

# CEO Power, Equity Incentives, and Bank Risk Taking

Lisa Marie Victoravich<sup>a</sup>, Pisun Xu<sup>b</sup>, William Buslepp<sup>c</sup>, Hugh Grove<sup>d</sup>

<sup>a,b,d</sup>University of Denver, USA

<sup>c</sup>Texas Tech University, USA

---

This study examines whether bank risk is a factor influenced by chief executive officer (CEO) power, equity incentives, and the interaction between these factors during 2005 through 2009, which marks the unraveling of the financial crisis. We find that firm specific risk is decreasing with CEO power and CEO equity-based incentives (newly granted stock options and restricted stock and accumulated exercisable and unexercisable stock options). These findings suggest that when CEOs have more power, they can influence the board's decision-making to their benefit in reducing risk. Further, when their personal wealth is more tied to firm value, they are less likely to take on high risk projects as these projects could be detrimental to their personal wealth. However, we find that CEOs with more power take on higher levels of firm risk when they have greater levels of future personal wealth in the form of unexercisable options. These results suggest that powerful CEOs are more likely to take on risk when their personal wealth is tied to long-term firm value, as opposed to short-term firm value. However, results from a supplementary analysis indicate that just cash compensation (total salary plus bonuses) is linked to higher bank risk which may be responsible in part for the risky, short-term practices that led to the financial crisis.

*JEL classification:* G21; G30; G32

*Keywords:* Equity compensation, CEO power, banks' risk taking

---

## 1. Introduction

The recent financial crisis has drawn much attention to the equity incentives used to compensate executives in the banking industry. For example, the chief executive officer (CEO) of bankrupt Countrywide Financial, Angelo Mozilo, cashed out options that he received as a performance incentive worth \$414 million between 2004 and 2008. In light of this anecdotal evidence, the amount and structure of executive compensation packages in the banking industry have been hypothesized by the financial press as a cause of excessive risk-taking behavior. Unsurprisingly, subsequent to the bailout period, the Securities Exchange Commission (SEC) issued new disclosure rules effective for proxies filed after February 28, 2010 to report employee compensation policies and practices that create risks that are reasonably likely to have a material adverse effect on the company. The rules also change the value reported for restricted stock and option rewards. Directors and shareholders would be well-served to understand a company's broader compensation policies and analyze whether these policies appropriately layer in considerations of risk and long-term firm growth.

A few studies have examined the relationship between executive compensation and bank risk taking. Houston and James (1995) report that bank CEOs receive less cash and option compensation and equity-based incentives which do not promote risk taking. Chen, Steiner, and Whyte (2006) report more current, contradictory findings that banks are progressively using more option-based compensation, and this form of compensation is linked with risk taking. Ang, Lauterbach and Schreiber (2002) also find that bank CEOs are paid more and have more equity-based pay in their compensation structure than CEOs in non-banking firms. Recently, DeYoung, Peng and Yan (2010) report that in response to deregulation, bank boards designed compensation to include more stock options aimed at encouraging CEOs to take on new risky business opportunities.

Another key factor which may influence bank risk individually or when coupled with high levels of equity incentives is CEO power. For example, Wachovia's board of directors asked its CEO,

Ken Thompson, to leave in May, 2008 and subsequently split his role as the Chairman of the Board (COB) and the CEO, due to reports that Thompson was running the company without proper controls (Mildenberg and Son, 2008). Also, he has been blamed for taking the lead role in the \$24 billion acquisition of Golden West Financial (GWF) which brought aboard rising loan defaults, due to GWF's riskier, "pick-a-payment" mortgage portfolio (Foust, 2008). In May of 2008 Washington Mutual announced that their CEO, Kerry Killinger, would step down from the role of chairman in order to strengthen corporate governance and reduce CEO power. He was blamed for leading the company into \$19.7 billion of asset backed, adjustable rate mortgages and subprime mortgages which was more than any other lender nationwide (Task, 2008). Our study empirically tests these allegations that weak governance in the form of CEO power and equity incentives is related to bank risk taking during the period when the financial crisis unraveled.

Promotion of unethical behavior by equity-based compensation may be more present at banks, given that large banks are often considered to be "too large to fail" from a regulatory perspective and the expectation that more government bailout funds will be received to offset potential bank failure, i.e., the "moral hazard" problem. This situation may increase executives' tendency to engage in risky behavior (Kane, 2000). Such risky behavior may enable bank executives to increase their short-term compensation by maximizing short-term performance at the expense of the bank's long-term performance. On the other hand, in the face of longer-term equity incentives, it makes economic sense for a CEO to focus on long-term performance since focusing on short-term performance might be costly with lower stock prices in the long-term.

In this paper, we extend research on the opaque relationship between CEO equity incentives and bank risk and whether CEO power influences this relationship and how each factor influences risk taking individually. Specifically, we investigate whether CEO power affects the relationship between equity incentives and risk-taking at banks. We examine CEO power on the basis that it is a key corporate governance factor which enables a CEO to pursue his or her own agenda. Previous literature has shown that CEO power in the form of a more entrenched CEO can have adverse effects on management behavior and incentives (Bebchuk, 2002). We expect that over-powerful CEOs are more able to influence the firm's decision making to their own benefit which is likely a function of their level and type of personal wealth which is tied to their firm's stock price performance, i.e., short-term vs. long-term.

CEO power is measured with an index comprised of five underlying variables: CEO duality (the CEO is also the COB), a staggered board of directors, the proportion of insiders who sit on the board, the proportion of affiliated board members who also sit on the board, and whether the CEO is the founder. Equity incentives are measured in terms of equity compensation (stock options and restricted stock) and CEO wealth (value of exercisable options and unexercisable options). These measures are employed to capture incentives related to both short-term and long-term firm performance. Risk taking is estimated with both firm specific and market based measures in terms of total, idiosyncratic and systemic risk. We also investigate the role of cash compensation in explaining bank risk taking in a supplementary analysis.

Our study contributes to the literature with a new perspective on how CEO power and equity incentives shape managerial risk-taking behavior at banks in the recent period of the unraveling financial crisis. Our findings contradict the contention that equity incentives and an over-powerful CEO lead to increased risk-taking at banks. This evidence should be of interest to boards, especially the members of the compensation and nominating committees, who need to evaluate the costs and benefits of equity incentives and the proportion of truly independent directors that sit on the board. The evidence will also help boards understand how equity and cash incentives affect CEO's decision making related to risk taking.

The remainder of this paper is organized as follows. Section 2 discusses the related literature and Section 3 develops the study's research questions. Section 4 describes our sample selection, descriptive statistics, and measurement of the variables used in our study. Section 5 presents our empirical results, and in Section 6, we draw conclusions and discuss the implications of our findings.

## 2. Related Literature

As noted previously, there are numerous studies which investigate the relationship between bank risk taking and equity compensation. Also, there is existing research which investigates the relationship between CEO power and bank risk taking. However, an unanswered research question is whether CEO equity incentives and future CEO wealth coupled with a powerful CEO are linked to risk taking at banks during the recent financial crisis period. These variables are of heightened interest given recent claims that over-powerful CEOs and excessive equity incentives lead banks to pursue new avenues of risky business. Identifying a link between these items is extremely important in explaining the underlying factors at banks which contributed to the global financial crisis.

Chen et al. (2006) identify a relationship between risk taking and stock option compensation at U.S. commercial banks for the period 1992 – 2000. Not only do they report that this form of compensation promotes risk taking, but subsequent to deregulation, banks have increasingly used stock options to compensate executives. Pathan (2009) identified a link between CEO power and bank risk-taking during 1997 - 2004. The results suggest that CEO power (when internally hired with a dual role of CEO and COB) is related to decreased risk-taking. This latter finding is surprising, given the argument that the duality factor (a CEO who was also the COB) was a leading cause for the failure of several banks, including Wachovia and Washington Mutual.

We build on the aforementioned studies in several ways. First, Chen et al. (2006) focus solely on stock option compensation. We expand this study by integrating restricted stock compensation. Restricted stock awards differ from stock options in several ways which lead to different expectations about the behavior of executives. Based on their findings, Bryan, Hwang, and Lilien (2003) argue that, unlike stock options, restricted stock awards decrease risk taking at growth firms. Thus, restricted stock, as compared to stock options, may be a more effective form of compensation in terms of aligning the goals of the CEO with that of the firm concerning long-term profitability and increased shareholder wealth.

Second, we also investigate the role of future CEO wealth (the value of exercisable and unexercisable stock options) on bank risk taking. Unlike current stock option compensation which is linked to current firm value, accumulated options may have a different impact on risk taking, given the waiting period until the options are realized as compensation. CEOs that have more accumulated options are likely to anticipate significant future stock option compensation which will likely impact their current period risk seeking behavior.

Third, our period of analysis covers the unraveling of the financial crisis. Due to the unique nature of the environment that led to the crisis (e.g., low interest rates and the resulting housing bubble), the findings of studies which analyze prior time periods may not generalize to the time period analyzed in our study. Also, investigating this time period enables us to explain the mixture between corporate governance factors and CEO compensation which may have led to risky practices underlying the crisis.

## 3. Research Questions

### 3.1. CEO Power

Consistent with Adams, Almeida and Ferreira (2005), we view CEOs' power as the ability to influence key decisions in their firms, despite possible disapproval from other executives. The dominant view in the literature on the effects of CEO power on firm performance and risk taking is that it has a determinant effect, due to the CEOs' ability to control the board of directors in the direction of their own agenda. These findings include negative associations between CEO power and firms' credit ratings (Ashbaugh-Skaife, Collins, and LaFond, 2006) and firm value (Bebchuk, Cohen and Farrell, 2009) and positive associations with variance in stock returns (Adams et al, 2005) and variability in firm performance (Wu, Quan, and Xu, 2011). Overall these findings suggest that powerful CEOs are associated with riskier firm performance.

On the other hand, a more powerful CEO may be risk adverse and less willing to take on new business ventures which may decrease future risk and future firm growth (May, 1995). This view is consistent with the findings of Pathan (2009) but inconsistent with the notion that over-powerful CEOs led banks into excessive risk taking, in terms of expansion into sub-prime mortgages, credit default swaps, and mortgage backed securities. Thus, we pose the following research question:

RQ<sub>1</sub>: Is CEO power positively associated with risk at banks?

### 3.2. Equity Incentives

Traditionally, stock-based compensation which links executive wealth directly to stock performance is viewed as a mechanism which better aligns managers and shareholder interests (Jensen and Murphy, 1990). This focus on long-term performance is expected to have positive impacts on firm value which is consistent with the findings of Hall and Liebman (1998). However, recent research points out the potential drawbacks and conflicting views of stock-based compensation. First, stock-based compensation might encourage excess risk-taking. When managers' interests are better aligned with shareholders, they have higher incentives to increase the risk of the firm to maximize the stockholders' equity call option value. Gray and Cannella (1997) and Bloom and Milkovich (1998) find that systematic risk is associated with higher levels of equity incentives. These results support the notion that although CEOs are responsible for firm specific risk, due to their role in making strategic decisions, they cannot control external factors that impact systematic risk. Suggesting that incentives may influence firm specific risk, Miller, Wiseman and Gomez-Mejia (2002) find that equity incentives are associated with firm specific risk.

Second, in contrast to the traditional view regarding the ability of equity incentives to align managers' interests with shareholders' interests, recent research points out that stock-based compensation may create incentives for managers to emphasize short-term stock performance. Peng and Roell (2008) argue that stock options cause executives to focus on short-term stock price, as evidenced by a higher likelihood of securities class action suits when executives are compensated with options. Chen et al. (2006) report that stock option compensation is more prevalent at banks versus firms in other industries and this form of compensation promotes risk taking in the banking industry.

Restricted stock may have a different impact on manager behavior, given that this form of compensation has no exercise price and vests over time. Such restricted stock results in a direct wealth transfer in terms of stock ownership, regardless of stock price. Thus, there is a reduced focus on driving up the firm's share price in the near term which is necessary for stock options to be in the money. On the other hand, restricted stock is termed "pay for pulse" since managers often receive the shares of stock, regardless of firm performance. Although restricted stock rewards executives for performance, it restricts the stock from being sold by the executive for a period. Thus, this form of compensation may not encourage a CEO or managers to set a high priority on accomplishing company goals in the near term or to take on risk aimed at increasing the firm's short-term stock price.

Given the contradictory views regarding the impact of equity compensation on managerial risk taking behavior, we pose the following research question to investigate the association between equity compensation and bank risk:

RQ<sub>2</sub>: Is CEO equity compensation associated with risk at banks?

### 3.3. CEO Wealth

CEO wealth can be tied to firm performance in the form of accumulated exercisable stock options and unexercisable stock options. Higher values of exercisable options likely promote managers to focus on short-term firm performance to ensure that the current stock price exceeds the exercise price. Unexercisable options likely vest from one to ten years out and are not greatly influenced by actions aimed at increasing short-term performance. Lin, Chen, You, and Chang (2008) report that while both exercisable and unexercisable options are associated with earnings per share

management through stock repurchases, exercisable options have a larger effect than unexercisable options. Thus, the holdings of exercisable options by CEOs likely increase the risk of the firm by creating incentives for the CEO to undertake projects to maximize stock price in the near term (Jensen, 2005) which may be in the form of risky ventures. On the other hand, unexercisable options may cause the opposite behavior, given that taking on risky endeavors in the short-term may damage long-term firm performance. However, depending on the exercise schedule of the options, CEOs may be less concerned with the chance that actions aimed at increasing short-term performance may hinder long-term performance. In light of these conflicting views, we pose our third research question as follows:

RQ<sub>3</sub>: Is future CEO wealth associated with risk at banks?

### **3.4. Interactive effect of Insider Power and Equity Incentives**

Although the role of both CEO power and equity incentives have been given heightened attention by the financial press and academic researchers in explaining the financial crisis, the interactive effect of the two variables has not been investigated. The extent to which equity incentives impact a CEO's decisions related to risk taking is likely influenced by the level of power that the CEO has in dominating board decision making. A CEO with high equity incentives and a low level of power in influencing board decisions may not have the ability to take on risky business ventures aimed at increasing the bank's stock price. As well, a CEO with low equity incentives coupled with a high level of power may not be incentivized to take on risky business ventures aimed at maximizing long term firm value. A high powered CEO with high equity incentives is more likely to take on risky business ventures due to the ability to control board decision making coupled with incentives linked to firm growth.

The interaction between equity-based compensation (i.e., stock options and restricted stock) and CEO power may differ from the interaction between future CEO wealth (i.e., unexercisable and exercisable stock options) and CEO power. When CEOs have high levels of equity-based compensation, their personal wealth has a strong link to current firm value, hence they may have an incentive to take on risk in the short-term to increase the chance of maximizing equity-based compensation. However, when a CEO has high levels of future wealth, especially wealth that won't be realized until the longer-term (unexercisable options); there is a reduced link to current firm performance and an increased link to future firm performance. Thus, it would be in the CEO's interest to take on ventures which may be more risky and are aimed at maximizing long-term firm value. We would expect the link between future wealth and risk taking to be more pronounced for more powerful CEOs given a greater ability to influence board decision making. This leads to our fourth research question:

RQ<sub>4</sub>: Is the association between CEO equity incentives and bank risk taking determined by the level of CEO power?

## **4. Method**

### **4.1. Sample and data**

The initial sample was generated by identifying commercial banks with SIC codes of 60 listed on Compustat for fiscal years 2005 through 2009. Due to variation in use of equity compensation at the banks in our sample, we have an unbalanced sample across measures of equity incentives. For stock option regressions, we employ 633 observations; for restricted stock regressions, we employ 1058 observations; for total equity (stock options plus restricted stock) regressions, we employ 1279 observations; for unexercisable option regressions, we employ 588 observations and for exercisable option regressions, we employ 1035 observations. Firm financial data and stock price data were obtained from Compustat and CRSP, respectively. Detailed compensation data was obtained from four sources: Execucomp, Equilar Inc., SEC DEF 14A proxy statements, and annual SEC 10K filings. Corporate governance data used in creating the CEO power index was obtained from Equilar Inc. and proxy statements. Data from proxy statements and 10-K filings were hand collected.

## 4.2. Variables

### 4.2.1. CEO Power

CEO power is measured with an index comprised of five underlying variables: CEO duality, a staggered board of directors, the proportion of insiders who sit on the board, the proportion of affiliated board members, and whether the CEO is the founder. The index is constructed to capture the overall power of the CEO in influencing board decision making. It is between zero and five (the sum of the five previous variables). A score of five indicates that CEO power is high: the CEO is also the chairman of the board (COB), the board of directors' election is staggered, the proportion of inside directors on the board exceeds the sample median, the proportion of affiliated directors on the board exceeds the sample median, and the CEO is the founder. A score of zero indicates that none of these variables are present and CEO power is low.

A staggered board of directors is a corporate governance structure that staggers the annual election of director slates. In the absence of a staggered or classified board, all continuing and nominated directors of a corporation stand for election annually. In contrast, corporations with a staggered or classified board assemble directors into distinct classes (typically three) with successive annual elections occurring only for a single class of directors. Therefore, under a classified structure, directors are elected to terms equal in length to the number of classes. Gompers, Ishii, and Metrick (2003) argue that board classification is one of the key methods in which management exerts control and mitigates the possibility of board turnover and challenges for control. Also, a staggered board likely gives the CEO more influence over director selection since the members that are up for reelection are smaller in number.

Agency theory argues that separating the roles of CEO and COB can mitigate information asymmetry. As a leader of the board, the COB is responsible for monitoring the CEO's decision-making and overseeing the process of CEO hiring, firing, evaluation and compensation. The combination of these two leadership roles would constrain the COB from taking on an effective and objective monitoring role which promotes CEO entrenchment and intensifies agency conflicts. Beasley, Carcello, and Hermanson (1999) find that CEO duality was involved in 72% of the frauds examined by the SEC, and Yermack (1996) finds that CEO duality reduces board independence. The opacity of banks and a lack of monitoring can further weaken CEO discipline which makes it more important to separate the leadership roles at banking firms.

A key indicator of insider representation on the board, which enables CEO power, is the presence of many affiliated directors on the board. Such directors are less likely to be independent from the CEO or other top executives. The decision-making of such non-independent directors (insider or affiliated directors) might enable the CEO to pursue his or her own objectives. Concerning a majority of insiders on the board of directors, Baysinger and Butler (1985) found that companies perform worse if boards have more insider representation, and Klein (2002) found lower presence of abnormal accruals when the board had more than a majority of outside directors.

We also include the proportion of affiliated directors on the board to capture the possible increased use of grey directors who satisfy the independence requirement to sit on the compensation and audit committee. In alignment with the Sarbanes-Oxley Act, the listing requirements of all major U.S. stock exchanges stipulate that each public company must have completely independent audit and compensation committees, which prohibits committee members being employed by the firm, receiving compensatory fees other than director fees, or having a significant relationship with the company. However, these rules do not prohibit prior employees (whose cooling off period has elapsed), and other related parties (such as family members) from sitting on the audit or compensation committee. Given their association with the banking firm and possible prior relations with the CEO, these board members are likely less independent and more influenced by the CEO than board members who have no prior relations with the firm.

Lastly, we incorporate the CEO as the bank founder in the index, given evidence that a founder as CEO is associated with increased fraud, i.e., Enron, WorldCom, Global Crossing, Parmalat and

Satyam. Also, founders have stronger economic links to their firms in the form of stock ownership (Nelson, 2003). Given such founders' economic links to firm performance and given that, by definition, they are also the longest tenured members in their organization, founder CEOs are likely to have the ability and interest to pursue their own personal interests in shaping firm performance.

#### 4.2.2. Equity Incentives: Compensation and CEO Wealth

We classify our equity incentive variables into equity compensation and future CEO wealth. We construct three CEO equity compensation measures: the proportion of stock option compensation (based on the Black-Scholes model) relative to total compensation, the proportion of restricted stock compensation relative to total compensation, and the sum of stock option compensation and restricted stock compensation relative to total compensation. We construct two future CEO wealth measures: the natural log of the dollar value of unexercisable options and the natural log of the dollar value of exercisable options. We use the natural log on the basis that a log transformation can reduce the difference in the magnitude of compensation across firms. Thus, it will mitigate the effect of heteroscedascity, which can be an econometric issue when a cross-sectional regression analysis is performed (Lambert and Larcker, 1987).

#### 4.2.3. Bank Risk

We use three proxies of bank risk: 1) total risk, 2) idiosyncratic risk (both of which capture firm specific risk), and 3) systematic risk (which captures market risk). Total risk is the sum of systematic risk and idiosyncratic risk which are calculated using a two-index market model, as employed in Chen et al. (2006) and Pathan (2009). This model is estimated for each observation:

$$R_{it} = \alpha_i + \beta_{1i}R_{mt} + \beta_{2i}interest + \varepsilon_{it} \quad (1)$$

where,  $i$  represents bank  $i$  and  $t$  represents period  $t$ ;  $R_i$  is the bank's stock market return;  $R_m$  is the systematic return on the S&P 500 index;  $INTEREST$  is the three month Treasury-bill yield. Idiosyncratic risk is equal to the standard deviation of the residuals for equation (1).

#### 4.3. Regression Model

The main model is shown in Equation (2). Several control variables are employed in our regression model. We use the natural log of total assets ( $LNTA$ ) to control for size. We use Tobin's  $Q$  ratio ( $Q$ ) to control for both the opportunity to grow and firm performance. Tobin's  $Q$  is measured as the sum of the market value of equity and the book value of debt divided by the book value of assets. We also include the percentage of shares outstanding held by the CEO ( $\%CEO\_OWN$ ) to control for their influence over board of director selection and alignment with shareholder interests.

The model is:

$$(RISK)_{i,t} = \gamma_0 + \gamma_1 COMP_{i,t} + \gamma_2 CEO\_POWER_{i,t} + \gamma_3 COMP_{i,t} * CEO\_POWER_{i,t} + \gamma_4 \%CEO\_OWN_{i,t} + \gamma_5 LNTA_{i,t} + \gamma_6 Q_{i,t} + \varepsilon_{i,t} \quad (2)$$

$RISK$  represents the three measures of bank risk taking - total risk ( $TR$ ), idiosyncratic risk ( $IDIOR$ ) and systematic risk ( $SYSR$ ).  $COMP$  represents the five measures of equity incentives, stock option compensation ( $\%OPTION$ ), restricted stock compensation ( $\%RSTOCK$ ), total equity compensation ( $\%TOTAL\_EQUITY$ ) which is the sum of option compensation and restricted stock compensation, the value of unexercisable stock options ( $UNEXOP$ ) and the value of exercisable stock options ( $EXOP$ ).  $CEO\_POWER$  represents the ability of the CEO to shape board of director decision making which is comprised of the five underlying dimensions:  $DUALITY = 1$  if CEO is also the COB,  $= 0$  otherwise;  $STAGG = 1$  if board is staggered for reelection,  $= 0$  otherwise;  $INSIDE = 1$  if the percentage of insiders on the board is greater than the sample median,  $= 0$  otherwise;  $AFF = 1$  if the percentage of affiliated members on the board is greater than the sample median,  $= 0$  otherwise;  $FOUNDER = 1$  if the CEO founded the company,  $= 0$  otherwise.

**Table 1**  
**Associations Among Study Variables**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(1) %RS	1.00																
(2) %OPTION	0.06	1.00															
(3) TOTAL_EQUITY	0.73***	0.76***	1.00														
(4) UNEXOP	0.31***	0.23***	0.37***	1.00													
(5) EXOP	0.22***	0.26***	0.36***	0.66***	1.00												
(6) TOTAL_COMP	0.41***	0.35***	0.56***	0.58***	0.64***	1.00											
(7) CEO_POWER	-0.03	0.04	-0.01	-0.13***	0.01	-0.04	1.00										
(8) DUALITY	0.13***	0.14***	0.15***	0.08**	0.15***	0.19***	0.56***	1.00									
(9) STAGG	-0.08***	-0.08***	-0.08***	-0.21***	-0.11***	-0.19***	0.44***	-0.02	1.00								
(10) FOUNDED	-0.05	0.03	-0.05*	-0.02	-0.00	-0.02	0.22***	0.06**	-0.02	1.00							
(11) %INSIDE	-0.19***	0.06	-0.15***	-0.11***	-0.02	-0.10***	0.41***	0.08***	0.03	0.19***	1.00						
(12) %AFF	-0.03	0.00	0.01	-0.04	0.04	0.01	0.34***	0.02	0.01	0.03	-0.10***	1.00					
(13) TR	-0.03	-0.12***	-0.11***	-0.01	-0.22***	-0.09***	-0.13***	-0.04	-0.15***	-0.01	-0.01	-0.26***	1.00				
(14) IDIOR	-0.11***	-0.17***	-0.18***	-0.17***	-0.25***	-0.15***	-0.12***	-0.08***	-0.11***	-0.01	0.03	-0.25***	0.97***	1.00			
(15) SYSR	0.22***	0.16***	0.23***	0.07*	0.06*	0.16***	0.03	0.14***	-0.13***	0.01	-0.05	0.08***	0.24***	0.07***	1.00		
(16) %CEO_OWN	-0.14***	0.01	-0.13***	0.06*	-0.02	-0.08***	0.20***	0.12***	-0.05*	0.20***	0.35***	0.06**	0.06**	0.09***	-0.06**	1.00	
(17) LN_TA	0.43***	0.36***	0.54***	0.59***	0.55***	0.67***	0.02	0.26***	-0.21***	-0.02	-0.12***	0.06**	-0.00	-0.13***	0.48***	-0.14***	1.00
(18) Q	0.05	0.16***	0.14***	0.06*	0.21***	0.15***	0.08***	0.09***	-0.00	0.00	0.03	0.19***	-0.43***	-0.45***	0.16***	0.00	0.14***

Notes: \*, \*\*, \*\*\* Indicates significance at the 0.10, 0.05, and 0.01 levels, respectively.



## 5. Results

### 5.1. Descriptive Statistics and Association Matrix

Table 1 presents Pearson associations between our regression variables. *CEO\_POWER* is positively associated with each of the underlying variables used in the index. There is no association between *CEO\_POWER* across all equity compensation measures. There is a positive association between *CEO\_POWER* and *UNEXOP*. *TR* is negatively associated with all measures of equity incentives and future wealth with the exception of *%RS*. *IDIOR* is negatively associated with all measures of equity compensation and *SYSR* is positively associated with all measures of equity compensation. There is also a positive association with between *UNEXOP* and *EXOP* and both *SYSR* and *TR*. These results suggest that firm risk decreases with equity compensation but increases with market risk. All measures of risk are positively associated with each other.

Table 2 provides descriptive information on our sample and detailed variable descriptions. From Panel A which reports descriptive statistics regarding CEO compensation, the average proportion of option compensation (*%OPTION*) is 22.17%, the average proportion of restricted stock compensation (*%RSTOCK*) is 12.30%, the average proportion of total equity compensation is (*%TOTAL\_EQUITY*) is 21.13%, and the average value of total compensation (*TOTAL\_COMP*) is \$1.6 million. From Panel B which reports descriptive statistics regarding CEO wealth, the average value of unexercisable options (*UNEXOP*) is \$714 thousand and the average value of exercisable options (*EXOP*) is \$2.6 million.

From Panel C, which reports descriptive statistics regarding the underlying board variables, the average index value (*CEO\_POWER*) is 2.04 suggesting that CEO power is relatively low across our sample of banking firms. Regarding the underlying variables used to create the index, the CEO is also the COB (*DUALITY*) at about 46% of the firms in our sample and the board of directors is staggered for reelection (*STAGG*) at about 67% of the firms in our sample. The average percentage of inside directors (*%INSIDE*) sitting on a board is about 15.67% and the average percentage of affiliated directors (*%AFF*) sitting on a board is about 10.16%. The bank founder serves as the CEO at about 2% of the firms in our sample.

From Panel D, descriptive statistics regarding risk taking measures report that average total risk (*TR*) is 2.94, average idiosyncratic risk (*IDIOR*) is 2.52, and average systematic risk (*SYSR*) is 0.96. This result suggests that firm risk is greater than market risk at banking firms. From Panel E, descriptive statistics regarding control variables report that on average the CEO owns (*%CEO\_OWN*) 3.33% of the outstanding equity, the average value of Tobin's q (*Q*) is 1.04, and the average value of the natural logarithm of total assets is 8.03.

### 5.2. Empirical Results

This section reports the results of OLS regression based on Equation (2) in which we investigate the impact of equity compensation, future CEO wealth and CEO power on the three measures of bank risk. Panels A, B, and C of Table 3 report results for each of the three measures of equity compensation (*%OPTION*, *%RSTOCK* and *%TOTAL\_EQUITY*). Panels A and B of Table 4 report the results for the two measures of CEO wealth (*UNEXOP* and *EXOP*).

#### 5.2.1. CEO Power

These findings suggest that CEOs with more power take on less firm risk. This result is consistent with Pathan (2009) and suggests that a more powerful CEO may be risk adverse and less willing to take on new business ventures which may increase risk but also firm value. The lack of an association between *CEO\_POWER* and *SYSR* suggests that CEOs do not impact systematic risk which is driven by external macroeconomic factors. Given that the findings regarding the association between CEO power and firm risk appear to be different at banking firms as compared to non-banking firms, these findings suggest that CEOs with more power may have a unique interest in reducing risk at banks.

**Table 2**  
**Descriptive Statistics**

<b>Panel A: CEO Comp.</b>						
Variable	N	Min	Max	Mean	Median	Std Dev.
%RSTOCK	1,058	-28.33	81.32	12.30	4.08	16.43
%OPTION	633	0.77	91.32	22.17	17.96	16.18
%TOTAL_EQUITY	1,279	0.00	97.90	21.13	14.02	22.93
TOTAL_COMP (\$)	1,281	\$31,171	\$34,364,292	\$1,603,128	\$646,392	\$3,178,445
<b>Panel B: CEO Wealth</b>						
UNEXOP <sup>a</sup>	588	0.00	\$27,375,770	\$714,083	\$82,073	\$2,155,027
EXOP <sup>a</sup>	1,035	0.00	63,805,487	2,595,871	439,730	6,691,532
<b>Panel C: Board</b>						
CEO_POWER	1,281	0.00	5.00	2.04	2.00	1.00
DUALITY	1,281	0.00	1.00	45.57	0.00	49.45
STAGG	1,281	0.00	1.00	67.13	1.00	46.99
FOUND	1,281	0.00	1.00	2.17	0.00	14.57
%INSIDE	1,281	0.00	62.50	15.67	13.33	8.53
%AFF	1,281	0.00	8.03	10.16	8.33	11.99
<b>Panel D: Risk-taking</b>						
TR	1,281	2.14	18.03	2.94	2.14	2.02
IDIOR	1,281	1.86	17.79	2.52	1.86	1.84
SYSR	1,281	1.03	3.39	0.96	1.03	0.71
<b>Panel E: Control</b>						
%CEO_OWN	1,567	0.00	57.75	3.33	1.16	6.03
LNTA	1,567	4.17	15.14	8.03	7.66	4.17
Q	1,567	0.64	1.47	1.04	1.03	0.07

## Notes:

%RSTOCK =	Total value of restricted stock grants scaled by total compensation.
%OPTION =	Total Black-Scholes value of stock options scaled by total compensation
%TOTAL_EQUITY =	Sum of total Black-Scholes value of annual stock options granted plus total value of restricted stock grants scaled by total compensation.
UNEXOP =	Black Scholes value of un-exercisable stock options.
EXOP =	Black Scholes value of exercisable stock options.
TOTAL_COMP =	Sum of salary, bonus, stock options, restricted stock grants and other compensation.
CEO_POWER =	Summary index which measures the degree to which a board is controlled by insiders or affiliated parties. Measured as the sum of the indicator variables: <i>DUALITY</i> = 1 if CEO is also the chairman, = 0 otherwise; <i>STAGG</i> = 1 if board is staggered for reelection, = 0 otherwise; <i>INSIDE</i> = 1 if the percentage of insiders on the board is greater than the sample median, = 0 otherwise; <i>AFF</i> = 1 if the percentage of affiliated members on the board is greater than the sample median, = 0 otherwise; <i>FOUNDER</i> = 1 if the CEO founded the company, = 0 otherwise.
TR =	Standard deviation of the bank's daily returns for year $t + 1, t + 2, t + 3$ .
IDIOR =	Standard deviation of $\varepsilon_{it}$ in equation (1)
SYSR =	Coefficient of $R_{mt}$ in equation (1).
%CEO_OWN =	Proportion of outstanding common equity held by the CEO.
LNTA =	The natural logarithm of total assets.
Q =	Tobin's Q measured as the sum of the market value of equity and the book value of debt divided by the book value of assets.

<sup>A</sup> For interpretative purposes, amounts reported are raw compensation amounts. The natural logarithm of *UNEXOP* and *EXOP* are employed in the regression analyses.

**Table 3**  
**Regression Results: Equity Compensation, CEO Power and Firm Risk**

	TR	IDIOR	SYSR
<b>Panel A: Option Compensation</b>			
Intercept	16.79***	16.19***	-1.24***
CEO_POWER	-0.08	-0.08	0.04
OPTION	-0.3	-0.34	-0.13
CEO_POWER * OPTION	-0.22	-0.19	0.04
CEO_OWN	-0.27	1.05	-1.47**
LNTA	0.07***	-0.07	0.16***
Q	13.49	-12.32***	0.80**
F-statistic	34.57***	41.18	31.40***
Adjusted R <sup>2</sup>	24.17	27.61	22.39
N	633	633	633
<b>Panel B: Restricted Stock grants</b>			
Intercept	17.48***	16.87	-0.92***
CEO_POWER	-0.30***	-0.27***	-0.02
RS	-1.20*	-1.31*	-0.02
CEO_POWER * RS	0.33	0.26	0.03
CEO_OWN	3.82***	3.89***	0.42
LNTA	0.15***	-0.02	0.22***
Q	-14.41***	-13.05***	0.15
F-statistic	54.54***	60.95***	59.75***
Adjusted R <sup>2</sup>	23.31	25.39	25.01
N	1,058	1,058	1,058
<b>Panel C: Total Equity-based Compensation</b>			
Intercept	16.01***	15.89***	-1.59***
CEO_POWER	-0.26***	-0.23***	-0.01
TOTAL_EQUITY	-1.42***	-1.27***	-0.43***
CEO_POWER * TOTAL_EQUITY	0.19	0.16	0.10
CEO_OWN	3.31***	3.56***	0.21
LNTA	0.20***	0.02	0.25***
Q	-13.34***	-12.32***	0.58**
F-statistic	62.29***	71.25***	80.59***
Adjusted R <sup>2</sup>	22.35	24.80	27.20
N	1,279	1,279	1,279

Notes: \*, \*\*, \*\*\* Indicates significance at the 0.10, 0.05, and 0.01 levels, respectively.

### 5.2.2. Equity Compensation

We find that %RS exhibits a marginally significant negative association with TR ( $t = -1.59$ ;  $p < 0.10$ ), IDIOR ( $t = 1.83$ ;  $p < 0.10$ ) and %TOTAL\_EQUITY is negatively associated with TR ( $t = -2.62$ ;  $p < 0.01$ ), IDIOR ( $t = -2.61$ ;  $p < 0.01$ ) and SYSR ( $t = -2.45$ ;  $p < 0.01$ ). There are no associations between %OPTION and all three measures of risk. These results suggest that firm specific risk is decreasing with the proportion of restricted stock and total equity compensation, relative to total

compensation. Also, compensation plans with higher proportions of equity compensation are associated with less market risk.

Taken together, these findings suggest that compensation packages with higher levels of equity incentives reduce risk taking but option compensation alone does not. As the managers hold more equity-based compensation, their personal portfolio becomes less diversified and they become more risk averse and more likely to pursue strategies aimed at mitigating risk. The lack of association with option compensation and firm risk at banks is inconsistent with Chen et al. (2006) who report that option compensation is positively associated with firm and market based risk. Our results suggest that restricted stock grants have a greater impact on CEO incentives and decision-making.

**Table 4**  
**Regression Results: CEO Wealth, CEO Power and Firm Risk**

**Panel A: Unexercisable Options**

	TR	IDIOR	SYSR
Intercept	8.19***	8.11	-2.19***
<i>CEO_POWER</i>	0.03	0.08	-0.03
<i>EXOP</i>	-0.20***	-0.14***	-0.04**
<i>CEO_POWER * EXOP</i>	-0.01	-0.01	-0.01
<i>%CEO_OWN</i>	-0.20	0.35	-0.54
<i>LNTA</i>	0.12***	-0.02	0.17***
<i>Q</i>	-3.87***	-3.82***	2.23***
F-statistic	39.66***	53.62***	49.59***
Adjusted R <sup>2</sup>	18.32	23.39	22.00
N	1,035	1,035	1,035

**Panel B: Exercisable Options**

	TR	IDIOR	SYSR
Intercept	8.43***	8.22***	-1.83***
<i>CEO_POWER</i>	-0.77**	-0.80***	0.10
<i>UNEXOP</i>	-0.26***	-0.23***	-0.02
<i>CEO_POWER * UNEXOP</i>	0.06**	0.06***	-0.01***
<i>%CEO_OWN</i>	-0.29	0.23	-0.10
<i>LNTA</i>	0.14***	0.02	0.16
<i>Q</i>	-3.92***	-3.48***	1.63***
F-statistic	14.22***	17.87***	21.89
Adjusted R <sup>2</sup>	11.92	14.71	17.59
N	588	588	588

Notes: \*, \*\*, \*\*\* Indicates significance at the 0.10, 0.05, and 0.01 levels, respectively.

**5.2.3. CEO Wealth**

We find that *EXOP* is negatively associated with *TR* ( $t = -4.63$ ;  $p < 0.01$ ), *IDIOR* ( $t = -4.11$ ;  $p < 0.01$ ) and *SYSR* ( $t = -2.17$ ;  $p < 0.05$ ) and *UNEXOP* is negatively associated with *TR* ( $t = -4.58$ ;  $p < 0.01$ ) and *IDIOR* ( $t = -4.95$ ;  $p < 0.01$ ). These findings suggest that both short-term future wealth and long-term future wealth result in reduced risk taking. Thus, CEOs with higher levels of accumulated options appear to protect their personal wealth by constraining the risk taking activities of their banking firms. These findings suggest that when CEOs' wealth is more tied to firm value and less diversified, they are more conservative and tend to take on less risk.

### 5.2.4. Interactive effect of Insider Power and Equity Incentives

To determine whether CEO power influences the association between equity incentives and firm risk, we examine the interaction term of *CEO\_POWER* and all measures of equity incentives. The interaction term is insignificant across all measures of equity compensation which suggests that the association between equity compensation and risk taking is not influenced by the level of CEO power.

We do find a positive and significant coefficient on the (*CEO\_POWER \* UNEXOP*) term across *TR* ( $t = 2.20$ ;  $p < 0.05$ ) and *IDIOR* ( $t = 2.94$ ;  $p < 0.01$ ). This result suggests that a more powerful CEO with higher levels of accumulated unexercisable stock option wealth takes on higher firm risk. The negative and significant sign on the (*CEO\_POWER \* UNEXOP*) in the *SYSR* ( $t = -2.47$ ;  $p < 0.01$ ) regression suggests that a CEO with more power and higher levels of accumulated unexercisable stock options is associated with higher levels of market risk which is not controllable by the CEO. The interaction term of *CEO\_POWER* and *EXOP* is insignificant across all measures of risk.

Overall, these findings suggest that when a CEO has more power and more personal wealth tied to long-term firm performance, he or she is more likely to take on risk. This result is likely due to both the ability to control the board and the realization that taking on more risk will increase long-term firm value which will result in higher levels of wealth in future periods.

### 5.3. Supplementary Analysis: CEO Cash Compensation

In this section, we discuss the findings from a supplementary analysis which investigates the role of CEO cash compensation in explaining bank risk. These findings are presented in Table 5. Given the negative association between equity compensation and bank risk and the contention that compensation fed the financial crisis, it is beneficial to paint a complete picture regarding the role of executive compensation in explaining bank risk. For example, President Obama stated that executive pay in the form of bonus packages encouraged excessive risk which led to the practices responsible for the financial crisis and his administration has looked for ways to curb executive pay (Story, 2011).

**Table 5**  
**Regression Results: Cash Compensation, CEO Power and Firm Risk**

<b>Cash Compensation</b>	<b>TR</b>	<b>IDIOR</b>	<b>SYSR</b>
Intercept	14.72***	14.90***	-1.86***
<i>CEO_POWER</i>	0.08	0.06	-0.06
<i>CASH</i>	1.68	1.47	0.10
<i>CEO_POWER * CASH</i>	-0.31	-0.31	0.12
% <i>CEO_OWN</i>	2.62***	3.04***	-0.01
<i>LNTA</i>	0.25	0.04	0.28***
<i>Q</i>	-14.03***	-12.94***	0.47***
F-statistic	57.70***	64.73***	71.88***
Adjusted R <sup>2</sup>	24.44	26.66	28.79
N	1,279	1,279	1,279

Notes: \*, \*\*, \*\*\* Indicates significance at the 0.10, 0.05, and 0.01 levels, respectively

Results from regressions with CEO cash compensation (total salary plus bonus) as an independent variable indicate that cash compensation (*CASH*) is positively associated with *TR* ( $t = 3.57$ ;  $p < 0.01$ ) and *IDIOR* ( $t = 3.49$ ;  $p < 0.01$ ). There is no association between *CASH* and *SYSR*. This suggests that unlike equity based compensation, short-term cash compensation paid to CEOs is positively associated with risk taking at banks. Thus, although it appears that equity compensation may have led to reduced risk taking; cash compensation had the opposite effect.

## 6. Conclusions and Implications

We extend research on risk taking and equity incentives at banks by linking it to CEO power. We find that a more powerful CEO is associated with reduced firm specific risk. We also find that a higher proportion of equity incentives, primarily in the form of restricted stock, are linked to lower levels of firm risk. Additionally, higher levels of both future short-term CEO firm-based wealth (exercisable options) and future long-term firm-based wealth (unexercisable options) are associated with lower levels of firm-based risk and exercisable options are negatively associated with market risk. Lastly, we find that a more powerful CEO, coupled with higher levels of future long term wealth in the form of unexercisable stock options, is positively associated with firm risk and negatively associated with market risk. Thus, CEO power appears to influence the association between long-term CEO wealth and risk taking. We also find that CEO cash compensation is positively associated with firm specific risk. This finding suggests that CEOs may have been focusing on maxing out current year bonuses and salary increases by taking on additional risk. Bonus compensation is more certain due to comfort associated with predicting earnings and related metrics, (i.e., earnings per share, return on assets, etc.), versus the ability to predict the firms' stock price.

These findings have several implications. First, they refute the view that an over-powerful CEO and equity incentives at banks lead to risky behavior of executives. Rather, it appears that a more powerful CEO and higher levels of equity incentives actually result in reduced risk taking at banking firms. Thus, higher levels of equity compensation may not be the underlying cause of banks' expansion into risky business ventures, such as subprime mortgages and investment in credit default swaps and mortgage backed securities.

Second, these findings are also relevant to compensation committee members at banking firms. Given the nature of the banking industry and the ability to maximize short-term profitability by taking on risky loans and engaging in risky hedging activities, special attention should be taken when creating compensation packages of top executives at banking firms. Compensation of banking executives should be comprised of long-term equity incentives, primarily in the form of restricted stock in order to reduce risk taking. As well, short-term cash based compensation should be minimized to curb excess risk taking. This conclusion is especially important, due to the moral hazard problem present at banks which is a result of the assurance provided by deposit insurance and taxpayers' bailout funds as well as the complex nature of banking transactions, which decreases the transparency of executive actions.

Third, the findings regarding executive compensation in the form of restricted stock and future CEO wealth in the form of unexercisable and exercisable stock options deserves more attention by academic researchers. The preponderance of the literature on equity incentives focuses on stock options which is only one part of executive equity compensation mix. Drawing on the results of this study, restricted stock and accumulated options in the form of both exercisable and unexercisable options appear to have a more profound impact on risk taking than just stock options at banking firms.

As with any corporate governance study, our study is subject to several limitations. First, we acknowledge the use of proxies for corporate governance mechanisms, i.e., CEO power, and bank risk taking, which may not accurately capture the actual mechanisms or outcomes experienced by banks in the financial marketplace. Second, we recognize the endogenous nature of the corporate governance variables which may pose econometric problems and limit our study's conclusions.

**References**

- Adams, R. B., H. Almeida, and D. Ferreira, 2005, Powerful CEOs and their impact on corporate performance, *The Review of Financial Studies*, 18, 4, 1404-1432.
- Ang, J., B. Lauterback, and B. Z. Schreiber, 2002, Pay at the executive suite: How do US banks compensate their top management teams? *Journal of Banking and Finance*, 26, 1143-1163.
- Ashbaugh-Skaife, H., D. W. Collins, and R. LaFond, 2006, The effects of corporate governance on firms' credit ratings, *Journal of Accounting and Economics*, 48, 2, 203-243.
- Baysinger, B., and H. Butler, 1985, Corporate governance and the board of directors: Performance effects of changes in board composition, *The Journal of Law, Economics and Organization*, 1, 101-124.
- Beasley, M., J. Carcello, and D. Hermanson, 1999, *Fraudulent financial reporting: 1987 - 1997. An analysis of U.S. Public Companies*, Jersey City: AICPA.
- Bebchuk, L. 2002, The case against board veto in corporate takeovers, *University of Chicago Law Review*, 69, 973-1035.
- Bebchuk, L., A. Cohen, and A. Ferrell, 2009, What matters in corporate governance, *Review of Financial Studies*, 22, 783-827.
- Bloom, M., and G. T. Milkovich, 1998, The relationship between risk, performance-based pay, and organizational performance, *Academy of Management Journal*, 41, 3, 283-297.
- Bryan, S., L. Hwang, and S. Lilien, 2000, CEO stock-based compensation: An empirical analysis of incentive-intensity, relative mix, and economic determinants, *The Journal of Business* 73, 4, 661-693.
- Chen, C. R., T. L. Steiner, and A. M. Whyte, 2006, Does stock option-based executive compensation induce risk-taking? An analysis of the banking industry, *Journal of Banking and Finance*, 30, 915-945.
- DeYoung, R., E. Y. Peng, and M. Yan, 2010, Executive compensation and business policy choices at U.S. commercial banks, *The Federal Reserve Bank of Kansas City Economic Department Paper Series*.
- Foust, D. 2008, Pick-a-pay goes away, *Business week*, June 30.
- Gompers, P., J. Ishii, and A. Metrick, 2003, Corporate governance and equity prices, *The Quarterly Journal of Economics*, 118, 1, 107-155.
- Gray, S., and A. Cannella, 1997, The role of risk in executive compensation, *Journal of Management*, 23, 4, 517-540.
- Hall, B. J., and J. B. Liebman, 1998, Are CEOs really paid like bureaucrats? *The Quarterly Journal of Economics*, 113, 3, 653-691.
- Houston, J. F., and C. James, 1995, CEO compensation and bank risk: Is compensation in banking structured to promote risk taking? *Journal of Monetary Economics*, 36, 405-431.
- Jensen, D., 2005, Agency costs of overvalued equity. *Financial Management*, 34, 5-19.
- Jensen, M. C., and K. J. Murphy, 1990, CEO Incentives - It's not how much you pay, but how? *Harvard Business Review*, 3, 138-153.
- Kane, E., 2000, Incentives for banking megamergers, What motives might regulators infer from event-study evidence? *Journal of Money, Credit, and Banking*, 32, 671-701.
- Klein, A., 2002, Audit committee, board of director characteristics, and earnings management, *Journal of Accounting and Economics*, 33, 375-400.
- Lambert, R. A., and D. F. Larcker, 1987, Accounting and market measures of performance. *Journal of Accounting Research*, 25, 85-125.
- Lin, Y., Y. Chen, S. You, and R. Chang, 2009, Stock repurchases, stock options, and earnings management: An empirical analysis of US firms, *Asia Pacific Management Review*, 14, 3, 349-362.
- May, D. O., 1995, Do managerial motives influence firm risk reduction strategies? *Journal of Finance*, 50, 291-308.
- Mildenberg, D., and H. Son, 2008, *Wachovia ousts Thompson on write-downs, shares plunge*, June 8.

- Miller, J., R. Wiseman, and L. Gomez-Mejia, 2002, The fit between CEO compensation design and firm risk. *Academy of Management Journal*, 45, 745-756.
- Nelson, T., 2003, The persistence of founder influence: management, ownership, and performance effects at initial public offerings, *Strategic Management Journal*, 24, 8, 707-724.
- Pathan, S., 2009, Strong boards, CEO power and bank risk-taking, *Journal of Banking and Finance*, 33, 7, 1340-1350.
- Peng, L., and S. Timme, 2003, Corporate Control and bank efficiency, *Journal of Financial Research*, 20, 515-530.
- Shehzad, C. T., J. de Haan, and B. Scholtens, 2010, The impact of bank ownership concentration on impaired loans and capital adequacy, *Journal of Banking and Finance*, 34, 2, 399-408.
- Sun, J., S. F. Cahan, and D. Emanuel, 2009, Compensation committee governance quality, chief executive officer stock option grants, and future firm performance, *Journal of Banking and Finance*, 33, 8, 1507-1519.
- Task, A., 2008, *WaMU wipeout: Gross mismanagement' by former CEO Killinger*, Sept 8.
- Wu, S., X. Quan, and L. Xu, 2011, CEO power, disclosure quality and the variability of firm performance: Evidence from China, *Nankai Business Review International*, 2, 1, 79-97.
- Yermack, D., 1996, Higher market valuation of companies with a small board of directors, *Journal of Financial Economics*, 40, 185-211.