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# A Study of Alignment between Management and Shareholders on China Financial Firms

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**Abstract**

This study provide an empirical study investigating the relation between executive compensation, ownership structure, and financial firm performance for Chinese publically listed firms. The empirical results reveal that executive compensation in China financial firms has increased remarkably after its privatization reform. Both board characteristics and ownership structure have a strong influence on executive incentive compensations after controlling for standard economic factors. The empirical findings suggest that the board and ownership variables in the compensation equation have significant impact on the effectiveness of banks' investment strategies and performance. The results have important implications for board members as well as the regulators on the measurement of management compensation and risk control in financial industry.

**JEL classification numbers**: G31, G32
**Keywords**: Compensation Structure, Firm Performance, Banking

## 1 Introduction

Executive compensation in banking industry has been criticized as playing an important role in causing the recent financial crisis (Bebchuk and Spamann, 2009). Current literature suggests that the CEO compensation in the U.S. and Europe with stock options display higher default risk. In developed countries, CEO stock options and equity incentive are frequently utilized to align with shareholders' wealth. Managerial compensation is viewed as a contractual factor

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that could align the incentives of top managers with shareholders (Fama and Jensen, 1983, Yang, 2013). Recent studies criticize the effectiveness of commonly used governance mechanisms in developed economies (Ball et al., 2000 and Bushman and Piotroski, 2006). The argument is based on the fact that political influence within state-owned enterprises (SOEs) in emerging economies could lead to a relation-based rather than market-based contract (Ball et al., 2000).

This study examines the relationship between executive compensation, ownership structure, and financial firm performance for Chinese listed firms. The commercial banks in the U.S. are overseen by several regulatory agencies. Banks with state banking charters are supervised jointly by the state and the Federal Reserve or the Federal Deposit Insurance Corporation (FDIC); nationally chartered banks are overseen by office of the Comptroller of Currency (OCC); China banks have very unique characteristics in contrast to other financial market and banking systems in that China banks are ultimately state-owned and controlled by the government. Palvia (2011) shows that most U.S. commercial banks are private and it's impossible to separate the private and public banks because over 95% of the banks have assets less than $1 billion and about 75% of them have branches fewer than five; while China banks are mainly controlled by the government and have very large market capitalization. Thus, regulators need to acquire deep understanding corporate governance. The key factor of corporate governance is to align interests between management and shareholders. Equity-based CEO incentive compensation was considered as an important measure. This study examine how banks' governance structure affects executive compensation and the subsequent managerial risk-taking investments behavior. The purpose of this paper is to provide a dynamic relations between bank governance structure, CEO incentive compensation and managerial risk-taking investments behavior.

The findings of this paper contribute to the existing literature in several ways. First, previous evidence relating to the determinants of executive compensation in financial industry is mixed and, so far, no research has been done to simultaneously explore the joint impacts of performance, board structure, and regulatory monitoring. This study foster a better understanding of how managerial compensation is related to corporate performance in China. Second, this paper examines the association of ownership structure and executive remuneration when publicly listed banks face greater scrutiny through regulatory monitoring. Third, this study contributes to existing literature in by investigating the effectiveness of CEO compensation and its impact on performance based measures. These results are robust across alternative methodologies, and model specifications. The findings of this study have important implication for regulators and board members in China listed firms. This study suggests that regulatory oversight of the

governance structure and CEO incentive compensations employed in the banking industry is important.

I applied three-simultaneous-equation using 3 Stage least Square (3SLS) method in which vega, delta and financial firm risk/performance are all treated as endogenous variables and are jointly determined, which avoid spurious inferences in OLS estimate and provide asymptotically correct estimates of the standard errors (Sawa, 1969).

The remainder of this paper is organized as the follows. Section 2 describes the prior literature and background. Section 3 introduces measures and methodology. Data is described in section 4. Section 5 and 6 reports the empirical results followed by a conclusion remarks.

## 2 Literature Review

The academic literature on corporate governance focus on the efficiency of alternative ownership structures and firm performance. Although there is mounting debates regarding proper governance structures to motivate managers to increase bank's performance, the empirical evidence so far is mixed and gives very little coherent evidence for the shape of an optimal governance structure. Crystal (1991) argues that boards of directors are ineffective in setting appropriate levels of compensation because outside directors are essentially hired by the CEO and can be removed by the CEO. Jensen (1990) argues that boards of directors are ineffective because board culture discourages conflicts, the CEO determines the agenda and information given the board, there is little equity ownership by managers and non managers on the typical board. If the CEOs and the board chairs are the same person, it is more likely to produce principle-agent issue where, executive cannot well represent the best interest of shareholders.

The relation between CEO compensation and board composition has been examined in many empirical studies with mixed findings. Hallock (1997) finds that CEO compensation is higher at financial firms with interlocked outside directors. Lambert et al. (1993) find that CEOs receive higher pay when they have appointed a greater proportion of the board.Lambert et al. (1993) and Boyd (1994) use confidential compensation data document a positive relation between CEO compensation and the percentage of the board composed of outside directors, whereas Finkelstein and Hambrick (1989) find that compensation, measured by salary and bonus is unrelated to the percentage of outside directors on the board. Other characteristics of the board have also been explored. Other empirical research examines whether certain board structures are associated with better financial firm value and performance. Byrd and Hickman (1992) find that bidding

financial firms on which independent outside directors hold at least 50% of the seats have higher announcement-date abnormal returns than other bidders, except when the independent directors hold a very high proportion of board seats. Rosenstein and Wyatt (1990) provide evidence that shareholder wealth is affected by the proportion of outside directors by documenting a positive stock price reaction at the announcement of the appointment of an additional outside director. In contrast, Yermack (1996) finds no association between the percentage of outside directors and financial firm performance. Thus, the evidence for the importance of outside directors is mixed. Yermack (1996) also provides evidence that financial firm value and performance is a decreasing function of board size, while Baysinger and Butler (1985), Hermalin and Iisbach (1991), and Bhagat and Black (1997) find no meaningful relation between various characteristics of board composition and financial firm performance.

Other than the analysis of board structure, there are relatively few studies examine the relation between governance structure and the scheme of CEO compensation. Lambert et al. (1993) find that CEO compensation is lower when the CEO's ownership is higher and when there is an internal member on the board other than the CEO who owns at least 5% of the shares. Holderness and Sheehan (1988) provide evidence those managers who are majority shareholders (defined as individuals owning at least half but not all of the common stock) in publicly held corporations receive marginally higher salaries than other officers. However, Allen (1981) finds that the level of CEO compensation is a decreasing function of the equity held by the CEO (and his family), as well as the extent of equity holdings by board members not related to the CEO. Finally, using a sample of Canadian companies (30% of which have multiple classes of voting stock), Core et al. (2002a) finds that CEO compensation is increasing in insider control of share votes and decreasing in insider ownership of share value.

Executive compensation and performance of the banking industry have not been well studies in emerging economies (Kato and Long, 2006). Moreover, little is known about how China CEOs are compensated compared to those in developed countries. This paper contributes to the literature on executive compensation in emerging markets by, it is the first time to examine the pay-performance sensitivities and elasticities for listed financial firms in China. Systematic research outside the US on executive compensation is still in its infancy, especially in emerging markets, this study aims to fill this gap.

# 3 Methodology and Model

Compensation is usually measured as the ratio of stock option based compensation to total compensation. However, such compensation measures cannot precisely capture risk-taking incentives of managers induced by their compensation schemes. Core and Guay (2002a) argue such measures are noisy proxies for vega and delta. A positive relation between the ratio of stock option compensation to total compensation and stock return volatilities could result from a certain factor having a positive effect on the volatility of stock returns. In such a case, the positive relation is not the result of greater incentives for risk-taking by managers due to the structure of their compensation. In this study, I obtain a more precise measure of the incentives faced by managers rather than the potentially noisy proxies. I include both vega and delta into empirical models, which allows me to isolate the effect of vega and delta. With the exception of Rogers (2002) and Coles et al. (2006), prior studies tend to focus on one dimension of compensation structure, such as delta or vega, without controlling for the other. The mix of vega and delta are likely to have substantially cross-sectional differences and both affect risk-taking behavior (Guay, 1999). Moreover, very few studies on the association between risk and compensation structure allow estimation of the underlying causal relationships. Rogers (2002) questions if a positive association between stock return volatility and vega indicates that vega is used to implement high-risk decisions, or does it suggest that some underlying and omitted primitive factor drives the association between vega and volatility? All of these examples imply that causation is likely to run in both directions for vega and delta. It is critical to account for how investment choices and characteristics of the managerial compensation schemes are jointly determined. When both compensation characteristics and managerial decisions are endogenous, OLS results are not appropriate because the orthogonality assumption is violated, and the use of OLS leads to biased and inconsistent parameter estimates. The usual t and F tests for these parameters are no longer valid in this case.

In this study, the primary characteristic of compensation considered is the sensitivity of CEO wealth to stock return volatility, or vega. Vega is defined as the change in the dollar value of the executive's wealth for a one percentage point change in the annualized standard deviation of stock returns. Delta is defined as the change in the dollar value of the executive's wealth for a one percentage point change in stock price. Guay (1999) shows that option vega is many times higher than stock vega. Rajgopal and Shevlin (2002), Rogers (2002) and Coles et al. (2006) adopt the same approach. The vega and delta calculations follows Guay (1999) and Core and Guay (2002a). Vega is computed as the partial derivative of the Black-Scholes option pricing model with respect to stock return volatility as follows:

$$Vega = e^{-dT} N'(Z) ST^{(1/2)},$$

$$Delta = e^{-dT} N(Z) \left( \frac{price}{100} \right),$$

Where $N'$ is the normal density function. The dollar value measures the magnitude of managers' incentives of risk-taking. Indeed, the higher the sensitivity of the manager's compensation to risk the more he/she gains from increasing risk. Therefore, this measure captures directly the incentives of executives to increase risk. The sensitivity with respect to a 1% change in stock price, delta, is partial derivative with respect to stock price. In this study, in order to avoid spurious inferences and to isolate causation, I apply 3 stage least square (3SLS) method followed by Coles et al. (2006) and Yang (2010), where one of the interested variables (bank risk, security underwriting, mortgage loan or write-offs), vega and delta, are contemporaneously determined to disentangle the causality between compensation incentives and risk-taking.

To assess the relation between board and ownership structure and vega and bank risk, I apply a three-simultaneous-equation using a 3 Stage Least Square (3SLS) method in which vega, delta, and bank risk are all treated as endogenous variables and are jointly determined. The 3SLS estimate could avoid spurious inferences in OLS estimate and provide asymptotically correct estimates of the standard errors (Sawa, 1969). While I focus on vega as the primary explanatory variable, I include both delta and control variables based on evidence elsewhere in the literature. Accordingly, I control for financial firm size, stock prices, long-term debt ratio and growth opportunities. (Servaes, 1994; Bhagat and welch, 1995; and Opler et al., 1999). An important reason to include control variables is to represent forces that drive both vega and delta together with investment or financial strategies. The regression equations include,

$$BankRisk_{it} = \alpha_0 + \alpha_1 vega_{it} + \alpha_2 delta_{it} + ControlVariables_{it} + \varepsilon_{it}$$

$$Vega_{it} = \beta_0 + \beta_1 BankRisk_{it} + \beta_2 Delta_{it} + ControlVariables_{it} + \zeta_{it}$$

$$Delta_{it} = \gamma_0 + \gamma_1 BankRisk_{it} + \gamma_2 Vega_{it} + ControlVariables_{it} + \xi_{it}$$

Where $\varepsilon_{it}$, $\zeta_{it}$ and $\xi_{it}$ captures the measurement errors. The reasons for choosing these variables as instrument variables are, first, they are informative for the dependent variables, and second, these variables are exogenous in the system equations.

# 4 Data

Since 1998, listed firms in China are required to disclose their executive compensation data in the annual report include total remuneration of the board of directors, the supervisory board, and senior management. Compensation of the highest paid executive in the company is also disclosed and I use it as a proxy for the pay of the CEO. The pay is the total cash compensation and includes base salary, bonuses, and commissions. Bonus pay is incentive payment tied to financial firm performance. The sample include all financial corporations which have been listed on the stock exchanges of Shanghai and Shenzhen since 1998. In line with other studies, the sample consists of 238 companies and 852 financial firm-year observations. I use the key parameters of company annual reports as input and employed the simulation approach to generated the data of executive compensation, share holdings of the three largest shareholders, board size, and board compensations. The analysis is based on information extracted from annual reports over the 1998-2006.

Table 1: Data descriptive statistics

| Variables | Mean | Median | Min | Max | Std |
|---|---|---|---|---|---|
| Compensation | | | | | |
| Vega | 10.45 | 12.36 | 0.10 | 105.42 | 32.56 |
| Delta | 10.23 | 8.57 | 0.21 | 123.57 | 35.12 |
| Cash compensation (000s) | 432.57 | 419.23 | 82.57 | 2418.33 | 898.66 |
| Performance | | | | | |
| ROA | 1.86 | 3.28 | -57.21 | 35.73 | 15.25 |
| Stock return (RETURN) | 42.15 | 51.28 | -25.36 | 389.26 | 71.23 |
| Financial firm | | | | | |
| Profit (000,000s) | 42.11 | 38.43 | -652.56 | 1315.19 | 142.38 |
| Sales (000,000s) | 852.34 | 361.78 | -58.62 | 9873.41 | 889.25 |
| Assets (000,000s) | 1361.28 | 987.56 | 105.29 | 20368.57 | 1053.22 |
| Market to book ratio | 2.43 | 2.10 | 0 | 12.35 | 2.81 |
| Debt ratio (DEBT) | 0.15 | 0.08 | -0.25 | 6.38 | 0.42 |
| Governance structure | | | | | |
| State ownership (GOV) | 0.56 | 0.76 | 0 | 1 | 0.48 |
| Ownership concentration | 0.23 | 0.21 | 0.02 | 0.75 | 0.58 |
| Foreign shares (FSHARE) | 0.15 | 0.08 | 0 | 1 | 0.62 |
| Board size (BOARD) | 9.52 | 8.76 | 5 | 22 | 2.73 |

Table 1 reports descriptive statistics on compensation, financial firm characteristics, and other control variables. The mean and median cash

compensation are RMB432,570/US55,458. Mean and median vega are 10.45 and 12.36. While mean and median delta are 10.23 and 8.57. Means stock return during sample period is high, which is 42.15% while is associated with high standard deviation of 71%. Debt to ratio is on average low. Mean and median debt ratio are 5% and 8%. State ownership takes more than a half of financial firms. Ownership concentration on average is 23%. Foreign shares take on average of 10% with median of 5%. Board size on average around 9.

# 5 Empirical Results

Cross-sectional differences among banks in the fundamental characteristics of the bank such as bank size, leverage, bank should imply cross-sectional differences in optimal investment, bank performance and compensation structure. Through time, as those characteristics either change or remain constant, so will vega and delta and the implemented policy will change or remain constant. While I use delta mainly as a control variable, the effects of delta on policy choices and bank risk are of some interest. These effects, however, are unclear. In this section I assess the relation between executive incentives and bank risk-taking investments. I examine the relation among three variables: vega, delta, and bank risk. Therefore I apply a three-simultaneous-equation using a 3 Stage Least Square (3SLS) method in which vega, delta and bank risk are all treated as endogenous variables and are jointly determined. The 3SLS estimate could avoid spurious inferences in OLS estimate and provide asymptotically correct estimates of the standard errors (Sawa, 1969).

While I focus on vega as the primary explanatory variable, here and in subsequent sections all model specifications include both delta and control variables include bank size, cash compensation, stock price and bank risk. (Servaes, 1994; Bhagat and welch, 1995; and Opler et al., 1999). An important reason to include control variables is to represent forces that drive both vega and delta together with investment or financial strategies. To address the possibility that there are other omitted variables, all specifications throughout include both industry (two-digit SIC) fixed and year effects.

Table 2: Simultaneous Equations (3SLS): Bank Risk and CEO compensation

| Variables | Risk | Vega | Delta |
|---|---|---|---|
| CEO compensation measures | | | |
| Vega | 0.356*** | | 1.518*** |
| | (0.029) | | (0.046) |
| Delta | 0.418*** | 0.586*** | |
| | (0.057) | (0.039) | |
| Risk | | 3.251*** | 2.158** |
| | | (1.032) | (0.043) |
| Financial firm size | 0.632*** | 4.321*** | -3.312* |
| | (0.021) | (0.038) | (0.045) |
| Stock prices | | | 1.312*** |
| | | | (0.048) |
| Governance Structure | | | |
| State ownership | | -4.332*** | |
| | | (0.061) | |
| Board size | | 3.328*** | |
| | | (0.062) | |
| Dummy variables | | | |
| Year dummies | YES | YES | YES |
| Industry dummies | YES | YES | YES |
| R-square | 0.536 | 0.779 | 0.612 |

Robust standard errors are reported in the parentheses. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table 2 reports the estimates of three-simultaneous-equation model (3SLS). The jointly determined variables are vega, delta, and bank risk. Here and throughout, reported *t*-statistics are based on robust standard errors. I draw independent variables from the prior literature (e.g., Bizjak et al., 1993; Guay, 1999; Core and Guay, 1999) for vega and delta. First, vega is significantly positively correlated with delta, which is consistent with prior literature. Second, the coefficients on bank risk is positive and significant different from zero. It implies that higher level of bank risk increase the managerial incentive in compensation, as reflected in vega, which is consistent with my expectations. Moreover, vega is positively correlated with bank size, which are consistent with prior literature. Finally, in this study, I find the coefficient on bank risk is positive and significant. It implies that higher risk level of bank will induce higher managerial incentives, which cause higher vega. From the equation of delta, delta depends positively on vega. Delta is also positively correlated with stock price and negatively correlated with bank size. These findings are consistent with Guay (1999, 2002) among the others. As banks expand more risky investments, the risk level of the bank is expected to be higher. Therefore, banks risk should be positively related to vega and negatively related to delta. The regression results in Table 2 are consistent with predictions.

The estimated coefficient on vega is positive and is significant at 5% level. It suggests that higher vega induce higher risk level of the bank. On the other hand, higher delta implements loIr risk level. The coefficient on delta is negative and significant. It implies that bank risk level is negatively associated with delta. The coefficient on State Ownership is negative and significant. It implies that the CEOs in the state owned financial firm has less incentive pay structure, so the vega is loIr in state owned financial firm. This finding is consistent with prediction. However, Board Size is positively correlated with vega. It implies that the financial firm that has larger board size has more CEO incentive pay thus higher vega. These findings are consistent with prediction. All coefficients are significant.

Table 3: Simultaneous Equations (3SLS): Banking sector performance (ROA) and CEO compensation structure

| Variables | ROA | Vega | Delta |
|---|---|---|---|
| CEO compensation measures | | | |
| Vega | 0.338*** | | 1.357*** |
| | (0.064) | | (0.043) |
| Delta | 0.576*** | 0.591*** | |
| | (0.037) | (0.042) | |
| Return | | 2.115*** | 3.132** |
| | | (1.062) | (0.049) |
| Financial firm size | 0.812*** | 4.339*** | -3.321* |
| | (0.059) | (0.051) | (0.045) |
| Stock prices | | | 0.912*** |
| | | | (0.038) |
| Governance Structure | | | |
| State ownership | | -3.122*** | |
| | | (0.055) | |
| Board size | | 2.618*** | |
| | | (0.041) | |
| Dummy variables | | | |
| Year dummies | YES | YES | YES |
| Industry dummies | YES | YES | YES |
| R-square | 0.561 | 0.719 | 0.693 |

Robust standard errors are reported in the parentheses. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table 3 reports the 3SLS model for the jointly determined variables on vega, delta, and financial firm performance (ROA). The coefficients on both vega and delta are positive and significant. It implies that increase CEO incentive compensation as indicated as vega and delta is positively associated with financial firm performance. Financial firm size is positively correlated with financial firm

ROA, which is consistent with literature. For relation between vega and delta, vega is significantly positively correlated with delta as predicted. The coefficients on ROA is positive and significant different from zero. It implies that higher level of financial firm performance increase the managerial incentive in compensation, as reflected in vega, which is consistent with my expectations. Moreover, vega is positively correlated with financial firm size which are consistent with prior literature. From the equation of delta, delta depends positively on vega. Delta is also positively correlated with stock price and negatively correlated with financial firm size. As financial firms expand and have higher level of return as reflected on higher ROA, CEO incentive compensation should be higher. Therefore, ROA should be positively related to vega and delta. The regression results in Table 3 are consistent with predictions. The estimated coefficient on vega is positive and is significant at 5% level. It suggests that higher vega induce higher performance of the financial firm. On the other hand, higher delta implements higher level of financial firm performance. The coefficient on delta is positive and significant.

Table 4: Simultaneous Equations (3SLS): Banking sector performance measure (Return) and CEO compensation structure

| Variables | Return | Vega | Delta |
|---|---|---|---|
| CEO compensation measures | | | |
| Vega | 0.713*** | | 1.776*** |
| | (0.045) | | (0.032) |
| Delta | 0.582*** | 0.628*** | |
| | (0.036) | (0.076) | |
| Return | | 3.112*** | 2.341** |
| | | (1.058) | (0.062) |
| Financial firm size | -0.662*** | 3.212*** | -4.137* |
| | (0.041) | (0.035) | (0.051) |
| Stock prices | | | 0.462*** |
| | | | (0.038) |
| Governance Structure | | | |
| State ownership | | -3.158*** | |
| | | (0.033) | |
| Board size | | 2.269*** | |
| | | (0.028) | |
| Dummy variables | | | |
| Year dummies | YES | YES | YES |
| Industry dummies | YES | YES | YES |
| R-square | 0.458 | 0.713 | 0.629 |

Robust standard errors are reported in the parentheses. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table 4 reports the 3SLS model for the jointly determined variables on vega, delta, and financial firm performance (Return). The coefficients on both vega and delta are positive and significant. It implies that increase CEO incentive compensation as indicated as vega and delta is positively associated with financial firm stock return. Financial firm size is positively correlated with return, which is consistent with literature. For relation between vega and delta, vega is significantly positively correlated with delta as predicted. The coefficients on ROA is positive and significant different from zero. It implies that higher level of stock return increases the managerial incentive in compensation, as reflected in vega, which is consistent with my expectations. Moreover, vega is positively correlated with financial firm size as predicted. From the equation of delta, delta depends positively on vega. Delta is also positively correlated with stock price and negatively correlated with financial firm size. As financial firms expand and have higher level of return, CEO incentive compensation should be higher. Therefore, stock return should be positively related to vega and delta. The regression results in Table 4 are consistent with predictions. The estimated coefficient on vega is positive and is significant at 5% level. On the other hand, higher delta implements higher level of return. The coefficient on delta is positive and significant.

Table 5: Simultaneous Equations (3SLS): Banking sector performance measure (Write-offs) and CEO compensation structure

| Variables | Write-offs | Vega | Delta |
|---|---|---|---|
| CEO compensation measures | | | |
| Vega | 1.362*** | | 1.586*** |
| | (0.035) | | (0.042) |
| Delta | -0.041*** | 0.582*** | |
| | (0.058) | (0.049) | |
| Financial firm size | 0.361*** | 3.768*** | -4.371* |
| | (0.037) | (0.013) | (0.049) |
| Stock prices | | | 0.668*** |
| | | | (0.073) |
| Governance Structure | | | |
| State ownership | | -3.558*** | |
| | | (0.061) | |
| Ownership concentration | | -2.732*** | |
| | | (0.035) | |
| Foreign shares | | 4.521*** | |
| | | (0.062) | |
| Board size | | 2.446*** | |
| | | (0.039) | |
| Dummy variables | | | |
| Year dummies | YES | YES | YES |
| Industry dummies | YES | YES | YES |
| R-square | 0.328 | 0.619 | 0.628 |

Robust standard errors are reported in the parentheses. ***, **, and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table 5 reports the 3SLS model for the jointly determined variables on vega, delta, and bank write-offs. The coefficient on vega is positive and significant, which implies higher vega is associate with higher risk level thus more write-offs. While interesting the coefficient on delta is negative and significant. This finding is consistent with previous discussion that delta align the CEO compensation with shareholders interests, thus associate with less risk which attribute to less write-offs. The empirical finding also show the bank size is positively associates with write-offs. For relation between vega and delta, vega is significantly positively correlated with delta as predicted. Moreover, vega is positively correlated with financial firm size as predicted. From the equation of delta, delta depends positively on vega. Delta is positively correlated with stock price and negatively correlated with financial firm size which is consistent with previous table results. Additionally, for the regressions in both Tables 5 and 6, I include year dummy variables,

and I use logarithmic values of vega and delta rather than the raw values. The results on vega are robust to all these alternative specifications.

## 6 Conclusions

This study examines the relationship between executive compensation, ownership structure and financial firm performance for China listed firms. I find that both board of director characteristics and ownership structure have a strong association with CEO incentive compensations after controlling for standard economic determinants of the level of CEO compensation. The results also show that ownership structure has a significant impact on China executive compensation. Ownership concentration tends to have a negative impact on CEO compensation. The involvement of state ownership tends to limit CEO compensation. The results are consistent with previous findings of Shleifer and Vishny (1997) and Chang et al. (2004) that the government or regulation may ensure efficient corporate governance in business activity as a helping hand when corporate governance is weak.

I further examine whether higher equity-based CEO incentive compensation is associated with banks' risk-taking investment strategies and performance. The empirical results are consistent evidence of a positive relation between CEO incentive compensation and managerial risk-taking investments. In particular, incentive compensation is positively associated with bank risk, performance and total loan write-offs. This empirical findings suggest that the importance of the board and ownership variables in the compensation equation are related to the effectiveness of banks' investment strategies and performance. The results are robust across alternative methodologies, and model specifications. The results have important implications for regulators and corporate governance in designing proper measure of CEO compensation and incentive risk control in China's financial industry.

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