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The Impact of Executive Payment on Firm Performance of the Financial Enterprises in China

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Abstract

Using a panel of Chinese commercial banks over the 2001-2009 period, this study explores the relationship between executive pay and performance, as well as, the comparison of pay-performance sensitivity between managers and directors. Several methods were employed to estimate the relation, with control variables of size and ownership, based on alternative measures of performance. Our analyses revealed that the performance of non-performing loan ratios and ROE have significant effect on director's compensation. On the contrary, no relation between bank performance and managers compensation was found, and neither any impact of compensation changes on performance. Moreover, according to our results the state control ownership can lower the pay-performance sensitivity. As a conclusion, this research supports that government regulations on bank performance rating and executive compensation are necessary.

Keywords: Executive compensation, Bank Performance, China

1. Introduction

Although there are many studies that have emerged on executive compensation and the performance of corporate entities (Mehran 1995, Coughlan and Schmidt 1985, Lambert and Larcker 1987, Aggarwal and Samwick 1999, Gomez-Mejia et al. 1987, Brunello et al. 2001 to name but few), it seems that the issue can be more easily argued on a theoretical basis rather than reaching an empirical consensus; performance-pay sensitivity always turns out to be unexpected (e.g. Ozkan 2007, Jensen and Murphy 1990, Wei 2000, Kubo and Saito 2008).

In China, the large compensations of Chief Executive Officers (CEOs) have drawn attention in recent years (Wei 2000, Xu et al. 2005). At the same time, the Chinese Ministry of Finance (MOF, see www.mof.gov.cn) has drafted a salary management circular for executives of State Owned Enterprises (SOEs), aiming to establish a performance-appraisal system for determining executive salary adjustments above annual base levels. Financial institutions were, its first target; MOF released a new set of detailed rules and regulations on how to rate the bank performance in December 2009 (Lin and Zhang 2009).

In this context we attempt to examine here the sensitivity of executive compensation in relation to performance

in the Chinese banking system with the aim to evaluate the necessity of the new regulations introduced in meeting performance measures for the financial industry. For our investigation in pay-performance sensitivity we chose 18 Chinese commercial banks with annual data from 2001-2009 and we examine profitability, asset quality, and capital adequacy aspects.

Our paper is structured as follows. In the next section, the literature in association to executive compensation and performance and the Chinese banking sector are briefly presented. This is followed by our research hypotheses, methods, and sample selection and description. We present then our findings and our conclusions. The paper ends with the identification of our research limitations and recommendations for improving the performance of the Chinese banking system.

2. Literature Review

2.1 *The impact of executives' compensation on their performance*

Tournament theory (Eriksson 1999, Melton and Zorn 2000), expectancy theory (Henemana and Schwab 1972), agency theory as well as other socio-psychological factors, have been used in the academic literature to explain the process in which managerial compensation is determined. Among them, agency theory has often been used by empirical researchers (e.g., Gomez-Meji et al. 2005, Mengistae and Xu 2002, Firth et al. 2006, Doucouliagos et al. 2007, Crespi-Cladera and Gispert 2003). According to its doctrines, the problem of information asymmetry between owners and their agents always arises due to the separation between ownership and control.

Tosi et al. (2000) mention that executives favor information asymmetry in their decision making process, as they prefer to pursue their own targets, which often do not coincide with shareholders'. Thus, exploring the way of aligning shareholders' interests with managers' compensation benefits becomes one of the main considerations in corporate governance. The purpose of a compensation contract is to reward executives in such a way that they strive to maximize firm performance, so that both executives and shareholders can meet their expectations.

As Bonner & Sprinkle (2002) show in their overview of the relationship between incentives and performance, the incentives–effort and effort–performance relations can be formulated as a function of personal, task, environmental, and incentive scheme variables. Crespi-Cladera and Gispert (2003) also demonstrate a model to express this situation: $Y = f(\epsilon, \epsilon)$. In this function, Y stands for firm performance, influenced by managerial effort (ϵ) and a set of variables (ϵ). In particular (ϵ) refers to the variables that are out of managerial control. These include variables such as the board size, ownership, CEO age, etc. Other researchers, like Ho et al. (2009), studied the relationship among performance, compensation and potential risk. In this context we focus our study on the observable and controllable outcomes (namely “ ϵ ”), where the design of executive compensation contract is based on, as well as the control of the size and ownership.

In general the owners of a business always try to put elements that serve their own interests in executive compensation contracts (Jensen and Murphy 1990), through which, executives can receive additional rewards as performance improves. Thus, two questions arise: what variables can reflect the managerial effort and can be accepted by the executives and; how can one design a compensation package.

For most of the listed companies, market based information (e.g. share price) reflects firm development and performance. According to Bertrand and Mullainathan (2001), share price may provide a noisy measure of executives' performance. Nevertheless, this is still widely used by researchers (e.g. Brik et al. 2008, Bruck et al. 2008, to name but few). Accounting based indices, on the other hand, present a traditional profit-oriented view of enterprise strategy. Profitability is measured by return on sales, ROA and ROE.

This picture changes in the financial industry. The basic operational model here is that of a procedure of reinvestment (Note 1). Berk & DeMarzo (2008) argue that from a financial performance perspective, once the result of ROA after deducting liabilities is lower than the cost of capital, it is difficult for a financial enterprise to develop its earning sustainably. In our study, we consider banks as representative institutions of the sector. Macey and O'Hara (2003) for example point out three special characteristics that distinguish banks from non-financial firms: the bank liabilities are made up by the demand of deposits; long-term loans compose the major part of their assets; banks receive most of their funding from debt with relatively little derived from equity. By contrast, John and Qian (2003) focus on the corporate governance of banks and indicate two special features: a) banks are regulated to a higher degree than manufacturing firms; b) banks have significantly higher leverage.

In addition, the banking sector, as a financial intermediary, closely interconnects governments, markets, the public (depositors), and other financial institutions. Webb (2008) points out that banks are monitored by regulators in addition to market supervisors and shareholders, because of the supervisory ratings based on periodic safety and soundness reviews. Therefore, profitability cannot be the only indicator when measuring the

managerial effort, since a bank equity holder requires not only (immediate) compensation and interest payments, but also sustainable development of his/her earnings. As a result, in our study, profitability, asset quality and solvency are all taken into account in analysing bank performance.

Designing a compensation package is not an easy task. Rewards can be classified as a) intrinsic; or b) extrinsic. Although the former cannot be controlled directly, they can be influenced through extrinsic rewards (e.g., monetary incentives, promotions, and praise). In particular, promotion might play a significant role in state-owned banks in China; in this case most of the executives are appointed by the state (the controller and biggest shareholder) rather than through open-market criteria. Therefore, the executives in China could be considered as public officers. In our study, we focus on the monetary rewards based on the assumption that physiological and any other subsistence needs of executives are already satisfied.

In addition Deshpande (2002) describes two kinds of “myopia” in executive behavioural analyses arising from non well-structured incentive contracts. The first one is termed “Passive Myopia”, meaning that agents focus mainly on short-term activity management, paying little attention to long-term performance, which, undoubtedly, appears to be a common problem in most companies around the world. The second one is called “Active Myopia”, created by stock-option based compensation, in which the agents “take long-term capital investment decisions with short-term signalling intentions”, resulting in a long lasting adverse effort. Either of the above can cause a gap between pay and performance.

2.2 Overview of the Chinese banking system

Lin and Zhang (2009) explore the development of the Chinese banking system over time. This, they argue, has moved along two routes in the last two decades: from a policy-orientation to a market-focused; and from state owned banks to privatised (joint stock companies - Note 2). High level of centralization was a typical feature of Chinese banks in the past. In the 1980's, a reform in the management structure of the banks and their operations took place, resulting in the coexistence of the so-called “big four”: the Bank of China (BOC), the Agricultural Bank of China (ABC), the Construction Bank of China (CBC), and the Industrial and Commercial Bank of China (ICBC), which all operate at national level. All SOEs (including the banking sector) were given more autonomy as well as the possibility to retain their profits. Profit sharing schemes were also introduced (Firth et al. 2006), but the characteristics of a monopolistic market remained because of strict market access limitations that stayed in place. Subsequently, due to socio-economic and regulatory developments, a variety of banks were legally incorporated, including the Chinese-foreign joint-equity bank, the domestic joint-equity bank, policy banks, and city-level commercial banks. This transition is still undergoing, aiming to involve corporate entities in open market competition and to further reduce state control. So far, higher foreign ownership, lower state ownership, minority shareholder rights, and the state relinquishing its right to appoint the CEO are all associated with improved financial performance (Xu et al. 2005). For the purposes of our paper the Chinese financial enterprises' strategic objectives to switch from policy to profit-orientations were deemed as an interesting environment to test the effect of executive-pay on firm performance. We undertake our endeavour here from an agency theory perspective.

Bruck et al. (2008) argue that the gradualism of Chinese economic reforms has resulted to performance-pay sensitivities and elasticities that are dimensionally similar and comparable to those of the USA and the UK financial sectors. Even though, the proportion of state-owned shares in SOEs has dropped in recent years, the Chinese government still retains significant control on the governance of SOEs. In spite of this, Lin and Zhang (2009) find that, the state-owned commercial banks are less profitable and less efficient; their asset quality is “lower” than other types of banks excluding the “policy” banks. However, the authors expect a non-significant sensitivity of payment on performance for national level banks. This is due to the state still having an important role in facilitating equitable economic growth without any indications of abandoning its effort to directly control the national financial activity, at least not in the short-term.

Recently, the Chinese Ministry of Finance (MOF, www.mof.gov.cn, Lin and Zhang 2009) released preliminary regulations for performance appraisals of state-owned financial enterprises aiming to provide more practical and quantifiable evaluation criteria (Note 3). Before these regulations, MOF had already drafted a salary management circular for the executives of SOEs, targeting to improve the operations and management performance of financial enterprises, and to better evaluate the executives' performance. The reasons for those regulations date back to 2007 and 2008 when the average executive compensation of Chinese listed companies rose sharply over the period of 2003 to 2008. In particular, the financial companies swept the top three positions of the top ten executive compensation ranking list of 2008 (Note 4). On the whole, compared to 2007, the overall performance of the listed companies in 2008 has declined by 16.88%; while the executive compensation grew by

1.5 % (with that growth in 2007 being 57.15% from the previous year – see www.realize.com.cn). The evidence of “bad performance associates with high compensation” is always a controversial issue among the public, suggesting an abnormal and unfair incentive mechanism (Lin and Zhang 2009).

Figure 1 shows the Chinese bank corporate governance structure, composed of directors, supervisors and senior management. Directors and supervisors are independent from each other, they are appointed (or selected) by the shareholders, and they report directly to them. The directors are in charge of the operations’ management and managers’ recruitment (through the personnel department); the supervisors are responsible for the supervision of directors and managers. Senior management in Chinese banks is responsible for implementing the directors’ strategy and it is supervised by the board of supervisors.

In most Chinese banks, there is a compensation committee, responsible to design compensation packages. The first draft of a compensation package will be scrutinized by the board of directors before approved by the shareholders. Problems though that could arise from directors scrutinizing their own compensation packages.

2.3 Prior Research on Payment-Performance Relationship

Prior studies on executive payment-performance relationship become more complicated over time, as the number and the variety of variables included in the models increase. Variables that have been used reflect: the nature of the company (e.g. industry type, cross-country), performance indices; ownership structure; demographics on executives and directors (e.g. age, function, nationality); time effects; to name but few. Until now researchers have not reached a consensus about the effects of compensation on motivating executives’ performance.

Bruck et al. (2008) concluded that the executive payment positively relates to the past and current firm financial performance. Firth et al. (2006) found that the firms with a state agency as the major stockholder do not appear to use performance related payments, while those with private equity holders or SOEs as their major shareholders link CEO compensation to increases in stockholders’ wealth and/or profitability. However, other studies have reached the opposite conclusions. Jensen and Murphy (1990) found that for any \$3.25 CEO compensation change, shareholder wealth changes by \$1,000. However this relationship was found as statistically non-significant. Wei (2000) examined 765 listed companies and found no remarkable positive correlation between business performance and executive incentives. Kubo and Saito (2008) estimated the sensitivity of Japanese presidents’ wealth to shareholder wealth in the period 1977–2000. In their results they showed that payment–performance sensitivity actually decreased substantially after 1990 due to bureaucracy. Ozkan (2007) tested UK non-financial firms and found that the institutional ownership is positively related to the pay-for-performance sensitivity of CEO compensation and negatively related to the level of CEO compensation. The result of Brik et al. (2008) was that the high pay performance sensitivity associates with low future returns, probably due to a reduction in firm risk.

Focusing on the banking sector in Australia, Doucouliagos et al. (2007) revealed an absence of a relationship between directors’ payment and bank performance, and no association with prior year performance. However, they found a strong positive relationship between CEOs’ remuneration and prior year bank performance. John and Qian (2003) conducted a comparative study between bank and manufacturing firms in the USA and they found that they pay-performance sensitivity in the banking industry, with its high leverage, is lower than it is in the manufacturing industry. They also documented that the pay-performance sensitivity of firms decreases with debt ratio and size. Beltratti et al. (2009) provided evidence that banks with more loans and more liquid assets performed better during the month following the Lehman bankruptcy, and so did banks from countries with stronger capital supervision and more restrictions on bank activities.

3. Methodology and Data Collection

3.1 Aim and Research Hypotheses of the study

As discussed earlier the literature on bank performance and executive compensation has examined many factors as potential influential on pay-performance sensitivities (CEO age, board size, ownership, shareholder wealth, return on stock, etc). Most of the existing studies focused on profitability as the only performance measure. However, in contrast to other industries, the financial system is more complex because of its special role in the financial market and its unique operating model (Macey and O’Hara 2003; Doucouliagos et al. 2007; John and Qian 2003). Thus, apart from profitability, asset quality and solvency are also important aspects for banks’ survival and prosperity. This is the reason why the new regulations issued by the MOF of China focus on a comprehensive set of measures rather than the single criterion of profitability. Especially for Chinese state-owned banks, the characteristics of the regulatory agencies play an important role to distinguishing the

banking sector from other industries.

So far, no study, on the relationship between executive pay and performance in the Chinese banking system, has included any non-profitability factors as yet. Moreover, since the state ownership is a typical feature of the Chinese banking system, and the evolution of this sector in the last two decades has had a remarkable influence on the entire financial industry, we aim to explore in our inquiry the impact of State control on executive payment and performance sensitivity. In this context, our research hypotheses are formulated as follow:

H1: There should be a positive relationship between executive compensation and bank performance.

H2: Pay-performance sensitivity in state-owned bank should be lower.

3.2 Variable selection for measuring the relationship between payment and performance

3.2.1 Remuneration

The Chinese bank corporate governance structure, consists of directors, supervisors and senior management. This study examines both directors' and managers' pay-for-performance relationship (Note 5). Our empirical investigation uses the natural logarithm of compensation as the dependent variable. Based on our data sources, we use an average of the top 3 highest compensations of each firm as the dependent variable. Particularly, some of the senior managers (including CEOs) are also members of the directors (Note 6). The reported payment is the total cash compensation and it includes a base salary and performance commissions and benefits (Note 7).

3.2.2 Firm Size

The majority of previous studies uses firm size as a major determinant when analyzing executive compensation and it is consistently found to be positively and significantly correlated with compensation levels (e.g. Firth et al. 2006, Conyon 1997, Bliss and Rosen 2001). However, some studies, like Lambert's et al. (1990), have concluded that the correlation between compensation and firm size is much smaller, but still statistically significant, which indicates that the changes in executive compensation are not primarily driven by the changes in organization's size. Various measures of firm size have been used in related studies, such as: total assets (Firth et al. 2006); sales turnover (Main et al. 1996); total capital (Mishra and Nielsen 2000), current sales (Mengistae and Xu 2002). Similar to Firth et al. (2006) the logarithm of total asset is used in our study.

3.2.3 Performance

Prior studies have used a variety of indicators to measure performance. For accounting-based and market-based performance, Firth et al. (2006) and Mengistae and Xu (2002) used return on sales, while Brik et al. (2008) stock returns. Bruck et al. (2008), on the other hand, chose total shareholder returns, pre-tax profits and returns on assets. Several studies have reported the relative merits of the various measures of bank performance (e.g. John and Qian 2003, Hubbard and Palia 1995, Doucouliagos et al. 2007).

Because of the special nature of the banking sector, in addition to conventional measures, such as ROA and ROE, which can only reflect the profitability of a bank, the measures of asset quality and solvency are also adopted for the analysis of performance. Thus, non-performing loans (NPL) and the core capital adequacy ratio (CCAR) are introduced in our investigation.

Asset quality---NPL

Effective solutions on the NPL problem can boost the competitiveness of a banking system. Chinese NPLs have attracted a lot of attention in 1998, as a negative outcome of the reforms passed (Lin and Zhang 2009). As a response, the Chinese government set up four State-owned asset management corporations to handle bad debts and injected capital into the big four banks. However, according to Ernst & Young (2006) report on Global Nonperforming Loans (http://www.articlealley.com/article_91573_19.html) it appears that the NPL problem will persist as China's growing property markets will produce new NPLs in the forthcoming years. Studies on bank failures found that the asset quality is a significant predictor of insolvency (Demirgüç-Kunt and Detragiache 1998, Barr and Siems 1994), and that the failing banks always have high levels of NPL. This especially applies to investment and development banks, as the NPLs are not always the main (operational) problems faced by commercial banks. In this light we include NPLs as an additional measure of performance in order to consider the potential risk usually in line with high profits.

Solvency---CCAR

Previous studies have analyzed the effects of capital adequacy regulations on bank asset risks (e.g. Besanko and Kanatas 1993, Boot and Greenbaum 1993, Dewatripont and Tirole 1995, Rochet 1992). The associated debate on the advantages and disadvantages created is ongoing; for example, Dewatripont and Tirole (1995) view capital

rules as a means of efficiently allocating controlling rights between different groups of claimholders, thereby indirectly influencing bank manager incentives. Beltratti et al. (2009) argued that large banks with more Tier 1 capital and more deposit financing at the end of 2006 had significantly higher returns during the credit crisis. Following this result, we assume that the capital adequacy ratio is a helpful measure to check the soundness and stability of the banking system, indicating the capacity of a bank to cope with credit risk and other operational risk.

Our choice of indicators, namely ROE, NPL and CCAR, is in accordance with “The Implementation of Rules on How to Evaluate The Performance of State-owned Financial Enterprises”, issued by The Chinese Ministry of Finance on December 2009 (Note 8).

3.2.4 Ownership

Firth et al. (2006) argued that, the form of a dominant shareholder existing in an organisation is critical in setting CEO payment. As discussed earlier, there has been a remarkable transition in the Chinese banking sector during the last two decades. Today, apart from the policy banks, investment banks and foreign banks, China’s commercial bank system consists of three additional tiers; namely State-owned banks, national-level domestic joint-equity banks, and city-level commercial banks (Lin and Zhang 2009) (Note 9). In the first tier, the majority shareholder used to be the state directly whereas now it is a state-owned investment company, owning more than 50% of shares (Note 10). The other formations are mostly joint-equity with isolated small-holdings. The majority of our sample, does not include a controlling or shareholding party owning more than 30% of shares. In particular, our sample contains three of the “big four” banks: BOC, CBC and ICBC (Note 11). Because of the limitation of data sources, we do not separate the joint-equity banks and city-level banks and we only use state-ownership as a control variable when considering the effect of ownership.

3.2.5 Variables selected for our study

Taking into account the above the variables that were used in our study can be seen in table 1.

3.3 Models

The econometric models employed are as follow.

3.3.1 Basic model analysis of compensation

First, we examine the relationship between payment and performance for managers and directors using a basic model without controlling for ownership. Adopting the methodology proposed by Doucouliagos et al. (2007), separate regressions were run using NPL, ROE and CCAR in turn, together with size as a control variable. The equation describing this is:

$$\text{Ln(PAY)}_{it} = a + \beta_1 * \text{Ln(Size)}_{it} + \beta_2 * \text{PERF}_{it} + u_{it} + \varepsilon_{it} \quad (1)$$

Where Ln(PAY)_{it} denotes the natural logarithm of compensation of managers and directors, respectively, for bank i in year t ; Ln(Size)_{it} and PERF_{it} are expressed in the same way (Note 12), u_{it} denotes a fixed effect, and ε_{it} is the error term (Note 13).

3.3.2 Effect of ownership on pay-performance sensitivity

Given the difference between state-owned banks and other forms of financial institutions in earnings performance and executive compensation, ownership was added as a control variable in our model. D_{SOE} is a dummy variable coded 1 if the bank is state-owned and 0 otherwise. The rest of the variables in our model stay as before. Equation (1) now transforms into:”

$$\text{Ln(PAY)}_{it} = a + \beta_1 * \text{Ln(Size)}_{it} + \beta_2 * \text{PERF}_{it} + \beta_3 * \text{PERF}_{it} * D_{\text{SOE}} + u_{it} + \varepsilon_{it} \quad (2)$$

The coefficient β_2 reflects the payment-performance sensitivity of non state-owned banks and the sum of $(\beta_2 + \beta_3)$ reflects the sensitivity of state-owned banks. If the payment-performance sensitivity of state-owned is lower than that of non-state-owned banks, that is, if our hypothesis holds, then β_3 should be negative (for NPL is positive) and significant.

3.3.3 Further test of pay-performance sensitivity

In order to further test sensitivity, the model described by equation (3) is employed. In equation 3, the change in compensation (ΔPAY) is regressed with the change in performance (ΔPERF_{it}). Since the results from the first model revealed that the firm size plays an important role in explaining compensation levels, the change of firm size is also included in our model.

$$\Delta\text{PAY}_{it} = a + \beta_1 * \Delta\text{Size}_{it} + \beta_2 * \Delta\text{PERF}_{it} + u_{it} + \varepsilon_{it} \quad (3)$$

3.4 Data collection

The data used in this study were collected from the Bankscope and banks' annual financial statements. Many banks operating in China are subsidiaries of foreign banks. These do not provide the information needed in their financial statements and were excluded from our study. In addition, we focus solely on commercial banks in order to obtain more meaningful and comparable results with other studies. As a result, a somewhat unbalanced sample of 18 banks with annual data for the period 2001-2009 was obtained (see table 2). Our total number of observations is 82, but due to missing data the amount of observations used in most regressions was even smaller raising questions for the validity of our results.

4. Research Results

4.1 Sample Descriptive Statistics

Table 3 exhibits the descriptive statistics of the key variables of our sample. Chinese commercial banks have an average size of ¥1,569 billion, while the average assets of the "big three" state-owned banks is three times higher, namely ¥6,124 billion. State-owned banks have a higher percentage of both capital adequacy ratio (9.20%) and ROE (14.84%) indicating that state-owned banks have better profitability and solvency than the rest of the Chinese banking system. However, with respect to NPLs, the average amount for state-owned banks is twice as big as the mean for the whole sector, suggesting financial risks behind their higher profits. It is also worth mentioning that the two highest compensation figures for managers (¥11.56 million and ¥8.05 million) are given from non-state-owned banks.

According to Figure 2, the average compensation of state-owned bank managers is always higher than that of directors, with the change not being as strong as it is for the entire sample. When examining the entire sample we see the opposite picture; director compensation is always higher than that of managers. We can argue thus that the rapid increases in executive compensation are due to the non-state-owned banks, since most of the directors of state-owned banks are accountable to the State Council. In accordance to John and Qian (2003), regulation could act as a substitute for monitoring and incentivizing managers. Since the directors of state-owned banks are similar to public officers rather than pure profit-oriented businessmen, some other incentives than monetary motives should be used to incentivize them. In general, the total direct compensation is increasing before 2008, and afterwards it appears to have a slight decrease probably due to the financial crisis.

Figure 3 compares the change of performance between the whole sample and the state-owned banks. During the period examined, the size of the state-owned banks has had a significant steady growth, while the growth for the entire sample is not that clear. This is because after 2006, there were 8 banks listed, including the "big three". Moreover, the state-owned banks have always had a higher capital adequacy ratio than the industry average, although this gap has become smaller in recent years. Beltratti et al. (2009) argue that banks with more Tier 1 capital can perform better during crises, however, the authors did not provide any convincing evidence on this. NPL of state-owned banks has dropped sharply during the examined period. After 2005, all banks keep the NPL at low levels. According to Lin and Zhang (2009), this is probably due to the fact that some of the banks were publicly listed or partially sold to foreign investors in 2005. Moreover the state has strengthened the management of non-performing loans since.

4.2 Regression Models

4.2.1 Basic model analysis of compensation

The bank size is found to be positively and significantly related to manager and director compensation (Table 4). This is consistent with most of the research in other countries and industries. Moreover, with respect to performance, there was not a significant statistically positive association between manager compensation and bank performance. For directors, however, ROE is significantly positive at 95% confidence interval, while NPL is significantly negative at 99%. The coefficient of NPLs, just as expected, provides preliminary evidence that the asset quality control is one of the considerations that affects the level of director compensation. But it seems that neither managers' nor directors' compensations appear to have a direct link with capital adequacy. These results suggest that, the drivers of director compensation appear to be bank size and profitability as well as asset quality. However, the payment is not consistent with performance for managers. Our results, provide partial support to our first hypothesis, namely that bank performance (ROE and NPL) has significant influence on director's compensation.

4.2.2 Effect of ownership on pay-performance sensitivity

The coefficients on director-ROE are still positive and significant at 95% confidence interval (see table 5). Similarly, director-NPL is negative and significant at 99%. The interaction terms of ROE and NPLs indicate that

state-owned banks do have a lower pay-ROE and lower pay-NPL sensitivity than non state-owned bank, although neither of them is significant. However, considering the results from table 4, we can claim that NPLs and ROE still have significant influence on the compensation package designed for non state-owned banks. Regarding CCAR, it appears that neither type of banks uses capital adequacy as a measure of managerial effort. Taking into consideration the results of Beltratti et al. (2009), we can argue that Tier 1 capital directly influences the performance of profitability, and it probably indirectly influences compensation, although this is not proved in our study.

The regression was also conducted based on the interaction term of size. All related coefficients were found significantly negative, suggesting that even though total assets is the driver of compensation, compared to non state-owned banks, the sensitivity of state-owned ones is lower. We can claim that in recent years, the big three Chinese banks have had a rapid growth in size since their listing, but executive compensation, is still controlled to certain levels.

4.2.3 Further test of pay-performance sensitivity

Based on Table 5 results, we can conclude that the rate of change of compensation is not consistent with the rate of change of performance, with the exception of ROE, but only at low significance levels. Specifically, the rate of asset change is negatively associated with the rate of change of compensation. However, neither of them is that clear nor significant. The regression results remained the same when the ownership control was also added in the model.

5. Discussion – Conclusions

From the mid 1980s, the Chinese government has undertaken bank reforms, in an attempt to shift the economy from central planning to market-orientations. Following the recently released state regulations on bank performance ratings, our study examines the sensitivity of executive compensation in relation to performance in the Chinese banking system. Our purpose was to identify the necessity of the new regulations in the setting of performance measures for the financial industry. Taking into consideration the work of Doucouliagos et al. (2007) and Firth et al. (2006), we chose 18 Chinese commercial banks with annual data from 2001-2009 as the sample to test pay-performance sensitivity from three different angles: profitability; asset quality; and capital adequacy.

Our examination revealed the size of the bank to be always related to executive and director compensation. This was consistent with most of the research conducted in other national contexts and sectors. Furthermore, compared to managers, compensation of bank directors seems to be associated with ROE and NPL in our study. This means, that both profitability and asset quality should be considered when designing director remuneration. However, when the payment-performance sensitivity was further tested, our results showed that the level of compensation change does not correspond to the level of performance change. Using ownership as a control variable indicated payment-ROE and payment-NPL relationships with director compensation to be significant in non state-owned banks although not enough evidence was found to support our second hypothesis. Our findings indicate that the transition of the banking system from central planning to market-based economies could have an impact on corporate governance. This is an area that could be further investigated in the future.

Our results indicate that the driver for incentive contracts is different between managers and directors. From anecdotal information it appears that most of bank presidents and vice-presidents are also members of the directors, especially in state-holding enterprises. Presidents can better understand and execute the targets assigned by the board of directors with less information asymmetry; thus, we should assume that directors would better align to shareholders' request than managers.

6. Study Limitations and Recommendations

Our study is rather exploratory and since parts of our results are not consistent with the literature further examination is necessary. Only a small number of scholars have investigated executive compensation in Chinese commercial banks. This has to do with unstandardised layouts (or even disclosure) of compensation reports. Factors that also limited the data available for our study. Since the Chinese stock market is still developing, most of the banks are listed only for a short period of time, resulting in an absence of data accessibility. When comparing the financial statements available, we felt that prior to their listing, executive compensation in Chinese banks were more like a secret; only information on the top 3 highest directors and executives was reported as an aggregate figure. Moreover, the dual roles of managers and directors as well as the non-separation of their compensation components, based on their duties, may have led our results to biasness. A lot of individual knowledge from the lead researcher of this study was used to frame the data.

The management of NPLs in the Chinese banking system was found to be considerably improved, given that all

banks try to maintain their non-performing loan ratios at low levels. However, according to Lin and Zhang (2009), state-owned banks can place non-performing loans into asset management companies and at the same time obtain an injection of state funds. Although in this study, NPLs appear to be related to director compensation, further examinations are needed to see how this relation exists.

It was mentioned that inappropriate setting of incentive contract may lead to myopia. Although long term incentive contract such as stock option is still not employed by most of the banks, the government specified that a fixed proportion of the annual total compensation of officers such as executives, directors and supervisors, should be a deferred payment based on some specific conditions. (Note 14). It would be worthwhile to further research the effect of this regulation.

According to this research's results, it is strongly supported that the new regulators on bank performance rating as well as salary management circular for executives are necessary, since no correlation between executive compensation and bank performance could be found. Webb (2008) points out that regulatory ratings impact on optimal bank governance structure by varying incentive sensitivity to market performance. Regarding to the special role the bank system plays, the typical regulations should be introduced in order to align agent's interest to shareholders' wealth, motivating from both short-term and long-term.

References

- Aggarwal R. K. and Samwick A. A. (1999). Executive Compensation, Strategic Competition, and Relative Performance Evaluation: Theory and Evidence. *The Journal of Finance*, 54(6): 1999 – 2043.
- Barr, R., Seiford, L. & Siems, T. (1994). Forecasting Banking Failure: A Non-Parametric Frontier Estimation Approach. *Researches Economiques de Lovain*, (60), 417-429.
- Beltratti, A. & Stulz, R.M. (2009). Why Did Some Banks Perform Better during the Credit Crisis? A Cross-Country Study of the Impact of Governance and Regulation. Fisher College of Business Working Paper No. 2009-03-012.
- Berk, J. & DeMarzo, P. (2008). *Corporate Finance*. Pearson Education.
- Besanko, D. & Kanatas, G. (1993). Credit Market Equilibrium with Bank Monitoring and Moral Hazard. *Review of Financial Studies*, 213-232.
- Bliss, R. & Rosen, R. (2001). CEO Compensation and Bank Mergers. *Journal of Financial Economics*, 61, 107–138.
- Bonner, S.E., & Sprinkle, G.B. (2002). The Effects of Monetary Incentives on Effort and Task Performance: Theories, Evidence, and a Framework for Research. *Accounting, Organizations and Society*, 27, 303-345.
- Boot, A. & Greenbaum, S. (1993). Bank Regulation, Reputation and Rents Theory and Policy Implications, Mayer, C., Vives, X. (Eds.), *Capital Markets and Financial Intermediation*. Cambridge University Press, Cambridge, 262-285.
- Brick I. E., Palmon, O., & Wald, J.K. (2008). Too Much Pay Performance Sensitivity? Midwest Finance Association Conference 2008. [Online] Available: <http://www.mfa-2008.com/papers/toomuchpps.pdf>
- Brunello G, Graziano C. and Parigi B. (2001). Executive Compensation and Firm Performance in Italy. *International Journal of Industrial Organization*, 19(1-2): 133 – 161.
- Buck T., Liu, X. & Skovoroda, R. (2008). Top Executive Pay and Firm Performance in China. *Journal of International Business Studies*, (2008)39, 833–850.
- Canyon, M.J. (1997). Corporate Governance and Executive Compensation. *International Journal of Industrial Organization*, 15, 493– 509.
- Coughlan A. T. and Schmidt R. M. (1985). Executive Compensation, Management Turnover, and Firm Performance: An Empirical Investigation. *Journal of Accounting and Economics*, 7(1-3): 43 – 66.
- Crespi-Cladera R., & Gispert, C. (2003). Total Board Compensation, Governance and Performance of Spanish Listed Companies. *Review of Labour Economics and Industrial Relations*, 17, 103–126.
- Demirgüç-Kunt, A. & Detragiache, E. (1998). The Determinants of Banking Crises in Developing and Developed Countries. *IMF Staff Paper*, 45(1), 1998, 81-109.
- Deshpande, P.H. (2002). Incentives in the Firm and the Roots of Capitalist Myopia. Working Paper Series. [Online] Available: <http://ssrn.com/abstract=341420>. doi:10.2139/ssrn.341420, <http://dx.doi.org/10.2139/ssrn.341420>

- Dewatripon, M. & Tirole, J. (1995). *The Prudential Regulation of Banks*. MIT Press, Cambridge, MA.
- Doucouliaagos, C., Haman, J. & Askary, S. (2007). Directors' Remuneration and Performance in Australian Banking. *Corporate Governance*, 15(6), 1363-1383.
- Eriksson T. (1999). Executive Compensation and Tournament Theory: Empirical Tests on Danish Data Tor Eriksson. *Journal of Labor Economics*, 17(2): 262 – 280.
- Ernst & Young. (2006). Global Nonperforming Loan Report 2006.
- Firth, M., Fung, P.M.Y. & Rui, O.M. (2006). Corporate Performance and CEO Compensation in China. *Journal of Corporate Finance*, 12, 693– 714.
- Gomez-Mejia L. R., Tosi H. and Hinkin T. (1987). Managerial Control, Performance, and Executive Compensation. *The Academy of Management Journal*, 30(1): 51 – 70.
- Gomez-Mejia, L., Wiseman, R. M., & Dykes, B. J. (2005). Agency Problems in Diverse Contexts: A Global Perspective. *Journal of Management Studies*, 42(7), 1507–1517.
- Hausman J, Stock H. J. and Yogo M. (2005). Asymptotic Properties of the Hahn–Hausman test for Weak-Instruments. *Economics Letters*, 89(3): 333 – 342.
- Henemana H. G. and Schwab D. P. (1972). Evaluation of Research on Expectancy Theory Predictions of Employee Performance. *Psychological Bulletin*, 78(1): 1 – 9.
- Ho. J.L.Y., Lee, L. & Wu, A. (2009). Employee Compensation Contracts and Firm Performance in Uncertain Environments: Empirical Evidence for Adjusting Pay-Performance Sensitivity, 2009 Annual Meeting & Conference of American Accounting Association. [Online] Available: <http://ssrn.com/abstract=1441882>.
- Hubbard, R.G. & Palia, D. (1995). Executive Pay and Performance; Evidence from the U.S Banking Industry. *Journal of Financial Economics*, 39, 105-130.
- Jensen M.C. and Murphy K.J. (1990). Performance Pay and Top-management Incentives. *Journal of Political Economy*, 98(2):225.
- John, K. and Qian, Y. (2003). Incentive Features in CEO Compensation in the Banking Industry. *FRBNY Economic Policy Review*, 9:109–121.
- Kubo, K. and Saito, T. (2008). The Relationship Between Financial Incentives For Company Presidents and Firm Performance In Japan. *The Japanese Economic Review*, Vol. 59, No. 4.
- Lambert R. A. and Larcker D. F. (1987). An Analysis of the use of Accounting and Market Measures of Performance in Executive Compensation Contracts. *Journal of Accounting Research*, 25(supplement): 85 – 125.
- Lambert, R.A., Larcker, D.F. & Weigelt, K. (1990). How Sensitive is Executive Compensation to Organizational Size? *Strategic Management Journal*, 12(5), 395-402.
- Lin, X. & Zhang, Y. (2009). Bank Ownership Reform and Bank Performance in China. *Journal of Banking & Finance*, 33, 20-29.
- Macey J. R. & O'Hara M. (2003). The Corporate Governance of Banks. *Economic Policy Review*, 91–107.
- Main, B.G., Bruce, A. & Buck, T. (1996). Total Board Remuneration and Company Performance. *The Economic Journal*, 106, 1627–1644.
- Mehran H. (1995). Executive Compensation Structure, Ownership, and Firm Performance. *Journal of Financial Economics*, 38(2): 163-180.
- Melton M. and Zorn S. T. (2000). An Empirical Test of Tournament Theory: The Senior PGA Tour. *Managerial Finance*, 26(7): 16 – 32.
- Mengistae, T. & Xu, L.C. (2004). Agency Theory and Executive Compensation: The Case of Chinese State-Owned Enterprises. *Journal of Labour Economics*, 22(3), 615-638.
- Mishra, C. S. & Nielsen, J. F. (2000). Board Independence and Compensation Policies in Large Banks Holding Companies. *Financial Management*, 29(3), 51–70.
- Ozkan, N. (2007). CEO Pay-for-Performance Sensitivity and Corporate Governance: An Empirical Investigation of UK Panel Data, 2007 FMA (Financial Management Association) Annual Meeting. [Online] Available: <http://69.175.2.130/~finman/Orlando/Papers/Neslihan.pdf>
- Realize. (2009). Knowledge and Capital Quarterly. [Online] Available in Chinese: www.realize.com.cn

(10/7/2009)

Rochet, J.-C. (1992). Capital Requirements and the Behaviour of Commercial Banks. *European Economic Review*, 36, 1137-1178.

Tosi, H. L., Werner, S., Katz, J.P., & Gomez-Mejia, L.R. (2000). How Much Does Performance Matter? a Meta Analysis of CEO Pay Studies. *Journal of Management*, 26(2): 301-339.

Webb, E. (2008). Regulator Scrutiny and Bank CEO Incentives, *Journal of Financial Services Research*, 33, 5-20.

Wei, G. (2000). Advanced Executive Incentive and the Listed Firm Performance, *Chinese Journal of Economic Research*, 3: 32 - 39.

Xu, L. C., Zhu, T., & Liu, Y.-M. (2005). Politician Control, Agency Problems and Ownership Reform: Evidence from China. *Economics of Transition*, 13(1): 1-24.

Websites

www.mof.gov.cn

www.realize.com.cn

Notes

Note 1. Banks, insurance companies, stock brokerage firms, investment funds and some government sponsored enterprises are all classified here as parts of the financial industry.

Note 2. A Joint Stock Company is a type of corporation or partnership involving two or more legal entities.

Note 3. State-owned financial institutions are divided into four categories: banks, insurance companies, securities futures/fund companies and financial holding companies.

Note 4. The data is from the "Value of Entrepreneurs Report", which is published by the Shanghai Realize Investment Consulting Co. in Chinese (Realize, 2009).

Note 5. In the financial statements where the necessary information is disclosed, most of the supervisors also get high compensations. Unfortunately, only a few banks report this, thus we did not include it in our investigation.

Note 6. We cannot distinguish the compensation based on the manager's role in the company.

Note 7. The pay was not broken down into these components until 2009.

Note 8. Since CAR and CCAR might have high correlation in our model, we would choose one of them after some tests.

Note 9. City-level commercial banks are also joint-equity banks with regional limitations in their scope of business.

Note 10. Central Huijin Investment Ltd is mandated on behalf of the Chinese state to exercise its rights and obligations as an investor in major state-owned financial enterprises. The members of Central Huijin's Board of Directors and Board of Supervisors are appointed by and are accountable to the State Council.

Note 11. The Agriculture Bank of China (ABC) is one of so-called "big four" state-owned commercial banks. However related data on executive compensation were not available.

Note 12. According to Doucouliagos (2007), by changing the dependent variable to the natural logarithm of the average directors' remuneration (i.e. total directors' remuneration divided by the number of directors) would not change the essence of the results.

Note 13. In this function, we use Pooled Least Squares with a fixed effect model, utilising Hausman testing (see for example Hausman et al. 2005) and F testing. The fixed effect model controls for vital firm specific effects performing thus a better degree of fitting.

Note 14. This is an executive mandate as of 2009. In our study, we used the total compensation without deducting the deferred ones.

Table 1. Variables employed in regression models

Symbol	Label	Definition
<i>Dependent variables</i>		
Executive compensation	Pay(EX)	Average of top 3 highest managers compensation
Director compensation	Pay(DIR)	Average of top 3 highest director compensation
<i>Performance variables</i>		
ROE		Return on equity.
NPL		Refer to Non-performing loan ratio
CCAR		Refer to core capital adequacy ratio. Also call Tier 1 capital ratio.
<i>Control variables</i>		
Bank size	size	Use total asset of a bank
Ownership	D _{SOE}	A dummy variable coded 1 if the bank is state-owned and 0 otherwise
<i>Interaction term</i>		
ROED		Equal to ROE*D _{SOE}
NPLD		Equal to NPL*D _{SOE}
CCARD		Equal to CCAR*D _{SOE}

Table 2. Banks in our study sample

NAME OF BANK	LISTED YEAR
SHENZHEN DEVELOPMENT BANK CO.,LTD.	1991
BANK OF NINGBO CO.,LTD.	-
SHANGHAI PUDONG DEVELOPMENT BANK CO., LTD.	1999
HUA XIA BANK CO., LTD	-
CHINA MINSHENG BANKING CORP.,LTD	2000
CHINA MERCHANTS BANK CO., LTD.	2002
BANK OF NANJING CO.,LTD	2007
INDUSTRIAL BANK CO., LTD.	2007
BANK OF BEIJING CO., LTD.	2007
BANK OF COMMUNICATIONS CO.,LTD	2007
INDUSTRIAL & COMMERCIAL BANK OF CHIAN CO., LTD	2006
CHINA CONSTRUCTION BANK CO., LTD	2007
BANK OF CHINA CO., LTD	2006
CHINA CITIC BANK CO., LTD	2007
CHINA EVERBRIGHT BANK CO., LTD	-
BANK OF HANGZHOU CO., LTD	-
CHINA BOHAI BANK CO., LTD	-
CHINA ZHESHANG BANK CO., LTD	-

Table 3. Descriptive statistics of key variables, Chinese commercial banks, 2001-2009

Panel A: Entire sample					
	Mean	Median	Maximum	Minimum	Observations
PAY(EX) (¥0,000)	240.44	174.72	805.30	23.94	90
PAY(DIR) (¥0,000)	269.57	167.97	1,156.36	33.33	79
ROE (%)	14.09	16.02	83.46	-193.90	129
CCAR (%)	8.17	7.40	62.60	-1.50	109
NPL (%)	4.13	2.25	29.78	0.00	122
ASSET(¥mil)	1,569,230	522,562	11,785,053	10,307	132
Panel B: SOE					
	Mean	Median	Maximum	Minimum	Observations
PAY(EX) (¥0,000)	312.48	223.33	592.63	114.30	11
PAY(DIR) (¥0,000)	154.19	151.30	168.27	121.31	11
ROE (%)	14.84	15.20	83.46	-27.92	22
CCAR (%)	9.20	9.90	12.00	5.00	21
NPL (%)	8.01	3.88	29.78	1.50	24
ASSET(¥mil)	6,124,037	5,388,082	11,785,053	2,857,936	24

Note: PAY (EX) stands for the total compensation of managers, while PAY (DIR) stands for total compensation of directors. The compensation of state-owned bank shown in the table is from year 2006 to 2009.

Table 4. Basic model of pay-performance sensitivity of banks

Independent Variable	EX	DIR	EX	DIR	EX	DIR
ROE	0.000917	0.0221				
	(0.6432)	(0.0419)**				
NPL			-0.0432	-0.1444		
			(0.1386)	(0.0004)***		
CCAR					0.0017	0.0092
					(0.8875)	(0.5593)
Ln(SIZE)	0.9842	0.8131	0.9328	0.5614	0.8818	0.8018
	(0.0000)***	(0.0000)***	(0.0000)***	(0.0017)***	(0.0000)***	(0.0000)***
Adjusted R-Square	0.76	0.62	0.80	0.70	0.71	0.56
Observation	89	79	87	77	83	73

Note: The table presents the regression results of equation 1. The sample includes 18 banks from 2002-2009 (after adjusting our statistics, 2001 data were removed). Dependent variable=ln(total manager compensation) or ln(director compensation). Each cell reports the coefficients from different base regressions. P-values are in parentheses. *, **and***denote significance at 90%, 95%, and 99% confidence interval levels respectively.

Table 5. Regression of compensation on performance and ownership

	Pay(EX)	Pay(DIR)	Pay(EX)	Pay(DIR)	Pay(EX)	Pay(DIR)
ROE	0.0009	0.0228				
	(0.6425)	(0.0370)**				
ROED	-0.0309	-0.0644				
	(0.6322)	(0.4224)				
NPL			-0.0456	-0.1491		
			(0.1193)	(0.0002)***		
NPLD			0.1330	0.2223		
			(0.3197)	(0.1651)		
CCAR					0.089926	0.0087
					(0.5723)	(0.5865)
CCARD					0.088664	0.1262
					(0.5786)	(0.5288)
Ln(SIZE)	0.9889	0.822872	0.9378	0.5743	0.890347	0.8196
	(0.0000)***	(0.0000)***	(0.0000)***	(0.0013)***	(0.0000)***	(0.0000)***
R	0.75	0.62	0.80	0.71	0.71	0.55
observation	89	79	87	77	83	73

Note: The table presents the regression results of equation 2. The sample includes 18 banks from 2002-2009. Dependent variable= $\ln(\text{total manager compensation})$ or $\ln(\text{director compensation})$. Each cell reports the coefficients from different base regressions. P-values are in parentheses. *, **and***denote significance at 90%, 95%, and 99% confidence interval levels, respectively.

Table 6. Pay-performance sensitivities

	Pay(EX)	Pay(DIR)	Pay(EX)	Pay(DIR)	Pay(EX)	Pay(DIR)
ROE	0.2724	4.0393				
	(0.4067)	(0.0965)*				
NPL			17.0263	22.5734		
			(0.1525)	(0.2807)		
CCAR					-0.9497	0.8226
					(0.6780)	(0.8173)
asset	-2.55E-06	-1.72E-05	-4.16E-06	-6.39E-06	-1.71E-06	-7.31E-06
	(0.9209)	(0.6584)	(0.8709)	(0.8708)	(0.9493)	(0.8594)
Adjusted R-Square	0.17	0.26	0.18	0.27	0.17	0.24
Observation	72	61	70	59	66	55

Note: The table presents the regression results of equation 3. The sample includes 18 banks from 2002-2009. Dependent variable= ΔPAY_{it} of managers or ΔPAY_{it} of directors. Regressions run separately in turn of different performance. Each cell reports the coefficients from different base regressions. P-values are in parentheses. *, **and***denote significance at 90%, 95%, and 99% confidence interval levels, respectively.

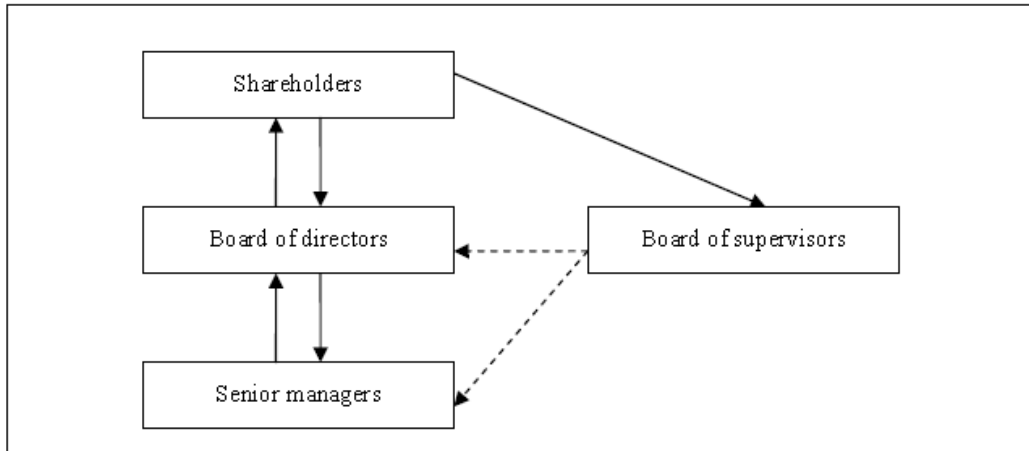


Figure 1. Structure of bank corporate governance

Source: Realize (2009).

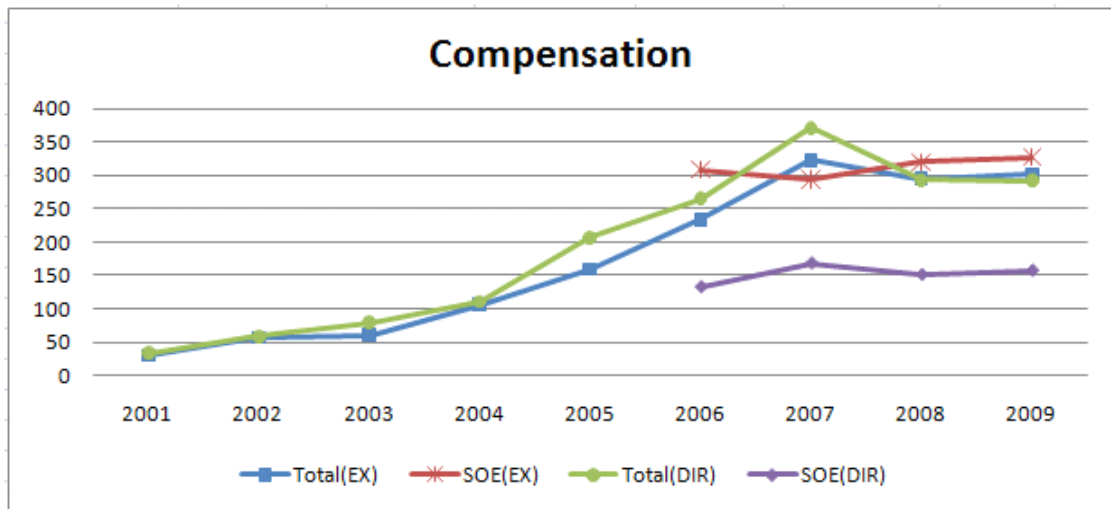


Figure 2. Changes of Compensation, Chinese Commercial Banks, 2001-2009

Notes: SOE: State-owned banks; EX: managers; DIR: directors.

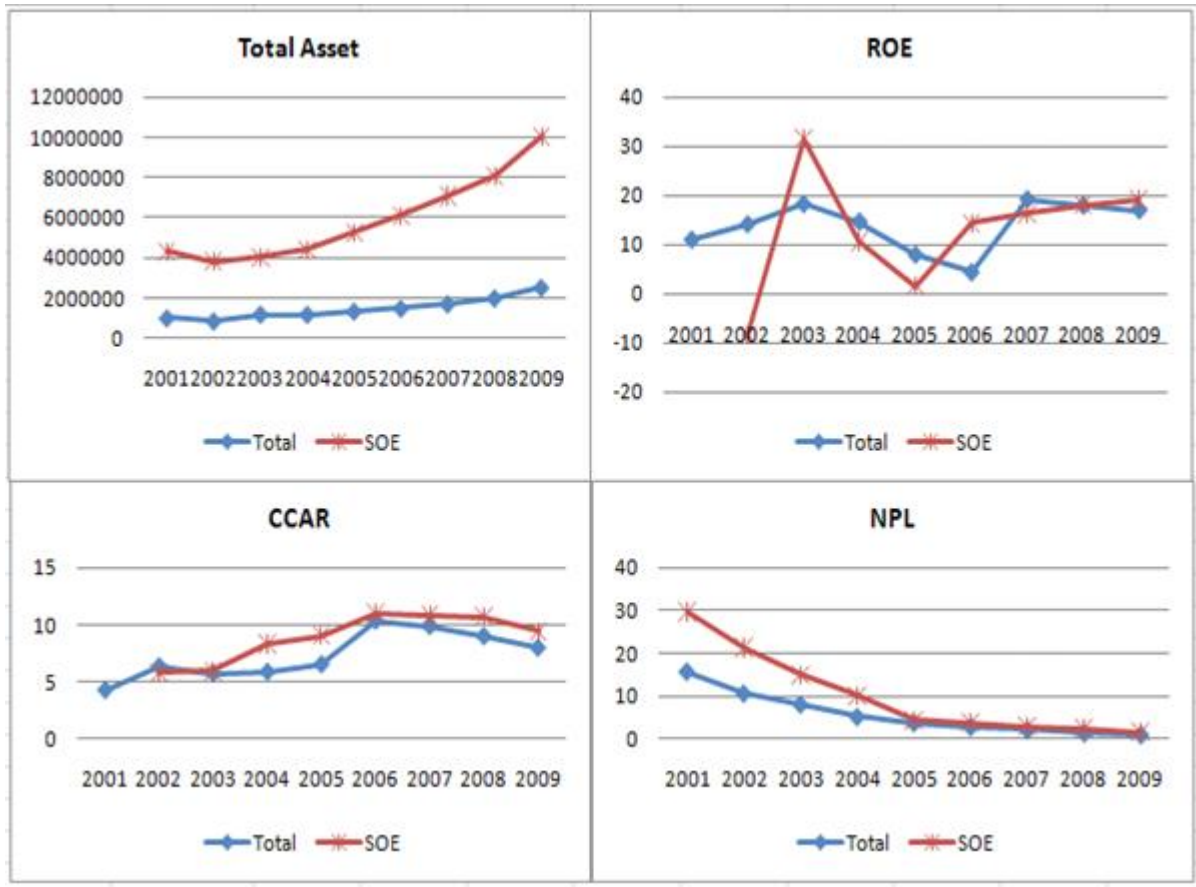


Figure 3. Changes of performance, Chinese Commercial Banks, 2001-2009

Note: Figure 3 presents the change of performance using mean value of each year. SOE is state-owned banks; ROE =return on equity; CCAR=core capital adequacy ratio; NPL=non-performing loan ratio.