate governance is a major concern in both mature and emerging markets (e.g., Shleifer and Vishny 1997). Due to the lack of experience and/or lessons, emerging markets usually take a trial by error method when making decisions regarding corporate governance. China's unfolding governance reform, especially its attempt to incorporate both American and German styles, thus provides a unique setting to test if a particular governance arrangement (e.g., supervisory boards) provides incremental efficiency/effectiveness. Our examination will provide important policy implications, as Chinese authorities and other jurisdictions that are undergoing governance reform will benefit from our empirical evidence. Second, La Porta et al. (2000) prescribe that the legal approach is a more "fruitful way" (p. 6) to understand corporate governance; China's governance reform again provides a quasi-experimental setting to examine this prescription. A new version of the Chinese Corporate Law became effective at the beginning of 2006, and our study compares the functioning of supervisory boards before and after this critical point. The sharp contrast of the role played by supervisory boards thus offers a vivid illustration of the legal approach.

Third, as executive compensation becomes a central agency issue in China and around the world, our evidence on the role of governance reform also provides important policy implications. The role of supervisory boards, after controlling for other governance mechanisms, sheds new insight on how to fight excessive executive pay. Fourth, our study examines the research questions in an improved way. We first divide supervisory board's meeting frequency into two parts: monitoring-induced versus non-monitoring induced, and then focus on the former to address the monitoring issues. Furthermore, given that monitoring itself is a costly activity, we consider the possible non-linear effects resulting from supervisory board's monitoring. Finally, prior studies have examined the role of supervisory boards and concluded that supervisory boards are dysfunctional (e.g., Dahya et al. 2003; Xi 2006). People generally perceive supervisory boards in China as a decoration to the boardroom. The CFA Institute in Hong Kong, on the other hand, recently surveyed the corporate governance practice in mainland China in August/September 2006, and find that thanks to recent governance reform, the rating of supervisory board's effectiveness is 3.85, with 1 (5) denoting extremely unimportant (important); furthermore, respondents believe that the functioning of supervisory boards has been improved. Firth et al. (2007) also confirm that supervisory boards help improve earnings' informativeness. Given the co-existence of two monitoring organs, our results thus will provide empirical evidence to the ongoing debate whether a supervisory board is needed on top of independent directors.

We test hypotheses using data in 2005 and 2006 from the two stock markets in China. Consistent with conventional wisdom that supervisory boards are dysfunctional in the Chinese corporate governance systems (e.g., Dahya et al. 2003; Xi 2006), we find that supervisory boards fail to affect executive pay in 2005. On the other hand, after the newly amended Corporate Law became effective in 2006, we show that both the size and meeting

frequency of supervisory boards influence executive compensation significantly after controlling for other factors including independent directors. That is, the dysfunctional supervisory board can be an effective monitoring mechanism if it is empowered properly. We further show that supervisory board size significantly affects pay-performance sensitivity such that a larger supervisory board leads to a lower level of pay-performance sensitivity. In addition, our results show that supervisory board meeting frequency has a non-linear effect on executive pay, and suggest that an optimal range of meeting frequencies may exist. Thus, our finding illustrates vividly the legal approach (e.g., La Porta et al. 2000) in China's quasi-experimental setting, and corresponds to Li et al. (2006) that macro corporate governance environment will affect monitoring effectiveness and efficiency.

The rest of this article is structured as follows: Sect. 2 discusses the institutional background, reviews the literature, and develops the hypotheses. Methodologies are described in Sect. 3, and empirical results are presented in Sect. 4. Section 5 concludes this study.

2 Institutional background, literature review, and hypothesis development

In this section, we provide institutional background regarding China's economic transition, the compensation reform in general and the executive compensation scheme in listed companies in particular, and China's unfolding corporate governance reform in which both supervisory boards and independent directors constitute the monitoring organs. Interested readers could also refer to China-related literature for more information about China's emerging market (e.g., Chen et al. 2000; Yeh et al. 2002; Firth et al. 2007; Ding et al. 2009).

2.1 Economic transition and compensation reform in China

China began its economic reform in 1978, and the goal of Chinese economic transition from planned to market-based system was formally made clear in CCP's (Chinese Communist Party) 14th Congress in 1992. The most significant step during the transition was the establishment of stock exchanges in Shanghai and Shenzhen in 1990 and 1991, respectively. The development of these two stock markets underwent a bumpy road at their early stage due to speculation and lack of investor protection, its success is obvious as the stock markets have been experiencing unprecedented growth since its inception. As of December 2007, 1527 firms were listed in Shanghai and Shenzhen Stock Exchanges, and the total market value amounted to RMB 31,044 billion. In 2007, the Chinese stock market was ranked No. 1 in the world in terms of IPO proceeds (RMB 447 billion).

Accompanying China's economic transition is the compensation reform, especially the reform for executives in Chinese state-owned enterprises (SOEs). Prior to the reform, China implemented a simple, rigid, and universal compensation system in which SOEs were not allowed to keep any profits. As a result, executives' compensation in SOEs were not linked to performance or to their individual contributions; rather, other factors, such as job title, seniority, size of the firm, industry, and region, mainly determined how much executives were compensated (Kato and Long 2006). In mid-1980s, a major compensation reform was implemented so that SOEs were allowed to keep part of their profits to reward their employees as well as their executives. From 1984 to 1993, SOEs began to link the growth of compensation to that of the firm performance. In 1985, it was reported that this

experiment was piloted in 100,000 SOEs, covering more than 30 million SOE employees. A common compensation practice for executives in SOEs at that stage was the system of fixed monthly pay plus a bonus (Kato and Long 2006). The role of bonus is limited, partly due to the deeply-rooted equality of pay between managers and ordinary employees (Firth et al. 2006), the approval system, and the wage adjustment tax (Kato and Long 2006; Yueh 2004). The role of incentive compensation in SOEs was examined by previous studies (Groves et al. 1994, 1995; Mengistae and Xu 2004), but inconsistent findings were reported based on survey data.[1] However, it is widely accepted that the compensation reform during this period was influenced by both planned system and market orientation.

In 1994, the compensation reform opened a new chapter. SOEs were permitted to set their own compensation practices (Yueh 2004), and a yearly compensation system consisting of the base salary and the incentive-pay for SOE executives was implemented throughout the country (Kato and Long 2006). According to Kato and Long (2006), the pilot experiment of yearly compensation system was considered successful and became the dominant compensation practice for SOE executives, especially in large firms.

2.2 Executive compensation in listed companies in China

The majority of publicly listed firms in China were converted from SOEs. When SOEs became listed, their net assets were converted into state-owned shares, and new shares were issued to the public at a much higher price. The state-owned shares enjoyed a much lower conversion price, but cannot be traded. On the contrary, the public investors paid a much higher price for the same stocks, but those can be circulated in secondary markets.

Due to the overwhelming domination of state-owned shares, the executives of listed companies at the early stage were often paid according to the civil service pay scale (Firth et al. 2006). With the development of China's stock markets, however, the increasingly popular incentive compensation for executives was encouraged by the Corporate Law, as well as by the regulations promulgated by the China Securities Regulatory Commission (CSRC). Since the core theme of Chinese economic transition is the SOE reform with an objective of establishing modern corporation systems, performance-related pay is increasingly and widely adopted in Chinese listed firms since the milestone CCP Congress in 1992 (Firth et al. 2006). Using survey data from 1995 to 1999, for example, Liu and Otsuka (2004) confirm that the fixed pay plus performance-related bonus is the most common compensation system, and is used by more than 80% of their respondents.

It is worth noting that cash compensation for executives dominates stock options in Chinese listed companies. Firth et al. (2006) indicates that several Chinese listed firms cross-listed in the US and Hong Kong have granted stock options to their executives, but little information is disclosed. They listed several reasons to explain this phenomenon, including the high rate of executive turnover and executives' concerns over the non-controllable events. Following Firth et al. (2006) and Kato and Long (2006), we only consider the cash compensation for executives in the current study.

2.3 Corporate governance reform in China: supervisory boards

One of the major characteristics of Chinese capital markets is the domination by controlling shareholders. According to Chen et al. (2006), about 30% of the shares are owned by central or local government, and another 30% are owned by legal entities which are

[1] See Firth et al. (2006) for detailed discussion of these findings.

usually SOEs ultimately controlled by the government. Therefore, although large shareholders seem to represent an effective corporate governance mechanism and help address agency problems (Shleifer and Vishny 1986, 1997), it is doubtful whether they play a positive governance role in China. In fact, the short history of Chinese stock markets suggests the contrary. Shleifer and Vishny (1997) prescribe legal approach and large shareholders as the two most common governance approaches; in China, improving legal protections of investors seems to be the only feasible option facing Chinese authorities. The governance reform in Chinese stock markets, as reflected through promulgating and amending a series of laws and CSRC's regulations, supports this argument.

The 1993 Corporate Law, enacted after the establishment of stock markets, confers the monitoring function to supervisory boards, whose members are representatives of both shareholders and employees. The Chinese corporate governance system resembles the two-tier board structure in Germany, and combines it with the Anglo-American governance system. Therefore, the role of supervisory boards in Chinese companies is not the same as that in Germany (Xi 2006). The supervisory board in China does not appoint or evaluate managers; it serves as one of the two monitoring organs in the Chinese governance mechanism. The other one is independent director on the board of directors.

According to the 1993 Corporate Law, the supervisory board has two major functions: (1) to supervise the directors and top management, and (2) to examine the financial affairs of the company. The monitoring role played by supervisory boards, however, has been controversial, and survey results suggest that at least in listed companies, supervisory boards' role is minimal (Xi 2006). Stated differently, members on supervisory boards are best described as honored guests, friendly advisors, or censored watchdogs (Xiao et al. 2004). Several factors may have contributed to supervisory boards' ineffectiveness, including, among others, the lack of information that is crucial for exercising their monitoring duties, the lack of expertise to fulfill their monitoring role, and the lack of legal supports to take actions (Xi 2006). It is worth pointing out, however, that investors seem to value supervisory boards and their reports, which are required to be disclosed in annual reports. For example, a company's failure to provide supervisory board report in its 1998 annual report led to negative market reactions (Dahya et al. 2003). Further evidence is provided by Firth et al. (2007), whose results show that supervisory boards improve the quality of accounting information, and by Ding et al. (2009) addressing that a larger size of supervisory board helps lower the board chair pay.

The 1993 Corporate Law was amended three times in 1999, 2004 and 2005, respectively; these amendments led to a remarkable progress in enhancing monitoring functions. The latest Corporate Law amendment addressed several important constraints that prevented supervisory boards from functioning properly. First, supervisory boards now have the power to propose dismissal of wrong-doing directors and top managements, and to sue directors and top managements who commit frauds. Second, supervisors were allowed to attend board meeting, but the latest amendment gave them the right to raise questions and make suggestions (Xi 2006). While the board of directors can decide compensation of top managers, the supervisory boards now have strengthened power to curb executive compensation. Furthermore, supervisory boards now have the right to submit proposals to shareholder meetings, which have the ultimate right to approve compensation of board directors. If the supervisory boards consider executive compensation inappropriate, they can submit proposals stating alternatives. Anticipating a possible disagreement among the supervisory boards, the executives, and controlling shareholders may encourage the board of directors to adjust their compensation proposal in advance. Third, supervisory boards' right to supervise top managements and directors has been expanded. Before 2006, other

top managers, such as vice president, CFO, and secretary of board of directors, were beyond supervisory board's monitoring scope. The expansion of supervisory boards' monitoring scope will surely improve their monitoring effects on other top managers' compensation. Finally, supervisory boards gain improved access to information, and usually have sufficient resources to fulfill duties that are out of their expertise by seeking independent professional advice, with the company bearing the expense. All these amendments greatly improve the monitoring power of supervisory boards.

In addition to empowering supervisory boards, the 2006 Corporate Law also affects other aspects of the governance system. For example, restrictions are imposed on chairs of the board, and independent directorship is codified. It is worth pointing out, however, that Chinese listed companies have been implementing independent directorship since 2001 as mandatorily required by the CSRC, and the new Corporate Law just completes the legal procedure; therefore, there is no change in the regulation regarding the functioning of independent directors. Since independent directors and supervisory boards are two monitoring organs with a certain level of duplication of functions, we examine the effect of supervisory boards after controlling for that of independent directors, which is not taken into consideration in Ding et al. (2009).

Furthermore, it could be interesting to examine supervisory board's incentive structure, and investigate how the newly amended Corporate Law influences supervisory board's incentives. Then it would be interesting to examine how supervisory board's incentive structure affects its monitoring. We believe that an in-depth interview of supervisory boards (e.g., Dahya et al. 2003; Xiao et al. 2004) helps shed important insights on this topic. Due to data limitation, however, in this study, we focus on examining supervisory board's monitoring function before and after the passage of new Corporate Law using cross-sectional data.

2.4 Prior studies on executive compensation and research questions

What drives executive compensation is extensively examined. Agency theory predicts that compensation policy should tie executive compensation to shareholders' objectives, and therefore, a positive pay-performance relationship is expected (Kaplan 1994). This is supported by empirical evidence from both mature and emerging markets (e.g., Jensen and Murphy 1990; Kaplan 1994; Firth et al. 2006; Bertrand and Mullainathan 2001).

While the pay-performance relationship is well documented, mixed evidence is also presented. The lack of consistent pay-performance relationship, in conjunction with the low pay-performance sensitivity (e.g., Jensen and Murphy 1990), suggests that other factors may help explain the variation of executive compensation. A recent stream of research focuses on the influence of corporate governance mechanisms on executive compensation, with particular attention to board of directors and ownership structure. Boyd (1994) finds that CEO compensation is not linked to firm size measured by net sales or profitability measured by return on equity, and shows that firms with lower levels of board control tend to have higher levels of executive compensation. Core et al. (1999) also confirm that firms with less effective governance structure pay their CEOs significantly higher. As for the effects of ownership structure, Cyert et al. (2002) show that the equity ownership held by board directors significantly negatively affects CEO's compensation. In another study, Elston and Goldberg (2003) examine the effects of ownership control on executive compensation using a unique dataset in Germany, and find that greater ownership dispersion increases executive compensation.

Monitoring function of financial institutions is also considered as one of the critical determinants of executive compensation. Bank influence seems to lead to a lower level of compensation, and institutional investors serve as an effective monitor (Shleifer and Vishny 1986). Hartzell and Starks (2003) show evidence supporting the negative relationship between institutional investor concentration and executive compensation, but find a greater level of the pay-performance sensitivity. Ke et al. (1999) examine the pay-performance relationship in both publicly and privately-held insurance companies, and find a positive relationship only holds for public ones.

Our study adds to this stream of literature by examining the monitoring effects of supervisory boards on executive compensation. Based on our discussion, we predict that supervisory boards may not be able to serve as an effective monitoring organ before the passage of the new Corporate Law. In contrast, we believe that the newly amended Corporate Law would significantly empower supervisory boards so that they can enhance their monitoring role, thus curbing executive compensation. Our hypotheses are developed as follows:

H1 Supervisory boards in year 2005 did not play a role in curbing executive pay.

H2 Supervisory boards did curb executive pay in year 2006.

The Corporate Law in China requires a publicly listed company to have at least one supervisory board meeting per 6 months, that is, a minimal of two meetings per year. If needed, companies may have more than two meetings to deal with various issues. In the meantime, it is widely accepted that board monitoring is costly and having too many meetings in a year may lower the efficiency and effectiveness of corporate governance mechanism. Thus, we expect to see a non-linear monitoring effect carried by supervisory board meeting frequency; in other words, supervisory board meeting is only expected to affect executive compensation significantly in a certain range. Since two meetings a year is a minimum and is mandatorily required, dysfunctional supervisory boards may simply meet twice a year to satisfy the legal requirement. Therefore, we predict that supervisory boards holding at least three meetings a year are more likely to function well, thus curbing executive compensation. Determining the upper limit of supervisory board meeting is difficult, as its meeting frequency may depend on many factors, and no prior literature has offered insights on this aspect. We try to determine the upper limit in the following two ways. First, intuitively supervisory boards should hold fewer meetings than the board of directors due to the latter's crucial role in corporate operation in China. Our examination of meeting frequency of board of directors shows that on average board of directors of Chinese listed companies hold about seven meetings annually in 2005 and 2006. Second, Sinopec (600028) is an SOE company listed on Shanghai Stock Exchange, and was awarded the "Company with Best Corporate Governance in China" title twice in 2002 and 2004 by the well-known Euro money. The award is based on the company's prior year governance practice, and our examination of Sinopec's annual reports shows that it held five supervisory board meetings in 2001 and 2003, respectively. In addition, the survey conducted by the CFA Institute of Hong Kong in 2006 indicated that the effectiveness of supervisory boards has been improved since 2003, and the newly amended Corporate Law may further motivate supervisory boards to meet more frequently due to the empowerment. Therefore, we expect that a well-functioning supervisory board may meet at least three times a year, but somewhat below seven times.

We fully acknowledge that our analyses above are rather exploratory; the best practice for Sinopec may not be the best practice for other companies due to firm-level variations.

However, given the lack of theoretical support and prior literature, we believe that our exploration of supervisory board activity is a valid attempt, as it would shed important insights on how this monitoring organ is functioning to curb executive pay. Furthermore, it will help highlight the importance of cost-benefit analyses when it comes to costly monitoring activities. Acknowledging its exploratory nature, we do not develop it into a formal hypothesis; rather, we explore the role of supervisory boards by examining the following research question: In terms of supervisory board's activity, is there an optimal range of supervisory board meeting frequency?

3 Data, variables, and models

3.1 Data

We use data sets developed by GTA and SINOFIN; both have been widely used in prior studies (e.g., Sun and Tong 2003; Bai et al. 2004; Wei et al. 2005; Haw et al. 2005; Kato and Long 2006; Zhang and Ding 2006; Jia et al. 2009). Since the objective of our study is to shed light on the functioning of supervisory boards before and after the new Corporate Law became effective (at the beginning of year 2006), we focus on year 2005 and 2006 to capture the "legal approach" (La Porta et al. 2000) of improving corporate governance. This is the same sample adopted by Ding et al. (2009),[2] and it consists of 1,345 observations in 2005 and 1,410 in 2006.

3.2 Variables

3.2.1 Dependent variable: total executive compensation (TEC)

When we choose our dependent variable, we have two options: the total compensation and the average compensation; both are valid. We use the LnTEC, which is measured by the natural logarithm of total executive compensation disclosed by listed companies in their annual reports, as our dependent variable for several reasons. First, total executive pay or the total pay of top three executives has been disclosed by Chinese listed companies since 1998, and is available on our data sets. Second, our adoption of total executive pay is consistent with prior studies examining compensation issue in China (e.g., Kato and Long 2006). Third, Crossland and Hambrick (2007) find the weakest CEO effect in Japan, compared to that in the US and Germany; that is, CEOs matter more in the US and Germany than in Japan. It could be the similar case in China; the prevalence of collective culture highlights the role of top management team, rather than that of CEOs. Therefore, the total executive compensation is appropriate in the Chinese setting. Finally, as mentioned previously, the newly amended Corporate Law significantly expands supervisory board's supervision scope; for the first time, other top executives, such as vice CEOs and CFOs, are overseen by supervisory boards. As our study's focal point is to examine the impact brought by the latest amendment of Corporate Law, we believe our adoption of total executive compensation suits our research questions.

[2] Ding et al. (2009) also adopt these 2 years of data, but for a different reason. They examine individuals' compensation, and the information about individual director's or individual executive's compensation was not mandatorily disclosed in the annual report until 2005.

3.2.2 Characteristics of supervisory boards

As aforementioned, research on the monitoring effects of supervisory boards is rare. However, there is a rich literature on board monitoring (e.g., Jensen 1993; Vafeas 1999); we therefore follow previous studies and measure characteristics of supervisory boards from three aspects, including the meeting frequency of the supervisory board (SBMF), its size (SBS), and the turnover of its chairman (SBCTurnover). These measures are consistent with those used in Ding et al. (2009) and Jia et al. (2009). Board meeting frequency is usually measured as a continuous variable by previous studies (e.g., Eisenberg et al. 1998; Vafeas 1999; Xie et al. 2003). We follow the literature and define SBMF as the number of annual supervisory board meetings, and then use a model adopted by Ding et al. (2009) to estimate the monitoring-induced supervisory board meeting frequency (MISBMF). As described in Ding et al. (2009), the model is

$$\mathrm{SBMF}_{\mathrm{current}} = f\left(\mathrm{FP}_{\mathrm{past}}, \mathrm{Risk}_{\mathrm{past}}, \ \mathrm{SBS}_{\mathrm{current}}, \ \text{control variables}\right) + \varepsilon_1 \qquad (1)$$

Consistent with Ding et al. (2009), we use the subscripts "current" and "past" to label variables in the current year and those in the past year, respectively. The variable FP refers to firm performance, and the second variable SBS is measured by the number of supervisory board members. The variable SBCTurnover is a binary one indicating whether there is a turnover of the chairman of the supervisory board in a year; if yes, the value of SBCTurnover equals one, and zero otherwise.

3.2.3 Control variables

Following prior literature and considering the China-specific context, we examine our research questions by controlling for other factors,[3] including variables measuring board independence, ownership structures, board chair/CEO duality, firm performance, risk taken by firms, firm size, and industry effects.

The size of independent directors (IBSIZE) is used as a proxy of board independence. Ownership structure, especially the features of controlling shareholders, is a key issue in China's capital markets (Firth et al. 2006). We follow Firth et al. (2006) and Ding et al. (2009) to consider two major categories of shareholders: state-owned and foreign ownership. Ding et al. (2009) construct a binary variable (GOV) to indicate whether the largest shareholders are government or government agencies, and another binary variable (GOV SOE) measuring whether the largest shareholders are government/government agencies and state-owned enterprises. GOV SOE is broader in scope than GOV; both have a value of one if the answer is yes, and zero otherwise. In the meantime, Ding et al. (2009) consider three variables, FOR, FOR10, and FOR%, to capture the potential effects of foreign shareholders.[4] We also follow Firth et al. (2006) and Ding et al. (2009) by taking into account the interactions between ownership structure of dominant shareholders and other variables, such as firm performance, meeting frequency, and size of the supervisory board. To further characterize the influences of ownership structure, we follow Chen et al. (2006), Ding et al. (2009), and Jia et al. (2009) and include the Herfindahl index (HHI) for the ten

[3] These control variables are the same as those used by Ding et al. (2009).

[4] FOR is a dummy variable; for firms with a foreign shareholder as the largest one, it equals one and zero otherwise. FOR10 is also a dummy variable; it equals 1 for firms with at least one foreign shareholder among the ten largest ones, and zero otherwise. FOR% measures the ownership percentage held by foreign shareholders listed among the ten largest ones.

largest shareholders, excluding the largest one, to capture the major features of ownership concentration.

To measure the separation of duties, we include a dummy variable, DUAL, to indicate whether the chairman of the board of directors is also the CEO of the company, which equals 1 if the same person assumes both positions, and zero otherwise. Firm performance and risk taken by firms may affect executive compensation in two ways. First, due to the wide adoption of incentive pay in Chinese listed companies, firm performance may influence the executive compensation. Second, as discussed in Ding et al. (2009), they may both affect supervisory board meeting frequency. As a result, the performance and risk variables are used twice in our analyses—first to estimate MISBMF and then as control variables in testing the effects of supervisory board monitoring on executive compensation. ROA and ROE are adopted to measure accounting return,[5] and debt-equity ratio (D/E) is used to indicate the risk level. Other control variables, consistent with this stream of literature (e.g., Ding et al. 2009; Firth et al. 2006; Wang and Xu 2004), include TRADE defined by the ratio between tradeable and total shares, the logarithm value of total assets (LnAssets) which measures the firm size, and 13 industry dummies according to the CSRC categorization.

3.3 Models and estimation

3.3.1 The effects of supervisory board size and meeting frequency on executive pay

To provide a valid answer to the research questions proposed above and to highlight the difference in effects of supervisory boards on executive compensation before and after the 2006 Corporate Law became effective, we adopt models similar to model (2) and the two-stage least square (2SLS) model of Ding et al. (2009) for cross-sectional tests using year 2005 observations, year 2006 observations, and a combination of them, respectively. The ordinary least square (OLS) regression is based on:

$$\text{LnTEC} = \gamma_0 + \gamma_1 \text{SBMF} + \gamma_2 \text{SBS} + \gamma_3 \,\text{Control variables} + \varepsilon_2 \tag{2}$$

and the second stage of the 2SLS model is

$$\text{LnTEC} = \alpha_0 + \alpha_1 \,\text{MISBMF} + \alpha_2 \,\text{SBS} + \alpha_3 \,\text{Control variables} + \varepsilon_3 \tag{3}$$

3.3.2 The effects of supervisory board size and meeting frequency on pay-performance sensitivity

We then follow Jensen and Murphy (1990) and Hartzell and Starks (2003) to examine pay-performance sensitivity, especially the effects of supervisory board size and meeting frequency on it. The model follows:

$$\begin{aligned}\Delta\text{TEC} = {} & \zeta_0 + \gamma_1 \Delta\text{SW} + \zeta_2 \text{SBMF} + \zeta_3 \text{SBS} + \zeta_4 \Delta\text{SW}^{*}\text{SBMF} + \zeta_5 \Delta\text{SW}^{*}\text{SBS} \\ & + \zeta_6 \text{ROE} + \zeta_7 \text{D/E} + \zeta_8 \text{Dual} + \zeta_9 \text{GOV} + \zeta_{10} \text{FOR} + \zeta_{11} \text{HHI} \\ & + \zeta_{12} \text{TRADE} + \zeta_{13} \text{LnAssets} + \zeta_{14} \text{IBSIZE} + \varepsilon_4\end{aligned} \tag{4}$$

where the dependent variable ΔTEC is the change in total executive compensation from 2005 to 2006, and ΔSW refers to the change in shareholder wealth. Other variables are

[5] We also use the variable net profit margin (NPM) as another proxy of firm performance. NPM indicates the net income generated by each dollar of sales, and it measures the effectiveness of cost control. No qualitative change is found.

defined before. The interaction terms between supervisory board characteristics (i.e., size and meeting frequency) and change in shareholder wealth are included to explore the potential effects of supervisory boards on pay-performance sensitivity.

3.3.3 The effect of change in supervisory boards on the change of executive pay

We also follow Ding et al. (2009) to test if the changes in the characteristics of supervisory boards before and after the newly amended Chinese Corporate Law became effective have an impact on the change in total executive compensation, and if yes, how. The OLS regression used for this test is similar to that adopted by Ding et al. (2009), and is developed as follows:

$$\Delta \text{TEC} = \beta_0 + \beta_1 \, \Delta \text{SBMF} + \beta_2 \, \Delta \text{SBS} + \beta_3 \, \text{Control variables} + \varepsilon_5 \quad (5)$$

The dependent variable is the change in executive compensation, ΔTEC, and the independent variables in the analysis are ΔSBMF and ΔSBS, where

$$\Delta \text{SBMF} = \text{SBMF2006} - \text{SBMF2005},$$

and

$$\Delta \text{SBS} = \text{SBS2006} - \text{SBS2005}.$$

Control variables are the difference between firm size in 2005 and 2006 (ΔAssets), that between the D/E ratio (ΔD/E), that between firm performance (ΔFP), that between the size of independent directors (ΔIBSIZE), and twelve industry dummies.

Ding et al. (2009) also use sub-samples to further investigate the board chair pay-supervisory board sensitivity in firms whose largest shareholders are state-owned and in those whose ten largest shareholders include foreign investors. This study not only follows them to use these subsamples to test the total executive pay-supervisory board sensitivity, but also does so using a sub-sample of firms with low meeting frequency of supervisory boards since these firms tend to meet more after the new Corporate Law became effective on January 1, 2006.

To sum up, models (2) and (3) are developed to examine the effect of supervisory boards on total executive compensation by considering the endogeneity issue. Model (4) investigates the traditional pay-performance sensitivity, especially the effects of supervisory boards' characteristics on this sensitivity. Model (5) sheds light on the effect that changes in supervisory boards have on the change in total executive pay.

4 Empirical results and analyses

4.1 Descriptive statistics

Table 1 presents the descriptive statistics for the full sample, the subsample in 2005, and that in 2006, respectively; *t*-statistics for comparing variable means between 2 years are also presented in the last column of Table 1. The average total executive compensation increased from RMB1, 635,008 in 2005 to RMB1, 894,876 in 2006; the increase is highly significant at the 1% level. The significant increase of total executive pay corresponds to our previous discussion that (excessive) executive compensation has become one of the central agency issues in China's listed companies.

From 2005 to 2006, the average supervisory board meeting frequency increased from 3.12 to 4.02, and the change is also highly significant at the 1% level. Given that meeting

Table 1 Descriptive statistics

	Combined sample			2005			2006			*t*-Statistics
	Mean	SD	*N*	Mean	SD	*N*	Mean	SD	*N*	
TEC	1,767,128	2,059,023	2734	1,635,008	1,824,876	1344	1,894,876	2,255,814	1390	3.305***
LnTEC	14.01	0.861	2734	13.943	0.852	1344	14.074	0.866	1390	4.005***
SBMF	3.577	1.676	2754	3.116	1.609	1348	4.019	1.621	1406	14.667***
SBS	4.146	1.44	2762	4.188	1.465	1351	4.106	1.414	1411	−1.491
SBCTurnover	0.355	0.479	2648	0.389	0.488	1242	0.324	0.468	1406	−3.473***
ROE	0.046	2.328	2742	0.02	1.743	1342	0.071	2.775	1400	0.573
D/E	0.231	1.037	2742	0.203	1.039	1342	0.258	1.035	1400	1.4
DUAL	0.12	0.326	2716	0.113	0.317	1318	0.127	0.334	1398	1.142
GOV	0.273	0.446	2914	0.332	0.471	1457	0.214	0.41	1457	−7.172***
GOVSOE	0.509	0.5	2914	0.457	0.498	1457	0.561	0.496	1457	5.662***
FOR	0.019	0.135	2914	0.017	0.127	1457	0.021	0.142	1457	0.824
FOR10	0.094	0.291	2914	0.08	0.272	1457	0.107	0.309	1457	2.481***
FOR%	8.351	11.058	273	8.827	11.814	117	7.995	10.48	156	−0.615
HHI	205.094	269.759	2762	220.664	285.07	1351	190.186	253.443	1411	−2.973***
TRADE	0.452	0.136	2762	0.418	0.123	1351	0.484	0.141	1411	13.118***
Assets (million RMB)	3,870	17,300	2742	3,540	16,000	1342	4,180	18,400	1400	0.972
LnAssets	21.247	1.113	2742	21.222	1.055	1342	21.271	1.166	1400	1.152
IBSIZE	3.310	0.762	2762	3.301	0.754	1411	3.319	0.771	1351	−0.614

The variable TEC is the total compensation of all executives, and LnTEC is the natural logarithm of total executive compensation. SBMF indicates the number of meetings of supervisory boards in a year, and SBS measures the size of supervisory board. SBCTurnover is a dummy variable with a value of one if there is a turnover of the supervisory board chair in a year, and zero otherwise. ROE is net income divided by total equity, and D/E indicates the debt-equity ratio. DUAL is a dummy variable with a value of one if the board chair also serves as the CEO, and zero otherwise. Both GOV and GOVSOE are binary variables. GOV has a value of one if the largest shareholder is government and/or government representative and zero otherwise; GOVSOE has a value of one if the largest shareholder is the government, government representative, and/or a state-owned enterprise and zero otherwise. FOR and FOR10 are dummies, and FOR% is a continuous variable. FOR indicates whether the largest shareholder is a foreign shareholder, and FOR10 indicates whether at least one of the ten largest shareholders is a foreigner. FOR% measures the percentage of shares held by foreigners who are among the ten largest shareholders. The Herfindahl index (HHI) measures the ownership concentration, and TRADE measures the percentage of shares that are tradable. LnAssets is computed using the natural logarithm of total assets. IBSIZE is the number of independent directors who are on the board of directors

*** $p < 0.01$. *N* is the number of observations

frequency is a valid proxy of board's diligence (e.g., Vafeas 1999), our descriptive statistics provide preliminary evidence that the supervisory board does respond to the passage of the new Corporate Law by holding more meetings.

It is worth noting that the average size of supervisory boards decreased from 4.19 in 2005 to 4.11 in 2006, but the change is not significant at the conventional level. Prior literature shows that larger boards of directors are inefficient (Karamanou and Vafeas 2005) and the size of board of directors is inversely associated with Tobin's Q (Yermack 1996). If the supervisory board suffers from the same size problem, the decrease of supervisory board size, although non-significant, could be interpreted as a positive sign that supervisory boards react in 2006. Our formal tests follow. To spare space, we do not repeat the descriptive statistics of other variables here since they are presented in Table 1.

4.2 Monitoring effects of supervisory boards on total executive compensation

Table 2 presents the results of model (2), and they provide us with the general picture of how supervisory board's characteristics impact the total executive compensations. When the combined sample is used, no monitoring effect of supervisory board meeting is found. In contrast, the size of supervisory boards is found to be significantly, positively associated with the total compensation. Given our previous discussion that larger boards of directors are not effective (e.g., Karamanou and Vafeas 2005; Yermack 1996; Eisenberg et al. 1998; Cheng et al. 2008), it appears that larger supervisory boards have similar efficiency problems. This is contrary to the findings of Ding et al. (2009), who show that a larger supervisory board helps lower the board chair pay, possibly because the board chair is the focal point of supervisory boards' monitoring.

A further examination reveals that the size effect of supervisory boards is highly significant when the 2006 sample is used, but is not significant at the conventional level when the 2005 sample is employed. Although the positive sign of supervisory board size suggests a low monitoring efficiency, the sharp contrast between 2005 and 2006 does indicate that the 2006 Corporate Law makes a difference; in other words, the "legal approach" seems to work. The meeting frequency of supervisory boards is not significant, regardless of the sub-samples. As discussed previously, however, the result may be due to the fact that monitoring-induced meeting frequency and the non-linear effects have not been taken into account. Consistent with prior studies (e.g., Firth et al. 2006), we fail to find a performance-compensation link for the combined sample.

4.3 Subtle monitoring effects

In the following analyses, we further address two sets of subtle monitoring effects by taking into account (1) the joint effects between meeting frequency and size of supervisory boards, and (2) the non-linear effects of SBMF.

4.3.1 Joint monitoring effects between SBMF and SBS

Table 3 presents the results based on the 2SLS model using three samples, one with observations in 2005, one with observations in 2006, and a combination of them. At the first stage of the 2SLS model, we find that in all three samples, the size of supervisory boards (SBS) increases its meeting frequency (SBMF) significantly; it is consistent with prior literature (Ding et al. 2009; Jensen 1993) that a larger board needs more meetings to

Table 2 Monitoring effects of supervisory boards on executive compensation: model (2)

Dep. var.	LnTEC		
	Comb	2005	2006
SBMF	−0.004 (0.010)	−0.001 (0.016)	−0.010 (0.014)
SBS	0.034*** (0.013)	0.019 (0.020)	0.048*** (0.018)
ROE	−0.010 (0.029)	−0.059 (0.058)	−0.025 (0.040)
D/E	−0.041*** (0.015)	−0.041 (0.027)	−0.035* (0.020)
DUAL	0.036 (0.044)	0.067 (0.064)	0.001 (0.060)
GOV	−0.159 (0.114)	−0.234 (0.154)	0.021 (0.181)
FOR	0.645 (0.461)	0.768 (0.609)	0.189 (0.726)
ROE × GOV	0.020 (0.014)	0.254*** (0.096)	0.056 (0.041)
ROE × FOR	2.036*** (0.661)	(dropped)	2.045*** (0.676)
SBMF × GOV	0.048** (0.019)	0.032 (0.027)	0.052* (0.030)
SBMF × FOR	−0.055 (0.063)	−0.160* (0.088)	0.068 (0.096)
SBS × GOV	−0.015 (0.021)	0.008 (0.029)	−0.052 (0.033)
SBS × FOR	−0.061 (0.093)	−0.002 (0.130)	−0.073 (0.134)
HHI	0.0002*** (0.000)	0.0002*** (0.000)	0.0003*** (0.000)
TRADE	0.529*** (0.112)	0.316* (0.176)	0.583*** (0.155)
LnAssets	0.357*** (0.014)	0.356*** (0.021)	0.353*** (0.019)
IBSIZE	0.137*** (0.020)	0.143*** (0.030)	0.133*** (0.028)
ROE × SBS	0.005 (0.007)	0.000 (0.014)	0.015 (0.013)
ROE × SBMF	0.01** (−0.005)	0.026* (−0.015)	0.019 (−0.012)
Industry dummies	Included and mixed		
Constant	5.495*** (0.296)	5.673*** (0.448)	5.513*** (0.400)
N	2599	1296	1303
Adj. R^2	0.2881	0.2597	0.3061
F-value	34.91***	16.14***	19.53***

The dependent variable LnTEC is the natural log of the total compensation of all executives. SBMF indicates the number of meetings of supervisory boards in a year, and SBS measures the size of supervisory board. ROE is net income divided by total equity, and D/E indicates the debt-equity ratio. DUAL is a dummy variable with a value of one if the board chair also serves as the CEO, and zero otherwise. GOV has a value of one if the largest shareholder is government and/or government representative and zero otherwise, and FOR indicates whether the largest shareholder is a foreign shareholder. The Herfindahl index (HHI) measures the ownership concentration, and TRADE measures the percentage of shares that are tradable. LnAssets is computed using the natural logarithm of total assets. IBSIZE is the number of independent directors who are on the board of directors. ROE × GOV and ROE × FOR measure the interactions between firm performance and ownership structure. SBMF × GOV and SBMF × FOR measure the interactions between supervisory board meeting frequency and ownership structure. SBS × GOV and SBS × FOR measure the interactions between the size of supervisory boards and ownership structure. Industry dummies include 12 dummy variables indicating the industries categorized by China Securities Regulatory Commission (CSRC). Results presented in this table are obtained from OLS regressions based on model (2)

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. *N* is the number of observations

achieve consensus or solve conflicts. As shown by Ding et al. (2009) using the full sample, in addition, SBMF is positively associated with SBCTurnover in both the full sample and the two sub-samples.

Table 3 Monitoring effects of supervisory boards on total executive compensation: model (3)

Dep. var.	Combined sample		Year 2005		Year 2006	
	Stage 1 SBMF	Stage 2 LnTEC	Stage 1 SBMF	Stage 2 LnTEC	Stage 1 SBMF	Stage 2 LnTEC
Constant	0.919 (0.616)	5.747*** (0.300)	0.505 (0.905)	6.335*** (0.463)	1.354* (0.779)	5.469*** (0.398)
MISBMF	–	−0.004 (0.011)	–	0.012 (0.014)	–	−0.008 (0.015)
SBS	0.064*** (0.023)	0.030** (0.013)	0.062** (0.031)	0.010 (0.021)	0.085*** (0.031)	0.046*** (0.018)
ROEpast	0.008 (0.009)	–	0.01 (0.010)	–	−0.023 (0.029)	–
ROEcurrent	–	0.014 (0.034)	–	−0.030 (0.066)	–	0.056 (0.049)
D/Epast	−0.056 (0.039)	–	−0.282*** (0.092)	–	−0.043 (0.049)	–
D/Ecurrent	–	−0.042*** (0.015)	–	−0.032 (0.027)	–	−0.040* (0.020)
LnAssets	0.100*** (0.030)	0.349*** (0.014)	0.093** (0.044)	0.333*** (0.022)	0.096** (0.038)	0.355*** (0.019)
GOV	−0.187*** (0.070)	−0.058 (0.098)	0.076 (0.090)	−0.245* (0.134)	−0.011 (0.101)	0.206 (0.150)
FOR	0.052 (0.234)	0.439 (0.383)	0.467 (0.341)	0.302 (0.558)	−0.215 (0.293)	0.423 (0.538)
SBCTurnover	1.084*** (0.065)	–	1.140*** (0.088)	–	1.121*** (0.088)	–
DUAL		0.026 (0.045)		0.052 (0.068)		−0.001 (0.060)
ROE × GOV		0.017 (0.014)		0.258*** (0.096)		0.055 (0.040)
ROE × FOR		2.128*** (0.659)		(dropped)		2.033*** (0.680)
MISBMF × GOV		0.053*** (0.020)		(dropped)		0.041 (0.032)
MISBMF × FOR		−0.075 (0.073)		−0.250** (0.103)		0.077 (0.106)
SBS × GOV		0.000 (0.022)		0.034 (0.030)		−0.046 (0.033)
SBS × FOR		−0.066 (0.094)		−0.025 (0.135)		−0.066 (0.135)
HHI		0.0003*** (0.000)		0.0002*** (0.000)		0.0003*** (0.000)
TRADE		0.491*** (0.113)		0.246 (0.179)		0.571*** (0.155)
IBSIZE		0.139*** (0.021)		0.146*** (0.031)		0.135*** (0.028)
ROE × SBS		−0.003 (−0.007)		0.008 (0.014)		−0.018 (0.014)
ROE × SBMF		0.008 (0.005)		0.018 (0.019)		0.022 (0.013)

Table 3 continued

Dep. var.	Combined sample		Year 2005		Year 2006	
	Stage 1 SBMF	Stage 2 LnTEC	Stage 1 SBMF	Stage 2 LnTEC	Stage 1 SBMF	Stage 2 LnTEC
Industry dummies	Included and mixed					
N	2545	2475	1219	1177	1326	1298
Adj. R^2	0.106	0.2850	0.135	0.2517	0.125	0.3068
F-value	44.17***	32.81***	28.05***	14.64***	26.80***	19.51***

The dependent variable LnTEC is the natural log of the total compensation of all executives. SBMF indicates the number of meetings of supervisory boards in a year, and SBS measures the size of supervisory board. MISBMF is the residuals from the first stage, and measures the monitoring-induced supervisory board meeting frequency. SBCTurnover is a dummy variable with a value of one if there is a turnover of the supervisory board chair in a year, and zero otherwise. ROE is net income divided by total equity, and D/E indicates the debt-equity ratio. DUAL is a dummy variable with a value of one if the board chair also serves as the CEO, and zero otherwise. GOV has a value of one if the largest shareholder is government and/or government representative and zero otherwise, and FOR indicates whether the largest shareholder is a foreign shareholder. The Herfindahl index (HHI) measures the ownership concentration, and TRADE measures the percentage of shares that are tradable. LnAssets is computed using the natural logarithm of total assets. IBSIZE is the number of independent directors who are on the board of directors. ROE × GOV and ROE × FOR measure the interactions between firm performance and ownership structure. SBMF × GOV and SBMF × FOR measure the interactions between supervisory board meeting frequency and ownership structure. SBS × GOV and SBS × FOR measure the interactions between the size of supervisory boards and ownership structure. Industry dummies include 12 dummy variables indicating the industries categorized by China Securities Regulatory Commission (CSRC). Results presented in this table are obtained from 2SLS models based on Eq. 1 as the first stage and model (3) as the second stage

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. *N* is the number of observations

Table 4 Non-linear effects of supervisory board meeting

Dep. var.	SBMF < 3			3 ≤ SBMF ≤ 6			SBMF > 6		
	LnTEC			LnTEC			LnTEC		
	Comb	2005	2006	Comb	2005	2006	Comb	2005	2006
MISBMF	0.070	0.062	−0.113	−0.030	0.036	−0.066***	0.047	0.003	0.045
	(0.075)	(0.086)	(0.181)	(0.021)	(0.036)	(0.026)	(0.062)	(0.167)	(0.098)
SBS	0.021	0.017	0.044	0.038**	0.007	0.057***	−0.019	−0.036	−0.008
	(0.027)	(0.032)	(0.054)	(0.016)	(0.026)	(0.020)	(0.065)	(0.167)	(0.087)
ROE	−0.011	0.016	−1.162*	0.108	0.344	−0.074	6.854**	−19.171	12.128*
	(0.065)	(0.067)	(0.693)	(0.099)	(0.270)	(0.126)	(3.291)	(22.491)	(6.628)
D/E	−0.060*	−0.055*	−0.199	−0.025	0.048	−0.037*	0.041	0.159	−0.102
	(0.031)	(0.033)	(0.135)	(0.020)	(0.072)	(0.022)	(0.112)	(0.221)	(0.320)
DUAL	0.102	0.103	0.103	0.023	0.007	0.029	−0.247	−0.398	−0.176
	(0.083)	(0.096)	(0.175)	(0.054)	(0.091)	(0.067)	(0.211)	(0.420)	(0.278)
GOV	−0.292	−0.436	0.435	−0.228	−0.131	−0.166	0.252	−4.677	2.406
	(0.296)	(0.331)	(0.756)	(0.185)	(0.274)	(0.267)	(1.587)	(2.960)	(3.366)
FOR	0.395	0.519	(dropped)	0.331	0.197	0.551	5.171	(dropped)	(dropped)
	(1.124)	(1.202)		(0.858)	(1.358)	(1.155)	(9.789)		
ROE × GOV	0.002	0.299**	0.650**	−0.038	0.262	0.049	0.277	4.304	−1.048
	(0.029)	(0.118)	(0.331)	(0.037)	(0.189)	(0.059)	(0.912)	(4.524)	(1.499)
ROE × FOR	−3.530	(dropped)	−4.211	2.015***	(dropped)	2.065***	1.608	(dropped)	(dropped)
	(4.749)		(6.217)	(0.687)		(0.695)	(12.055)		
SBMF × GOV	0.011	0.012	0.141	0.078**	0.029	0.072	0.021	0.593	−0.253
	(0.134)	(0.152)	(0.327)	(0.039)	(0.059)	(0.055)	(0.226)	(0.406)	(0.475)
SBMF × FOR	−0.221	−0.183	−0.268	0.000	−0.168	0.045	−0.582	0.112	−0.878
	(0.491)	(0.526)	(0.710)	(0.153)	(0.288)	(0.196)	(1.416)	(0.252)	(1.202)
SBS × GOV	0.035	0.063	−0.191*	−0.031	−0.020	−0.029	−0.065	−0.004	−0.093
	(0.042)	(0.047)	(0.108)	(0.026)	(0.038)	(0.037)	(0.119)	(0.255)	(0.162)
SBS × FOR	0.131	0.081	0.266	−0.059	0.116	−0.141	−0.215	−0.195	2.355
	(0.180)	(0.220)	(0.381)	(0.130)	(0.391)	(0.152)	(0.266)	(0.320)	(3.045)

Table 4 continued

Dep. var.	SBMF < 3			3 ≤ SBMF ≤ 6			SBMF > 6		
	LnTEC			LnTEC			LnTEC		
	Comb	2005	2006	Comb	2005	2006	Comb	2005	2006
HHI	0.000	0.000	0.000	0.0003***	0.000	0.0004***	0.000	0.001	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
TRADE	−0.159	−0.124	−0.484	0.669***	0.548**	0.663***	1.496***	2.539	0.846
	(0.244)	(0.311)	(0.462)	(0.130)	(0.217)	(0.172)	(0.564)	(1.552)	(0.779)
LnAssets	0.340***	0.336***	0.355***	0.353***	0.350***	0.344***	0.529***	0.517***	0.559***
	(0.029)	(0.035)	(0.057)	(0.016)	(0.029)	(0.021)	(0.075)	(0.120)	(0.112)
IBSIZE	0.165***	0.157***	0.163**	0.132***	0.134***	0.134***	0.053	−0.013	0.006
	(0.040)	(0.049)	(0.077)	(0.025)	(0.039)	(0.032)	(0.100)	(0.285)	(0.140)
ROE × SBS	0.053**	0.073***	−0.027	−0.007	−0.018	−0.004	−0.101	2.146	0.182
	(0.021)	(0.022)	(0.078)	(0.016)	(0.032)	(0.019)	(0.311)	(1.677)	(0.410)
ROE × SBMF	−0.139***	−0.202***	0.596**	−0.008	−0.043	0.019	−0.793	0.983	−1.505*
	(0.044)	(0.048)	(0.327)	(0.014)	(0.050)	(0.020)	(0.512)	(2.633)	(0.825)
Industry dummies	Included and mixed								
Constant	5.926***	6.015***	6.222***	5.670***	5.767***	5.829***	1.605	1.918	1.461
	(0.599)	(0.724)	(1.161)	(0.360)	(0.627)	(0.452)	(1.548)	(2.379)	(2.362)
N	746	541	205	1727	712	1015	126	43	83
Adj. R^2	0.2624	0.2658	0.2601	0.2909	0.2672	0.3055	0.4623	0.5979	0.3599

Table 4 continued

Dep. var.	SBMF < 3			3 ≤ SBMF ≤ 6			SBMF > 6		
	LnTEC			LnTEC			LnTEC		
	Comb	2005	2006	Comb	2005	2006	Comb	2005	2006
F-value	10.14***	7.98***	3.56***	23.84***	9.64***	15.39***	4.58***	3.4***	2.65***

The dependent variable LnTEC is the natural log of the total compensation of all executives. SBMF indicates the number of meetings of supervisory boards in a year, and SBS measures the size of supervisory board. MISBMF is the residuals from the first stage, and measures the monitoring-induced supervisory board meeting frequency. SBCTurnover is a dummy variable with a value of one if there is a turnover of the supervisory board chair in a year, and zero otherwise. ROE is net income divided by total equity, and D/E indicates the debt-equity ratio. DUAL is a dummy variable with a value of one if the board chair also serves as the CEO, and zero otherwise. GOV has a value of one if the largest shareholder is government and/or government representative and zero otherwise, and FOR indicates whether the largest shareholder is a foreign shareholder. The Herfindahl index

(HHI) measures the ownership concentration, and TRADE measures the percentage of shares that are tradable. LnAssets is computed using the nature logarithm of total assets. IBSIZE is the number of independent directors who are on the board of directors. ROE × GOV and ROE × FOR measure the interactions between firm performance and ownership structure. SBMF × GOV and SBMF × FOR measure the interactions between supervisory board meeting frequency and ownership structure. SBS × GOV and SBS × FOR measure the interactions between the size of supervisory boards and ownership structure. Industry dummies include 12 dummy variables indicating the industries categorized by China Securities Regulatory Commission

(CSRC). Results presented in this table are obtained from OLS regressions based on model

(3), and the criterion for forming this sub-sample is that the supervisory board meeting frequency is lower than 3, between 3 and 6, and more than 6, respectively

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. *N* is the number of observations

After estimating MISBMF using model (1) in all three samples, the full sample and the two sub-samples, we incorporate it into model (3) and present the results in Table 3. Our results confirm what we present in Table 2; we find a significantly (at the 1% level) positive effect of the size of supervisory boards on the total executive compensation in 2006, but not in 2005. Since the joint effect has already been incorporated, our results in Table 3 further highlight the significance of the new Corporate Law.

Similarly, we find that supervisory board meeting frequency does not monitor the total executive pay. As discussed before, the non-significant role of meeting frequency could be due to the existence of a relevant range in which supervisory board meeting exerts monitoring functions.

4.3.2 Non-linear effects of supervisory board meeting frequency

As stated above, we further address non-linear monitoring effects of SBMF on total executive compensation in different ranges of supervisory board meetings. Model (3) is used, and results are presented in Table 4. The supervisory board has no effect on total executive compensation when it holds either too few or too many meetings, regardless of the sample year. When supervisory board meeting frequency is sufficiently low (i.e., below or equal to 2), firms may only meet due to the mandatory requirement. Thus, it is highly likely that supervisory boards in these firms are dysfunctional; therefore, no monitoring effects. On the other hand, when supervisory boards meet too often (more than six meetings a year), the monitoring costs may offset the positive aspects.

Our focal point is the range in which a supervisory board meets more than mandatorily required, but not too many (i.e., $3 \leq \text{SBMF} \leq 6$). As discussed in the previous section, we believe only within this range does a supervisory board function properly. We observe from Table 4 that both SBMF and SBS highly significantly affect total executive pay within this range. Compared to the results in Tables 2 and 3, it is the first time that we observe a significant main effect of supervisory board meeting frequency. Furthermore, examinations based on sub-samples show that both supervisory board meeting and size significantly influence the total executive pay ONLY in year 2006, rather than in year 2005. Once more, after considering the joint effect and the non-linear effect, we conclude that the 2006 Corporate Law vividly illustrates the "legal approach" of enhancing corporate governance. More specifically, consistent with above analyses, the size of supervisory boards is highly significantly and positively associated with the total executive pay in year 2006 which saw the new Corporate Law become effective. Consistent with prior literature on board (of director) size (e.g., Karamanou and Vafeas 2005; Yermack 1996; Cheng et al. 2008), we interpret this finding as large supervisory boards being inefficient.

In sharp contrast to the positive association between supervisory board size and total executive pay, we find that the supervisory board meeting frequency in year 2006 is highly significantly negatively associated with total executive pay, suggesting that supervisory boards hold more meetings to curb executive compensation. The extent to which board meets should reflect its diligence level, and is expected to influence management activities (e.g., Karamanou and Vafeas 2005). Our examination on supervisory boards suggests that this effect depends on the legal environment. In year 2005, whether a supervisory board meets frequently does not affect total compensation; in year 2006, which saw the newly effective Corporate Law, supervisory board meeting frequency effectively reduced total executive pay. Put differently, after the new Corporate Law became effective in 2006, we observe a functioning supervisory board; thus, a strong and effective monitoring effect of supervisory boards is revealed.

In summary, we demonstrate that the newly amended Corporate Law, which significantly strengthens the role of supervisory boards, does make a difference in enhancing governance efficiency, because the dysfunctional supervisory board (in year 2005) began to function in year 2006 (after we take into consideration both the SBMF–SBS joint effects and the non-linear effects of SBMF). With a proper supervisory board meeting frequency, we find supervisory boards meet to curb (excessive) executive compensation in year 2006, rather than in year 2005 (Table 4); correspondingly, we observe a significant increase of supervisory board meeting from year 2005 to year 2006 (Table 1). On the other hand, we find that a large supervisory board tends to increase total executive pay in year 2006, but not in year 2005 (Table 4), a finding that is consistent with board literature which shows that a large supervisory board is more likely to have a lower monitoring efficiency; as a result, we observe a decrease in supervisory board size from year 2005 to year 2006 (Table 1).

4.4 Pay-performance sensitivity: the effects of supervisory boards

The pay-performance sensitivity analysis based on model (4) is presented in Table 5. Given the lack of equity-based pay scheme in Chinese listed companies during our sample period, the change in shareholder wealth fails to significantly affect the change in compensation. A positive coefficient is reported for the change in shareholder wealth, but it is not statistically significant. The lack of per-performance sensitivity in our tests is consistent with Firth et al. (2006) who also find a positive yet non-significant coefficient for the change in shareholder wealth. The explanatory power of our sensitivity model is also low, but is quite consistent with prior studies that examine pay-performance sensitivity in the US (Jensen and Murphy 1990) and China (Firth et al. 2006; Kato and Long 2006). Our focal point is the effect of supervisory boards on pay-performance sensitivity. As shown in Table 5, the size of supervisory boards negatively affects the pay-performance sensitivity such that a larger supervisory board leads to a lower sensitivity. This size effect is consistent with our previous discussion that a larger supervisory board results in a higher level of total executive pay. Therefore, our findings that a larger supervisory board inflates total compensation while decreasing pay-performance sensitivity consistently suggest that a larger supervisory board may lead to monitoring inefficiency, which is consistent with many prior studies documenting an inefficiency resulting from a large size of the board of directors (e.g., Jensen 1993; Karamanou and Vafeas 2005; Yermack 1996; Eisenberg et al. 1998; Del Guercio et al. 2003; Cheng et al. 2008).

4.5 Total executive compensation: supervisory board sensitivity

To further document the marginal impacts of supervisory board's characteristics on total executive compensation, we analyze the effect of changes in supervisory board meetings, as well as those in supervisory board sizes, on the change in executive compensation. Empirical results are presented in Table 6. According to the analyses based on the full sample, we fail to find a significant change in total executive compensation resulting from the changes in supervisory board's characteristics, but our further analyses based on sub-samples present interesting patterns.

Since firms with minimal or less than minimum supervisory board meetings are likely to have more in 2006, possibly to conform to the new Corporate Law, we re-do the total executive compensation-supervisory board analysis using a sub-sample with the firms

Table 5 Pay-performance sensitivity analysis: the effects of supervisory boards

Dep. var.	ΔTEC
ΔSW	0.0133 (0.0239)
SBMF	−19.4247 (16.8470)
SBS	39.5456** (19.1528)
ΔSW × SBMF	0.0048 (0.0046)
ΔSW × SBS	−0.0035** (0.0015)
ROE	7.3718 (8.5782)
DE	−28.1011 (23.2852)
DUAL	−52.9929 (74.8261)
GOV	26.0494 (59.8735)
FOR	−46.3047 (180.6955)
HHI	0.2101** (0.1061)
TRADE	176.4440 (192.7497)
LnAssets	32.7431 (25.5384)
IBSIZE	−0.8853 (36.5491)
Constant	−718.5092 (521.1426)
N	1297
Adj. R^2	0.0117
F-value	2.09

The dependent variable ΔTEC is the change in the total compensation of all executives (in thousands). ΔSW is the change in shareholder wealth (in millions). SBMF indicates the number of meetings of supervisory boards in a year, and SBS measures the size of supervisory board. ROE is net income divided by total equity, and D/E indicates the debt-equity ratio. DUAL is a dummy variable with a value of one if the board chair also serves as the CEO, and zero otherwise. GOV has a value of one if the largest shareholder is government and/or government representative and zero otherwise, and FOR indicates whether the largest shareholder is a foreign shareholder. The Herfindahl index (HHI) measures the ownership concentration, and TRADE measures the percentage of shares that are tradable. LnAssets is computed using the nature logarithm of total assets. IBSIZE is the number of independent directors who are on the board of directors. Results presented in this table are obtained from OLS regressions based on model (4)

** $p < 0.05$. *N* is the number of observations

whose board meeting frequencies in 2005 were less than three times (i.e., SBMF2005 < 3). As shown in Table 6, the change in supervisory board meeting frequency (ΔSBMF) was negatively related to the change in the total compensation of all executives (ΔTEC) at the 5% significance level. It indicates that, for firms whose supervisory boards met less than three times in 2005, the marginal effect of their supervisory board meeting on the change in total executive compensation would be RMB 47,301.62 in 2006.

We follow Ding et al. (2009) and investigate the total executive pay-supervisory board relationship in a sub-sample of firms whose largest shareholder is government/government agencies. According to the empirical results presented in Table 6, we find that one more supervisory board member results in an increase of RMB 278,012.20 in the total executive compensation. We also redo the total executive compensation-supervisory board sensitivity using firms having foreigners among the ten largest shareholders only. As presented in Table 6, one more supervisory board member results in an increase of RMB 652,206.90 in the total executive compensation. These results are consistent with those presented by Ding et al. (2009) which examine individual executives' compensation.

Table 6 The effects of changes in supervisory boards on the change in executive pay

Dep. var.	Raw sample ΔTEC	SBMF < 3 ΔTEC	GOV = 1 ΔTEC	FOR = 1 ΔTEC
ΔSBMF	−7127.992 (12963.150)	−47301.62** (23568.480)	12534.490 (28374.630)	−24808.460 (64166.280)
ΔSBS	65331.300 (44118.800)	39306.760 (61088.420)	278012.2*** (94573.800)	652206.9** (286438.200)
ΔROE	−22574.75*** (7575.889)	−20225.33*** (7548.014)	9703.702 (9960.946)	392779.000 (270694.100)
ΔD/E	95286.54*** (17615.590)	210339*** (24407.690)	−98159.680 (99498.940)	−456564.200 (926713.700)
ΔAssets	0.000** (0.000)	0.000** (0.000)	0.000** (0.000)	0.000*** (0.000)
ΔIBSIZE	32251.520 (56153.110)	73707.710 (81367.790)	89634.780 (128003.400)	571253.900 (560069.100)
Industry dummies	Included and mixed			
Constant	73990.290 (103470.400)	34204.490 (156330.800)	−104708.500 (259429.700)	56565.040 (331830.500)
N	1307	543	290	26
Adj. R^2	0.0353	0.1678	0.0088	0.4822
F-value	3.65***	7.83***	1.15	3.59***

The dependent variable ΔTEC is the change in the total compensation of all executives. ΔSBMF and ΔSBS measure the change in the supervisory board meeting frequency and that in the size of supervisory boards from 2005 to 2006, respectively. ΔROE, ΔD/E, and ΔAssets are the change in return on equity, that in the debt-equity ratio, and that in the total book value of assets from 2005 to 2006, respectively. ΔIBSIZE reflects the change in the number of independent directors. GOV has a value of one if the largest shareholder is government and/or government representative and zero otherwise, and FOR indicates whether the largest shareholder is a foreign shareholder. ROE × GOV and ROE × FOR measure the interactions between firm performance and ownership structure. SBMF × GOV and SBMF × FOR measure the interactions between supervisory board meeting frequency and ownership structure. SBS × GOV and SBS × FOR measure the interactions between the size of supervisory boards and ownership structure. Industry dummies include 12 dummy variables indicating the industries categorized by China Securities Regulatory Commission (CSRC). Results presented in this table are obtained from OLS regressions based on model (5)

*** $p < 0.01$, ** $p < 0.05$. *N* is the number of observations

4.6 Robustness tests

Robustness tests are done using alternative proxies for financial performance, risk taken by firms, and ownership structure variables. We have found no qualitative change in the results. Variance inflation factors (VIF) are estimated; our empirical results are not biased due to potential multicollienarity. In short, we conclude that the empirical results presented in this study are robust.

5 Conclusions and future research

As one of the typical emerging economies in the world, China's corporate governance reform provides a unique setting to offer insights to the global effort to enhance governance effectiveness and efficiency. It combines the two well-accepted corporate governance mechanisms in the world, the Anglo-American and the German systems. While the CSRC intends to strengthen the monitoring effectiveness of the Chinese corporate governance system with the co-existence of independent directors from the American system and supervisory boards from the German system, evidence of the functionality of the supervisory boards is mixed in this stream of literature. In order to protect the minority shareholders' benefits, the CSRC makes significant efforts, one of which is through the newly amended Corporate Law which became effective at the beginning of 2006.

This study attempts to address the monitoring role played by the supervisory board by comparing its effects on total executive compensation before and after this new version of the Chinese Corporate Law became effective. Findings indicate that the amendment significantly strengthens the monitoring effects of supervisory board, since in 2006, more supervisory board meetings help curb total executive compensation when they fall in a proper range; this is not found in 2005. We also find that a larger supervisory board size tends to increase the total executive compensation, but it lowers the pay-performance sensitivity. In addition, the marginal effects of supervisory board's characteristics on the change in total executive compensation depend on the range of supervisory board meeting frequency and certain ownership features. In summary, documenting the joint and non-linear effects of supervisory boards, we provide vivid evidence that the "legal approach" works well in China's unfolding governance reform. This conclusion further confirms the results presented in Ding et al. (2009).

Multiple contributions are made to the academic literature and the practice; findings in the current study not only add to the literature on corporate governance under agency theory, but also provide crucial policy implications for both the Chinese authorities and other emerging markets in the world. Future research can be done by investigating the effectiveness of the Chinese two-tier board mechanism, consisting of both boards of directors and supervisory boards.

References

Bai C, Liu Q, Lu J, Song FM, Zhang J (2004) Corporate governance and market valuation in China. J Comp Econ 32:599–616

Bauman M, Shaw K (2006) Stock option compensation and the likelihood of meeting analysts' quarterly earnings targets. Rev Quant Financ Acc 26(3):301–319

Bertrand M, Mullainathan S (2001) Are CEOs rewarded for luck? The ones without principals are. Quart J Econ 116:901–932
Blackwell D, Dudney D, Farrell K (2007) Changes in CEO compensation structure and the impact on firm performance following CEO turnover. Rev Quant Financ Acc 29(3):315–338
Boyd B (1994) Board control and CEO compensation. Strateg Manag J 15:335–344
Chen C (2002) Additional evidence on the association between director stock ownership and incentive compensation. Rev Quant Financ Acc 19(1):21–44
Chen G, Firth M, Kim J (2000) The post-issue market performance of initial public offerings in China's new stock markets. Rev Quant Financ Acc 14:319–339
Chen G, Firth M, Gao DN, Rui OM (2006) Ownership, corporate governance, and fraud: evidence from China. J Corp Finance 12:424–448
Cheng S, Evans J, Nagarajan N (2008) Board size and firm performance: the moderating effects of the market for corporate control. Rev Quant Financ Acc 31:121–145
Core J, Holthausen R, Larcker D (1999) Corporate governance, chief executive officer compensation, and firm performance. J Financ Econ 51:371–406
Crossland C, Hambrick D (2007) How national systems differ in their constraints on corporate executives: a study of CEO effects in three countries. Strateg Manag J 28:767–789
Cyert R, Kang S, Kumar P (2002) Corporate governance, takeovers, and top-management compensation: theory and evidence. Manage Sci 48:453–469
Dahya J, Karbhari Y, Xiao J, Yang M (2003) The usefulness of the supervisory board report in China. Corp Gov Int Rev 11:308–321
Del Guercio D, Dann L, Partch M (2003) Governance and boards of directors in closed-end investment companies. J Financ Econ 69:111–152
Ding S, Wu Z, Li Y, Jia C (2009) Can the Chinese two-tier-board system control the board chair pay? Asian J Finance Account 1:1–22
Eisenberg TS, Sundgren S, Wells MT (1998) Larger board size and decreasing firm value in small firms. J Financ Econ 48:35–54
Elston J, Goldberg L (2003) Executive compensation and agency costs in Germany. J Bank Finance 27:1391–1410
Firth M, Fung P, Rui O (2006) Corporate performance and CEO compensation in China. J Corp Finance 12:693–714
Firth M, Fung P, Rui O (2007) Ownership, two-tier board structure, and the informativeness of earnings: evidence from China. J Account Public Policy 26:463–496
Groves T, Hong J, McMillan J, Naughton B (1994) Autonomy and incentives in Chinese state enterprises. Quart J Econ 109:181–209
Groves T, Hong J, McMillan J, Naughton B (1995) China's evolving managerial labor market. J Polit Econ 103:873–892
Hartzell J, Starks L (2003) Institutional investors and executive compensation. J Finance 58:2351–2374
Haw I, Qi D, Wu D, Wu W (2005) Market consequences of earnings management in response to security regulations in China. Contemp Account Res 22:95–140
Jensen MC (1993) The modern industrial revolution, exit, and the failure of internal control systems. J Finance 48:831–880
Jensen M, Murphy KJ (1990) Performance and top management incentives. J Polit Econ 98:225–264
Jia C, Ding S, Li Y, Wu Z (2009) Fraud, enforcement action, and the role of corporate governance: evidence from China. J Bus Ethics 90:561–576
Kaplan S (1994) Top executive rewards and firm performance: a comparison of Japan and the United States. J Polit Econ 102:510–546
Karamanou I, Vafeas N (2005) The association between corporate boards, audit committees, and management earnings forecasts: an empirical analysis. J Account Res 43(3):453–486
Kato T, Long C (2006) Executive compensation, firm performance, and corporate governance in China: evidence from firms listed in the Shanghai and Shenzhen Stock Exchanges. Econ Dev Cult Change 54:945–983
Ke B, Petroni K, Safieddine A (1999) Ownership concentration and sensitivity of executive pay to accounting performance measures: evidence from publicly and privately-held insurance companies. J Account Econ 28:185–209
La Porta R, Lopez-de-Silanes F, Shleifer A, Vishny R (2000) Investor protection and corporate governance. J Financ Econ 58:3–27
Lansing P, Knoedgen S (2007) The causes and consequences of the global inflation of CEO salaries. Int J Manag 24(1):70–75
Levitt A (2005) Corporate culture and the problem of executive compensation. J Appl Corp Finance 17:41–43

Li D, Moshirian F, Pham P, Zein J (2006) When financial institutions are large shareholders: the role of macro corporate governance environments. J Finance LXI:2975–3007
Liu D, Otsuka K (2004) A comparison of management incentives, abilities, and efficiency between SOEs and TVEs: the case of the iron and steel industry in China. Econ Dev Cult Change 52:759–780
Mengistae T, Xu L (2004) Agency theory and executive compensation: the case of Chinese state-owned enterprises. J Labor Econ 22:615–637
Palia D, Porter R (2004) The impact of capital requirements and managerial compensation on bank charter value. Rev Quant Financ Acc 23(3):191–206
Ryan H Jr, Wiggins R III (2004) Who is in whose pocket? Director compensation, board independence, and barriers to effective monitoring. J Financ Econ 73:497–524
Shleifer A, Vishny R (1986) Large shareholders and corporate control. J Polit Econ 94:461–488
Shleifer A, Vishny R (1997) A survey of corporate governance. J Finance 52:737–783
Sun Q, Tong W (2003) China share issue privatization: the extent of its success. J Financ Econ 70:183–222
Vafeas N (1999) Board meeting frequency and firm performance. J Financ Econ 53:113–142
Vafeas N, Waegelein J (2007) The association between audit committees, compensation incentives, and corporate audit fees. Rev Quant Financ Acc 28(3):241–255
Vafeas N, Waegelein J, Papamichael M (2003) The response of commercial banks to compensation reform. Rev Quant Financ Acc 20(4):335–354
Wang F, Xu Y (2004) What determines Chinese stock returns. Financ Anal J 60:65–77
Wei Z, Xie F, Zhang S (2005) Ownership structure and firm value in China's privatized firms: 1991–2001. J Financ Quant Anal 40:87–108
Xi C (2006) In search of an effective monitoring board model: board reforms and the political economy of corporate law in China. Conn J Int Law 22:1–46
Xiao JZ, Dahya J, Lin Z (2004) A grounded theory exposition of the role of the supervisory board in China. Br J Manag 15:39–55
Xie B, Davidson W III, DaDalt PJ (2003) Earnings management and corporate governance: the role of the board and the audit committee. J Corp Finance 9:295–316
Yeh Y, Lee T, Pen J (2002) Stock returns and volatility under market segmentation: the case of Chinese A and B shares. Rev Quant Financ Acc 18(3):239–257
Yermack D (1996) Higher market valuation of companies with a small board of directors. J Financ Econ 40:185–211
Yu Y (2008) Ma, Mingzhe 18K a day: the average compensation of top three executives of PingAn tops 40 million. Jing Bao, March 21, 2008
Yueh L (2004) Wage reforms in China during the 1990s. Asian Econ J 18:149–164
Zhang L, Ding S (2006) The effect of increased disclosure on cost of capital: evidence from China. Rev Quant Financ Acc 27(4):383–401