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# Incentives For Monitors: Director Stock-Based Compensation And Firm Performance

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# Incentives For Monitors: Director Stock-Based Compensation And Firm Performance

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## ABSTRACT

*Since the mid-1990s, US corporations have increasingly emphasized stock-based compensation for outside directors in order to align their interests with stockholders and thus boost firm performance. We demonstrate that stock options and stock grants (each as a ratio relative to total compensation) for directors were positively related to future firm performance (measured as stock returns, and, separately, as Jensen's Alpha) for a panel of 450 Standard and Poor 500 firms over 1995-97. Stock option ratios appeared to have a stronger impact on firm performance than stock grants did.*

## INTRODUCTION

The agency costs arising from conflicts of interests between managers and stockholders (Jensen & Meckling, 1976), have been analyzed in multiple studies (e.g., Gomez-Mejia & Barkema, 1998; Gomez-Mejia & Wiseman, 1997; Murphy, 1999). In contrast, the literature on outside director compensation has been sparse (Boyd, 1996; Bryan et al. 2000; Cordeiro, Veliyath & Eramus, 2000; Hempel & Fay, 1994) and has focused primarily on the determinants of outside director compensation levels. Much less attention has been given to the "secondary" agency problems (Perry, 1999) that exist between outside directors and the stockholders of the firm (Fama, 1980; Fama & Jensen, 1983; Jensen & Meckling, 1976; Williamson, 1984). These are important because of the key roles corporate directors play in monitoring the firm's executives on behalf of the shareholders, and deserves research attention (Fama & Jensen, 1983; Williamson, 1984).

Secondary agency problems arise in large part because directors may not be as vigilant in their oversight of managers as they are charged to be. Instead they may consciously advance managers' rather than stockholder preferences (e.g., in situations of growth, entrepreneurship, and risk-taking), in decisions made or ratified by the board. First, directors are likely to be pressured to conform to norms of group behavior from the board that nominated them, especially in cases where directors must serve a minimum number of years to secure retirement benefits. In these cases, shareholder interests may well suffer if the influential nominating committee of the board is allied with management. Directors may also wish to increase the level and security of their compensation packages in order to establish or to benefit from ongoing business relationships with the firms they serve, or to advance their personal influence with its top management. Conflicts between director and shareholder interests may also arise from other sources. For example, proponents of the stakeholder theory perspective claim that directors are entrusted to represent the interests of all of the firm's stakeholders, not just its owners (Freeman, 1984), and therefore it is not unreasonable that outside directors may feel morally obligated to fulfill this commitment.

However, several forces work to reduce secondary agency problems between outside directors and stockholders. Fama (1980) and Fama & Jensen (1983) note that directors have reasons to be concerned with the quality of their monitoring efforts since the labor market will proxy firm performance with their ability when they seek additional directorships. This imperative imposes strong pressures on outside directors to perform their fiduciary duty

to shareholders. Consistent with this reasoning, Shivdasani (1993) finds that higher quality directors hold a greater number of outside directorships. As we argue in a later section, directors also have reasons to be concerned about the vigilance of activist investors, security analysts, and lenders who exercise oversight over directors and managers in order to advance their own interests. These parties prompt directors' concern for shareholder well-being, because of the potential threat of personal litigation. For example, Monks & Minnow (1996) note that lawsuits against boards have increased dramatically since the landmark 1985 Trans-Union case where directors of Trans-Union were found to be negligent in their involvement in the decision to accept a merger agreement with the Pritzker family group. Similarly, Kesner & Johnson (1990) found that only 1 in 20 boards were sued in the 1960s, compared to 1 in 5 in the 1980s.

However, in contrast to the "fear-based" motivations discussed above, secondary agency costs can also be reduced in a more positive manner if directors' compensation contracts are designed to align directors and shareholders' interests by increasing outside director's potential for accumulating greater personal wealth through higher stock values. As argued below, this is accomplished through the provision of stock grants and options.

### **Trends In Director Compensation And Its Components**

In recent years, compensation packages have evolved towards giving outside directors a greater financial stake in the firms they serve (Bryan, Hwang, Klein, & Lilien, 2000). Recent surveys show a growing use of stock-based compensation for outside directors, coupled with dramatic increases in the total compensation paid to outside directors (Oppermann, 1997; Perry, 1999; Schellhardt, 1999). According to a recent study by the compensation consulting firm of Korn-Ferry in 1999, 84 percent of companies compensated their directors with some form of company stock, up from 62 percent in 1995. The same study reported that 65 percent of board members believed a majority of directors' pay should be in stock, and that a small but rapidly increasing number of companies already paid directors exclusively in stock. Similarly, a survey by Pearl Meyer and Co. (Meyer, 1999) showed that 95 percent of the top 200 firms used equity incentives in 1998, up from 65 percent in 1994. Conference Board data (cited in Dalton & Daily, 1999) also indicated that the percentage of firms using stock-based compensation rose from 6 percent in 1990 to 84 percent in 1997, with stock options being more popular than stock grants. Fifty-four percent of firms surveyed by Conference Board in 1997 used stock options (which had a median value of \$45,000).

A more recent study by William Mercer and Co. of 350 large companies confirmed these trends. Equity grants to outside directors comprised 55 percent of directors' pay mix in 1999, compared to only 36 percent in 1996. Also, 93 percent of the firms provided directors with some sort of stock arrangement (compared to 63 percent in 1992), and the number of companies granting multiple types of stock compensation jumped from 47 percent in 1997 to 55 percent in 1999. Finally, pension offerings to directors declined from 64 percent in 1994 to 15 percent in 1998. The majority of the firms that eliminated pensions either increased stock grants under existing compensation plans or adopted new stock compensation plans. All of the above evidence indicates the increased practice (starting from the early to mid-90s') of compensating outside directors through a combination of stock grants and options.

### **Reducing Secondary Agency Costs through Director Stock Ownership**

Increasingly, institutional investors and influential stockholder activists have called for a significant portion of director compensation to be in the form of stock grants and options. CalPERS, the nation's largest public pension fund, and the National Association of Corporate Directors (NACD) Blue Ribbon Commission Report on Director Compensation have called for a significant portion of director compensation to be paid in the form of stock grants and options. CalPERS proposed that 50 percent of directors' total compensation be stock-based, while the NACD Blue Ribbon Commission Report on Director Compensation recommended a "significant" portion of compensation in the form of equity (Dalton & Daily, 1999). Over the 1990s, individual shareholder proposals have increasingly pushed towards moving director compensation from cash to stock compensation while often simultaneously eliminating retirement benefits for directors.

From an agency theory perspective, increased outside director stockholdings align director incentives more closely with the stockholders they represent. Jensen notes that ‘...the idea that outside directors with little or no equity stake in the company could effectively monitor and discipline the managers who select them has proven hollow at best (1989; p. 64).’ There is a growing body of research evidence on the effectiveness of director stock ownership in this regard. Hambrick & Jackson (2000) found that the outside directors of 40 high-performing firms held 1.3 percent stock in their firms, compared to only 0.1 percent of company stock among directors in a matched-industry sample of poorly-performing firms. Hoskisson, Johnson & Moesel (1994) found that outside director ownership was positively related to relative stock-market performance of the firm, while Grossman & Hoskisson (1998) reported that directors who owned a larger block of firm equity might favor the interests of stockholders over those of the firm's other stakeholders. It is important to note that the studies cited so far focus on levels of inside and outside director stock ownership and their relationship with firm performance. Moreover the datasets used in these studies were based on time periods when stock ownership among outside directors was largely voluntary. To date however, with the exception of Perry (1999) who reported that independent boards whose outside directors received stock options were more likely to dismiss the CEO due to poor performance, and Gerety, Hoi & Robin (2001) who reported an insignificant stock market effect using event study methods to proposals of incentive plans for directors, no published study has directly examined the effects of director stock-based compensation on firm performance (especially covering the period of the 1990s’). This is a period where the majority of U.S. firms began shifting outside director compensation away from cash towards the use of stock grants and options. This study seeks to fill this gap in the literature.

Most director compensation experts recommend paying directors at least a mandatory minimum in stock (Carey, 1995; Davis & Stobaugh, 1995; Elson, 1996; Hambrick & Jackson, 2000; Wamberg, 1997). This arrangement could improve the alignment of directors' and stockholders' interests, as suggested by the empirical evidence cited above. Increased equity ownership by directors can reduce secondary agency problems by providing outside directors with a direct financial incentive to vigilantly monitor, direct, and control the actions of top management. Perry (1999) argues that this financial incentive can be significant even in the case of independently wealthy directors. Likewise, Lorsch (1989) noted that director stock ownership not only provided directors with a financial incentive, but also strengthens directors' psychological bonds to the firm. Finally, greater stock ownership gives directors the power to challenge executives, which can lessen managerial opportunism and lead to higher firm performance. Thus, greater use of director incentive compensation in the form of stock grants and stock options will lower both primary and secondary agency costs, leading to superior firm performance.

A summary outline of the theoretical model is provided below:

Director Stock-Based Compensation <ul style="list-style-type: none"> <li>• <i>Stock Grants Ratio</i></li> <li>• <i>Stock Options Ratio</i></li> </ul>	→	Lower Secondary Agency Costs <ul style="list-style-type: none"> <li>• <i>(Unmeasured)</i></li> </ul>	→	Higher Future Firm Performance <ul style="list-style-type: none"> <li>• <i>Stock Returns</i></li> <li>• <i>Jensen's Alpha</i></li> </ul>
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Based on the model above, we hypothesize that:

- H1a:** Outside director stock grant ratios will be positively related to future firm performance.
- H1b:** Outside director stock option ratios will be positively related to future firm performance.

It is important to recognize that all forms of stock-based director compensation may not be equally useful in reducing secondary agency costs, (and thus enhancing both director monitoring effectiveness as well as firm performance). Director stock grants and stock options are likely to induce different degrees of monitoring and risk-taking behavior by directors. The key difference is that, unlike stock grants, which have a linear payoff schedule in terms of stock price appreciation, stock options provide a convex payoff schedule (Guay, 1999; Bryan, Hwang, & Lilien, 2000). This convex payoff schedule is more likely to induce risk-taking by managers, and by extension, their directors.

Thus, in firms with risk-averse managers, incentive compensation in the form of stock options is more likely than incentive compensation in the form of stock grants to lead managers to propose, and directors to sanction, risky but potentially valuable projects that benefit the firm's well-diversified (thus risk-neutral, or less risk-averse) stockholders, mitigating the scope of the under-investment problem where valuable but risky projects may be foregone by managers and directors who are too risk-averse (Smith & Stulz, 1985; Gallo, 1996). Consistent with this logic, high-growth firms have been found to use significantly higher levels of CEO stock-based incentive compensation (Veliyath & Cordeiro, 2001), especially stock options (Guay, 1999). Based on this, we hypothesize:

**H1c:** Outside director stock option ratios will have a stronger positive impact on future firm performance than director stock grant ratios.

## **METHODS**

### **Sample and Data**

The sample of 450 firms was drawn from the Standard and Poor's (S&P 500) index. Fifty of the S&P 500 companies had missing data and were not included in the analysis. The 1995-1997 period used in this study was especially significant because the most dramatic shifts away from cash to stock-based compensation for outside directors began around 1995, prompted by the National Association of Corporate Directors (NACD) report of that same year.

The stock option ratio and stock grant ratio were our study's two main independent variables. Based on definitions of data items in the Standard and Poor's *Execucomp* database, *Stock Option Ratio* was the ratio of dollar stock option compensation to total dollar director compensation, while *Stock Grant Ratio* was the ratio of dollar stock grant compensation to total dollar director compensation. The use of stock compensation ratios follows Carpenter & Sanders (2002). Director cash compensation used in the computation of total compensation was defined as the sum of the annual cash retainer plus the number of board meetings multiplied by the per-meeting fee. Director stock option compensation was calculated as the number of options awarded multiplied by the per-share option value estimated using the Black-Scholes option pricing model. Director stock grant compensation was the number of shares of stock awarded times the per-share price (averaged over the year). Total director compensation was defined as the sum of director cash compensation, director stock option compensation and director stock grant compensation. *Execucomp* data reflects data for the "average" outside director of the firm and does not include inside directors. Data used in the study were collected at the firm level of analysis for each of the three years.

The study used two indicators of firm financial performance, the main dependent variable. *Jensen's Alpha* was measured using the excess return on the stock above and beyond that of the benchmark S&P 500 index using the market model. Jensen's Alpha was obtained from the Disclosure-Worldscope database. *Stock returns* were measured by stock price appreciation plus dividends measured over one-year periods. These were adjusted for industry by deducting the 4-digit SIC industry median. Each of these performance measures was calculated for each year of the study, from 1995 to 1997.

Analyses also included three variables that could impact firm performance (Spieler, 1999): company size, leverage, inside ownership and inside ownership squared. *Firm size*, gathered from *Compustat*, was measured as the natural logarithm of firm sales. *Firm leverage* was measured by the ratio of long-term debt to total assets and was also collected from *Compustat*. *Inside ownership* was defined as the percentage of outstanding shares held by inside directors and managers as a group. The (*inside ownership*)<sup>2</sup> variable was included as a control in the analyses because prior research had found a non-linear relationship between inside ownership and firm value (McConnell & Servaes, 1990; Morck, Shleifer & Vishny, 1988). Inside ownership data was obtained from *Disclosure*.

**ANALYSIS**

Company performance was measured in the period subsequent to the measurement of the director stock-compensation measures. This one-year performance lag test follows several recent studies in the strategic management literature seeking to investigate the impact of governance and incentive variables on performance including, most recently, Finkelstein & Boyd (1998) and Carpenter & Sanders (2002). Separate analyses were conducted for stock returns and for Jensen’s Alpha as dependent variables, with the stock option ratio and the stock grant ratio as independent predictors. All analyses included the control variables mentioned above (company size, leverage, inside ownership and inside ownership<sup>2</sup>). The following model was estimated:

$$\text{Firm performance}_{t+1} = b_0 + b_1 \text{Stock Grant Ratio}_t + b_2 \text{Stock Option Ratio}_t + b_3 \text{Firm Size}_t + b_4 \text{Firm Leverage}_t + b_5 \text{Inside Ownership}_t + b_6 (\text{Inside Ownership})^2_t + \text{error}$$

Pooled cross-sectional time series regression (Sayrs, 1989) was used in the analysis. This technique is suitable for analyzing continuous variables in a data set comprised of multiple organizations observed at multiple points in time. A random effect generalized least squares (GLS) model was used, similar to the analysis employed by Zajac and Westphal (1994). The pooled approach controls for heterogeneity bias, or the confounding effect of time-invariant variables omitted from year-by-year OLS regression models (Bowen & Wiersema, 1999).

**RESULTS**

Table 1 provides the descriptive statistics and correlations for the sample. Firms in the sample represented 47 two-digit SIC groups and averaged 38,930 employees (sd=67,360). The firms also reported average sales of \$862.6 million (sd=144.7). Further, annual director cash compensation (which included retainer and meeting fees) averaged \$33,810 (sd=35,360). Annual stock grants averaged \$13,030 (sd=23,710), and stock options averaged \$29,210 (sd=12,026).

**TABLE 1**  
**Descriptive Statistics and Correlations for Variables used in the Regression Analyses<sup>a</sup>**

VARIABLE	MEAN	S.D.	1	2	3	4	5	6	7	8
1 Stock Grant Ratio	0.17	0.23	1							
2 Stock Option Ratio	0.19	0.28	-0.34	1						
3 Firm Size Ln (Sales)	8.44	1.07	0.19	-0.11	1					
4 Firm Leverage	0.18	0.13	0.10	-0.11	0.06	1				
5 Inside Ownership	0.05	0.09	-0.16	0.02	-0.14	-0.16	1			
6 Stock Return	-0.24	28.03	0.05	0.03	0.05	-0.02	0.07	1		
7 Jensen’s Alpha	0.16	1.34	-0.05	0.18	-0.08	-0.20	0.12	0.19	1	
8 Market/Book of Assets (IOS)	2.04	1.46	-0.07	0.21	-0.17	-0.41	0.18	0.22	0.40	1

<sup>a</sup> Cell sizes ranged from 1039 to 1350. Correlations > .11 are significant at >.001; correlations > .09 are significant at the .01 level; correlations > .07 are significant at the .05 level; correlations > .05 are significant at the .10 level (all tests two-tailed)

The results of the pooled time-series, random-effects, generalized least squares regressions for the full sample are provided in Table 2. H1a and H1b both posited a positive relationship between director stock compensation components (i.e., the stock grant ratio and the stock option ratio) and firm performance. The second and third columns in Table 2 display the results of the regressions with stock returns and Jensen’s Alpha as the dependent variables, respectively. In both regressions, the stock grant ratio and the stock options ratio were the independent variables, with firm size, leverage, inside ownership and (inside ownership)<sup>2</sup> included as control variables.

**TABLE 2**  
**Pooled Time Series Regressions (1995-97) of Outside Director Stock Grant Ratios, Stock Options Ratios and Controls against Firm Performance (Full Sample)**

	Stock Return	Jensen's Alpha
Constant	-14.58 #	1.16 *
Stock Grant Ratio	11.87 **	0.33
Stock Option Ratio	7.64 *	0.53 **
<i>Control Variables</i>		
Size	1.23	-0.10 #
Leverage	-2.14	-1.88 ***
Inside Ownership	5.77	-0.13
(Inside Ownership) <sup>2</sup>	69.54	3.65
<i>Model Statistics</i>		
R-Squared	0.02	0.07
Wald Chi-Square	20.78	46.04
Model Significance	**	***

# p ≤ 0.1; \* p ≤ 0.05; \*\* p ≤ 0.01; \*\*\* p ≤ 0.001 (two-tailed).

Both director stock compensation ratios are significant with the expected positive sign in the case where stock returns were used as the performance measure (column 2). In the case where Jensen's Alpha was used as the performance measure (column 3), the stock option ratio had the expected positive relationship, while the stock grant ratio was not significant. Since the stock grant ratio exhibited the expected positive relationship only with the stock return measure of performance, H1a was only partially supported. The stock option ratio, however, exhibited the expected positive relationship with both measures of performance providing full support for H1b. H1c was supported since the stock option ratio has a significant positive impact on both measures of firm performance, whereas the stock grant ratio has a significant impact only on stock return.

## DISCUSSION

Over the past decade, companies have increased the number of outside directors serving on their boards (Dalton, et. al., 1998), while at the same time increasing the amount of stock grants and stock option compensation to outside directors, in an effort to align their interests with those of the firm's shareholders. Specifically, stock-based compensation is intended to encourage directors to monitor executives more closely (Bryan et. al., 2000), thus reducing secondary agency costs, and improving firm performance. Given the paucity of empirical research on the effects of different components of outside director compensation on company performance, this study has sought to advance this literature in the spirit of Gerety, Hoi, & Robin (2001), and to complement the large body of work on CEO performance and CEO compensation (Gomez-Mejia & Barkema, 1998; Gomez-Mejia & Wiseman, 1997; Tosi, Werner, Katz, & Gomez-Mejia, 2000). It has also attempted to rationalize and document the differential impact of stock grants versus stock options, and to link components of director stock compensation to company performance under different contexts. This section reviews the study's key findings.

The paper analyzed the relationship between ratios of two different outside director stock-based compensation components (i.e., stock grants and stock options) and two separate measures of firm performance (stock returns and Jensen's Alpha). While the effects of the stock option ratio on both stock returns and Jensen's Alpha were positive as hypothesized (H1b), the stock grant ratio was positively related only to stock return (H1a). Overall, the results provide partial support for H1a. In contrast, both H1b and H1c were supported since stock options ratio had the hypothesized positive significant impact on both measures of performance while stock grants ratio only impacted stock returns. This combined with the low overall explanatory power of the models suggests that recommendations of powerful bodies such as the NACD for more director stock-based compensation need to be tempered with the

realization that all stock-based compensation forms are evidently not equal in their motivational impact.

Several factors may also account for the relatively weak explanatory power. Some researchers (e.g., Daily, Certo, & Dalton, 1999; Dalton & Daily, 1999/2001), have cautioned against an over-reliance on stock compensation. Among their concerns are possible allegations that boards may use stock-based compensation to inflate their already-high total compensation, as well as the apparent loss of objectivity and independence when directors are compensated in the same manner as the managers they are charged with monitoring. Stock-based compensation can also dilute outside stockholder claims by reducing their proportional ownership, earnings and dividends. Directors holding stock grants and options may also initiate stock buybacks to achieve price increases that meet a set option exercise price, set favorable option performance targets, re-price options during periods of exceptionally poor performance, or reload them to perpetuate a cycle of increasing compensation. These actions can compromise the independence of boards from management, increasing secondary agency costs and lowering firm performance.

These compensation practices might actually exacerbate secondary agency problems that keep directors from fulfilling their fiduciary responsibility to the firm's shareholders. It is also possible that directors do not respond to compensation and stock incentives in the same ways that managers do. In fact, a survey by Lorsch (1989) found that compensation and stock ownership were at the bottom of the list of directors' motivators, in contrast to motivators like 'quality of top management' and 'opportunity to learn.' If this is true, while stock compensation may be a necessary condition for effective incentive alignment, it may not by itself suffice to motivate outside directors (Jensen, 1993). Outside directors may also have additional goals and motives when joining boards, such as networking with other firms and directors. These goals might supersede the financial compensation outside directors receive from board service.

### **Managerial Implications and Future Research Directions**

The results show a need for board compensation committees to assess the appropriateness of offering outside directors a higher proportion of stock grants and options as a part of their compensation packages. The study's results highlight the need for compensation committees to customize director compensation practices to their company's specific context. Board compensation committees should also be structured in ways that induce and enhance objectivity in setting pay and compensation practices. Specifically, they should be staffed in a way that reduces opportunism and self-serving behavior (Dalton & Daily, 1999). The weak but significant links that were found between outside directors' compensation and company performance highlights a need to more effectively link compensation levels and mix to company performance. Compensation committees also need to develop appropriate mechanisms that ensure that stock-based compensation favors long-term shareholder value creation, versus short-term windfalls.

Since outside directors may seek to join boards for reasons having little to do with financial rewards (Lorsch, 1989), researchers should also consider these goals along with other forms of incentives as they evaluate the merits of various directors' compensation schemes. Further, incentives provided to attract board members may not necessarily lead to increased oversight and a reduction of secondary agency costs. Future studies would also benefit from documenting the intangible benefits directors receive and how they influence directors' decisions, since these benefits curb directors' opportunism, thereby reducing secondary agency costs.

Different research designs may also help capture the effects of compensation practices on company performance. Researchers should compare firm performance before and after the adoption of specific compensation plans. Researchers might also consider extensions that include other contexts such as firm diversification, industry structure, and global profile. Researchers would benefit also from using other theoretical perspectives. Specifically, the stakeholder approach (Carr & Valinezhad, 1994; Clarkson, 1995; Donaldson & Preston, 1995; Freeman, 1984; Shankman, 1999) have been successful in questioning the assumptions of agency theory.

There is also a need to assess board effectiveness using more direct measures. While firm performance is a rough proxy for board effectiveness, several variables intervene between board processes and company performance



(Pearce & Zahra, 1991). Future researchers should examine the effect of different outside director compensation components on board effectiveness outcomes, such as the quality of director service and frequency of monitoring which in turn affect company performance.

Finally, as noted earlier, the current results may reflect the time period examined and the unique experience of the companies studied. Different time frames (including longitudinal analyses) and different samples (focusing perhaps on mid-sized and smaller firms) might yield different insights.

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**NOTES**