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CEO power, ownership structure and pay performance in Chinese banking

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ABSTRACT

This paper examines the determinants of executive compensation in Chinese banking during 2005–2012. Using the fixed effects panel, 2SLS and dynamic GMM regressions, I find that there is no significant positive pay performance relation, and CEO power does not necessarily exhibit higher levels of executive compensation. However, I show that ownership structure (measured by ownership concentration and ownership identification) and compensation committee are significant in determining executive compensation in Chinese banking. It suggests that government may ensure efficient monitoring functions when the pay incentive is ineffective. The results have important implication on bank regulation and corporate governance in emerging markets.

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1. Introduction

This paper attempts to examine the determinants of executive compensation in Chinese banking. Particularly, it investigates whether powerful chief executive officers (CEOs) have privileges over the board to obtain higher remunerations. In general, agency theory states that CEO stock options and equity incentive should be utilized to align the incentives of top managers with the interests of

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shareholders (Jensen & Meckling, 1976; Fama & Jensen, 1983); while in countries where corporate governance is weak, the pay practice may follow a relation-based rather than a market-based contract (Luo & Jackson, 2012b), and management is inclined to "undertake activities to increase their own welfare by consuming more resources at the expense of minority shareholders" (Shleifer & Vishny, 1997). Moreover, "Decisions with extreme consequences are more likely to be taken when the CEO is more powerful" (Adams, Almeida, & Ferreira, 2005). Nonetheless, an optimal compensation contract is important because the degree of CEO power affects not only the minority shareholders, but also national economic stability. For example, in the 2008 financial crisis, poor bank CEO incentives are criticized to be "one of the most fundamental causes" of the financial crisis (Blinder, 2009; Fahlenbrach & Stulz, 2011)[1]. Therefore, regulators need to continually improve their understanding of corporate governance in the banking system and enhance their ability to monitor the risks that banks have taken (Hagendorff, Collins, & Keasey, 2007).

This study focuses on Chinese banking because the Chinese financial market has a unique governance structure. Academics argue that the effectiveness of commonly used agency-based corporate governance mechanisms may not work in emerging economies (Ball, Robin, & Wu, 2000). Particularly, Palvia (2011) documents that most U.S. commercial banks are private and over 90% of them have assets less than US $1 billion; while the Chinese banks are dominated by state owned banks and have huge market capitalization. Generally speaking, the U.S. banking is a mix of both privately-owned and publicly-traded institutions. They are overseen by several regulatory agencies, such as the Federal Reserve, the Federal Deposit Insurance Corporation (FDIC), or the Office of the Comptroller of Currency (OCC). Peek, Rosengren, and Tootell (2003) find that the Federal Reserve has an informational advantage over the public; if incorporating the Federal Reserve's confidential bank supervisory data, it will significantly improve forecasts of variables relevant for the conduct of monetary policy. In contrast, the China Banking Regulatory Commission (CBRC) is the primary regulator governing the overall banking system, while the People's Bank of China (PBC) also has regulatory authority monitoring individual banks' operations. Because the issues of CEO entrenchment and weak corporate governance might lead to the presence of inefficient compensation contract (Luo & Jackson, 2012a), and the "complexity of the banking business increases the asymmetry of information and diminishes the stakeholders' capacity to monitor bank managers' decisions" (Andres & Vallelado, 2008), regulatory monitoring of financial firms may be especially beneficial to provide the board of directors in the banks, as well as shareholders valuable information which leads to enhanced managerial discipline (Palvia, 2011).

This is the first study to examine the pay practice in Chinese banking during 2005–2012. The literature in this field is scant (Conyon & He, 2012; Firth et al., 2006, 2007; Kato & Long, 2006). Previous studies typically exclude the financial firms because the banking industry is considered to be regulated and opaque in assets (Morgan, 2002). The exclusion of financial firms helps focus more closely on the tangible side of the economy; however, regulatory monitoring of banks yields valuable information for investors and regulators (DeYoung et al., 2001). Such information is also valuable for economic forecasting or in predicting bank failure (Wheelock & Wilson, 2005). For instance, Gunther and Moore (2003) show that accounting data provided by banks enable supervisors to detect risky banks and to decide whether an early on-site exam must be conducted; therefore, banks would report their financial statements in a more comprehensive manner if regulatory actions are involved.

To empirically test the pay performance sensitivity (PPS), I use both Ordinary Least Square (OLS) and the fixed effects (FE) panel regressions. In addition, this study investigates whether powerful CEOs have privileges over the board to obtain abnormal pay. To proxy managerial power, following Finkelstein (1992), I identify four sources of CEO power: structural power, ownership power, expert power, and prestige power. To control for endogeneity problems in model specification, I also employ Two-Stage Least Square (2SLS) and dynamic Generalized Method of the Moments (GMM) methods. In general, I find that both agency theory and managerial power theory do not hold; however, ownership structure (measured by both ownership concentration and ownership identification) is significant in determining executive compensation in Chinese banking. It suggests that government may ensure efficient

[1] For example, Stan O'Neal, the former CEO of Merrill Lynch, received an annual compensation package up to US$ 161.5 million, but the company suffered huge losses up to US$ 8.4 billion in sub-prime crisis (Farrell, 2007).

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monitoring functions when the pay incentive is ineffective. The results have important implications on banking regulation and corporate governance in emerging market.

The rest of the manuscript is organized as follows: Section 2 presents a literature review and develops hypotheses. Section 3 describes data and methodologies. Section 4 reports data analyses and empirical results, and Section 5 concludes.

2. Literature review and hypotheses

Agency theory states that management compensation arises from the separation of ownership and control. To align the interests of the managers with those of the owners, it is important for owners to establish incentive contracts for the managers and effective monitoring mechanisms within the firm. Jensen and Meckling (1976) and Fama and Jensen (1983) claim that a positive relationship between management compensation and firm performance is in line with shareholders' interest. Specifically, the agency theory predicts that executive compensation depends, at least in part, on changes in firm performance, hence the higher the PPS, the lower the level of "skimming" (Fama & Jensen, 1983). In the Chinese context, relevant literature shows that the Chinese public firms follow agency-based compensation contract (Kato & Long, 2006; Firth et al., 2006, 2007). Firth et al. (2006, 2007) claim that the PPS in China is 0.021; while Kato and Long (2006) find that an additional $1000 of shareholder value is associated with 5.3 cents of additional executive compensation. Conyon and He (2012) also document that Chinese executive compensation is positively correlated to both accounting and stock market performance, although the link to accounting performance is more robust. Therefore, it hypothesizes that:

H1. Firm performance is positively associated with executive compensation in Chinese banking.

In contrast to agency theory, the entrenchment theory assumes that self-interested executives can extract rents for themselves by manipulating board structures to design favorable compensation packages, subject mainly to an "outrage" constraint applied by the press and other media (Bebchuk & Fried, 2004). The "managerial power" theory claim that executives, and CEOs in particular, enjoy positions of power in relation to the design of pay packages, being able to insulate themselves from constraints applied by regulators and shareholders. From this rent-extraction perspective, agency theory is said to be "under-socialized" and ignores social forces in favor of supposed arm's length contracting (Aguilera & Jackson, 2003). In countries where corporate governance is weak, the arrangement of CEO compensation has less to do with incentive alignment, but more to do with CEO self-enrichment or "skimming" (Barkema & Gomez-Mejia, 1998; Conyon & Peck, 1998; Bertrand & Mullainathan, 2001). In the Chinese banking system, the stylized fact is that state shareholding and concentrated ownership are prevailing and this could cause severe principal–principal problems because firms with different levels of managerial ownership may not experience alignment-of-interest effects, but entrenchment effects (Kim et al., 2004). Bebchuk et al. (2002) argue that in firms with poorer governance, CEOs can more easily exert their influence over the board of directors and demand higher pay. Hence, Bebchuk et al. (2002) claim that there is a direct causal link between corporate governance and CEO pay; powerful CEOs can exercise enormous sway over boards, rendering the boards ineffective in setting appropriate CEO contracts (Bebchuk & Fried, 2004). Accordingly, this study hypothesizes that:

H2. CEO power will result in higher levels of executive compensation in Chinese banking.

How do other factors affect bank managers' compensation in an emerging market? Literature suggests that in the presence of inferior monitoring quality, executive compensation and monitoring activities of the board are argued to be substitutes and jointly contribute to the alleviation of agency problems (Hermalin & Weisbach, 1998, 2003; Core, Guay, & Larcker, 2003). Jensen and Murphy (1990) suggest that researchers should examine the factors outside of agency-based framework to explain CEO pay, or at least empirically test the explanatory value of alternative paradigms such as a firm's ownership structure, board characteristics, remuneration committee, the market for corporate takeover, or even the general public environment. However, the relevance of banks in the economic system and the nature of the banking business make the problems involved in corporate governance highly specific, since the "complexity of the banking business increases the asymmetry of information

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and diminishes the stakeholders' capacity to monitor bank managers' decisions" (Andres & Vallelado, 2008).

The stylized fact in the emerging market of China is that managerial markets are not well developed, as the government or states often intervene. For example, CEOs are often selected from the relatives of the founder or appointed by the government, and there is a common fear that they build up their wealth at the cost of shareholders (Ghosh, 2006). In addition, the finance reform has been lagging in China, especially the stat-owned bank reform. At the early stage of banking reform, many new shareholding banks were established, reflecting the reform approach of imposing external pressure to the existing banks by adding new participants. The approach has achieved some effects; however, it did not work with the existing state-owned banks. Particularly, the low efficiency in the Chinese banking sector has accumulated a huge amount of non-performing loans, which have become the obstacles to the future growth of the Chinese economy. In 2004, the Chinese government decided to enact laws to ensure the commercial banks' independence and take a radical reform on the state-owned banks. The 2004 recapitalization injected billions of funds into the banking sector with aims to enhance the corporate governance of the banks. Meanwhile, the CBRC has asked the banks to fulfill a series of requirements for the establishment of the board of directors and the board of supervisors, the diversification of ownership, the adoption of prudential accounting standards, and the improvement of the management of the banks. The new emphasis thus significantly sped up the initial public offering process of the Chinese banks. However, Young, Peng, Ahlstrom, Bruton, and Jiang (2008) argue that a principal–agent perspective may have limited application in emerging economies, because most corporations in these countries are controlled by a family or the state with concentrated ownership (Faccio, Lang, & Young, 2001). As a result, there is more potential for conflict between majority shareholders and minority shareholders than there is between shareholders (principals) and managers (agents). Accordingly, this study considers the unique aspects of ownership structure in Chinese banking and hypothesizes that:

H3. Ownership structure is significant in determining executive compensation in Chinese banking.

3. Data and methodology

3.1. Sample and data description

The dataset is drawn from the annual reports of Chinese financial firms and supplemented from the China Center for Economic Research (CCER) database. The sample consists of all the public financial corporations listed on the Shanghai stock exchange and the Shenzhen stock exchange during 2005–2012. The firms are classified as banking and financial firms if their first two digits of Global Industry Classification Standard (GICS) codes are "40." The commercial banks include all the state-owned commercial banks, joint-stock commercial banks, city commercial banks, rural commercial banks, and foreign banks. The major commercial banks include the state-owned commercial banks (SOCBs) and the joint stock commercial banks (JSCBs). There are five SOCBs: the Agricultural Bank of China (ABC), the Industrial and Commercial Bank of China (ICBC), the China Construction Bank (CCB), the Bank of China (BOC), and Bank of Communications (BOCOM). The JSCBs include CITIC Industrial Bank, Everbright Bank of China, Huaxia Bank, Guangdong Development Bank, Shenzhen Development Bank, China Merchants Bank, Shanghai Pudong Development Bank, Industrial Bank, and China Minsheng Banking Corporation. The final sample is adjusted through elimination of missing values, yielding 214 observations in an unbalanced panel dataset.

3.2. Measures of CEO compensation

Following Kaplan (1994) and Kato and Long (2006), I use the natural logarithm of one plus three-highest-paid executive compensation as the dependent variable in the following equation:

$$\text{LnPAY} = \text{Ln}(1 + \text{three_highest_paid_executive_compensation}) \quad (1)$$

This logarithmic transformation has a superior advantage because the regression coefficients measure the proportionate effect rather than the dollar amount effect (Core, Holthausen, & Larcker, 1999).

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The three-highest-paid executive compensation is the total annual cash compensation for the CEO and the two other highest-paid executives (often vice CEOs). Since equity incentive is rarely used in Chinese banking (Leone, Wu, & Zimmerman, 2006), the total cash compensation includes base salary, bonuses, and commissions, not including the grants of stock options to CEOs.

The disclosure of executive compensation information is required by the Chinese Securities Regulatory Committee (CSRC) in the passage of the "Regulation for the Content and Format of Public Firms' Information Disclosure, No. 2: Content and Format of Annual Reports". The regulation has been constantly amended since 1998. In the 1998 version, the regulation does not require listed firms to disclose executive compensation information in their annual reports. The 2001 amended version, however, requires listed firms to report the sum of total compensation for the three highest paid executives and the three highest-paid board members (including executive board members). After 2007, listed firms are further required to report each individual board member or executive's total annual compensation.

3.3. Measures of explanatory variables

The explanatory variables are formulated to empirically test three hypotheses: H1–H3, given the literature discussed in Section 2. Hypothesis H1 predicts that firm performance should be positively correlated to executive compensation. Core et al. (1999) and Cheung, Jing, Lu, Rauc, and Stouraitisa (2009) suggest that firm performance should be measured by using both internal accounting performance and external market performance, hence, I use return on assets (ROA) to gauge internal firm performance, and use annual stock return (RET) as an external measure.

It is well documented that the Chinese public firms have distinctive corporate governance and institutional features (Firth et al., 2006; Kato & Long, 2006; Luo, 2014). Haid and Yurtoglu (2006) suggest that identification of the owners has significant effects on the levels of executive compensation. Unfortunately, ownership identity effectively addresses the issues of risk aversion, wealth creation, and shareholder value, but are incapable of examining the powers to control and monitor management that are conferred by actual shareholding (Cubbin & Leech, 1983). Conversely, ownership concentration focuses on the ability of the owners to monitor and control managerial discretion, but fails to take into consideration the investment preferences of the owners and how they affect the priorities and strategies of the firm. Therefore, Angelucci et al. (2002) and Ongore (2011) claim that use either the ownership concentration or the ownership identity alone cannot claim to have exhaustively analyzed the relationship between ownership structure and firm performance. In this study, I measure ownership structure in two dimensions: ownership concentration and ownership identity. Specifically, I include SOCB – a dummy variable of a state owned bank, which takes the value of one if the bank is controlled by the government, or zero otherwise, and HFDL – Herfindahl index, the sum of the squares of the proportion of shares held by the five largest shareholders within the firm as a proxy of ownership concentration.

Finkelstein (1992) identify four sources of power: structural power, ownership power, expert power, and prestige power. However, this definition does not lend itself to natural and unequivocal measures of CEO power, because CEO power may come from many formal and informal sources (Pfeffer, 1992). In this study, I consider powerful CEOs as those who can consistently influence major decisions over the board in the banks; in other words, CEO power is viewed as a consequence of his formal position and titles, such as status as a founder, and status as the sole insider on the board. Specifically, I use four measures to gauge CEO power, and incorporate the unique aspects of governance structure in Chinese banking. The first measure of CEO power is a dummy variable that indicates whether the CEO is also one of the company's founders; the second measure of CEO power is a dummy variable that indicates whether the CEO is also an insider on the board; the CEO is considered to be an insider of a company, if he or she beneficially owns more than 10% of a company's voting shares; the third measure of CEO power is a dummy variable that indicates whether the CEO is also served as a chairperson on the board, or CEO duality; the fourth measure of CEO power is a dummy variable of CEO tenure, which indicates whether the CEO is appointed or nominated by the government with tenure. Particularly, I review the CEOs from the major SOCBs are with CEO tenure, while those CEOs from the other types of banks are not. Finally, I create a CEO power index using an average of the

aforementioned measures. Although this paper emphasizes on the overall effects of CEO power on executive compensation, it also investigates the effects of each individual component of CEO power on the pay performance relation. Due to limitation of page length, I only report the results from using the CEO power index.

Literature suggests that CEO compensation is a function of a set of firm-specific attributes (Jensen, 1986; Jensen & Murphy, 1990), such as economic factors, codes of corporate governance, listing agreements, corporate laws, and even accounting practices (Luo, 2014). I first include firm size LnSIZE, the natural logarithm of total asset as explanatory variables. Murphy (1999) and Pagano, Roell, and Zechner (2002) show that firm size is one of the major factors that can explain a firm's decision; since large firms typically require more talented managers, and thereby managers in large firms generally demand higher levels of compensation (Core et al., 1999). In addition, Jensen (1986) and Stulz (1999) document that firm's leverage changes have significant effects on the aftermarket performance of publicly listed firms. I also control of CEO ownership using SHARE, which is the proportion of shares held by the CEO. As suggested by Barkema and Gomez-Mejia (1998) and Conyon and Peck (1998), firms with compensation committees are more likely to design a better compensation contract in favor of the shareholders' interests. In the Chinese context, Luo and Jackson (2012b) find that the involvement of a compensation committee in the corporate governance mechanism has substantial impact on executive compensation. Therefore, I also include COMP, a dummy variable which takes the value of one if the firm has a compensation committee on board, or zero otherwise. Board characteristic is another factor affecting executive compensation. Jensen (1986) argues that large boards are less effective than small boards, because larger boards may suffer free-riding problems in decision-making and thereby diluting monitoring incentives for board members. Empirically, Vafeas (1999) finds that firm performance typically improves subsequent to the abnormal frequent board meetings, and such improvements are stronger in the firms that performed poorly before. As a result, asset appropriation could cause more board meetings. Nevertheless, a high number of board meetings can be interpreted as a signal of high importance of the board and hence of sound corporate governance. Therefore, I include board meeting frequency LnMEET—natural logarithm of the total number of annual board meetings as an independent variable.

3.4. Empirical model and estimation method

3.4.1. Empirical model

To test the three main hypotheses, this study develops the following empirical model in the following equation:

$$\begin{aligned}\mathrm{LnPAY}_{it} = \alpha_i + \beta_1\mathrm{PERFORMANCE}_{it} + \beta_1\mathrm{POWER}_{it} + \beta_3\mathrm{SOCB}_{it} + \\ \beta_4\mathrm{HFDL}_{it} + \sum_{i=1}^{N}\gamma_i\mathrm{CONTROLS}_{it} + \varepsilon_{it}\end{aligned} \tag{2}$$

where the dependent variable is LnPAY, the natural logarithm of executive compensation in Chinese banking. Firm performance is measured by ROA or RET. POWER is CEO power index measured in four dimensions. Ownership structure is measured by SOCB, a state owned bank dummy and HFDL, the Herfindahl index to measure ownership concentration. The control variables include firm size (LnSIZE), CEO ownership (SHARE), compensation committee dummy (COMP), and the natural logarithm of the board meeting frequency (LnMEET). Finally, I use ε_{it} as an idiosyncratic component to capture all the other unobserved effects. According to the hypotheses, β_1 and β_2 should be positive, while β_3 and β_4 should be negative.

3.4.2. Estimation method

To get preliminary results, I employ cross-sectional OLS model with robust standard error to estimate the coefficients of firm performance, ownership structure (state ownership and ownership concentration), and CEO power on executive compensation in Chinese banking. The pooled OLS is appropriate because the time variant effect is not significant in regression and most sample firms

have short-period longitudinal data. To control for endogeneity problem between firm performance and executive compensation, I lag the firm performance measures ROA and RET in one period.

While OLS is commonly used in cross-sectional regression, it is better to employ some advanced techniques specifically designed to take advantage of panel data. FE panel estimation focuses more on the between or within effects. Since the goal of this research is designed to study the causes of changes within an entity, I further construct the following linear FE panel regression model in the following equation:

$$y_{it} = \sum_{j=1}^{K} x'_{j,it}\beta_j + \mu_{it} \tag{3}$$

where y_{it} is the dependent variable observed for firm i ($i = 1, \ldots, N$) at time t ($t = 1, \ldots, T$), x_{it} is the independent variables matrix for firm i at time t. β_j is the estimated coefficient for explanatory variables $x_{j,it}$, and μ_{it} is the stochastic disturbance that is independent and identical with normal distributions in the form of $\varepsilon_{it} \sim$ i.i.d. $N(0, \sigma_\varepsilon{}^2)$.

Literature suggests that governance structures arise endogenously in response to the constrained optimization problems faced by the relevant parties (Hermalin & Weisbach, 2006). As suggested by Murphy (1999) and Buck, Liu, and Skovoroda (2008), I employ a one-period lagged firm performance to control for endogeneity problem. In Eq. (3), I use the FE panel model to control for unobserved firm specific factors and the endogeneity problem, because the fixed effect model allows for endogeneity of the regressors with the individual effects. Relevant analyses are also available for the random effects panel regression, and the model fit statistics are conducted by the Hausman test and available upon request.

Another important technique employed in the analysis is to produce robust standard error estimates for linear panel models and adjust the standard errors for clustering effects. Peterson (2009) points out that, in most empirical finance studies, "Researchers are often confronted with panel data. In these data sets, the residuals may be correlated across firms or across time, and OLS standard errors can be biased." However, "42% of the papers did not consider possible dependence in the residuals. Many of the remaining 58% of papers did not use the correct method to adjust standard errors." To deal with the problems of cross-sectional dependence of the estimated residuals, Peterson (2009) suggests that when both individual and time dependencies are present, researchers have to address one parametrically and then estimate clustered standard error on the other dimension. In this study, I specifically examine these issues and report robust t-statistics with clustering of firms in the FE panel regressions.

I also use 2SLS regressions in an attempt to isolate the effects of CEO power on firm performance from other sources of variation. Because instrumental variable (IV) techniques are most directly applicable to them, I focus on cross-sectional regressions of executive compensation on measures of firm performance similar to those in Eq. (2). I add firm leverage (LEV), total debt to total asset ratio into Eq. (4) as an instrumental variable. LEV is appropriate because it can be used to address omitted variable bias and errors-in-variable bias. Specifically, I construct the following second stage estimating method in the following equation:

$$\begin{aligned} \mathrm{ROA}_{it} = \alpha_i + \beta_1 \mathrm{LnSIZE}_{it} + \beta_2 \mathrm{LEV}_{it} + \beta_3 \mathrm{SOCB}_{it} + \beta_4 \mathrm{HFDL}_{it} + \beta_5 \mathrm{SHARE}_{it} \\ + \beta_6 \mathrm{POWER}_{it} + \beta_7 \mathrm{COMP}_{it} + \beta_6 \mathrm{LnMEET}_{it} + \varepsilon_{it} \end{aligned} \tag{4}$$

Lastly, I employ a more advanced technique—the dynamic GMM method to control for endogeneity problems by taking the first difference to eliminate individual specific effects and time-invariant explanatory variables. Specifically, the dynamic GMM estimation process can be expressed in the following equation:

$$Y_{i,t} = \alpha_i + \gamma Y_{it-1} + \sum_{j=1}^{K} \chi_{it}^{j} \beta_i + \varepsilon_{it} \tag{5}$$

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As suggested by Edison, Levine, Ricci, and Sløk (2002), dynamic panels are capable of handling the potential endogeneity of explanatory variables. Specifically, the GMM method takes first differences of the variables and removes the state effects. Therefore, the GMM estimator has the ability to produce an equation that is estimable using instrumental variables in which endogenous explanatory variables are instrumented with suitable lags of their own (Arellano & Bond, 1991). In contrast to the Arellano and Bond (1991) method, the Blundell and Bond (1998) method employs lagged differences in addition to the lags of the endogenous variables, producing more robust results as the autoregressive processes become persistent. Therefore, I apply the Blundell and Bond (1998) method in Eq. (5) to address the dynamic dimension of firm characteristics and control for the response processes across different time horizons.

To test the validity of instruments in Eq. (5), I examine the correlation between the instruments and the error term using the Sargan test of over-identification of restrictions. In addition, I examine the AR (2) statistic developed by Arellano and Bond (1991) to test for lack of second-order serial correlation in first-difference residuals. Since the first-order serial correlation AR (1) is fairly common in the residuals, emphases are focused more on using AR (2) statistics of the validity of estimation. Baltagi et al. (2009) state that "One should reject the null of the absence of first order serial correlation and not reject the absence of second order serial correlation." Therefore, I expect an insignificant Sargan χ^2 test, and some degree of first-order serial correlation, and absence of second-order serial correlation.

4. Empirical results

4.1. Univariate data analyses

Table 1 reports the descriptive statistics of executive compensation in Chinese banking over 2005–2012. It shows that the average three-highest-paid executive compensation increased steadfastly over time. Particularly, the average of three-highest-paid executive compensation increased from 1.08 million Chinese yuan (US$ 0.16 million) in 2005 to 2.43 million Chinese yuan (US$ 0.36 million) in 2012. Moreover, the relative difference between the mean of three-highest-paid executive compensation widens substantially. Meanwhile, the volatility of three-highest-paid executive compensation increased from 1.04 in 2005 to 1.77 in 2012. Apparently, the structural reform in 2004 has remarkable consequences on the compensation volatility in Chinese banking. In comparison, the 2008 financial crisis has even more profound effects on the three-highest-paid executive compensation. Although the minimum executive compensation is far below 1 million Chinese yuan for some years, the maximum values of executive compensation increased consistently over time. Finally, it shows that the distribution of Chinese executive compensation is highly skewed with positive kurtosis.

Table 2 presents the summary of descriptive statistics. The average logarithm of the three-highest-paid executive compensation is 15.066, ranging from a high of 18.771 to a low of zero. The mean ROA is low (0.023) and skewed (0.721), while the mean RET is high (0.396) and positively skewed (3.367). The maximum value of the logarithm of firm size is 30.496 and the minimum is 20.036.

Table 1
CEO compensation in Chinese banking during 2005–2012.

Year	*N*	Mean	Median	St. Dev	Min	Max	Skewness	Kurtosis
2005	8	1.08	0.61	1.04	0.11	3.23	1.17	3.23
2006	11	1.84	1.09	1.72	0.12	5.02	0.93	2.39
2007	21	3.58	1.52	9.19	0.00	47.33	4.39	21.38
2008	27	2.83	2.18	2.65	0.25	11.11	1.60	5.03
2009	30	2.70	1.76	3.16	0.00	16.44	3.04	13.32
2010	36	2.25	2.05	1.45	0.00	6.20	0.64	3.00
2011	40	2.57	2.36	1.77	0.60	9.67	1.86	7.83
2012	41	2.43	2.00	1.77	0.51	9.55	2.09	8.32

This table reports the descriptive statistics of the average three-highest-paid executive compensation in Chinese banking during 2005–2012. The values include the total annual cash compensation of CEO and two other highest-paid executives, often vice CEOs (in million Chinese yuan).

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Table 2
Descriptive statistics.

	Mean	Median	St. Dev	Min	Max	Skewness	Kurtosis
LnPAY	15.066	15.575	2.706	0.000	18.771	−4.829	27.263
ROA	0.023	0.013	0.033	−0.185	0.212	0.721	18.013
RET	0.396	0.004	1.335	−0.775	8.697	3.367	17.873
POWER	0.201	0.000	0.402	0.000	1.000	1.493	3.228
SOCB	0.528	1.000	0.500	0.000	1.000	−0.112	1.013
HFDL	0.154	0.103	0.146	0.012	0.621	1.423	4.023
LnSIZE	25.944	26.291	2.609	20.035	30.496	−0.303	2.263
SHARE	0.005	0.000	0.029	0.000	0.240	7.066	53.696
COMP	0.981	1.000	0.136	0.000	1.000	−7.108	51.519
LnMEET	2.220	2.197	0.395	0.000	3.258	−0.984	7.502

This table reports the descriptive statistics of selected variables of Chinese banks during 2005–2012. LnPAY is natural logarithm of one plus the three-highest-paid executive compensation. ROA is return on assets. RET is annual stock return. POWER is a CEO power index. SOCB is a state owned bank dummy. HFDL is Herfindahl index. LnSIZE is natural logarithm of firm's total assets. SHARE is CEO ownership. COMP is a compensation committee dummy. LnMEET is natural logarithm of board meeting frequency. The total number of observations is 214.

Table 3
Pearson correlation matrix.

	LnPAY	ROA	RET	POWER	SOCB	HFDL	LnSIZE	SHARE	COMP	LnMeet
LnPAY	1.00									
ROA	0.02	1.00								
RET	−0.06	0.23*	1.00							
POWER	−0.04	0.05	0.13	1.00						
SOCB	−0.17*	0.05	−0.02	0.06	1.00					
HFDL	0.01	0.10	−0.04	−0.21*	0.54*	1.00				
LnSIZE	0.01	−0.40	−0.15*	−0.29*	−0.03	0.04	1.00			
SHARE	0.04	−0.06	−0.03	−0.25*	−0.17*	−0.17*	−0.01	1.00		
COMP	−0.01	0.07	−0.04	0.02	−0.06	0.08	−0.08	0.02	1.00	
LnMeet	0.01	−0.05	0.07	0.01	0.06	−0.01	0.01	−0.06	0.08	1.00

This table reports the Pearson correlation matrix of selected variables of Chinese banks during 2005–2012. LnPAY is natural logarithm of one plus the three-highest-paid executive compensation. ROA is return on assets. RET is annual stock return. POWER is a CEO power index. SOCB is a state owned bank dummy. HFDL is Herfindahl index. LnSIZE is natural logarithm of firm's total assets. SHARE is CEO ownership. COMP is a compensation committee dummy. LnMEET is natural logarithm of board meeting frequency. The total number of observations is 214. The asterisk * indicates the significance at the 5% level.

The mean HFDL is 0.154 ranging from 0.012 to 0.621. It shows that both firm size and executive compensation are associated with high standard deviations. On average, the proportion of shares held by CEOs is 0.05%, while the highest CEO shareholding is 24%. In addition, Table 2 shows that most banks have compensation committees under the board, and these banks often have board meetings two or three times a year. In general, the results suggest that there are substantial variations of economic characteristics across the banks and absence of influential observations in selected variables over the entire sample period.

Table 3 reports the correlation matrix. It illustrates that SOCB and HFDL are highly correlated (0.54), but the correlations between other pairs of selected variables are within an acceptable level. The dependent variables LnPAY is negatively correlated with stock return, CEO power, state ownership and compensation committee. ROA has a weak but positive correlation with executive compensation (0.02). In addition, it shows that CEO ownership, compensation committees, and board meeting frequency are weakly associated with executive compensation (0.05, −0.01, and 0.01). It seems that executive compensation in Chinese banking varies with different measures of firm performance, although ROA and RET are positively associated (0.23) with each other. In general, the results are consistent with the proposed hypotheses except for the negative correlation between CEO Power and LnPAY, suggesting that multicollinearity would not be a problem in model specification.

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Table 4
The OLS and fixed effect panel regressions on executive compensation in Chinese banking.

	OLS method			FE Panel method	
	Model 1	Model 2		Model 3	Model 4
H1: Performance					
Lag(ROA)	3.250 (0.90)		ROA	1.112 (0.56)	
Lag(RET)		−0.196 (−1.51)	RET		−0.057 (−0.94)
H2: CEO power					
POWER	−0.250 (−0.90)	−0.269 (−0.93)	POWER	0.686 (1.18)	0.639 (1.04)
H3: Ownership structure					
SOCB	−1.687** (−2.45)	−1.658** (−2.47)	SOCB	−0.927 (−1.46)	−0.910 (−1.44)
HFDL	0.023 (1.47)	0.022 (1.45)	HFDL	−0.056** (−2.52)	−0.052** (−2.09)
Control variables					
LnSIZE	0.016 (0.23)	−0.021 (−0.25)	LnSIZE	1.237*** (2.72)	1.219** (2.70)
SHARE	3.836*** (2.74)	3.318** (2.11)	SHARE	3.622 (1.02)	3.914 (1.08)
COMP	−1.491* (−1.84)	−1.640* (−1.84)	COMP	−8.258*** (−17.41)	−8.282*** (−17.56)
LnMEET	0.351 (0.60)	0.420 (0.73)	LnMEET	−0.395 (−0.63)	−0.395 (−0.64)
N	168	168	*N*	210	210
F	6.02	4.82	*F*	3.66	3.70
Adj. R^2	0.08	0.09	Adj. R^2	0.15	0.121

This table reports the cross-sectional OLS regression and fixed effect panel regression results of Chinese executive compensation in the banking sector during 2005–2012. The dependent variable is: LnPAY = Log (1 + three-highest-paid executive compensation). ROA is return on assets. RET is annual stock return. POWER is a CEO power index. SOCB is a state owned bank dummy. HFDL is Herfindahl index. LnSIZE is natural logarithm of firm's total assets. SHARE is CEO ownership. COMP is a compensation committee dummy. LnMEET is natural logarithm of board meeting frequency. Robust standard errors are included in the OLS analyses. Cluster-robust *t*-statistics with clustering on firms are reported in parentheses in panel fixed effect regression. The asterisks *, **, and *** indicate the significance at the 10%, 5%, and 1% level, respectively.

4.2. OLS and FE panel analysis

Table 4 reports the empirical results from the cross-sectional OLS regression and the fixed effects panel regression. The dependent variable is the logarithm of the three-highest-paid executive compensation in Chinese banking over 2005–2012. To test hypothesis H1, I use one-period-lagged ROA as firm performance measure in Models (1) and (3), and one-period-lagged RET as an alternative performance measure in Models (2) and (4). Table 4 illustrates that both performance measures are not significant at the 5% level. Although the predicted signs for ROA are positive, the predicted signs for RET are contradicting with agency theory. The results illustrate that a positive relationship between firm performance and executive compensation does not hold in Chinese banking. Thus, the pay-incentive scheme in Chinese banking is ineffective, or at least not functional.

Interestingly, Table 4 shows that the coefficients of CEO power are not significant at the 5% level. To measure CEO power, I use four sources of CEO power: structural power, ownership power, expert power, and prestige power. The first measure of CEO power is whether the CEO is one of the firm's founders; the second measure of CEO power is whether the CEO is an insider on the board; the third measure of CEO power is whether the CEO is also serving as a chairperson on the board, or CEO duality, and the fourth measure of CEO power is CEO tenure. Initially, I apply each measure individually to run the regressions, and then I use a combination of two or three of the aforementioned measures; finally I create a CEO power index using an average of four sources of CEO power. Unfortunately, there is no explicit evidence in support of the managerial power hypothesis using either each individual component of CEO power or the overall CEO power index. Table 4 reports the results from using CEO power index. Apparently, the results reject our hypothesis H2 that powerful CEOs will have higher levels of executive compensation in Chinese banking. I attribute this phenomenon to the unique corporate governance structure in Chinese banking, since the executives and directors in Chinese banking are often bureaucrats and appointed or nominated by the government.

Table 4 also shows that state ownership has significant negative effects on executive compensation. It shows that the coefficients of SOCB (−1.687 and −1.658) are significant in Models (1) and (2), suggesting that a 1% increase in state ownership will lead to about a 1.69 or 1.67% decrease in

Table 5
The 2SLS and GMM regressions on executive compensation in Chinese banking.

	2SLS model			GMM model	
	Model 5	Model 6		Model 7	Model 8
			Lag(LnPAY)	−0.026 (−0.16)	0.014 (0.08)
H1: Performance					
ROA	4.613** (2.21)		ROA	6.989 (0.66)	
RET		−1.947* (−1.77)	RET		−0.282 (−1.19)
H2: CEO power					
POWER	−0.499 (−0.65)	−0.667 (−1.58)	POWER	0.004 (0.01)	−0.117 (−0.18)
H3: Ownership structure					
SOCB	−1.344* (−1.82)	−1.658** (−2.07)	SOCB	−1.493** (−2.41)	−1.393** (−2.22)
HFDL	0.010 (0.65)	0.028 (1.52)	HFDL	0.020 (1.25)	0.017 (1.10)
Control variables					
LNSIZE	0.444** (2.13)	−0.134 (−1.14)	LNSIZE	−0.069 (−0.64)	−0.028 (−0.35)
SHARE	9.159* (1.79)	1.554 (0.33)	SHARE	2.223 (0.28)	3.217 (0.40)
COMP	−1.551* (−1.67)	−1.958 (−1.25)	COMP	−4.425*** (−2.63)	−4.634*** (−2.72)
LnMEET	0.527 (0.78)	0.695 (1.06)	LnMEET	−0.743 (−1.06)	−0.492 (−0.69)
N	210	210	*N*	168	168
F	1.45[0.18]	0.74[0.66]	*F*	1.74[0.08]	1.83[0.07]
Root MSE	3.68	3.65	Sargan χ^2	17.79[0.77]	16.33[0.84]
			AR(1)	−2.16[0.03]	−2.19[0.03]
			AR(2)	−1.56[0.12]	−1.30[0.19]

This table reports the 2SLS and GMM regression results of the three-highest-paid executive compensation in Chinese banking over 2005–2012. The dependent variable is: LnPAY = Log(1 + three-highest-paid executive compensation). ROA is return on assets. RET is annual stock return. POWER is a CEO power index. SOCB is a state owned bank dummy. HFDL is Herfindahl index. LnSIZE is natural logarithm of firm's total assets. SHARE is CEO ownership. COMP is a compensation committee dummy. LnMEET is natural logarithm of board meeting frequency. The Sargan χ^2 test reports the Hansen *J*-statistics under the null that the overidentified restrictions are valid. AR (1) and AR (2) correspond to the Arellano-Bond test for the first and second level serial correlation, under the null of no autocorrelation. *t*-statistics are in parentheses; *p*-values are in brackets. The asterisks *, **, and *** indicate the significance at the 10%, 5%, and 1% level, respectively.

three-highest-paid executive compensation. Seemingly, the coefficients of HFDL (−0.056 and −0.052) from FE panel regressions are statistically significant at the 5% level, suggesting that a 1% increase in ownership concentration will lead to about a half percent decrease in three-highest-paid executive compensation. In addition, the results show that the presence of a compensation committee on the board is significantly negative at the 1% level, although Conyon and Peck (1998) point out that a remuneration committee is associated with higher levels of CEO pay because outsiders or directors on the committee are not intimately familiar with the internal affairs of a company. In general, the evidence from Table 4 tends to support H3. The results confirm that ownership structure and compensation committee on the board are important factors in determining Chinese executive compensation. It implies that government control over the banks may ensure efficient monitoring function when the pay practice is ineffective.

4.3. 2SLS and GMM estimations

Table 5 reports the empirical results from 2SLS regression and dynamic GMM regression. To address the inherent endogeneity issue, I apply a 2SLS model to control for the effects of firm size, firm leverage, ownership structure and board characteristics on firm performance in the first stage, and get the residuals from estimating ROA and RET in Eq. (4). In the second stage, I use LnPAY as the dependent variable to test the pay-performance setting and control for firm performance, CEO power, ownership structure and other controlling variables in Eq. (2). In Table 5, the 2SLS models show some weak evidence in support of H1; the coefficient of ROA is 4.613 (significant at the 5% level) and the coefficient of RET is −1.947 (significant at the 10% level). However, the overall model fit of 2SLS regression is not good; it needs to be improved as suggested by insignificant *F*-statistics (1.45 in Model 5 and 0.74 in Model 6) and low Root MSE (3.68 in Model 5 and 3.65 in Model 6). Most importantly, due to smaller sample size, adoption of instrumental variable could result in biased coefficients. Therefore, it is better

to use the 2SLS results only as a comparison to the results from other models. In contrast, the dynamic GMM models show much superior characteristics in terms of statistical model fit. In the dynamic GMM models, I use first-differenced variables as instruments as shown in Eq. (5); the estimates from GMM are robust to unobserved heterogeneity, simultaneity, and dynamic endogeneity. The diagnostic tests in Table 5 show that the model is well-fitted with statistically insignificant tests for both second-order autocorrelation AR (2) and Sargan χ^2 statistics of over-identifying restrictions. In Table 5, AR(1) tests are statistically significant (−2.16 at the 5% level in Model 7 and −2.19 at the 5% level in Model 8) while AR (2) tests are statistically insignificant (−1.56 with p-values of 0.119 in Model 7 and −1.30 with p-values of 0.193 in Model 8). It is expected that the residuals in the first difference AR (1) should be serially correlated, but the residuals in the second difference AR (2) should not be serially correlated. Likewise, the Sargan χ^2 tests are statistically insignificant, indicating that the instruments are valid in the respective estimation.

Table 5 provides further evidence of the effects of CEO power on executive compensation in Chinese banking. The dynamic GMM results illustrate that both firm performance measures are not significant at the 5% level, and the predicted sign for RET is contradicting with agency theory. The results confirm previous findings in Table 4 that there is no significant positive relationship between firm performance and executive compensation in Chinese banking. To test managerial power hypothesis, I find that the coefficients of CEO power are not significant at the 5% level. The results are not in favor of H2, suggesting that CEO power over the board in Chinese banking does not necessarily result in higher levels of executive compensation. On the contrary, the results show that state ownership and compensation committee have significant negative effects on executive compensation. The coefficients of SOCB (−1.493 and −1.393) and COMP (−4.425 and −4.634) are both statistically significant at the 5% level, suggesting that state ownership and compensation committee in Chinese banking may ensure efficient monitoring functions in executive compensation. In sum, the results are in support of H3, suggesting that government control over the Chinese banks may ensure efficient monitoring functions in executive compensation.

5. Conclusion

This study examines the determinants of executive compensation in Chinese banking during 2005–2012. Particularly, it investigates the pay practice in Chinese banking based on agency theory, managerial power theory and corporate governance theory. According to agency theory, it is expected that executive compensation depends, at least in part, on changes in firm performance; therefore, a positive relationship between management compensation and firm performance is in line with shareholders' interest. Unfortunately, the results show that there is no significant relationship between bank performance (measured by either ROA or RET) and executive compensation in Chinese banking. This suggests that the agency-based pay incentive does not hold in Chinese banking. The results imply that a principal–agent perspective may have limited application in emerging markets, because there is more potential for CEO self-enrichment or "skimming" than there is conflict between shareholders (principals) and managers (agents) in Chinese banking.

The results provide further evidence on the impact of CEO power on executive compensation in Chinese banking. The "managerial power" theory claim that self-interested executives can extract rents for themselves by manipulating board structures to design favorable compensation packages, leading towards inefficient pay-incentive scheme. From this entrenchment perspective, powerful CEOs can exercise enormous sway over boards, rendering the boards ineffective in setting appropriate CEO contracts (Bebchuk & Fried, 2004), while agency theory is said to be "under-socialized" and ignores social forces in favor of supposed arm's length contracting (Aguilera & Jackson, 2003). Interestingly, the results find little evidence in support of H2 that powerful CEOs have privileges over the board to obtain higher levels of executive compensation in Chinese banking. This phenomenon is attributed to the unique corporate governance structure in Chinese banking.

The study concludes that executive compensation in Chinese banking has less to do with incentive alignment, but more to do with corporate structure. The results show that both state ownership and ownership concentration are significant in determining executive compensation in Chinese banking. Due to the dominance of state ownership in Chinese banks, the executives and directors in Chinese

banking are often bureaucrats and appointed or nominated by the government, and the boards of directors generally lack independence and tend to rubber-stamp decisions made by the government authorities. Therefore, executives, and particularly the CEOs are unable to insulate themselves from constraints applied by regulators and shareholders. Although the CEOs enjoy positions of power in relation to the design of pay packages, they rarely have significant power over the board to obtain personal benefits in cash compensation. It seems that the board of directors in Chinese banking has done a poor job of defining CEO incentives or management compensation packages, while government control over Chinese banks may ensure efficient monitoring functions in executive compensation. The results have important implications on banking regulation and corporate governance in emerging markets.

References

Adams, R. B., Almeida, H., & Ferreira, D. (2005). Powerful CEOs and their impact on corporate performance. *The Review of Financial Studies*, *18*(4), 1403–1432.
Aguilera, R. V., & Jackson, G. (2003). The cross-national diversity of corporate governance: dimensions and determinants. *Academy of Management Review*, *28*(3), 447–465.
Andres, P., & Vallelado, E. (2008). Corporate governance in banking: The role of the board of directors. *Journal of Banking & Finance*, *32*, 2570–2580.
Angelucci, M., Bevan, A., Estrin, S., Fennema, J., Kuznetsov, B., Mangiarotti, G., et al. (2002). The determinants of privatized enterprise performance in Russia. In *CEPR discussion papers no. 3193*.
Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Review of Economic Studies*, *58*, 277–297.
Ball, R., Robin, A., & Wu, J. (2000). Accounting standards, the institutional environment and issuer incentives: Effect on timely loss recognition in China. *Asia Pacific Journal of Accounting and Economics*, *7*, 71–96.
Baltagi, B., Demetriades, P., & Law, S. H. (2009). Financial development and openness: Evidence from panel data. *Journal of Development Economics*, *89*, 285–296.
Barkema, H. G., & Gomez-Mejia, L. R. (1998). Managerial compensation and firm performance: A general research framework. *Academy of Management Journal*, *41*(2), 135–145.
Bebchuk, L. A., & Fried, J. M. (2004). *Pay without performance: The unfulfilled promise of executive compensation*. Cambridge: Harvard University Press.
Bebchuk, L. A., Fried, J. M., & Walker, D. I. (2004). Managerial power and rent extraction in the design of executive compensation. *The University of Chicago Law Review*, *69*, 751–846.
Bertrand, M., & Mullainathan, S. (2001). Are CEOs rewarded for luck? The ones without principals are. *Quarterly Journal of Economics*, *116*(3), 901–932.
Blinder, A. S. (2009). Crazy compensation and the crisis. *The Wall Street Journal*,. ⟨http://online.wsj.com/articles/SB124346974150760597⟩ (Retrieved on April 8, 2015).
Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data methods. *Journal of Econometrics*, *87*, 115–143.
Buck, T., Liu, X., & Skovoroda, R. (2008). Top executive pay and firm performance in China. *Journal of International Business Studies*, *39*, 833–850.
Cheung, Y., Jing, L., Lu, T., Rauc, P. R., & Stouraitisa, A. (2009). Tunneling and propping up: An analysis of related party transactions by Chinese listed companies. *Pacific-Basin Finance Journal*, *17*, 372–393.
Conyon, M. J., & d He, L. (2012). CEO compensation and corporate governance in China. *Corporate Governance: An International Review*, *20*(6), 575–592.
Conyon, M. J., & Peck, S. I. (1998). Board control, remuneration committees, and top management compensation. *Academy of Management Journal*, *41*(2), 146–157.
Core, J. E., Guay, W. R., & Larcker, D. F. (2003). Executive compensation and incentives: A survey. *Federal Reserve Bank of New York Economic Policy Review*, *9*(1), 27–44.
Core, J. E., Holthausen, R., & Larcker, D. (1999). Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics*, *51*, 371–406.
Cubbin, J., & Leech, D. (1983). The effect of shareholding dispersion on the degree of control in British companies: Theory and measurement. *The Economic Journal*, *93*, 351–369.
DeYoung, R., Flannery, M., Lang, W., & Sorescu, S. (2001). The information content of bank examination ratings and subordinated debt prices. *Journal of Money Credit and Banking*, *33*, 900–925.
Edison, H. J., Levine, R., Ricci, L., & Sløk, T. (2002). International financial integration and economic growth. *Journal of International Money and Finance*, *21*, 749–776.
Faccio, M., Lang, L. H. P., & Young, L. (2001). Dividends and expropriation. *American Economic Review Papers*, *91*, 54–78.
Fahlenbrach, R., & Stulz, R. M. (2011). Bank CEO incentives and the credit crisis. *Journal of Financial Economics*, *99*(1), 11–26.
Fama, E. F., & Jensen, M. C. (1983). Separation of ownership and control. *Journal of Law and Economics*, *26*(2), 301–325.
Farrell, G. (2007). Under fire Merrill Lynch CEO O'Neal retires. *USA Today*, *8*, 2015. ⟨http://www.usatoday.com/money/companies/management/2007-10-30-merrill_N.htm⟩ (Retrieved on April).
Firth, M., Fung, P., & Rui, O. (2006). Corporate performance and CEO compensation in China. *Journal of Corporate Finance*, *12*(4), 693–714.
Firth, M., Fung, P., & Rui, O. (2007). How ownership and corporate governance influence chief executive pay in China's listed firms. *Journal of Business Research*, *60*(7), 776–785.

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Finkelstein, S. (1992). Power in top management teams: dimensions, measurement, and validation. *Academy of Management Journal*, *35*, 505–538.
Ghosh, A. (2006). Determination of executive compensation in an emerging economy: Evidence from India. *Emerging Markets Finance and Trade*, *42*(3), 66–90.
Gunther, J., & Moore, R. (2003). Loss underreporting and the auditing role of bank exams. *Journal of Financial Intermediation*, *12*, 153–177.
Hagendorff, J., Collins, M., & Keasey, K. (2007). Bank governance and acquisition performance. *Corporate Governance: An International Review*, *15*, 957–968.
Haid, A., & Yurtoglu, B. B. (2006). *Ownership structure and executive compensation in Germany*. ⟨http://ssrn.com/abstract=948926⟩ (Retrieved on April 8, 2015).
Hermalin, B. E., & Weisbach, M. S. (1998). Endogenously chosen boards of directors and their monitoring of the CEO. *American Economic Review*, *88*(1), 96–118.
Hermalin, B. E., & Weisbach, M. S. (2003). Boards of directors as an endogenously determined institution: A survey of the economic literature. *Federal Reserve Bank of New York Economic Policy Review*, *April*, 7–26.
Hermalin, B. E., & Weisbach, M. S. (2006). A framework for assessing corporate governance reform. In *NBER working papers No. 12050*. National Bureau of Economic Research, Inc.
Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review*, *May*, 659–665.
Jensen, M. C., & Meckling, W. H. (1976). Theory of firm—Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305–360.
Jensen, M. C., & Murphy, K. J. (1990). Performance pay and top—Management incentives. *The Journal of Political Economy*, *98*(2), 225–264.
Kaplan, S. N. (1994). Top executive rewards and firm performance: A comparison of Japan and the U.S. *Journal of Political Economy*, *102*, 510–546.
Kato, T. K., & Long, C. X. (2006). Executive compensation, firm performance, and corporate governance in China: Evidence from firms listed in the Shanghai and Shenzhen Stock Exchanges. *Economic Development and Cultural Change*, *54*(4), 945–983.
Kim, K. A., Kitsabunnarat, P., & Nofsinger, J. R. (2004). Ownership and operating performance in an emerging market: Evidence from Thai IPO firms. *Journal of Corporate Finance*, *10*(3), 355–381.
Leone, A. J., Wu, J. S., & Zimmerman, J. L. (2006). Asymmetric sensitivity of CEO cash compensation to stock returns. *Journal of Accounting and Economics*, *42*, 167–192.
Luo, Y. (2014). Executive compensation in emerging markets: Theoretical developments and empirical evidence. In S. Boubaker, & D. K. Nguyen (Eds.), *Corporate governance and corporate social responsibility: Emerging markets focus* (pp. 499–529). World Scientific Publishing (WSP).
Luo, Y., & Jackson, D. (2012a). CEO compensation, expropriation, and the balance of power among large shareholders. In Stephen P. Ferris, Kose John, & Anil K. Makhija (Eds.), *Advances in financial economics* (Vol. 15) (pp. 195–238).
Luo, Y., & Jackson, D. (2012b). Executive compensation, ownership structure and firm performance in Chinese financial corporations. *Global Business and Finance Review*, *17*(1), 56–74.
Morgan, D. (2002). Rating banks: Risk and uncertainty in an opaque industry. *American Economic Review*, *92*, 874–888.
Murphy, K. J. (2004). Executive compensation. In O. Ashenfelter, & D. Card (Eds.), *Handbook of labor economics* (Vol. 3) (pp. 2485–2563). North Holland: Elsevier Science.
Ongore, V. O. (2011). The relationship between ownership structure and firm performance: An empirical analysis of listed companies in Kenya. *African Journal of Business Management*, *5*, 2120–2128.
Pagano, M., Roell, A. A., & Zechner, J. (2002). The geography of equity listing: Why do European companies list abroad? *Journal of Finance*, *57*, 2651–2694.
Palvia, A. (2011). Banks and managerial discipline: Does regulatory monitoring play a role? *The Quarterly Review of Economics and Finance*, *51*, 56–68.
Peek, J., Rosengren, E. S., & Tootell, G. (2003). Does the Federal Reserve possess an exploitable information advantage? *Journal of Monetary Economics*, *50*, 817–839.
Peterson, M. A. (2009). Estimating standard errors in finance panel data sets: Comparing approaches. *Review of Financial Studies*, *22*(1), 435–480.
Pfeffer, J. (1992). *Managing with power: politics and influence in organizations*. Boston, MA: Harvard Business School Press.
Shleifer, A., & Vishny, R. W. (1997). A survey of corporate governance. *The Journal of Finance*, *52*, 737–783.
Stulz, R. (1999). Globalization, corporate finance, and the cost of capital. *Journal of Applied Corporate Finance*, *12*, 8–25.
Vafeas, N. (1999). Board meeting frequency and firm performance. *Journal of Financial Economics*, *53*, 113–142.
Wheelock, D., & Wilson, P. (2005). The contribution of on-site examination ratings to an empirical model of bank failures. *Review of Accounts and Finance*, *4*, 110–133.
Young, M. N., Peng, M. W., Ahlstrom, D., Bruton, G. D., & Jiang, Y. (2008). Corporate governance in emerging economies: A review of the principal–principal perspective. *Journal of Management Studies*, *45*(1), 196–220.

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