# Large Shareholders and Independent Director Equity Compensation

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**Summary at a Glance**

This paper investigates the impact of large shareholders on equity compensation for independent directors. Research finds that equity compensation for independent directors is more likely when the aggregate ownership percentage is moderate, when there are multiple large shareholders, and when the ownership stakes of the large shareholders are more comparable.

**Abstract**

This paper investigates the use of equity compensation for independent directors, with a focus on the impact of large shareholders on a company's tendency to use equity compensation to align independent directors' interests with those of shareholders. Based on data from 215 large Australian listed companies from 2005-2009, our analyses show that the use of equity incentive pay for independent directors is more likely when the aggregate ownership percentage of large shareholders is moderate, when there are multiple large shareholders, and when the ownership stakes of large shareholders are more comparable. This paper contributes to the literature by providing new evidence of how various aspects of ownership dispersion affect compensation design for independent directors.

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**Large Shareholders and Independent Director Equity Compensation**

**INTRODUCTION**

Agency theory, which addresses conflicts of interest and incentive problems in the principal-agent relationship in which one party (the principle) delegates the work to another party (the agent), has been one of the most important theories underpinning accounting research (Lambert 2001). After the seminal work by Jensen and Meckling (1976), numerous studies have investigated agency problems between shareholders (the principals) and managers (the agents) (Lambert 2001). Because managers are not the residual claimants, they may not act in the best interests of shareholders. Linking their wealth with shareholders' wealth through equity compensation is expected to align the managers' interests with those of shareholders (Jensen and Meckling 1976). In addition to the use of incentive pay for managers, agency theorists recommend appointing an independent, capable person to the board of directors to monitor and prevent management opportunism (Fama and Jensen 1983). The Australian Stock Exchange (ASX) adopts this recommendation in the Principles of Good Corporate Governance and Best Practice Recommendations, which were issued in 2003 to boost public confidence after corporate scandals such as Enron, Worldcom, HIH and OneTel. The Corporate Governance Principles and Recommendations (amended in 2010) indicate that at least 50% of the members of the board of directors, nomination, and remuneration committees should be independent directors, i.e., directors who are not the company's executives or substantial shareholders, and who do not have any relationships that could materially impair independent judgements.[1] It is also recommended that an audit committee should consist entirely of non-executive directors and 50% of the members should be independent directors (ASX Corporate Governance Council 2010).

The ASX recommendation for a majority of independent directors is based on the presumption that independent directors act selflessly and diligently on behalf of shareholders to monitor managers and improve firm performance. Recent empirical research suggests that this presumption may not always be true. Brick et al. (2006), for example, find that non-executive directors receive more pay when the CEO (Chief Executive Officer) receives higher compensation, and a firm which pays excess compensation to their non-executive directors and CEO tends to underperform. Such results may well be regarded as evidence of cronyism between managers and independent directors. Independent directors may shirk their monitoring responsibilities, may be too busy to monitor, or may favour management rather than shareholder interests (Deutsch 2007). Singh and Davison (2003) find that board independence does not help reduce the agency costs from separation of ownership and control. In fact, rather than finding that board independence improves firm performance, Christensen et al. (2010) show that a listed Australian firm with a higher proportion of independent directors on its board tends to underperform. Overall, previous research suggests that simply appointing an independent director alone may not necessarily lead to stronger board oversight and better firm performance. Independent directors can be self-interested, and agency problems can also arise between independent directors and shareholders (Fama and Jensen 1983; Jensen and Meckling 1976). To alleviate the problem, in the US, researchers, institutional investors and influential activists recommend using equity incentive pay to motivate independent directors to act in shareholders' interest (Cordeiro et al. 2005; Jensen and Meckling 1976).

Despite the potential benefits of using equity incentive pay for independent directors, this practice may not be adopted widely in Australia due to two reasons. First, while the rationales for such a recommendation are not presented, the ASX Corporate Governance Principles and Recommendations indicate that non-executive directors should be

compensated by way of fees and should not receive options or bonuses (ASX Corporate Governance Council 2010). However, the ASX's recommendation is not a legal requirement. A firm can still implement an incentive pay scheme for its independent directors if such a plan is considered beneficial. It may be the second cause, i.e., the independent director's own preference, which is more influential in determining independent director compensation in practice. A recent survey shows that Australian independent directors prefer fixed cash compensation to equity compensation (Brook et al. 2009).

Based on the previous research discussed above, independent directors may not always act diligently on shareholders' behalf to monitor managers and may design their own compensation packages to suit their preferences rather than to maximise shareholder welfare. The important question is whether we need to amend our corporate governance recommendations to cope with the potential agency problems between shareholders and independent directors. However, before such amendments can be made, we need to know the current practice. How is independent director compensation determined? What kinds of companies award equity compensation for independent directors? Can large shareholders encourage the use of equity compensation for independent directors? Under what conditions will they choose to do so?

The purpose of this paper is to explore the determinants of the use of equity compensation for independent directors in Australia. In particular, motivated by the literature which finds that large shareholders can influence the design of executive compensation (Holderness 2003), we investigate whether the presence of large shareholders affects the use of equity compensation for independent directors. Following the previous research such as Holderness (2009) and Konijn et al. (2011), we focus on large shareholders with at least 5% ownership stake in a company, commonly referred to as blockholders. Using a sample of large companies listed in ASX from 2005–2009, we perform our analyses at the director-

firm-year observation level because previous research (e.g., Adithipyangkul and Leung 2015; Bryan et al. 2000; Cordeiro et al. 2000; Linn and Park 2005) shows significant relationships between compensation and director characteristics such as age, gender, experience, expertise, and effort, after controlling for firm characteristics and corporate governance structure.

We find that independent director compensation is determined by (i) director-specific factors such as education, experience, and age, (ii) firm-specific factors such as firm size and leverage, and (iii) corporate governance factors such as board independence and CEO/chairman duality. The use of equity incentives for independent directors is less likely in a smaller firm and in a firm whose CEO is also chairman of the board of directors. In addition, we find that large shareholders can encourage the use of equity compensation for independent directors. In particular, large shareholders are more likely to promote the use of equity compensation for independent directors when a firm has multiple blockholders whose ownership sizes are comparable and the aggregate block ownership is moderate rather than very high or very low. These results add to the strand of literature which argues that large shareholders can help improve corporate governance by alleviating the agency problems within a company (Hartzell and Starks 2003; Shleifer and Vishny 1997).

While the research on agency problems between managers and shareholders and on executive compensation is extensive (Devers et al. 2007), limited attention has been given to independent director compensation (Hahn and Lasfer 2011). By describing how independent director compensation is determined, this study contributes to the literature in the field and informs the public and policy-makers on the current practice. With a better understanding of the factors which determine compensation for independent directors, policy-makers and business communities can make better informed decisions regarding corporate governance policies related to independent directors.

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**LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT**

Researchers argue that large shareholders (blockholders) can improve corporate oversight and mitigate agency problems in a company because their significant ownership stakes motivate and enable them to monitor firm management and to intervene in its operation to reduce the agency costs from separation of ownership and control (Bolton and von Thadden 1998; Maug 1998; Shleifer and Vishny 1997). In addition, through a threat to divest, which will negatively affect share price, blockholders can discipline management (Admati and Pfleiderer 2009) and reduce management myopia (Edmans 2009). Block ownership is also found to reduce agency costs from management extravagance, inefficient asset management, and underinvestment (Chen and Yur-Austin 2007). Overall, previous research shows that the presence of large shareholders appears to mitigate agency problems between managers and shareholders.

The research investigating the impact of block ownership on agency problems between independent directors and shareholders in general and on independent director compensation in particular is still limited and inconclusive (Bryan et al. 2000; Cordeiro et al. 2000; Vafeas 1999). This paper investigates how block ownership influences the design of compensation for independent directors. It extends the literature by using a new data set from Australia and by examining new aspects of block ownership (i.e., the number of blockholders and block size asymmetry). Below, we develop our hypotheses based on the agency theoretical paradigm.

Agency theorists recommend two main mechanisms that a blockholder can use to mitigate agency problems related to independent directors: rewarding good behaviour (Jensen and Meckling 1976) and monitoring to prevent and penalise undesirable behaviour (Fama and Jensen 1983). In other words, it is the choice between 'carrot' and 'stick'. The compensation package for independent directors should then be designed to match the mechanism chosen.[2]

First, consider the use of rewards to motivate good behaviour. Researchers and practitioners suggest the use of equity compensation to motivate independent directors to act in the shareholder's interest (Cordeiro et al. 2005; Jensen and Meckling 1976). Being remunerated in terms of stocks or options, an independent director's wealth increases when share prices (and hence shareholder wealth) increase and vice versa. While equity compensation can align the interests of independent directors and shareholders, this does not come without a cost. Previous research suggests that independent directors are risk-averse, i.e., they appreciate fixed cash payment more than uncertain equity compensation (Brook et al. 2009). Share prices can be affected by uncontrollable factors, making equity compensation risky. To make the risky remuneration acceptable to the directors, the company needs to compensate its directors for this additional risk associated with the use of stocks or options, resulting in higher overall compensation costs (Christensen and Feltham 2005; Eisenhardt 1989). This extra compensation cost is commonly referred to as the risk premium in the agency theory literature (Christensen and Feltham 2005).

Second, consider the choice of 'stick'. A blockholder can actively monitor independent directors to prevent and penalise undesirable behaviours such as shirking and lavish spending (Eisenhardt 1989). What motivates independent directors to perform is the probability that their incompetence, ignorance, shirking, or poor judgements will be detected and penalised (e.g., by dismissal or shareholder lawsuits). In this situation, fixed cash compensation, rather than equity compensation, can be paid to independent directors, and the overall compensation cost alone will be lower than the cost under the 'carrot' plan above because the firm does not need to pay the risk premium to its directors. However, the information needed to evaluate the performance of independent directors is not available without cost; a blockholder needs to spend time, effort, and resources obtaining it (Eisenhardt

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1989). In case there is more than one blockholder, monitoring costs also include the costs of communication and coordination among the blockholders (Winton 1993).

Whether blockholders will choose active monitoring ('stick'), equity compensation ('carrot'), or doing nothing is expected to be determined by (i) the blockholder's ability to influence company policy, and (ii) the benefits and costs of active monitoring to the blockholders. Firstly, when the aggregate block ownership percentage is very low, it is difficult for blockholders, individually or collectively, to influence a firm's decisions and policies (Cronqvist and Fahlenbrach 2009). Without sufficient power to influence and interfere, neither 'carrot' nor 'stick' can be implemented. In this case, we anticipate that independent directors are more likely paid in terms of fixed cash compensation, the independent director's preferred form of remuneration (Brook et al. 2009). In other words, we anticipate that equity compensation is less likely to be awarded to independent directors when the aggregate block ownership percentage is in the low range.

Secondly, when aggregate block ownership is sufficiently large to enable blockholders to influence firm policy (i.e., the ownership percentage is in the medium or high range), blockholders can make a choice between active monitoring ('stick') and equity compensation ('carrot'). We anticipate that the choice should be determined by cost-benefit analysis. When the benefits from monitoring are low but the monitoring costs are high, rendering the net benefits from the 'stick' option sufficiently small, we anticipate the blockholders to choose the 'carrot' over the 'stick' strategy.[3]

The benefits from monitoring are determined by the size of block ownership (Maug 1998). A larger ownership percentage implies that a blockholder will receive a greater proportion of benefits from monitoring effort and hence is more likely to choose to actively monitor the agents (Maug 1998). Furthermore, to successfully implement the 'stick' strategy, blockholders need to have sufficient voting power to penalise independent directors (such as

by voting for termination or against reappointment). Without sufficient voting power from their ownership stakes, it may be difficult for blockholders to discipline independent directors even when they detect the director's shirking or poor judgments. Therefore, we anticipate that the monitoring and penalty strategy is more likely used to motivate independent directors when block ownership is in the high range. On the contrary, when the block ownership percentage is lower (i.e., in the medium range), so that the benefits from active monitoring are not large, blockholders may not find it worthwhile to spend their time, effort and resources to do the monitoring job themselves. It is more likely that blockholders will choose not to actively monitor independent directors but instead to adopt the 'carrot' strategy. Therefore, equity compensation is expected to be used more when block ownership size is in the medium range. To summarise, the relationship between independent director equity compensation and the size of block ownership is expected to follow an inverted U-shaped pattern.

*H1: As the block ownership percentage keeps increasing, independent director equity compensation increases and then decreases.*

When there are multiple blockholders in a company, monitoring costs include the time, effort, and resources spent to coordinate, communicate, and reach agreements among the blockholders. As a result, monitoring costs will be higher and monitoring will be less efficient when there are more blockholders in a company (Winton 1993). In addition, the relative size of block ownership stakes can influence monitoring costs. Cronqvist and Fahlenbrach (2009) show that blockholders can better monitor and influence firm policies when they have a larger ownership stake and when they can make a decision on their own. Monitoring is expected to be more efficient when there is one major blockholder than when there are many equally small blockholders. A study by Andreoni and Petrie (2004) also implies that monitoring is likely more effective with a major blockholder acting as a lead

monitor. Reaching an agreement is expected to be easier and faster when there is one powerful blockholder who takes the lead than when there are many smaller blockholders with symmetric block sizes (i.e., when each of the small blockholders owns about the same number of shares so that power is equally dispersed). Accordingly, we expect monitoring costs to be higher when the sizes of block ownership are more symmetric.

When monitoring costs are high (such as when the number of blockholders is larger and the block sizes are more symmetric), we anticipate that a blockholder is more likely to adopt the 'carrot' strategy, i.e., using equity compensation to motivate independent directors. This leads to the following hypotheses.

*H2: As the number of blockholders increases, independent director equity compensation increases.*

*H3: As block ownership becomes more symmetric, independent director equity compensation increases.*


## DATA AND METHODOLOGY

**Data**

The hypotheses are tested on a sample of independent directors[4] from 215 Australian listed firms in non-finance sectors over the fiscal years 2005–2009. Data on large non-finance firms with a market capitalisation of at least A$100 million are extracted from several databases.[5] Data on director compensation, gender, and number of directorships are retrieved from the Connect 4 Boardroom database. We obtain financial data from DatAnalysis and FinAnalysis. Director demographic data (age and education) are from the Capital IQ database. The data on blockholding and other corporate governance variables are hand collected from company annual reports. Observations with missing data are then excluded, resulting in 1877 director-firm-year observations in our sample.

**Analyses**

Multivariate regression analyses are used to investigate the relationships between the test variables discussed above and independent director compensation.

$$Compensation = \alpha_0 + \beta_1\, BlockHolding\% + \beta_2\, BlockHolding\%^2 + \beta_3\, Number\ of\ Blockholders$$

$$+\ \beta_4\, Gini\ Coefficient + \beta_5\, Control + \beta_6\, Industry + \beta_7\, Year \qquad (1)$$

Based on our hypotheses, $\beta_1$ is expected to be positive and $\beta_2$ to be negative, i.e., equity compensation increases and then decreases in the aggregate block ownership percentage. Also, $\beta_3$ is expected to be positive and $\beta_4$ to be negative, i.e., more equity compensation should be awarded as the number of blockholders increases or as block size becomes more symmetric.

The dependent variable, *Compensation*, is measured as the log of independent director compensation, which is the log of value of equity (including options and shares) compensation plus 1. For exploratory purposes, we also consider the independent director's cash compensation, which is the log of value of cash compensation. The test variables include the size of block ownership (*BlockHolding%*), which is the aggregate ownership percentage of all blockholders in a company, the square of the size of aggregate block ownership (*BlockHolding%$^2$*), the number of blockholders (*Number of Blockholders*), and block size asymmetry (*Gini Coefficient*). The *Gini Coefficient* is a measure of inequality among values such as inequality in income. Following previous studies such as Konijn et al. (2011), the *Gini Coefficient* is used to measure block size asymmetry. A higher *Gini Coefficient* represents greater inequality among values, i.e., greater block size asymmetry. For the ownership percentages ranked in descending order $w_1 \geq w_2 \geq w_3 \geq w_4 \geq w_5$ (i.e., for ownership percentage ranking from the largest to the smallest), Fei et al. (1978) show that the *Gini Coefficient* can be calculated as follows:

$$\text{Gini Coefficient} = \frac{2}{5}\frac{1}{(w_1+w_2+w_3+w_4+w_5)}(5w_1 + 4w_2 + 3w_3 + 2w_4 + w_5) - 1.2. \qquad (2)$$

The control variables include director-specific factors, corporate governance factors, and firm-specific factors. There are four director-specific factors. *Multiple Directorship,* a dummy that equals 1 for an independent director with multiple board appointments, is used to measure director experience and reputation (Fama and Jensen 1983). *Education*, which is a dummy coded 1 if an independent director has a university degree, is used to measure capability as education is found to be positively associated with capability (Hambrick and Mason 1984) and compensation (Mithas and Krishnan 2008). Age is also found to be related to compensation (Ostroff and Atwater 2003). Therefore, we include *Director Age*, which is the log of director age, as our control variable. Following previous studies (e.g., Cordeiro et al. 2000; Hempel and Fay 1994), *Number of Meetings*, which is the log of the number of board meetings attended plus 1, is included as a proxy for director time and work effort.

Regarding the corporate governance variables, *Independent Director Ratio*, which is the proportion of independent directors on a board, is included because board independence is found to be related to outside director compensation (Ryan and Wiggins 2004). Following Brick et al. (2006) and Marchetti and Stefanelli (2009), who find that CEO/Chairman duality is related to compensation, *CEODuality*, a dummy coded 1 if a CEO is also a chairman, is included in the analyses.

We have six firm characteristics as control variables. As outside director compensation is found to be positively related to firm size (Hempel and Fay 1994; Linn and Park 2005), we include *Firm Size*, which is the log of the total assets of a firm, in our models. Cordeiro et al. (2005) find that performance is related to compensation. *ROA*, which is return on total assets, is used to measure firm performance. Furthermore, firms with less financial resources are expected to pay their directors less; following Bryan et al. (2000), *Free Cash Flow Asset Ratio* (gross cash flow less gross investment scaled by total assets) is our proxy

for liquidity constraint. *DA,* the debt to asset ratio, is used to control for leverage, as suggested by Brick et al. (2006) and Bryan et al. (2000). Risk can also be related to compensation (Core et al. 2003; Low 2009). To control for the impact of firm risk, we use *Risk*, which is the standard deviation of return on total assets for five years. *MB*, the market-to-book ratio, is also included as a proxy for growth opportunities because firm growth opportunity is found to be related to outside director equity compensation (Bryan et al. 2000; Linn and Park 2005) and CEO compensation (Walker 2010). Finally, compensation is found to vary across industries (Marchetti and Stefanelli 2009; Matolcsy and Wright 2007) and through time (Linn and Park 2005), so industry dummies, *Industry*, and year dummies, *Year*, are included in our models.

**RESULTS**

This section reports the research findings from our analyses. The discussion of the results is presented in the Discussion and Conclusion section below. Table 1 reports the descriptive statistics. Independent director annual cash pay ranges from around A$1300 to A$447 700, with a mean of A$100 400 and a median of A$86 300. Independent director annual equity compensation ranges from A$0 to A$921 100, with a mean of A$7700 and a median of A$0. The mean age is 59.6 years. Approximately 48.6% of independent directors have a university degree and around 52.4% hold an external appointment as a director in another company. An independent director attends 16.6 meetings per year on average.

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Insert Table 1 Here
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On average, firms have 3.75 blockholders and in aggregate have around 46.8% of the shares owned by blockholders, with a *Gini Coefficient* of around 0.29. The mean proportion of independent directors on a board is around 42.9%. In 5.3% of the observations, a CEO is

also a chairman of the board. Firm size (total assets) ranges from A\$21.24 million to A\$39 962 million, with a mean of A\$3652 million. The mean return on total assets and mean debt to total asset ratio are 7.67% and 47%, respectively. On average, free cash flow is around 2.67% of total assets and the market to book ratio is 3.15. The mean volatility of return on total assets over five years is 0.06.

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The correlation matrix of the explanatory variables is shown in Table 2. None of the explanatory variables are extremely correlated so that it is unlikely that multicollinearity is a concern for the multivariate analyses. We also conduct collinearity analysis by using the variance inflation factor (VIF), which is a measure of the severity of multicollinearity in regression analysis. All VIF values are less than 5, indicating that the regression models do not suffer from multicollinearity problems (O'Brien 2007).

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Insert Table 3 and Table 4 Here
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Table 3 presents the results of Ordinary Least Square (OLS) regression analyses on the use of equity compensation for independent directors. Total equity compensation is separated into options and share compensation in Table 4. The results from both tables are consistent with H1, H2, and H3 respectively. Equity compensation is found to be nonlinearly associated with *BlockHolding%* as predicted in H1. In Table 3 model (2), the coefficient of *BlockHolding%* is positive and significant while the coefficient of *BlockHolding%*$^2$ is negative and significant, implying that equity compensation first increases and then decreases as block ownership keeps increasing. The results remain qualitatively unchanged in models (3) and (4) in Table 3 and in models (2) – (4) in Table 4.

Supporting H2, in Table 3 model (3), independent director equity compensation is positively and significantly associated with the number of blockholders as predicted. The coefficients remain positive and significant in model (3) for both options and share compensation in Table 4. When the *Gini Coefficient* is included in model (4), however, the coefficient of the number of blockholders becomes insignificant for total equity compensation in Table 3. Further investigation in Table 4 (model (4)) reveals that while share compensation is not significantly related to the number of blockholders, options compensation is positively related to the number of blockholders as predicted. Overall, the results show that equity compensation, especially options compensation, is more likely awarded to independent directors when there are more blockholders in the company, which is consistent with H2.

Supporting H3, in Table 3 model (4), the coefficient of the *Gini Coefficient* is negative and significant, suggesting that less equity compensation is awarded when block size becomes more asymmetric. Further analyses in Table 4 (model (4)) indicate that while options compensation is not significantly associated with the *Gini Coefficient*, share compensation is negatively associated with the *Gini Coefficient*. Collectively, the results suggest that equity compensation, especially share compensation, is less likely to be awarded to independent directors when block sizes are less symmetric (i.e., the block sizes held by individual blockholders are less commensurate, such as when ownership is concentrated and one blockholder owns more shares than others).

This study also explores the determinants of independent director cash compensation. In Table 3, we find that independent director cash compensation is not significantly associated with blockholding percentage (*BlockHolding%*) in model (1). When the square of blockholding percentage (*BlockHolding%$^2$*) is included in model (2), the coefficient of *BlockHolding%* becomes negative while the coefficient of *BlockHolding%$^2$* is positive and

significant. When the number of blockholders and the *Gini Coefficient* are included in models (3) and (4), respectively, cash compensation is not significantly related to *BlockHolding%* but is marginally positively related to *BlockHolding%²*. In addition, cash compensation is negatively related to the number of blockholders in model (3) (but only marginally) and is not significantly related to the *Gini Coefficient* in model (4). Overall, the relationships between cash compensation and blockholding seem to be weak statistically. It appears that cash compensation can better be explained by other director, governance, and firm characteristics.

Consistent with previous studies such as Brick et al. (2006), Hempel and Fay (1994), and Merchetti and Stefanelli (2009), we find that independent director compensation is determined by director characteristics. In Table 3, both cash and equity compensation tend to be larger for independent directors who are older, have outside directorships, and attend more meetings. A more educated independent director appears to be paid less cash but receive more equity compensation. An independent director tends to receive more cash compensation in a firm with more independent directors on the board. This result resonates with a recent survey which shows that Australian independent directors prefer fixed cash compensation to equity compensation (Brook et al. 2009). An independent director also receives more cash but less equity compensation in a firm with CEO/chairman duality, possibly because a powerful CEO/chairman prefers to reduce an independent director's incentive to monitor the CEO (Ryan and Wiggins 2004). Consistent with Bryan et al. (2000), independent directors tend to get paid less cash compensation in a firm with less free cash flow and greater debt. Furthermore, we find cash compensation is negatively associated with firm risk while equity compensation is positively related to firm risk. This is possibly because the use of equity incentive pay encourages risk-taking behavior, as found in previous studies such as Low (2009).

Noteworthy here is the relationship between compensation and performance (*ROA*). Previous findings have been inconclusive. Cordeiro et al. (2005) and Marchetti and Stefanelli (2009) find positive relationships between non-executive director compensation and firm performance while Ryan and Wiggins (2004) report negative relationships. We find no significant relationship between cash compensation and performance but a negative, significant relationship between equity compensation and performance. It is possible that the positive impact of equity incentives on firm performance is long-term, rather than immediate. Equity incentive plans can deter myopia and encourage firms to invest in a project which decreases short-term profit but improves long-term performance (Bebchuck and Fried 2010). Future research which investigates time series of performance measures is needed to clarify the inconclusive results.

**Robustness Test**

As discussed in Hartzell and Stark (2003), a potential problem with the OLS (Ordinary Least Squares) model is that the relationship between compensation and ownership structure may be bi-directional. For example, it may be possible that a shareholder chooses to invest in a firm with a particular choice of compensation design for independent directors. The ownership structure and compensation may be determined endogenously. This reciprocal effect may bias the estimates using the OLS regression method. To address concerns for endogeneity problems between independent director compensation and blockholding, the instrumental variable approach (two-stage least squares method) is employed to generate the fitted values of the blockholding percentage. Following the literature on the determinants of block ownership, we include the following explanatory variables as our instrumental variables: market capitalisation, market-to-book ratio, sales, property plant and equipment, research and development expenses, firm risk, stock price volatility, firm age, and indicators

which equal 1 for a firm in utility, mining, and media industries (Demsetz and Lehn 1985; Himmelberg et al. 1999; Lamba and Stapledon 2001). Based on Barclay and Holderness (1989), we also include firm performance (return on asset) and leverage (debt to asset ratio), which are expected to be related to the benefits of block ownership. Then, the fitted values of the blockholding percentage generated from the first-stage regression are used to conduct the regression analyses in equation (1). The results using the instrumental variable approach are consistent with H1, H2, and H3, suggesting that our OLS results are robust after controlling for potential endogeneity issues.[6]

## DISCUSSION AND CONCLUSION

In this paper, we aim to investigate the use of equity compensation for independent directors. We are particularly interested in the impact of large shareholders on a company's tendency to use equity compensation to motivate its independent directors. Our analyses are based on data from 215 large Australian listed companies from 2005 – 2009. This paper contributes to the literature by providing new evidence of how block ownership dispersion affects compensation design for independent directors.

Previous research finds inconclusive results regarding the impact of the size of blockholding (or the presence of blockholders) on independent director equity compensation. Bryan et al. (2000) show a positive relationship while Cordeiro et al. (2000) and Vafeas (1999) report no significant relationship between blockholding and equity compensation for outside directors. These studies investigate a linear relationship whereas this paper considers the possibility of a non-linear relationship between compensation and blockholding. When the square of the blockholding percentage is omitted from the regression model, we find no significant relationship between the blockholding percentage and total equity compensation; this result is consistent with those reported by Cordeiro et al. (2000) and Vafeas (1999).

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When the square of the blockholding percentage is included in the analysis, the results show evidence of nonlinear relationships: equity compensation for an independent director first increases as the blockholding percentage increases, and then it starts to decline as the block ownership percentage keeps rising further. This finding has research implications. Previous research often considers linear relationships and investigates whether one corporate governance mechanism is a complement or substitute for another. Mehran (1995), for example, finds a negative linear relationship between executive equity compensation and blockholding percentage. Based on that finding, the author argues that monitoring by blockholders may be a substitute for equity incentives for managers. The non-linear relationships that we found suggest that the substitution/complementary relationship may not be absolute but instead may hold only within a relevant range. Future research should consider the possibility of non-linear relationships before concluding whether two governance mechanisms are substitutes or complements.

In addition, we extend the literature by investigating the impact of block ownership dispersion on compensation. While block ownership dispersion has been explored in many capital market studies (e.g., Boubaker and Sami 2011; Konijn et al. 2011), research examining the impact of block ownership dispersion on compensation is scarce. Through our extensive search of the relevant literature, we only find a paper by Hartzell and Starks (2003), which investigates the relationship between CEO compensation and institutional ownership concentration.  The authors find that CEO cash (salary and bonus) compensation and total compensation are negatively related to ownership concentration by institutional investors, i.e., ownership concentration by institutional investors appears to suppress CEO compensation. We find consistent results only for equity compensation, i.e., block ownership concentration (block size asymmetry) is found to be negatively related to equity compensation for independent directors. However, we do not find independent director cash

compensation to be significantly related to ownership concentration. This is possibly because we consider all types of blockholders while Hartzell and Starks (2003) only include institutional blockholders. Blockholders' motivation and impact on the firm can vary according to their backgrounds (Cronqvist and Fahlenbrach 2009; Holderness 2009). Future research in this area is needed to further explain the impact of ownership structure on compensation.

Overall, this paper shows that the use of equity incentives for independent directors is more likely when the firm has multiple blockholders, the block ownership sizes are commensurate, and the aggregate block ownership percentage is moderate rather than very high or very low. Our study adds new evidence to the strand of literature on the potential benefits of large shareholders such as the study by Hartzell and Starks (2003) which finds that institutional ownership increases pay-performance sensitivity in executive compensation and the study by Boubaker and Sami (2011) which reports that having multiple large shareholders can improve earnings informativeness. By showing that large shareholders can encourage the use of equity compensation to motivate independent directors, our study supports the argument that large shareholders can improve corporate governance by alleviating the agency problems within a company (Shleifer and Vishny 1997).[7]

Our findings have implications for future research. While previous compensation research often investigates the size of block ownership or the presence of a blockholder, recent capital market studies show that other aspects of blockholding such as the number of blockholders and block size asymmetry can also be important (Attig et al. 2008; 2009). This study adds to this strand of literature by showing that the number of blockholders and block size asymmetry are related to independent director compensation. We show that each aspect of blockholding affects independent director compensation in different ways (positive versus negative associations, linear versus non-linear relationships). This implies that if only the size

of block ownership or a dummy whether a blockholder is present in a company is included in the analysis, the impact of other aspects of blockholding which are omitted from the model will be captured in the coefficient on block size or block presence dummy. Future compensation studies should consider including other aspects of blockholding in their analyses to avoid the omitted variable problems.

Our study also has implications for policy-makers. In the Corporate Governance Principles and Recommendations, the ASX Corporate Governance Council (2010) recommends a majority of independent directors on the board of directors (Recommendation 2.1). Our results suggest that board independence alone may not be sufficient to improve corporate governance. While previous research (e.g., Mehran 1995) finds that board independence is positively related to equity compensation but is negatively related to cash compensation for managers, we find that board independence is not significantly related to the use of equity incentive for independent directors. It is the blockholders who can encourage the use of equity incentives for independent directors. We also find that a board with a higher proportion of independent directors tends to award itself greater cash compensation and we do not find cash compensation to be significantly related to firm performance. These findings suggest that without someone to monitor independent directors, they may not always set their own compensation in the shareholder's best interest. As a result, it may not be beneficial to prescribe firms to remunerate their non-executive directors by way of fees and recommend against the use of incentive pay such as bonuses and options (Box 8.2: Guidelines for Non-executive Director Remuneration). The benefits of equity incentives are expected to vary across companies. In a company with weaker owner monitoring, using incentive pay to align an independent director's interests with shareholders' interests can be advantageous. Rather than prescribing firms to remunerate their non-executive directors only by way of fees, it may be better to let firms design the

compensation packages for their independent directors as they deem appropriate and require them to disclose the justifications for why the compensation packages are designed as such. In addition, we find that CEO/Chairman duality is positively related to independent director cash compensation but negatively related to equity compensation. The findings suggest that the ASX's recommendation against CEO/Chairman duality (Recommendation 2.3) may help improve corporate governance by discouraging excessive cash payment and encouraging the use of equity compensation for independent directors.

To conclude, this research suggests that blockholders encourage the use of equity incentives when the aggregate blockholding percentage is moderate, when there are multiple blockholders, and when the sizes of block ownership stakes are more comparable. One limitation of this study is that we do not distinguish between different types of blockholders (such as being an individual or an institution) and do not take into account their backgrounds (such as being an ultimate owner or an intermediate owner owned by another entity). We acknowledge that blockholders' motivation, behaviour, and impact on the company can vary according to their backgrounds (Cronqvist and Fahlenbrach 2009; Holderness 2009). We recommend that future research should investigate this interesting issue to broaden our knowledge in the field.

Endnotes:

[1] The ASX recommendations are guidelines rather than legal requirements. However, under ASX Listing Rule 4.10.3, a listed company which chooses not to follow the guidelines is required to disclose its reasons for not following the guidelines in its annual report (ASX Corporate Governance Council 2010).

[2] Although we discuss the two mechanisms separately for simplicity of exposition, we acknowledge that in practice, a blockholder can implement a combination of both mechanisms.

[3] We acknowledge that the cost of the 'carrot' strategy, which is the risk premium associated with the use of uncertain equity compensation, should also affect the decision. We do not discuss the risk premium here in detail because the focus of our study is on the characteristics of block ownership. To account for the risk premium, we include firm risk as our control variable in the analyses.

[4] We exclude non-executive directors who are not considered independent because they have some relationship with the focal company, such as being a major shareholder, a service provider, or a former employee. These 'grey' directors may have their interest more aligned with the management (Luan and Tang 2007).

[5] Previous research shows that the corporate governance of banking firms is systematically different from other types of firms, and many studies in the corporate governance literature are based on non-financial firm data (Adams and Mehran 2003). To make our study more comparable with the large body of corporate governance research, we exclude firms in financial industries.

[6] The results of OLS and two-stage least squares analyses are qualitatively the same. To save space, the results of the two-stage least squares analysis are not reported here, but are available upon request.

[7] In the literature review, we discuss the benefits of having large shareholders in a company. It should be noted that having large shareholders can also be disadvantageous. Large shareholders can use their influence to obtain private benefits from companies, at the expense of other shareholders and employees (Holderness 2003; Shleifer and Vishny 1997), such as through related-party transactions with the terms more favourable to the large shareholders themselves than normal arm's length transactions (Lamba and Stapledon 2001). The private benefit extraction can adversely affect share prices (Konijn et al. 2011). Our result that the use of equity compensation for an independent director is less likely when the ownership percentage is high can be interpreted as evidence of private benefit extraction. When blockholders accumulate more voting rights through ownership and become more powerful, they can extract more private benefits from companies (Dyck and Zingales 2004), and the private benefit extraction will result in lower share prices (Konijn et al. 2011). As part of their jobs, independent

directors are expected to mitigate agency problems between minority and major shareholders. If independent directors are paid in terms of shares or options, their wealth, which is linked to share price, will decrease when more private benefits are extracted. Paying them more equity compensation gives them greater incentive to curb private benefit extractions. Therefore, it is possible that the reason why less equity compensation is used when block ownership is large is because blockholders want to reduce the director's incentive to deter private benefit extraction activities. We acknowledge that we cannot rule out this alternative explanation of the results and that future research is needed to clarify this issue.

# REFERENCES

Adithipyangkul, P. and Leung, T.Y. 2015, 'State Ownership, Legal Institution, and Independent Director Compensation: An Exploratory Study in China', *The Chinese Economy*, forthcoming.

Adam, R. and Mehran, H. 2003, 'Is Corporate Governance Different for Bank Holding Companies?', *FRBNY Economic Policy Review*, 9, 1: 123-142.

Admati, A. and Pfleiderer, P. 2009, 'The "Wall Street Walk" and Shareholder Activism: Exit as a Form of Voice', *Review of Financial Studies*, 22, 7: 2445-2485.

Andreoni, J. and Petrie, R. 2004, 'Public Goods Experiments without Confidentiality: A Glimpse into Fund-raising', *Journal of Public Economics,* 88: 1605-1623.

ASX Corporate Governance Council. 2010, *Corporate Governance Principles and Recommendations with 2010 Amendments,* available at http://www.asx.com.au/regulation/corporate-governance-council.htm, last accessed 14 January 2015.

Attig, N., El Ghoul, S. and Guedhami, O. 2009, 'Do Multiple Larger Shareholders Play a Corporate Governance Role? Evidence from East Asia', *Journal of Financial Research*, 32, 4: 395-422.

Attig, N., Guedhami, O. and Mishra, D. 2008, 'Multiple Large Shareholders, Control Contests, and Implied Cost of Equity', *Journal of Corporate Finance*, 14: 721-737.

Barclay, M. and Holderness, C. 1989, 'Private Benefits from Control of Public Corporations', *Journal of Financial Economics,* 25:371-395.

Bebchuk, L.A. and Fried, J.M. 2010, 'Paying for Long-term Performance', *University of Pennsylvania Law Review*, 158: 1915-1959.

Bolton, P. and von Thadden, E. 1998, 'Blocks, Liquidity, and Corporate Control', *Journal of Finance*, 53, 1: 1-25.

Boubaker, S. and Sami, H. 2011, 'Multiple Large Shareholders and Earnings Informativeness', *Review of Accounting and Finance*, 10, 3: 246-266.

Brick, I., Palmon, O. and Wald, J. 2006, 'CEO Compensation, Director Compensation, and Firm Performance: Evidence of Cronyism?', *Journal of Corporate Finance*, 12: 403-423.

Brooks, A., Oliver, J. and Veljanovski, A. 2009, 'The Role of the Independent Director: Evidence from a Survey of Independent Directors in Australia', *Australian Accounting Review*, 20(19): 161-177.

Bryan, S., Hwang, L., Klien, A. and Lilien, S. 2000, 'Compensation of Outside Directors: An Empirical Analysis of Economic Determinants', Working paper, CUNY.

Chen, X. and Yur-Austin, J. 2007, 'Re-measuring Agency Costs: The Effectiveness of Blockholders', *Quarterly Review of Economics and Finance*, 47: 588-601.

Christensen, J., Kent, P. and Stewart, J. 2010, 'Corporate Governance and Company Performance in Australia', *Australian Accounting Review*, 55(20): 372-386.

Christensen, P. and Feltham, G. 2005, *Economics of Accounting, vol. II: Performance Evaluation,* Kluwer Academic Publishers, Boston.

Cordeiro, J., Veliyath, R. and Eramus, E. 2000, 'An Empirical Investigation of the Determinants of Outside Director Compensation', *Corporate Governance: An International Review*, 8, 3: 268-279.

Cordeiro, J., Veliyath, R. and Neubaum, D. 2005, 'Incentives for Monitors: Director Stock-based Compensation and Firm Performance', *Journal of Applied Business Research*, 21, 2: 81-90.

Core, J., Guay, W. and Larcker, D. 2003, 'Executive Equity Compensation and Incentives: A Survey', *Economic Policy Review*, April: 27-50.

Cronqvist, H. and Fahlenbrach, R. 2009. 'Large Shareholders and Corporate Policies', *Review of Financial Studies*, 22, 10: 3941-3976.

Demsetz, H. and Lehn, K. 1985, 'The Structure of Corporate Ownership: Causes and Consequences', *Journal of Political Economy*, 93, 6:1155-1177.

Deutsch, Y. 2007, 'The Influence of Outside Directors' Stock-option Compensation on Firms' R&D', *Corporate Governance: An International Review,* 15, 5: 816-827.

Devers, C.E., Cannella, A.A., Reilly, G.P. and Yoder, M.E. 2007, 'Executive Compensation: A Multidisciplinary Review of Recent Developments', *Journal of Management,* 33: 1016-1072.

Dyck, A. and Zingales, L. 2004, 'Private Benefits of Control: An International Comparison', *Journal of Finance,* 59, 2: 537-600.

Edmans, A. 2009, 'Blockholder Trading, Market Efficiency, and Managerial Myopia', *Journal of Finance,* 64, 6: 2481-2513.

Eisenhardt, K. 1989, 'Agency Theory: An Assessment and Review', *Academy of Management Review*, 14, 1: 57-74.

Fama, E. and Jensen, M. 1983, 'Separation of Ownership and Control', *Journal of Law and Economics,* 26: 301-325.

Fei, J., Ranis, G. and Kuo, S. 1978, 'Growth and the Family Distribution of Income by Factor Components', *Quarterly Journal of Economics,* 92, 1: 17-53.

Hahn, P. and Lasfer, M. 2011, 'The Compensation of Non-executive Directors: Rational, Form, and Findings', *Journal of Management and Governance,* 15: 589-601.

Hambrick, D. and Mason, P. 1984, 'Upper Echelons: The Organization as a Reflection of its Top Managers', *Academy of Management Review,* 9, 2: 193-206.

Hartzell, J. and Starks, L. 2003, 'Institutional Investors and Executive Compensation', *Journal of Finance,* 58, 6: 2351-2374.

Hempel, P. and Fay, C. 1994, 'Outside Director Compensation and Firm Performance', *Human Resource Management,* 33, 1: 111-133.

Himmelberg, C., Hubbard, G. and Palia, D. 1999, 'Understanding the Determinants of Managerial Ownership and the Link between Ownership and Performance', *Journal of Financial Economics* 53: 353-384.

Holderness, C. 2003, 'A Survey of Blockholders and Corporate Control', *FRBNY Economic Policy Review,* April: 51-64.

Holderness, C. 2009, 'The Myth of Diffuse Ownership in the United States', *Review of Financial Studies,* 22, 4: 1377-1408.

Jensen, M. and Meckling, W. 1976, 'Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure', *Journal of Financial Economics,* 3, 4: 305-360.

Konijn, S., Kräussl, R. and Lucas, A. 2011, 'Blockholder Dispersion and Firm Value', *Journal of Corporate Finance,* 17, 5: 1330-1339.

Lamba, A. and Stapledon, G. 2001, 'The Determinants of Corporate Ownership Structure: Australian Evidence', Working paper, University of Melbourne.

Lambert, R. 2001, 'Contracting Theory and Accounting', *Journal of Accounting and Economics*, 32, 3-87.

Linn, S. and Park, D. 2005, 'Outside Director Compensation Policy and the Investment Opportunity Set', *Journal of Corporate Finance,* 11, 4: 680-715.

Low, A. 2009, 'Managerial Risk-taking Behavior and Equity-based Compensation', *Journal of Financial Economics*, 92: 470-490.

Luan, C. and Tang, M. 2007, 'Where is Independent Director Efficacy?', *Corporate Governance: An International Review*, 15, 4: 636-643.

Marchetti, P. and Stefanelli, V. 2009, 'Does the Compensation Level of Outside Director Depend on its Personal Profile? Some Evidence from UK', *Journal of Management and Governance,* 13, 4: 325-354.

Matolcsy, Z. and Wright A. 2007, 'Australian CEO Compensation: The Descriptive Evidence', *Australian Accounting Review*, 17(3): 47-59.

Maug, E. 1998, 'Large Shareholders as Monitors: Is There a Trade-off between Liquidity and Control?', *Journal of Finance*, 53, 1: 65-98.

Mehran, H. 1995, 'Executive Compensation Structure, Ownership, and Firm Performance', *Journal of Financial Economics*, 38:163-184.

Mithas, S. and Krishnan, M. 2008, 'Human Capital and Institutional Effects in the Compensation of Information Technology Professionals in the United States', *Management Science*, 54, 3: 415-428.

O'Brien, R.M. 2007, 'A Caution Regarding Rules of Thumb for Variance Inflation Factors', *Quality & Quantity*, 41, 5: 673-690.

Ostroff, C. and Atwater, L. 2003, 'Does Whom You Work with Matter? Effects of Referent Group Gender and Age Composition on Managers' Compensation', *Journal of Applied Psychology,* 88, 4: 725-740.

Ryan, H. and Wiggins, R. 2004, 'Who is in Whose Pocket? Director Compensation, Board Independence, and Barriers to Effective Monitoring', *Journal of Financial Economics,* 73: 497-524.

Singh, M. and Davidson, W. 2003, 'Agency Costs, Ownership Structure and Corporate Governance Mechanisms', *Journal of Banking and Finance*, 27: 793-816.

Shleifer, A. and Vishny, R. 1997, 'A Survey of Corporate Governance', *Journal of Finance,* 52, 2: 737-783.

Vafeas, N. 1999, 'Determinants of the Adoption of Director Incentive Plans', *Journal of Accounting, Auditing, and Finance,* 14: 453-474.

Walker, J. 2010, 'The Use of Performance-based Remuneration: High versus Low-growth Firms', *Australian Accounting Review,* 54(20): 256-264.

Winton, A. 1993, 'Limitation of Liability and the Ownership Structure of the Firm', *Journal of Finance*, 48, 2: 487-512.

## Table 1

## Descriptive Statistics

| | Dummy Code = 1 | Dummy Code = 0 | Mean | Median | Maximum | Minimum | Standard Deviation |
|---|---|---|---|---|---|---|---|
| *Cash Compensation (Million)* | | | 0.1004 | 0.0863 | 0.4477 | 0.0013 | 0.0582 |
| *Options Compensation (Million)* | | | 0.0034 | 0.0000 | 0.7825 | 0.0000 | 0.0395 |
| *Share Compensation (Million)* | | | 0.0043 | 0.0000 | 0.9211 | 0.0000 | 0.0264 |
| *Total Equity Compensation (Million)* | | | 0.0077 | 0.0000 | 0.9211 | 0.0000 | 0.0399 |
| *BlockHolding%* | | | 0.4678 | 0.4728 | 0.9787 | 0.0000 | 0.1847 |
| *Number of Blockholders* | | | 3.7517 | 4.0000 | 8.0000 | 0.0000 | 1.3888 |
| *Gini Coefficient* | | | 0.2875 | 0.2698 | 0.7596 | 0.0205 | 0.1265 |
| *Multiple Directorship* | 983 | 894 | | | | | |
| *Number of Meetings* | | | 16.5923 | 16.0000 | 83.0000 | 0.0000 | 8.1480 |
| *Education* | 913 | 964 | | | | | |
| *Director Age* | | | 59.5834 | 60.0000 | 83.0000 | 31.0000 | 7.1478 |
| *Independent Director Ratio* | | | 0.4293 | 0.4286 | 0.8000 | 0.0667 | 0.1659 |
| *CEO Duality* | 100 | 1777 | | | | | |
| *Firm Size (Million)* | | | 3651.8893 | 1075.4260 | 39962.0000 | 21.2382 | 6514.2489 |
| *ROA* | | | 0.0767 | 0.0778 | 0.4810 | -2.0321 | 0.1049 |
| *DA* | | | 0.4704 | 0.4928 | 0.8785 | 0.0050 | 0.1828 |
| *Free Cash Flow Asset Ratio* | | | 0.0267 | 0.0485 | 0.8114 | -1.7274 | 0.1669 |
| *Risk* | | | 0.0583 | 0.0215 | 1.1329 | 0.0001 | 0.1162 |
| *MB* | | | 3.1454 | 2.2700 | 19.9000 | 0.1300 | 2.7155 |

*Cash Compensation* is the value of cash compensation. *Options Compensation* is the value of options compensation. *Shares Compensation* is the value of shares compensation. *Total Equity Compensation* is the value of equity (options and shares) compensation. *BlockHolding%* is the aggregate ownership percentage of all blockholders. *Number of Blockholders* is the number of shareholders with at least 5% ownership. The *Gini Coefficient* is the measure of block size asymmetry. *Multiple Directorship* is a dummy that equals 1 for a director with multiple directorships. *Number of Meetings* is the number of meetings attended by an independent director. *Education* is a dummy coded 1 if a director has a university degree. *Director Age* is the age of the director. *Independent Director Ratio* is the proportion of independent directors on a board. *CEO Duality* is a dummy coded 1 if a CEO is also the board chairman. *Firm Size* is total assets. *ROA* is return on total assets. *DA* is the debt to assets ratio. *Free Cash Flow Asset Ratio* is the gross cash flow less gross investment scaled by total assets. *Risk* is the standard deviation of return on total assets for five years. *MB* is the market to book ratio.

# Table 2

## Correlation Matrix

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *BlockHolding%* | 1.00 | | | | | | | | | | | | | | |
| 2 | *Number of Blockholders* | 0.57*** | 1.00 | | | | | | | | | | | | | |
| 3 | *Gini Coefficient* | 0.35*** | -0.43*** | 1.00 | | | | | | | | | | | | |
| 4 | *Multiple Directorship* | 0.02 | -0.02 | 0.00 | 1.00 | | | | | | | | | | | |
| 5 | *Number of Meetings* | -0.05*** | 0.00 | -0.04** | 0.14*** | 1.00 | | | | | | | | | | |
| 6 | *Education* | 0.10*** | 0.07*** | -0.01 | 0.17*** | 0.01 | 1.00 | | | | | | | | | |
| 7 | *Age* | -0.03 | -0.04* | 0.01 | 0.02 | 0.10*** | -0.09*** | 1.00 | | | | | | | | |
| 8 | *Independent Director Ratio* | -0.13*** | 0.04** | -0.23*** | 0.12*** | 0.13*** | 0.08*** | 0.16*** | 1.00 | | | | | | | |
| 9 | *CEO Duality* | -0.13*** | -0.13*** | 0.06*** | -0.11*** | -0.10*** | -0.08*** | -0.04** | -0.03 | 1.00 | | | | | | |
| 10 | *Firm Size* | 0.16*** | 0.08*** | 0.01 | 0.27*** | 0.17*** | 0.22*** | 0.11*** | 0.32*** | -0.22*** | 1.00 | | | | | |
| 11 | *ROA* | 0.03 | 0.08*** | -0.07*** | 0.03 | 0.01 | -0.02 | 0.01* | -0.04* | 0.04* | 0.04* | 1.00 | | | | |
| 12 | *DA* | 0.05*** | 0.00 | 0.06*** | 0.11*** | 0.16*** | 0.05** | 0.04* | 0.11*** | -0.12*** | 0.50*** | 0.15*** | 1.00 | | | |
| 13 | *Free Cash Flow Asset Ratio* | 0.03 | 0.04* | -0.04** | 0.05*** | 0.04** | -0.04* | 0.03 | 0.05** | -0.02 | 0.13*** | 0.62*** | 0.19*** | 1.00 | | |
| 14 | *Risk* | -0.12*** | -0.10*** | -0.02 | -0.11*** | -0.10*** | -0.05** | -0.06*** | -0.04** | 0.12*** | -0.39*** | -0.32*** | -0.38*** | -0.29*** | 1.00 | |
| 15 | *MB* | 0.02 | 0.08*** | -0.03 | -0.06*** | -0.10*** | 0.01 | -0.09*** | -0.13*** | 0.07*** | -0.28*** | 0.26*** | -0.05** | 0.12*** | 0.12*** | 1.00 |

*BlockHolding%* is the aggregate ownership percentage of all blockholders. *Number of Blockholders* is the number of shareholders with at least 5% ownership. The *Gini Coefficient* is the measure of block size asymmetry. *Multiple Directorship* is a dummy that equals 1 for a director with multiple directorships. *Number of Meetings* is the log of the number of meetings attended by an independent director plus 1. *Education* is a dummy coded 1 if a director has a university degree. *Director Age* is the log of director age. *Independent Director Ratio* is the proportion of independent directors on a board. *CEO Duality* is a dummy coded 1 if a CEO is also the board chairman. *Firm Size* is the log of total assets. *ROA* is return on total assets. *DA* is the debt to assets ratio. *Free Cash Flow Asset Ratio* is the gross cash flow less gross investment scaled by total assets. *Risk* is the standard deviation of return on total assets for five years. *MB* is the market to book ratio.
* p .10, ** p .05, *** p .01

## Table 3
## Regression Analysis for Total Equity and Cash Compensation

| | Total Equity (Options and Share) Compensation | | | | Cash Compensation | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) Coeff | (2) Coeff | (3) Coeff | (4) Coeff | (1) Coeff | (2) Coeff | (3) Coeff | (4) Coeff |
| Intercept | -10.12*** | -10.79*** | -11.52*** | -10.39*** | 4.30*** | 3.83*** | 3.83*** | 3.77*** |
| *BlockHolding%* | 0.51 | 13.95*** | 10.156*** | 14.39*** | 0.07 | -0.37* | -0.14 | -0.19 |
| *BlockHolding%$^2$* | | -15.49*** | -12.72*** | -14.76*** | | 0.55** | 0.41* | 0.43* |
| *Number of Blockholders* | | | 0.29*** | -0.06 | | | -0.02* | -0.01 |
| *Gini Coefficient* | | | | -3.78*** | | | | 0.05 |
| *Multiple Directorship* | 0.28* | 0.35** | 0.36** | 0.36** | 0.04** | 0.03 | 0.03 | 0.03 |
| *Number of Meetings* | 0.38*** | 0.39*** | 0.38*** | 0.39*** | 0.61*** | 0.61*** | 0.62*** | 0.61*** |
| *Education* | 0.73*** | 0.74*** | 0.72*** | 0.71*** | -0.06*** | -0.05*** | -0.05** | -0.05** |
| *Age* | 1.33** | 1.24** | 1.34** | 1.42** | 0.32*** | 0.32*** | 0.31*** | 0.31*** |
| *Independent Director Ratio* | 1.12* | 0.88 | 0.64 | 0.55 | 0.10 | 0.12* | 0.17*** | 0.17*** |
| *CEO Duality* | -0.93*** | -0.91*** | -0.80** | -0.70** | 0.08** | 0.08** | 0.08** | 0.07** |
| *Firm Size* | 0.25*** | 0.18** | 0.20*** | 0.17** | 0.19*** | 0.21*** | 0.22*** | 0.22*** |
| *ROA* | -2.46** | -2.06* | -2.36** | -2.57** | 0.07 | 0.06 | 0.09 | 0.08 |
| *DA* | -1.05* | -0.78 | -0.75 | -0.55 | -0.11 | -0.18*** | -0.22*** | -0.23*** |
| *Free Cash Flow Asset Ratio* | -1.16 | -1.11 | -1.00 | -1.01 | 0.25*** | 0.18** | 0.15 | 0.15* |
| *Risk* | 1.34 | 1.91* | 2.03* | 2.00* | -0.35*** | -0.38*** | -0.36*** | -0.36*** |
| *MB* | 0.01 | -0.01 | -0.01 | -0.01 | 0.04*** | 0.05*** | 0.04*** | 0.04*** |
| *Industry Dummy and Year Dummy Included* | | | | | | | | |
| Adjusted R-square | 0.14 | 0.17 | 0.18 | 0.18 | 0.61 | 0.62 | 0.62 | 0.62 |
| F Statistics | 12.32 | 14.57 | 14.60 | 14.50 | 109.91 | 107.78 | 110.62 | 103.60 |
| p-value | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

*Total Equity Compensation* is the log of equity (options and shares) compensation plus 1. *Cash Compensation* is the log of cash compensation. *BlockHolding%* is the aggregate ownership percentage of all blockholders. *BlockHolding%$^2$* is the square of *BlockHolding%*. *Number of Blockholders* is the number of shareholders with at least 5% ownership. The *Gini Coefficient* is the measure of block size asymmetry. *Multiple Directorship* is a dummy that equals 1 for a director with multiple directorships. *Number of Meetings* is the log of the number of meetings attended by an independent director plus 1. *Education* is a dummy coded 1 if a director has a university degree. *Director Age* is the log of director age. *Independent Director Ratio* is the proportion of independent directors on a board. *CEO Duality* is a dummy coded 1 if a CEO is also the board chairman. *Firm Size* is the log of total assets. *ROA* is return on total assets. *DA* is the debt to assets ratio. *Free Cash Flow Asset Ratio* is the gross cash flow less gross investment scaled by total assets. *Risk* is the standard deviation of return on total assets for five years. *MB* is the market to book ratio.
* p .10,  ** p .05,  *** p .01

# Table 4
## Regression Analysis for Options and Share Compensation

| | Options Compensation | | | | Share Compensation | | | |
|---|---|---|---|---|---|---|---|---|
| | (1) Coeff | (2) Coeff | (3) Coeff | (4) Coeff | (1) Coeff | (2) Coeff | (3) Coeff | (4) Coeff |
| Intercept | 4.45** | 4.23** | 3.96** | 3.49* | -15.76*** | -15.95*** | -16.31*** | -15.25*** |
| *BlockHolding%* | 0.55** | 5.05*** | 3.67*** | 3.05** | 0.03 | 9.00*** | 6.54*** | 10.94*** |
| *BlockHolding%²* | | -5.18*** | -4.18*** | -4.04*** | | -10.33*** | -8.54*** | -10.64*** |
| *Number of Blockholders* | | | 0.11* | 0.18** | | | 0.19*** | -0.17 |
| *Gini Coefficient* | | | | 0.89 | | | | -3.92*** |
| *Multiple Directorship* | -0.16 | -0.14 | -0.13 | -0.12 | 0.41*** | 0.46*** | 0.47*** | 0.47*** |
| *Number of Meetings* | 0.16** | 0.17** | 0.16** | 0.16* | 0.26*** | 0.26*** | 0.26*** | 0.28*** |
| *Education* | 0.19* | 0.19* | 0.18* | 0.17 | 0.54*** | 0.53*** | 0.52*** | 0.50*** |
| *Age* | -0.12 | -0.16 | -0.12 | -0.14 | 1.44*** | 1.36*** | 1.42*** | 1.49*** |
| *Independent Director Ratio* | -0.62 | -0.70* | -0.79* | -0.76* | 1.66*** | 1.51*** | 1.36*** | 1.25*** |
| *CEO Duality* | -0.54** | -0.53** | -0.49* | -0.50** | -0.38* | -0.36* | -0.29 | -0.19 |
| *Firm Size* | -0.17*** | -0.19*** | -0.18*** | -0.16*** | 0.46*** | 0.41*** | 0.41*** | 0.39*** |
| *ROA* | -3.02*** | -2.89*** | -3.00*** | -2.93*** | 0.70 | 1.02* | 0.83 | 0.65 |
| *DA* | -0.62 | -0.53 | -0.52 | -0.58 | -0.55 | -0.36 | -0.33 | -0.15 |
| *Free Cash Flow Asset Ratio* | 0.24 | 0.26 | 0.30 | 0.30 | -1.57*** | -1.49*** | -1.40*** | -1.44*** |
| *Risk* | 2.39** | 2.58*** | 2.63*** | 2.57*** | -1.14*** | -0.73* | -0.64 | -0.69* |
| *MB* | -0.02 | -0.03 | -0.02 | -0.03 | 0.04* | 0.03 | 0.03 | 0.03 |
| *Industry Dummy and Year Dummy Included* | | | | | | | | |
| Adjusted R-square | 0.11 | 0.12 | 0.12 | 0.12 | 0.20 | 0.22 | 0.22 | 0.23 |
| F Statistics | 9.13 | 9.55 | 9.39 | 8.72 | 17.90 | 19.14 | 18.84 | 18.88 |
| p-value | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

*Options Compensation* is the log of options compensation plus 1. *Shares Compensation* is the log of shares compensation plus 1. *BlockHolding%* is the aggregate ownership percentage of all blockholders. *BlockHolding%²* is the square of *BlockHolding%*. *Number of Blockholders* is the number of shareholders with at least 5% ownership. The *Gini Coefficient* is the measure of block size asymmetry. *Multiple Directorship* is a dummy that equals 1 for a director with multiple directorships. *Number of Meetings* is the log of the number of meetings attended by an independent director plus 1. *Education* is a dummy coded 1 if a director has a university degree. *Director Age* is the log of director age. *Independent Director Ratio* is the proportion of independent directors on a board. *CEO Duality* is a dummy coded 1 if a CEO is also the board chairman. *Firm Size* is the log of total assets. *ROA* is return on total assets. *DA* is the debt to assets ratio. *Free Cash Flow Asset Ratio* is the gross cash flow less gross investment scaled by total assets. *Risk* is the standard deviation of return on total assets for five years. *MB* is the market to book ratio.*
p .10,  ** p .05,  *** p .01