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**THE EFFECT OF DIRECTOR COMPENSATION ON FIRM PERFORMANCE**

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**A Dissertation  
Submitted to  
the Temple University Graduate Board**

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**in Partial Fulfillment  
of the Requirements for the Degree  
DOCTOR OF PHILOSOPHY**

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**by  
Debra T. Sinclair  
August, 2004**

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## ABSTRACT

Title: The Effect of Director Compensation on Firm Performance

Candidate's Name: Debra T. Sinclair

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Corporate governance advocates have strongly encouraged firms to include equity as part of directors' compensation to help align directors' interests with that of corporate stockholders. In response, firms have drastically increased their use of stock-based compensation for directors [Pearl Meyer & Partners, 2004]. While the argument in favor of stock-based director compensation is intuitively appealing, there is very little evidence of the efficacy of stock-based director compensation.

In an effort to determine the effectiveness of this policy, this study uses multivariate regression to examine the relation between director compensation and firm performance. In contrast to prior studies that use an indicator variable to denote the existence of a stock-based director compensation plan [Bhagat et al., 1999; Hempel and Fay, 1994; Fich and Shivdasani, 2004], this dissertation calculates the value of the compensation. Valuing the compensation provides a stronger test of the hypothesis of a relation between director compensation and firm performance, as the use of an indicator variable treats all stock-based compensation as equal (i.e., a plan which provides its directors with a substantial amount of stock is treated as equal to a plan that gives only a minimal amount of stock-based compensation). Additionally, this study examines stock and stock option compensation separately, as the two forms of compensation are likely to differ in their motivational effects.

The results of this analysis suggest that there is a relation between stock-based director compensation and firm performance. However, probably due to risk, directors appear to be motivated differently by stock compensation versus stock option compensation. Generally, stock compensation is negatively related to firm performance. However, at higher levels stock compensation is positively related to firm performance suggesting that, if directors are given enough stock compensation, it has a positive effect on firm performance. Alternately, stock option compensation is positively related to firm performance. However, at higher levels this relation also reverses suggesting that directors can have too much stock option compensation. Finally, stock option compensation is more effective if directors are also shareholders.

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## CHAPTER 1 INTRODUCTION

As institutional investors have increased their shareholdings in recent years, they have also become more active in corporate governance [Pomeranz, 1998]. Director compensation has become a focus for many corporate governance reformers and institutional shareholders who, based on agency theory, argue that firms can encourage directors to act in the interest of shareholders by offering them incentive-based pay [Teachers Insurance and Annuity Association – College Retirement Equities Fund, 2000; The Business Roundtable, 2002]. While the argument is intuitively appealing, there is scant evidence to support the relation between director stock-based compensation and firm performance. This study examines the relation between director compensation and subsequent firm performance.

Although institutional shareholders have pushed for performance-based compensation for directors, recent scandals involving companies such as Enron and Tyco have led some to question whether payment of executives and directors in stock and/or options leads executives to focus on meeting short-term goals to the detriment of long-term shareholder value [Gimein et al., 2002; Schaff, 2002]. Further, while corporate governance advocates (e.g., the Teachers Insurance and Annuity Association-College Retirement Equities Fund (TIAA-CREF)) have urged firms to compensate directors in stock, to date research on the relation between director compensation and subsequent firm performance has been limited and inconclusive [Bhagat et al., 1999; Hempel and Fay, 1994; Fich and Shivdasani, 2004]. One possible reason for the inconsistent results is that previous research [Bhagat et al., 1999; Hempel and Fay, 1994; Fich and Shivdasani,

2004] has been limited to testing the impact of the existence of a stock-based compensation plan on firm performance versus the value of the stock compensation paid.

The use of a binary variable results in a weaker test of the hypothesis of a relation between director compensation and firm performance because, by using a binary variable, all stock-based compensation plans are weighted equally. In other words, compensation plans giving only a token amount of stock to directors are treated as equal to a compensation plan paying directors *only* in stock, and compensation paid in stock is treated as being equal to compensation in options. In fact, it is likely that directors react differently to different forms – and amounts – of stock-based compensation. This study examines the effect of director compensation on firm performance in greater detail by identifying the form of director compensation (e.g., stock grants versus stock options versus cash) as well as the value of each type of compensation.

Shareholders are concerned that their interests are not being adequately represented in today's corporate boardrooms. Specifically, critics fear that directors' allegiances are to management rather than to the shareholders they represent [Dunn, 1987; Crystal, 1991; Lowenstein, 1996; Dalton and Daily, 1999]. Firms have generally responded to this criticism in two ways—by including some form of stock-based compensation in director remuneration and by increasing the number of independent directors on their boards, as recommended by numerous shareholder and corporate governance advocates.<sup>1,2</sup>

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<sup>1</sup> Directors are typically classified as either inside, outside, or gray. An independent, or outside, director is one who is not presently or formerly employed by the company, and who has no significant financial or personal ties to the company or its management that could compromise the director's objectivity and loyalty to the shareholders [Teachers Insurance and Annuity Association – College Retirement Equities Fund, 2000].

Proponents of compensating directors with stock rely on agency-theory arguments. According to agency theory, a potential problem exists when the ownership of a firm is separated from its management—as is typical of the modern corporation [Berle and Means, 1932; Jensen and Meckling, 1976]. Because the owners (shareholders) are rarely involved in the day-to-day operations of a firm, it is difficult, and costly, for them to monitor a professional manager (agent) to ensure that the manager does not put his own interests ahead of those of the firm’s shareholders. Additionally, there is little incentive for any one shareholder to engage in monitoring because he or she would bear the entire cost whereas the benefits would accrue to all of the firm’s shareholders [Porter, 1992].

To protect the interests of shareholders and help alleviate the agency problem, the corporate board of directors was established. It was charged with monitoring, advising and controlling management on behalf of shareholders. Initially, boards were chosen by and comprised of the firm’s largest shareholders, but by the early twentieth century, corporations were expanding and becoming national in size and scope. To finance this growth, many shareholders were needed to contribute capital.

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Theoretically, increasing the number of independent directors on the board should result in a board that is less tied to top management and a better representative of shareholders [Dalton and Rechner, 1989].

<sup>2</sup>The National Association of Corporate Directors (NACD), in their 1995 Blue Ribbon Commission on Director Compensation, recommends that directors receive between 50 and 100 percent of total compensation in the form of stock [National Association of Corporate Directors, 2000]; the Teachers Insurance and Annuity Association-College Retirement Equities Fund (TIAA-CREF) “advocates payment of directors at least partially in stock or restricted stock” and states that, “The board should be composed of a substantial majority of independent directors” [Teachers Insurance and Annuity Association-College Retirement Equities Fund, 2000]; Charles Elson, *Director for the Center of Corporate Governance at the University of Delaware*, strongly advocates paying board members exclusively in stock [Lublin, 1996]; and the California Public Employees Retirement System (CalPERS) recommends that the stock component be a significant portion of total director compensation and that independent directors comprise a “substantial majority of seats on a board” [California Public Employees Retirement System, 1998].

As the number of shareholders increased, their individual holdings in the firm became proportionally smaller until, often, no individual shareholder or shareholder group was large enough to dominate the entity. Through the proxy process, management selected the board of directors [Mace, 1971; Williams, 1979]. Usually, these directors had some prior relation with management and, in contrast to the first boards, the modern board of directors held little or no stock [Bhagat et al., 1999].

Having little or no ownership in the firm, corporate directors have become agents of shareholders themselves and, like management, their interests are not necessarily aligned with that of the shareholders [Fama and Jensen, 1983; Hermalin and Weisbach, 1991; Vafeas, 1999a; Bryan et al., 2000a; Balsam, 2002]. Jensen (1993) contends that, through practices such as loading the board of directors with insiders and allowing CEOs to also hold the position of chairman of the board, executives have been able to take over the system of corporate governance and engage in self-interested behaviors at the expense of firm shareholders. Others echo Jensen's sentiment, arguing that directors are not doing their jobs of representing the interests of the shareholders [Dunn, 1987], that too many directors are "fast asleep at the switch" [Linden and Lenzner, 1995], and that corporate boards of directors are nothing more than "rubber stamps" for management initiatives [Herman, 1981].

Shareholders have therefore turned to stock-based compensation in an effort to minimize the agency problem.<sup>3</sup> Theory suggests that agency costs are minimized when executive compensation is tied to firm performance [Smith and Watts, 1982; Murphy,

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<sup>3</sup> Note that, although shareholders have pushed for stock-based compensation for directors, directors are actually responsible for setting their own compensation.

1985]. If directors are in fact agents, then compensating directors with stock should motivate directors to maximize stock values, which best serves shareholders' interests [Morck et al., 1988; Roe, 1992; Elson, 1997]. This reasoning has led to the current drive toward compensating corporate directors with stock and stock options.<sup>4</sup> However, while director stock-based compensation has drastically increased in recent years [Pearl Meyer & Partners, 2004], there is very little evidence to support a relation between director stock-based compensation and firm performance.

In fact, some experts contend that directors should *never* be compensated in equity. For example, Daily and Dalton (2002) argue that equity holdings may cause directors to lose their objectivity and to adopt a short-term view as they focus on the current value of their holdings rather than the longer-term. Others argue that stock ownership is actually a disincentive for directors to ask the "really tough questions" for fear that the answers to those questions may drive down the stock price [Contrada, 2002]. Additionally, recent scandals at companies such as Enron are causing experts to re-think stock-based compensation as executives and directors of many of the firms that crashed the hardest during the recent market down-turn cashed in hundreds of millions of dollars worth of stock prior to the plunge.<sup>5</sup> In reference to these scandals, Gimein et al. (2002) declare:

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<sup>4</sup> "Shareholders, NACD Want Directors to be Paid in Stock," *Investor Relations Business*, April 3, 2000, p. 1.

<sup>5</sup> For example, Quest Communications chairman, Phil Anschutz, sold almost \$1.6 billion of stock before Quest announced they had overstated revenues by \$1.1 billion over the last three years [Gimein et al., 2002; Soloman, 2002]. Between 1999 and mid-2001, Enron's executives and directors sold 17.3 million shares reaping \$1.1 billion. By October 2001, Enron was collapsing in scandal and its stock was nearly worthless. Broadcom's Chief Executive Officer (CEO) and co-chair Henry Nicholas sold \$799 million worth of stock before the SEC started its investigation of Broadcom's aggressive accounting practices [Schaff, 2002; Springsteel, 2001]. Peregrine Systems chairman John Moores cashed out \$646 million before Peregrine announced that its revenues had been misstated [Gimein et al., 2002].



In some cases insiders clearly cheated the investment community to realize their gains – by ginning up revenue numbers that have turned out to be phony. But even putting those cases aside, the billions of dollars of insider sales make absurd many of the rationales executives used to justify their new wealth...As for the idea that big stock and options grants would align the interests of shareholders and managers—that now seems equally absurd. What really took place was a breach of faith, with the insiders in effect betraying their shareholders by making sure that they themselves wound up rich no matter how badly things turned out for their companies or their investors. (p. 64)

The remainder of this dissertation is organized as follows: Section 2 presents the motivation for the study and a review of the relevant literature. Section 3 develops the hypotheses. Section 4 contains a description of the data and model specifications. Section 5 describes the sample and includes univariate statistics. Section 6 presents the results, Section 7 discusses sensitivity analysis, and the findings are summarized in Section 8.

## CHAPTER 2 MOTIVATION

Various groups, such as the National Association of Corporate Directors (NACD), have strongly promoted director stock compensation, but the scarcity of research on director compensation suggests that further investigation is needed. Daily et al. (1999) point out,

...there is virtually no evidence of a relationship between director stock compensation and firm performance. In fact, there is no consensus that we should even *expect* to see one. Ironically, while greater levels of stock ownership may cause directors' interests to more closely align with those of shareholders, significant ownership may also cause directors to lose some of their objectivity and independence. (p. 48)

Hempel and Fay (1994) examine the relationship between board compensation and firm performance using 1986 and 1990 proxy statements. They find little evidence of a relationship between director compensation and firm performance. However, the majority of the firms included in their sample compensated directors by paying them a cash retainer plus meeting fees. Additionally, due to data restrictions, the existence of a stock-based compensation plan was examined rather than the actual value of the stock plan.

In examining a sample of firms from 1992 through 1996, Bhagat et al. (1999) find no relationship between any form of stock compensation and subsequent firm performance. However, they also limit their analysis to the existence of a stock-based compensation plan rather than attempting to value the stock compensation. They do find a significant positive correlation between outside director ownership and firm performance. Additionally, they find that the greater the dollar-value of the individual

outside director's equity holdings, the more likely a disciplinary-type CEO turnover in a poorly performing company.

Finally, in contrast to earlier studies, Fich and Shivdasani (2004), using a sample of 2,088 firm-year observations of the Fortune 1000 firms from 1997-1999, find that firms with outside director option plans have significantly higher market-to-book ratios and accounting profitability metrics. While they do link director compensation to firm performance, they also limit their analysis to the existence of a stock option compensation plan rather than attempting to value the stock compensation.

Theoretically, stock-based compensation should provide the same type of incentives to directors as stock ownership – both should encourage directors to “think like shareholders.” Given that researchers (e.g., Bhagat et al., 1999; Hambrick and Jackson, 2000) have found a significant positive relationship between director share ownership and firm performance, one would expect to find a relationship between stock-based compensation and firm performance. The conflicting results of prior studies may be due to the use of a weak measure of stock compensation (i.e., the use of a dichotomous variable indicating the existence of a stock-based compensation plan). This paper uses a stronger measure by calculating the value of the compensation.

Additionally, with the exception of Fich and Shivdasani (2004), the studies cited above examine years when activists were just beginning to set formal policies on corporate governance. For example, the NACD did not formally endorse the policy of compensating directors using some form of stock until 1995 [National Association of Corporate Directors, 2000]; the Business Roundtable (BRT), an association of chief executive officers, issued a formal statement on corporate governance in September,

1997 [Business Roundtable, 1997]; and the Teachers Insurance and Annuity Association/College Retirement Equities Fund (TIAA-CREF), the world's largest pension plan, drafted its first corporate governance policy in the fall of 1993 [Lubin, 1994]. As the issue of director compensation and its link to corporate governance has gained attention, firms' motivations for and use of director compensation may have changed.

Fich and Shivdasani (2004) may find a relation between director stock option compensation and firm performance because their sample is more current (1997-1999). However, as discussed previously, by using an indicator variable to denote the existence of a stock option plan, the authors treat all director stock-option compensation plans the same. Indeed, it is unlikely that directors react the same to a small amount of stock compensation as to a large amount of stock compensation. It may instead take some minimum amount of stock-based compensation to align director and shareholder interests. Or alternatively, too much stock-based compensation could have a negative impact.

### CHAPTER 3 HYPOTHESIS DEVELOPMENT

According to Pearl Meyer & Partners 2003 report on board compensation [Pearl Meyer & Partners, 2004], total remuneration for board service averages \$155,884 among the Top 200 largest industrial and service companies. This is more than double the average director remuneration for these firms in 1995. Much of the increase in total director compensation is due to the increased use of stock-based compensation. Bryan et al. (2000a) report that 43.0 percent of the firms in their sample offered some form of stock-based compensation to their outside directors in 1992. By 1997, usage had increased to 75.7 percent of the sample.<sup>6</sup> This increased use of stock-based compensation is not surprising – shareholder and corporate-governance advocates have been insisting for years that director compensation be more aligned with stock performance. However, some observers question whether these programs truly align the interests of directors with that of shareholders or if companies are just adding more compensation to already lucrative pay packages [Creswell, 1998].

Although some activists have campaigned for complete abolition of any pay to directors other than remuneration in the form of stock (see footnote 2), in practice there are considerable differences in director-compensation policies among firms. Typically, firms pay an annual cash retainer although some retainers also include stock grants. Additionally, many firms pay a separate fee for attendance at board and/or committee meetings and provide additional meeting fees or retainers to committee chairs. Some firms also offer pension benefits to directors [National Association of Corporate Directors, 2000].

Even among those firms that have moved toward stock-based compensation for directors, there are vast differences in stock-compensation policies. For example, some firms compensate directors using stock options while others compensate directors using stock grants. Firms typically require a vesting period before stock options can be exercised, and stock grants usually have restrictions as to when the stock can be sold. However, even these restrictions can vary widely.

Many companies are trying to customize director compensation to meet directors' individual circumstances by offering directors choices as to the form and timing of their compensation. Additionally, to protect directors from market downturns, some firms grant equity based on a dollar-value amount rather than a set number of shares [Archer, 2001]. Appendix A offers some examples of director compensation plans taken from corporate proxy statements filed with the Securities and Exchange Commission.

Members of the institutional investor community (such as CalPERS) strongly advocate stock-based compensation for directors for the same reasons that they support stock-based compensation for CEOs—they believe it aligns directors' interests with that of shareholders [Dalton and Daily, 1999]. However, stock-based compensation is a useful tool in director compensation only if directors' actions can affect firm performance (and, therefore, stock prices). As directors are not involved in daily operations, they are likely to have far less impact on a company's performance than do executives.

Evidence suggests that directors do have some influence on firm performance. Hambrick and Jackson (2000) find that outside directors of those companies that went on to out-perform their industries in 1987 had greater equity stakes than directors in those

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<sup>6</sup> Perry (1999) reports similar findings.

companies that appreciably lagged their industries, implying that outside directors with equity ownership positively influence subsequent firm performance. Lee et al. (1999) find that the appointment of a financial outside director to the board of a public corporation is associated with positive abnormal returns. Their evidence suggests that small firms, which may have less access to public markets and less financial knowledge, benefit substantially from the addition of an outside director with financial expertise.<sup>7</sup> Table 1 contains a summary of previous research on corporate governance and firm performance.

This paper examines the relation between the composition of director compensation and firm performance. As Daily et al. (1999) point out, this relationship is difficult to predict, *a priori*. Each component of director compensation—cash, stock option awards, and stock grants—has potential benefits and drawbacks in motivating directors to act in the interests of shareholders. This paper examines the effects of each component of director compensation on firm performance.

### 3.1 Cash-based Director Compensation

Corporate governance experts (e.g., the National Association of Corporate Directors) contend that to align director incentives with those of stockholders, directors should be paid primarily in stock. This logic implies that firms paying primarily in fixed compensation have not aligned director and shareholder incentives. In this case, one may

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<sup>7</sup> They define financial outside directors as outside directors who are executives of a commercial bank, investment bank, or insurance company.

**Table 1. Summary of Previous Research on the Effect of Corporate Governance Variables of Firm Performance**

STUDY	MEASURE	TEST VARIABLES			CONTROL VARIABLES		
<sup>1</sup> Chaganti et al. (1985)	Filed for Chapter XI	Board size*	Board composition	CEO duality			
<sup>2</sup> Donaldson and Davis (1991)	ROE	CEO duality*	CEO compensation				
Hermalin and Weisbach (1991)	Tobin's Q	CEO* ownership	Board composition		R&D** expense	Size	Adv** expense
					CEO tenure <sup>7</sup>	Director tenure <sup>7</sup>	
Rechner and Dalton (1991)	ROE, ROI, profit margin	CEO duality**					
<sup>3</sup> Pi and Timme (1993)	ROA, cost efficiency	CEO duality**	CEO stock ownership**		Firm size	Market structure	Product mix
Hempel and Fay (1994)	EPS		Director compensation		# of board meetings	Board size	Firm size**
					Industry**		
Boyd (1995)	ROI	CEO duality*	Duality X sales growth*	Duality X sales volatility*			
			Duality X complexity				
Agrawal and Knoeber (1996)	Tobin's Q	Insider stock ownership	Outside blockholding	CEO tenure	Growth** opportunity	Firm size**	
		Corporate control activity**	Institutional shareholdings	Debt usage**			
			Board composition*				
Baliga et al. (1996)	ROA, ROE, Cash flow	CEO duality					
Fiegenger et al. (1996)	ROA, ROE	Outside director tenure *			Outside director stock ownership	Board composition	
Yermack (1996)	Tobin's Q	Board size**			Industry <sup>4</sup>	Inside stock ownership**	Firm size**
					Growth opportunity	Prior firm** performance	Year <sup>3</sup>
					Diversification**	Board** composition	



**Table 1. (continued)**

<sup>5</sup> Agrawal and Knoeber (1999)	Tobin's Q	Political directors	Board** composition	Board size	Diversification	Prior firm** performance	Growth opportunity**
<sup>6</sup> Bhagat and Black (1999)	Tobin's Q		Board composition*		Board size	CEO ownership*	Outside director ownership
					Outside* blockholdings	Firm size	Industry
<sup>7</sup> Bhagat et al. (1999)	Sales growth	Director compensation	Director ownership*		Board composition	Firm size*	
<sup>8</sup> Lee et al. (1999)	Abnormal returns	Financial directors*					
<sup>9</sup> Hambrick and Jackson (2000)	Returns		Outside director ownership*				
Bhagat and Black (2002)	Tobin's Q, ROA, Sales/Asset		Board composition		Outside director ownership	CEO ownership	Board size
					Firm size	# of outside 5% blockholder	Industry
Keil and Nicholson (2003)	Tobin's Q, ROA	Board size**	Board ** composition	CEO duality	Firm size**		
Fich and Shivdasani (2004)	Market- to book-value,	Director** compensation	Board size**	Board composition	Firm size**	ROA**	capital expense
	asset turnover, ROS, ROA	Insider* stock ownership	Outside director ownership*		Industry*	Year*	
Fuerst and Kang (2004)	Expected residual income	Insider * stock ownership	Outside director ownership *	Outside * blockholdings	Firm size *		
			Controlling shareholder *	Board size			
		CEO tenure *	Board composition	CEO duality *			

\*Significant at the 5% level

\*\*Significant at the 1% level

<sup>1</sup>Industry and size were controlled for by using a matched pair sample matched by industry and size.

<sup>2</sup>Observations were grouped by industry

<sup>3</sup>Sample was limited to the banking industry. Dummy variables were used to control for year.

<sup>4</sup>Results not reported

<sup>5</sup>Sample limited to manufacturing firms and uses 1987 data only.

<sup>6</sup>Regressions were run using different measures of firm performance with similar results. Separate regressions were run in three-year increments.

<sup>7</sup>While the authors indicated that some of these variables are significant, they did not indicate the statistical level of significance.

<sup>8</sup>Observations were grouped by industry and size.

<sup>9</sup>A matched pair sample was used controlling form industry, size, and prior firm performance. While the authors indicated that there was a significant relationship between outside director stock ownership and firm performance, they did not indicate the statistical level of significance.

expect a negative, or perhaps no, relationship between cash-based director compensation and firm performance.

However, stock-based compensation for directors has also been disparaged. With so much riding on stock price, directors have strong incentives to keep the stock price elevated until they can sell their stock or options [Schaff, 2002]. Moreover, director-shareholders may be overly focused on short-term results versus long-term stability [Phelps and Kennedy, 2002], and requiring directors to be shareholders in the firms they serve may cause them to lose the objectivity they should bring to the boardroom [Dalton and Daily, 1999]. If paying directors in cash helps to avoid the potential conflicts associated with stock-based compensation, then there may be a positive relation between the proportion of cash-based director compensation and firm performance.

### 3.2 Stock-based Director Compensation

As noted above, although corporate governance experts recommend compensating directors primarily in stock, there is no empirical evidence that stock remuneration for directors improves firm performance. If stock-based compensation better aligns the interests of directors and shareholders, then firms compensating directors largely in stock should perform better than firms paying little or no stock-based compensation. Alternatively, if stock compensation causes directors to lose their objectivity there should be a negative relationship between stock-based director compensation and firm performance.

Finally, there could be a non-linear relationship between the proportion of stock-based director compensation and firm performance. In this case, up to some optimal point, stock-based compensation would motivate directors to act in the benefit of

shareholders and induce a positive relationship between the proportion of stock-based director compensation and firm performance. However, beyond this optimal level, the risk effect of being compensated in stock may outweigh the incentive effect, thereby causing a negative relationship between stock-based compensation and firm performance.<sup>8</sup>

### 3.3 Summary and Hypothesis

Although any form of stock-based compensation theoretically aligns directors' with shareholders' interests by causing directors to focus on stock price, there is no agreement as to which form of stock compensation is the most effective. Some large institutional investors, such as TIAA/CREF, currently advocate compensating directors in part with stock – but not stock options.<sup>9</sup> Payment in stock is thought to better motivate directors to focus on long-term stock price by exposing directors to the risk of a drop in share price as well as the opportunity for gain [Firstenberg and Malkiel, 1994; Lublin, 1994].

Bryan et al. (2000b) find that restricted stock, due its more linear payoff structure, is relatively inefficient (when compared to stock options) in inducing risk-averse CEOs to accept risky, value-increasing projects. They suggest that stock-option awards are a more efficient tool for compensating CEOs, especially in high growth firms. This may also hold true for directors. However, directors are likely less risk-averse than an executive of the firm because directors have less human capital invested in the firm. Sitting on the

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<sup>8</sup> This optimal point is unobservable, although it may be a function of directors' prior stock ownership. Outside director ownership is controlled for in the model by including a measure of outside director ownership.

<sup>9</sup> "Shareholders, NACD Want Directors to be Paid in Stock," *Investor Relations Business*, April 3, 2000.

board of directors is not a full-time job, and many directors have other sources of income [Nuelle, 1995]. Therefore, the average director is probably more diversified, and less risk-averse, than the average executive.<sup>10</sup> The main hypothesis of this paper, stated in the alternative, is:

**Hypothesis 1:** There is a relation between the composition of director compensation and firm performance.

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<sup>10</sup> Although the average director is probably less diversified than the average stockholder, who has no human capital invested in the firm.

## CHAPTER 4 MODEL SPECIFICATION

Accounting and stock market returns are widely reported measures of firm performance and have been frequently used in research [Kren and Kerr, 1997]. This study employs a multivariate regression model to test the hypothesis regarding the effects of the composition of director compensation on subsequent firm performance using both of these measures of firm performance. Both measures are used because each has strengths and weaknesses in evaluating firm performance, as discussed below.

The accounting-based measure used in this study is return on assets (ROA), defined as income before tax, extraordinary items and discontinued operations divided by average total assets.<sup>11</sup> The market-based measure of firm performance used in this study is the average common stock return for the fiscal year, three fiscal years, or five fiscal years after compensation is awarded. The dependent variables (ROA and stock returns) are measured at one-, three-, and five-year intervals to capture the possible short-, mid-, and long-term effects of director compensation on firm performance. The average common stock return is examined, rather than a measure of excess returns, because this paper is concerned with estimating the covariance between director compensation and subsequent firm performance, rather than the abnormal returns associated with some event. Additionally, industry-indicator variables (IND) are included in the regression to control for idiosyncratic returns within each industry group and time-indicator variables (YR) are included to measure returns relative to the average return in the sample over the same time period.

Both accounting- and market-based measures of firm performance are employed in this study because each measure has strengths and weaknesses in evaluating firm performance. It is possible that, even if director compensation can influence performance, there may be no correlation between pay and returns if the market fully impounds the director compensation information at the beginning of the period. Additionally, market return is a noisy measure of firm performance as much of the change in stock price is beyond the firm's (and directors') control. Accounting-based measures offer a less noisy measure of firm performance. However, market-based measures may be preferable to accounting-based measures because accounting information can be manipulated.

#### 4.1 Accounting Measure of Firm Performance

The first test uses the accounting measure of firm performance, ROA, as the dependent variable. The specific regression is:

$$ROA_i = \beta_0 + \beta_1 OCOMP_i + \beta_2 SCOMP_i + \beta_3 EOCOMP_i + \beta_4 ESCOMP_i + \beta_5 SDROA_i + \beta_6 SALES_i + \beta_7 INSIDE_i + \beta_8 OUTSIDE_i + \beta_9 INST_i + \beta_{10} INDIV_i + \beta_{11} BOARD_i + \beta_{12} CHAIR_i + \beta_{13} TENURE_i + \beta_{14} NBOARDS_i + \beta_{15} FIN_i + \beta_{16} YR_i + \beta_{17} IND_i + \varepsilon_i \quad (1)$$

where:

- ROA = the average return on assets for the year, three years, or five years after the year in which the compensation is awarded, calculated as income before tax, extraordinary items and discontinued operations divided by average total assets;
- OCOMP = the ratio of director compensation paid in stock options to total director compensation, where stock option compensation is calculated as the per share Black-Scholes option value multiplied by the number of shares awarded;
- SCOMP = the ratio of director compensation paid in stock to total director compensation, where stock compensation is calculated as the number of

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<sup>11</sup> ROA is also highly correlated with other accounting measures, such as return on equity [Antle and Smith, 1986].

shares granted to a firm director multiplied by the average stock price. Average stock price is the average of the beginning and end of year stock prices, following Bryan et al. (2000a);

EOCOMP	= the ratio of CEO compensation paid in stock options to total compensation, where stock-option compensation is taken from the Standard & Poor's ExecuComp database;
ESCOMP	= the ratio of CEO compensation paid in stock to total compensation, where stock compensation is taken from the Standard & Poor's ExecuComp database;
SDROA	= the standard deviation of the annual percentage corporate return on assets for the five years prior to when compensation is awarded;
SALES	= the log of firm sales for the year prior to the year in which compensation is awarded;
INSIDE	= inside ownership measured as the proportion of shares held by inside directors where inside directors are defined as those currently or formerly employed by the firm;
OUTSIDE	= outside director ownership, measured as the proportion of shares held by outside directors on the board;
INST	= institutional ownership, measured as the proportion of the shares held by institutions holding five percent or more of the firm's outstanding equity;
INDIV	= individual ownership, measured as the proportion of the shares held by individuals (excluding officers and directors) holding five percent or more of the firm's outstanding equity;
BOARD	= the proportion of outside directors to total directors;
CHAIR	= an indicator variable denoting that the CEO is also chairman of the board;
TENURE	= the average number of years the outside directors have served on the board, calculated as the total number of years served by outside directors divided by the total number of outside directors;
NBOARDS	= the average number of directorships held per outside director, calculated as the total number of directorships held by all outside directors of the firm divided by the total number of outside directors;
FIN	= the proportion of financial outside directors to total outside directors, where financial outside directors is defined as outside directors who are executives of a commercial bank, investment bank, merchant bank, or insurance company;
YR	= an indicator variable denoting the year in which compensation was paid; and
IND	= an indicator variable denoting the firm's two-digit industry membership.

#### 4.2 Test Variables

The test variables include the proportion of director compensation paid in stock options (OCOMP), and the proportion of director compensation paid in stock (SCOMP).

To test for a relationship between the form of stock compensation and firm performance, the coefficients of these two variables are examined ( $\beta_1$  and  $\beta_2$ ).<sup>12</sup> Each measure is for the average director of the firm. Typically, only non-employee directors receive compensation for serving on the board. If director stock compensation induces better (worse) firm performance, one would expect a positive (negative) relationship between OCOMP and/or SCOMP and the measure of firm performance, ROA.

#### 4.3 Control Variables

Two measures of executive compensation are included in the model (EOCOMP and ESCOMP), measuring the proportion of the CEO's stock option compensation to total compensation, and the proportion of the CEO's stock compensation to total compensation, respectively. These measures of executive compensation are included in the model to control for possible effects of executive compensation on firm performance. Additionally, it is likely that director and CEO compensation are correlated. For example, director and CEO compensation may be positively correlated if a firm subscribing to the belief that executives' interests are best aligned with that of shareholders through stock compensation also exercises the same theory in setting director compensation – paying both executives and directors in stock-based compensation (or, alternatively, paying both predominately in cash).

On the other hand, as Vafeas (1999a) points out, managerial stock compensation and director stock compensation may act as substitutes. Director incentive plans may be a more useful means of director compensation when the need for active director

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<sup>12</sup> To test for a relation between equity compensation and firm performance, the two stock measures are combined so that the ratio of total stock-based compensation to total compensation is examined.



monitoring is high, for example, where inside ownership is low and managerial incentives weak. In this case director and CEO compensation would be negatively correlated. Omitting CEO compensation from the model could lead to a spurious correlation between director compensation and firm performance.

The standard deviation of the annual percentage corporate return on assets for the five years prior to the year in which the compensation is awarded (SDROA) is included to control for firm specific earnings risk, following Core et al. (1999). The log of sales (SALES) is for the year prior to the year in which compensation is awarded and is included to control for firm size. Firm size is included as a control variable because prior research indicates that financial ratios differ across different size firms (e.g., Walker and Petty, 1978; Osteryoung et al., 1992). Additionally, research suggests that firm size and director compensation are correlated [Bryan et al., 2000a]. Failure to control for firm size in the model may lead to a spurious correlation between director compensation and firm performance.

INSIDE, OUTSIDE, INST, and INDIV are added to control for the effect of ownership on firm performance. INSIDE is measured as the proportion of shares held by inside directors of the board where inside directors are defined as directors who are currently or formerly employed by the firm.<sup>13</sup> This measure also includes ‘gray’ directors (e.g., the firm’s attorney, banker, or consultant).<sup>14</sup>

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<sup>13</sup> If managerial ownership and monitoring by the board of directors are substitutes, then there may be less of a need to align director and shareholder incentives through director stock compensation in firms with high levels of inside ownership.

<sup>14</sup> Research has recognized that, although board members may be technically independent, there are powerful social and psychological factors that can compromise a director’s objectivity in monitoring management (e.g., Westphal, 1999). So, although directors may appear to be independent from management, in reality, it is difficult to determine how independent a director really is. Sensitivity analysis is conducted using

OUTSIDE is included as a control variable and is measured as the proportion of shares held by outside directors on the board. This measure does not include directors who are current or former employees (i.e., inside directors) or gray directors. OUTSIDE is included because if outside directors already hold a significant amount of stock in the firm, then their interests are already aligned with that of shareholders through their ownership. Therefore, the form of their compensation may be less important, and have less of an impact on, firm performance. Or, stock compensation for these directors may even have a negative effect on firm performance if their ownership position causes them to be more risk-averse than a non-owner director.

Brickley et al. (1988) find evidence of a monitoring role for institutions and other outside blockholders. Additionally, Shleifer and Vishny (1986) postulate that the presence of a large minority shareholder provides a partial solution to the “free rider” problem, i.e., large shareholders have greater incentives to monitor management performance than smaller individual shareholders. Consequently, the presence of institutional ownership (INST) or individuals holding large blocks of stock (INDIV) would be expected to improve performance and reduce the need for monitoring by directors.

Alternatively, institutional or blockholder ownership and monitoring by directors could serve as complements. Anecdotal evidence suggests that institutional investors often encourage firms to improve their corporate governance structures through appointments of outside directors [Meyer, 2000]. Bryan et al. (2000a) point out that large

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alternative definitions of OUTSIDE as research (e.g., Rhoades et al., 2000) has shown that the form of this variable can affect the results.

institutional investors have the clout to nominate board members and transfer the monitoring role to the board itself. In support of this conjecture, Bryan et al. (2000a) find a positive relationship between institutional ownership and total director compensation.

Whether institutional and blockholder ownership complement or substitute for monitoring by the board, it is necessary to control for the effects of institutional/blockholder ownership to ensure that results attributed to director compensation variables are not, in fact, due to a correlated omitted variable. Therefore, institutional ownership (INST), measured as the proportion of the shares held by institutions holding five percent or more of the firm's outstanding equity, and INDIV measured as the proportion of the shares held by individuals (excluding officers and directors) holding five percent or more the firm's outstanding equity are added to the model.

The proportion of outside directors to total directors (BOARD) is included in this model to control for the possibility that board structure may affect firm performance. Although both the New York Stock Exchange (NYSE) and Nasdaq are now calling for boardrooms to be filled with a majority of independent directors [Plitch, 2002], there is no clear-cut evidence that boards dominated by outsiders are more effective than boards dominated by insiders [Bhagat and Black, 1999]. Bhagat and Black (2002) and Hermalin and Weisbach (1991) find no relation between board composition and firm performance, while Yermack (1996), Agrawal and Knoeber (1996), and Agrawal and Knoeber (1999)

all find that firm performance is negatively related to the proportion of outside directors on the board.<sup>15</sup>

Perry (1999) reasons that if inside directors or directors closely affiliated with management dominate the board, incentive compensation for outside directors may have no impact on the level of observed monitoring because, in these cases, outside directors may not have the power to discipline managers of poorly performing firms. In support of his hypothesis, Perry finds that directors with incentive compensation are more likely to replace the CEO following poor performance, *but only when the board is predominately composed of independent directors*. Similarly, Vafeas (1999a) finds that firms adopting director incentive plans have significantly more outsiders on their boards than control firms without director incentive plans in place.

CHAIR is an indicator variable denoting CEO duality (i.e., the CEO is also chairman of the board). Although many in the business community agree that the roles of chairman and CEO should be separate (e.g., The Institute of Internal Auditors, 2002; Corporate Governance Center at Kennesaw State University, 2002), academics have failed to reach a similar consensus.<sup>16</sup> Therefore, CHAIR is included in the model to control for the possibility that CEO duality has an effect on firm performance.

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<sup>15</sup> However, independent directors may be more effective in performing particular board tasks. For example, Hutchinson (2002) finds that growth firms perform better when there is a higher proportion of outside to inside directors on the board. She speculates that the monitoring role of outside directors overcomes the agency problems of high investment opportunities so that these firms are more profitable.

<sup>16</sup> For example, Finkelstein and D'Aveni (1994) find that board vigilance is positively related to CEO duality. Rechner and Dalton (1991) and Pi and Timme (1993) find that firms separating the chairman and CEO positions outperform, in terms of accounting-based performance measures, those firms that combine the two titles. Donaldson and Davis (1991) find the opposite—those firms separating the positions perform worse using accounting-based measures. Dechow et al. (1996) find that firms that manipulate earnings are more likely to have a CEO who also serves as Chairman of the Board. Baliga et al. (1996) find no evidence to support the proposition that a change in duality, from a dual CEO/chairman to separate titles, affects long-term performance, and Chaganti et al. (1985) find no differences in the frequency of dual CEOs in a matched sample of 21 failed

Board tenure (TENURE) is measured as the average number of years of outside director service. Beasley (1996) provides evidence that the length of time an outside director serves on the board affects the director's ability and/or willingness to scrutinize top management's actions.<sup>17</sup> Hermalin and Weisbach (1991) find that firms with longer median tenures are positively associated with firm performance, and Fiegener, et al. (1996) find a positive relation between average outside director tenure and firm performance. However, Vafeas (2003) contends that outside directors who have been on the board for an extended period of time are more likely to befriend management at the expense of the shareholders. Average outside director tenure is therefore included in this analysis to control for the possibility that there is a relation between director tenure and firm performance.

Fama and Jensen (1983) speculate that an individual holding multiple board memberships may be of superior quality. In support of this conjecture, Ferris, et al. (1999) find some evidence that the average number of directorships held per director is positively associated with firm performance.<sup>18</sup> However, they also find that the likelihood of a firm becoming a defendant in a securities fraud lawsuit is positively related to the average number of directorships held per director. Additionally, Core, et al. (1999) find that the presence of directors holding multiple directorships is positively associated with excess CEO compensation, suggesting that multiple directorships impair

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and non-failed firms. Finally, Boyd (1995) concludes that duality can have a positive effect on firm performance under some industry conditions, but a negative effect under others.

<sup>17</sup> In a study comparing 75 firms involved in material financial statement fraud with 75 non-fraud firms. Average outside director tenure is significantly longer for the non-fraud companies – 6.6 years of service compared to an average tenure of only 3.8 years for the fraud companies.

the director's ability to monitor effectively. Whether serving on multiple boards impairs an outside director's ability to monitor effectively or indicates a superior quality director, it is likely that the average number of directorships per director is correlated with firm performance. Therefore, NBOARDS, calculated as the total number of directorships held by all outside directors of the firm divided by the total number of outside directors, is included as a control variable.

The proportion of financial outside directors (FIN), where financial outside directors are executives of a commercial bank, investment bank, merchant bank, or insurance company, is included as a control variable because Lee et al. (1999) find that the appointment of a financial director to a firm's board is associated with positive abnormal returns. These findings are attributable to smaller firms, suggesting that smaller firms add financial outside directors to their boards to gain access to financial markets or to obtain financial expertise. If outside directors with financial expertise enable a firm to perform better, then one may expect a positive relation between financial outside directors and firm performance. Therefore, FIN is added to the analysis as a control variable.

#### 4.4 Market Measure of Firm Performance

The second test uses the market-based measure of firm performance. The specific regression is:

$$\begin{aligned}
 RET_i = & \beta_0 + \beta_1 OCOMP_i + \beta_2 SCOMP_i + \beta_3 EOCOMP_i + \beta_4 ESCOMP_i + \\
 & \beta_5 SRET_i + \beta_6 LMVE_i + \beta_7 MB_i + \beta_8 INSIDE_i + \beta_9 OUTSIDE_i + \\
 & \beta_{10} INST_i + \beta_{11} INDIV_i + \beta_{12} BOARD_i + \beta_{13} CHAIR_i + \beta_{14} TENURE_i + \\
 & \beta_{15} NBOARDS_i + \beta_{16} FIN_i + \beta_{17} YR_i + \beta_{18} IND_i + \varepsilon_i
 \end{aligned} \tag{2}$$

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<sup>18</sup> Yermack (2003) finds a positive association between a company's performance in the previous two years and the net acquisition of new board seats by outside directors, suggesting that directors are "rewarded" for good performance with additional directorships.

where, RET is the common stock return for the fiscal year, three fiscal years, or five fiscal years after compensation is awarded. SRET is the annual standard deviation of return on the common stock for five years prior to when the compensation is awarded and is included in the model to control for firm risk. SRET is used in place of SROA in the previous model because the dependent variable has been changed to RET. Two additional variables are included in the returns model that are not used in the ROA model. LMVE is measured as the log of the market value of equity and is included to control for firm size (replacing SALES) because LMVE is better related to the dependent variable, RET, and the firm's market-to-book ratio (MB), measured as the firm's market value of equity divided by its book value of equity, is added to the model because prior research (e.g., Fama and French, 1992) has found that this variable (or its inverse) explains much of the variation in average stock returns. All other variables are as previously defined.

## CHAPTER 5 SAMPLE AND UNIVARIATE STATISTICS

The sample includes 500 observations – 250 firms from the S&P 500 Index for 1992 and 250 firms for 2000. Only half of the firms were selected for each year in an effort to minimize data collection efforts.<sup>19</sup> Information on director compensation and board characteristics for each of these firms has been hand-collected from the proxy statements. To be included in the sample, each firm must have seven years of annual data (the observation year, five years prior to the observation year, and at least one year after the observation year) available on Compustat for calculating the test and control variables. Additionally, CEO compensation information must be available on the Standard & Poor's ExecuComp database for the observation year and the proxy statement for the sample observation year must be available on either Lexis-Nexis or EDGAR.

The summary statistics for this sample were compared to that of the S&P 500 in an effort to determine if the firms selected for this study are representative of the S&P 500 as a whole. Comparing the means, the sample firms are significantly larger as measured by the log of sales ( $z = 4.08$ ). This is probably due to the fact that the larger firms were more likely to have their proxy statements available on Lexis-Nexis or EDGAR. The standard deviation of returns (SDRET) is significantly smaller for the sample firms ( $z = -2.68$ ). There were no other significant differences between the sample and the S&P 500 firms with regards to any of the other sample statistics including the log of the market value of equity (LMVE), market-to-book value (MB), and the standard deviation of return on assets (SDROA).



As shown in Table 2, total director compensation averages \$72,931 for the sample, with stock option compensation comprising, on average, 17% of the total pay package and stock compensation 15%. In examining the sample by year (Table 3), it is apparent that director compensation policies have undergone major changes from 1992 to 2000. Total director compensation averaged \$38,261 (median \$35,000) in 1992, but increased to \$107,601 (median \$80,749) by 2000. Additionally, while 42% of the firms in the sample used some form of stock-based compensation for directors in the 1992 sample firms, usage increased to 91% by 2000.<sup>20</sup>

Examining OCOMP further may provide an explanation for the mixed results found by previous studies when using an indicator variable to test for a relation between director stock option compensation and firm performance. As mentioned previously, both Hemple and Fay (1994) and Bhagat et al. (1999) examine earlier samples (Hemple and Fay examine 1986 and 1990; Bhagat et al. select their sample from 1992-1996). In this sample, the average firm issued stock options valued at \$4,571 in 1992, but the *median* firm issued *none*. On the other hand, Fich and Shivdasani (2004) examine a later time period (1997-1999). By 2000, the average firm in this study sample issued stock options valued at \$45,759 and the median firm, \$11,052. The fact that an indicator variable is a weaker test coupled with the fact that far fewer firms used stock-based compensation for directors may explain the lack of results in the earlier studies. By the late 1990's, the dichotomous variable likely detected a relation between the use of stock-

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<sup>19</sup> The firms were selected at random. If the firm had observations in both sample years, and if both sample-year observations met the data requirements, then both years are included in the sample. Otherwise, only the available year was used. This process was continued until 250 observations from each year were selected.

<sup>20</sup> Bryan et al. (2000) report similar means for their 1992 observations.

**Table 2. Sample Summary Statistics**

The sample consists of 500 observations taken from the S&P 500 firms. 250 of the observations are from 1992 and 250 from 2000. The table reports the mean, median, and standard deviation for each variable. Director compensation variables are for the average director of the firm. Cash compensation represents the total dollar amount of cash compensation (in thousands). Stock option compensation represents the total value of stock option compensation (in thousands) calculated using the Black-Scholes method. Stock compensation is the total value of stock compensation (in thousands) calculated as the number of shares issued times the average annual stock price. Total compensation is the sum of the cash, stock option, and stock compensation (in thousands). % of option compensation is the value of the stock option compensation divided by the total compensation. % of stock compensation is the value of the stock compensation divided by total compensation. Existence of a stock based plan is an indicator variable equal to one if the firm paid directors in stock or option compensation. CEO option compensation is the dollar value of the stock option compensation paid to CEO of the firm (in thousands) as valued by the Black-Scholes method. CEO stock compensation is the value of the stock compensation paid to the CEO (in thousands). % of CEO option compensation is the value of the CEO's option compensation divided by the CEO's total compensation % of CEO stock compensation is the value of the CEO's stock compensation divided by the CEO's total compensation. The remaining variables are defined below.

Variable	Mean	Median	Std Dev
<b><i>Director Compensation Variable</i></b>			
Cash compensation	34.44818	33	13.33358
Option compensation	25.16479	0	67.47365
Stock compensation	13.31796	0	22.83100
Total compensation	72.93093	49.35366	74.29225
% of option compensation	0.171856	0	0.260346
% of stock compensation	0.150486	0	0.214784
existence of a stock-based plan	0.668000	1	0.471402
<b><i>Control Variables</i></b>			
CEO option compensation	5165.22000	877.05150	29159.60000
CEO stock compensation	704.51518	0	3020.72000
% of CEO option compensation	0.36604	0.33980	0.28770
% of CEO stock compensation	0.06996	0	0.15676
SALES	8.43355	8.42590	1.24968
LMVE	8.75244	8.62321	1.29968
MB	4.49665	2.64907	12.66466
SDROA	0.02662	0.01756	0.03780
SDRET	0.34538	0.28969	0.22939
<b><i>Corporate Governance Variables</i></b>			
INSIDE	0.04419	0.00921	0.09750
OUTSIDE	0.01096	0.00099	0.04005
BOARD	0.69968	0.71429	0.15440
INST	0.11512	0.07922	0.12354
INDIV	0.01107	0	0.05482
CHAIR	0.85000	1	0.35743
TENURE	8.25618	7.88750	3.64209
NBOARDS	2.69329	2.57143	1.44105
FIN	0.05731	0	0.08909

## **Table 2. (continued)**

### **Variable definitions:**

**SALES** is the log of firm sales for the year prior to the year in which compensation is awarded;

**LMVE** is measured as the log of the market value of equity;

**MB** is the firm's market-to-book ratio measured as the firm's market value of equity divided by its book value of equity;

**SDROA** is the standard deviation of the annual percentage corporate return on assets for the five years prior to when compensation is awarded;

**SRET** is the annual standard deviation of return on the common stock for five years prior to when the compensation is awarded;

**INSIDE** is inside ownership measured as the proportion of shares held by inside directors where inside directors are defined as those currently or formerly employed by the firm;

**OUTSIDE** is outside director ownership, measured as the proportion of shares held by outside directors on the board;

**BOARD** is the proportion of outside directors to total directors;

**INST** is institutional/blockholder ownership, measured as the proportion of the sum of the shares held by institutions holding five percent or more of the firm's outstanding equity;

**INDIV** is individual ownership, measured as the proportion of the sum of the shares held by single individuals (excluding officers and directors) holding five percent or more of the firm's outstanding equity;

**CHAIR** is an indicator variable denoting that the CEO is also Chairman of the Board;

**TENURE** is the average number of years the outside directors have served on the board, calculated as the total number of years served by outside directors divided by the total number of outside directors;

**NBOARDS** is the average number of directorships held per outside director, calculated as the total number of directorships held by all outside directors of the firm divided by the total number of outside directors; and

**FIN** is the proportion of financial outside directors to total outside directors, where financial outside directors is defined as outside directors who are executives of a commercial bank, investment bank, merchant bank, or insurance company.

**Table 3. Sub-sample Summary Statistics and Tests of Differences in Means**

The last column provides the absolute value of the difference of means for the two sub-samples, 1992 versus 2000, based on a Wilcoxon rank-sum test. Please refer to Table 2 for full variable definitions.

Variable	1992 sub-sample			2000 sub-sample			Difference of means
	Mean	Median	Std Dev	Mean	Median	Std Dev	
<i>Director compensation variables</i>							
Cash compensation	30.3697	30.0000	9.8303	38.5266	38.4500	15.0415	7.17***
Option compensation	4.5705	0	13.2795	45.7591	11.0516	89.9759	9.57***
Stock compensation	3.3210	0	8.2657	23.3150	15.7402	27.8496	10.63***
Total compensation	38.2612	35.0000	18.1966	107.6007	80.7485	91.1926	15.14***
% of option compensation	0.0750	0	0.1716	0.2687	0.1742	0.2959	8.88***
% of stock compensation	0.0658	0	0.1401	0.2352	0.1900	0.2417	9.40***
existence of a stk-based plan	0.4240	0	0.4952	0.9120	1.0000	0.2839	11.57***
<i>Control variables</i>							
CEO option compensation	811.9709	282.7575	1860.26	9518.47	2639.57	40773.33	11.99***
CEO stock compensation	238.0703	0	986.0148	1170.96	0	4108.16	1.88*
% CEO option compensation	0.2356	0.2113	0.2291	0.4965	0.5109	0.2815	10.08***
% CEO stock compensation	0.0563	0	0.1355	0.0837	0	0.1746	1.26
SALES	8.0502	8.0848	1.2570	8.8169	8.7562	1.1201	6.56***
LMVE	8.2333	8.1708	1.0962	9.2716	9.0827	1.2816	8.89***
MB	3.0780	2.4593	2.1639	5.9153	2.9257	17.6835	3.64***
SDROA	0.0259	0.1743	0.0405	0.0273	0.0176	0.0350	0.27
SDRET	0.3559	0.2897	0.2240	0.3349	0.2897	0.2347	0.80
<i>Corporate governance variables</i>							
INSIDE	0.0546	0.0103	0.1173	0.0338	0.0086	0.0712	1.38*
OUTSIDE	0.0127	0.0009	0.0454	0.0092	0.0012	0.0339	2.01**
BOARD	0.6522	0.6667	0.1612	0.7471	0.7778	0.1314	7.05***
INST	0.0964	0.0612	0.1228	0.1339	0.1182	0.1216	4.08***
INDIV	0.0143	0	0.0670	0.0079	0	0.0388	0.10
CHAIR	0.8480	1.0000	0.3597	0.8520	1	0.3558	0.13
TENURE	8.4338	7.8258	3.8685	8.0786	8.1125	3.3991	0.66
NBOARDS	2.7579	2.6667	1.5844	2.6287	2.5227	1.2817	0.82
FIN	0.0608	0	0.0964	0.0538	0	0.0811	0.35

\*\*\* Indicates statistical significance at the .01 level, two-tailed

\*\* Indicates statistical significance at the .05 level, two-tailed

\* Indicates statistical significance at the .10 level, two-tailed

based compensation and firm performance in the Fich and Shivdasani (2004) study because stock-based compensation plans were much more prevalent.

Turning to the corporate governance variables, despite the fact that stock-based compensation has dramatically increased since 1992; outside director stock ownership has not changed as drastically. While the median outside director stock ownership has increased from .09 percent of the outstanding common stock in 1992 to .12 percent by 2000, average outside director stock ownership has actually decreased – falling from 1.2 percent of the common stock outstanding in 1992 to 0.9 percent by 2000.<sup>21</sup>

In 2000, outside directors make up a larger percentage of the board. In 1992, 65 percent of the average board was composed of outside directors. By 2000, the proportion of outside directors to total had increased to 74 percent. Additionally, average institutional shareholdings have significantly increased since 1992 with institutional shareholders holding, on average, ten percent of the outstanding stock in 1992. In 2000, average institutional shareholdings were approximately 13 percent.<sup>22</sup> There are no other significant differences in the corporate governance variables from 1992 to 2000.

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<sup>21</sup> Ofek and Yermack (2000) find that, once managers reach a certain ownership level, they actively rebalance their portfolios when awarded equity compensation by selling after receipt of option awards or restricted stock. It is likely that directors act in a similar manner.

<sup>22</sup> Institutional ownership reported in this paper is substantially lower than that reported by some studies due to the difference in definition of institutional ownership. For example, Balsam et al. (2002) report mean institutional ownership as 49.9 percent for their sample. However, they include all institutional shareholdings, whereas this study limits institutional shareholders to those holding at least 5% of the outstanding common stock. When compared to studies using the 5% threshold, this study reports similar sample statistics. For example, Bhojraj and Sengupta (2003) report 8.9 percent mean institutional shareholdings.

## CHAPTER 6 RESULTS

### 6.1 Outside Director Compensation and Firm Performance

Table 4 presents the results for the regressions of average return on assets (ROA), for the fiscal year, three years, and five years after the compensation is awarded, on director stock option and stock compensation (Equation 1). The models are all significant with  $p < .01$  and the adjusted R-squares are fairly high, explaining between 22.6 percent (for the ROA1 model) and 34.1 percent (for the ROA3 model) of the variation in return on assets. No director compensation variables are significant in any of the ROA models.

Table 5 shows the results of estimating Equation 2, average common stock returns (RET), for the fiscal year, three years, and five years after the compensation is awarded, on director stock option and stock compensation. Again, all three models are statistically significant at  $p < .01$  with R-squares ranging from a low of 14.3 percent for the RET5 model to 21.5 percent for the RET3 model. Again, no director compensation variables are significant.

Finally, all six models were run again combining OCOMP and SCOMP (measuring director option compensation and stock compensation, respectively) into one variable, OSCOMP. All models yield insignificant coefficients on OSCOMP, indicating no relation between equity compensation and firm performance. As an additional test, OSCOMP was replaced with an indicator variable coded one for the existence of a stock-based compensation plan and zero otherwise. All six models yield an insignificant

**Table 4. Regressions of Average Return on Assets on Director Stock Option Compensation and Director Stock Compensation**

Industry and year controls are included but not reported. t-statistics for two-tailed tests indicated in parentheses beneath the coefficients.

Independent Variable	Average ROA for period:		
	+1 year ROA1	+3 Years ROA3	+5 Years ROA5
intercept	0.1019* (1.86)	0.0984 (1.61)	0.0954* (1.65)
OCOMP	0.0111 (0.80)	0.0316 (1.59)	0.0258 (1.36)
SCOMP	0.0161 (1.03)	-0.0089 (-0.38)	-0.0141 (-0.63)
EOCOMP	-0.0018 (-0.14)	0.0042 (0.26)	0.0055 (0.36)
ESCOMP	-0.0077 (-0.42)	-0.0279 (-1.20)	-0.0292 (-1.32)
SDROA	-0.0236 (-0.29)	-0.1824** (-2.07)	-0.1372 (-1.63)
SALES	-0.0061** (-2.01)	-0.0060* (-1.78)	-0.0066** (-2.05)
INSIDE	0.0352 (1.03)	0.0612* (1.96)	0.0788*** (2.65)
OUTSIDE	0.0323 (0.46)	0.1528** (2.17)	0.1326** (1.98)
BOARD	-0.0276 (-1.23)	-0.0263 (-1.14)	-0.0017 (-0.08)
INST	-0.0682*** (-2.92)	-0.0372 (-1.48)	-0.0525** (-2.19)
INDIV	0.0161 (0.28)	0.0571 (1.06)	-0.0098 (-0.19)
CHAIR	0.0035 (0.44)	0.0112 (1.27)	0.0071 (0.84)
TENURE	0.0019** (2.48)	0.0008 (0.91)	0.0004 (0.54)
NBOARDS	-0.0026 (-1.18)	-0.0007 (-0.29)	-0.0004 (-0.16)
FIN	0.0227 (0.74)	-0.0412 (-1.25)	-0.0402 (-1.29)
Adj R <sup>2</sup>	22.6%	34.1%	33.1%
F	3.27***	3.08***	2.99***
N	500	250	250

**Table 4. (continued)**

\*\*\* Indicates statistical significance at the .01 level, two-tailed

\*\* Indicates statistical significance at the .05 level, two-tailed

\* Indicates statistical significance at the .10 level, two-tailed

**Variable definitions:**

ROA1, ROA3, and ROA5 are the average return on assets for the year, three years, or five years after compensation is awarded, respectively, calculated as income before tax, extraordinary items and discontinued operations divided by average total assets;

OCOMP is the ratio of director compensation paid in stock options to total compensation, where stock option compensation is calculated as the per share Black-Scholes option value multiplied by the number of shares awarded;

SCOMP is the ratio of director compensation paid in stock to total compensation, where stock compensation is calculated as the number of shares granted to a firm director multiplied by the average stock price. Average stock price is the average of the beginning and end of year stock prices, following Bryan et al. (2000a);

ECOMP is the ratio of CEO compensation paid in stock options to total compensation, where stock-option compensation is calculated as the per share Black-Scholes option value multiplied by the number of shares awarded.

ESCOMP is the ratio of CEO compensation paid in stock to total compensation, where stock compensation is taken from the Standard & Poor's ExecuComp database;

All other variables are defined in Table 2;



**Table 5. Regressions of Average Common Stock Return on Director Stock Option Compensation and Director Stock Compensation**

Industry and year controls are included in the regression but not reported. t-statistics for two-tailed tests indicated in parentheses beneath the coefficients.

Independent Variable	Average RET for period		
	+1 year RET1	+3 Years RET3	+5 Years RET5
intercept	1.2117*** (4.81)	2.3283*** (4.42)	4.2851** (2.26)
OCOMP	-0.0377 (-0.59)	-0.0149 (-0.10)	0.2390 (0.40)
SCOMP	-0.0237 (-0.33)	-0.0352 (-0.20)	-0.4070 (-0.57)
EOCOMP	0.0453 (0.77)	-0.0004 (-0.00)	0.0746 (0.15)
ESCOMP	-0.0718 (-0.84)	-0.2031 (-1.00)	-1.1797* (-1.69)
SRET	-0.1422** (-2.35)	-0.5782*** (-3.96)	0.1580 (0.32)
LMVE	-0.0704*** (-5.32)	-0.1328*** (-4.17)	-0.0457 (-0.41)
MB	-0.0004 (-0.37)	-0.0016 (-0.67)	0.0227 (0.41)
INSIDE	0.1169 (0.75)	1.1979** (3.17)	2.8120*** (2.99)
OUTSIDE	-0.0768 (-0.24)	-0.4578 (-0.60)	2.1792 (1.10)
BOARD	-0.1771* (-1.73)	0.1080 (0.44)	0.3659 (0.54)
INST	-0.0230 (-0.20)	-0.0010 (-0.00)	0.0230 (0.03)
INDIV	-0.1294 (-0.49)	0.2001 (0.31)	0.2543 (0.16)
CHAIR	0.0048 (0.13)	-0.1019 (-1.17)	-0.5033* (-1.90)
TENURE	-0.0038 (-1.07)	-0.0143* (-1.69)	-0.0273 (-1.11)
NBOARDS	-0.0026 (-0.27)	-0.0317 (-1.33)	-0.0256 (-0.39)
FIN	-0.3520** (-2.50)	-0.6453* (-1.90)	-1.8487* (-1.88)
Adj R <sup>2</sup>	21.1%	21.5%	14.3%
F	3.05***	3.14***	1.66***
N	500	500	250

**Table 5. (continued)**

\*\*\* Indicates statistical significance at the .01 level, two-tailed

\*\* Indicates statistical significance at the .05 level, two-tailed

\* Indicates statistical significance at the .10 level, two-tailed

**Variable definitions:**

RET1, RET3, and RET5 are the average common stock returns for the fiscal year, three fiscal years, or five fiscal years, respectively, after compensation is awarded;

OCOMP is the ratio of director compensation paid in stock options to total compensation, where stock option compensation is calculated as the per share Black-Scholes option value multiplied by the number of shares awarded;

SCOMP is the ratio of director compensation paid in stock to total compensation, where stock compensation is calculated as the number of shares granted to a firm director multiplied by the average stock price. Average stock price is the average of the beginning and end of year stock prices, following Bryan et al. (2000a);

EOCOMP is the ratio of CEO compensation paid in stock options to total compensation, where stock-option compensation is calculated as the per share Black-Scholes option value multiplied by the number of shares awarded.

ESCOMP is the ratio of CEO compensation paid in stock to total compensation, where stock compensation is taken from the Standard & Poor's ExecuComp database;

All other variables are defined in Table 2.

coefficient on the dummy variable, again indicating no significant results between any form of stock-based compensation and firm performance.

At first blush, it appears that there is no evidence that stock-based compensation has any effect on firm performance. Neither the return on asset models nor the returns models shows a significant relation between any form of director stock-based compensation and firm performance. Finally, the existence of a stock-based compensation is not significantly related to firm performance in any of the models.

## 6.2 Interactions and Non-linearity

To further explore the relation between director compensation and firm performance, the above regressions were rerun adding variables to test for a non-linear relation between outside director compensation and firm performance (OCOMP2 and SCOMP2) and to test for interactions between outside director stock ownership and director compensation (OUTOCOMP and OUTSCOMP). As previously noted, stock-based compensation may be less effective if directors' interests are already aligned with shareholders via their stock ownership. Or, stock-based compensation may have a negative effect on firm performance if their ownership position causes directors to be more risk-averse than a non-owner director.

For the ROA models (Table 6), the R-squares are similar to the models in Table 4 for the ROA1 model and stronger for the ROA3 and ROA5 models. All three models remain significant at the  $p < .01$  level. While no form of director compensation is significant in the short-run (ROA1) model, the ROA3 and ROA5 models both show a positive and significant coefficient on the squared term SCOMP2 and a negative and significant coefficient for the main effect, SCOMP.

As mentioned previously, Bryan et al. (2000b) find that restricted stock is relatively inefficient (when compared to stock options) in inducing risk-averse CEOs to accept risky, value-increasing projects. The negative coefficient on SCOMP seems to confirm this finding. However, the positive coefficient on the squared term suggests that at some point, given enough stock, the risk aversion may be overcome – perhaps because, even if the stock price drops, the stock is inherently valuable (whereas options may become worthless).

Additionally, the interaction between outside director stock ownership and stock option compensation (OUTOCOMP) is positive and significant in both the ROA3 and ROA5 models. While the main effect of OCOMP is not significant in these models, the main effect of stock ownership (OUTSIDE) is significant and positive. These results suggest that stock ownership coupled with stock option compensation has a positive effect on firm performance as measured by ROA in both the mid- and long-term. The returns models (Table 7) also yield interesting results. R-squares are similar to the R-squares in Table 5, and all models remain statistically significant. The coefficient on OCOMP is positive and significant in both the RET3 and RET5 models. Additionally, the coefficient on OCOMP2 is negative and significant in both the RET3 and RET5 models. Again, no form of director compensation is significant in the short-run model. These results suggest a non-linear relation between stock option compensation and firm performance. While a higher proportion of stock option compensation generally has a positive effect on firm performance as measured by stock returns, it appears that, at some

**Table 6. Regressions of Average Return on Assets on Director Stock Option Compensation, Director Stock Compensation, Interaction, and Non-linear Variables**  
 Industry and year controls are included but not reported. t-statistics for two-tailed tests indicated in parentheses beneath the coefficients.

Independent Variable	Average ROA for period		
	+1 year ROA1	+3 Years ROA3	+5 Years ROA5
intercept	0.1047* (1.90)	0.0954 (1.57)	0.0967* (1.68)
OCOMP	-0.0227 (-0.64)	0.0426 (0.76)	0.0134 (0.25)
SCOMP	0.0055 (0.15)	-0.1407** (-2.31)	-0.1411** (-2.45)
OCOMP2	0.0386 (0.88)	-0.0545 (-0.58)	-0.0172 (-0.19)
SCOMP2	0.0145 (0.27)	0.3007** (2.54)	0.2876** (2.57)
OUTOCOMP	0.5435 (1.09)	1.8950* (1.81)	2.2423** (2.27)
OUTSCOMP	-0.1108 (-0.38)	-0.3664 (-1.24)	-0.3541 (-1.26)
EOCOMP	-0.0032 (-0.25)	0.0101 (0.64)	0.0106 (0.71)
ESCOMP	-0.0088 (-0.47)	-0.0405* (-1.69)	-0.0450** (-1.99)
SDROA	-0.0179 (-0.21)	-0.1946** (-2.13)	-0.1481* (-1.71)
SALES	-0.0059* (-1.90)	-0.0049 (-1.44)	-0.0053* (-1.67)
INSIDE	0.0336 (0.98)	0.0576* (1.88)	0.0764*** (2.63)
OUTSIDE	0.0283 (0.23)	0.2269** (2.04)	0.1985* (1.89)
BOARD	-0.0233 (-1.02)	-0.0151 (-0.66)	0.0105 (0.49)
INST	-0.0685*** (-2.91)	-0.0409* (-1.66)	-0.0554** (-2.37)
INDIV	0.0113 (0.20)	0.0673 (1.26)	-0.0022 (-0.04)
CHAIR	0.0029 (0.36)	0.0074 (0.85)	0.0033 (0.39)
TENURE	0.0018** (2.32)	0.0004 (0.51)	0.0000 (0.05)

**Table 6. (continued)**

NBOARDS	-0.0027 (-1.22)	-0.0009 (-0.37)	-0.0005 (-0.25)
FIN	0.0208 (0.67)	-0.0597* (-1.82)	-0.0606* (-1.95)
Adj R <sup>2</sup>	22.2%	37.3%	37.0%
F	3.10***	3.25***	3.22***
N	500	250	250

\*\*\* Indicates statistical significance at the .01 level, two-tailed

\*\* Indicates statistical significance at the .05 level, two-tailed

\* Indicates statistical significance at the .10 level, two-tailed

Variable definitions:

ROA1, ROA3, and ROA5 are the average return on assets for the year, three years, or five years after compensation is awarded, respectively, calculated as income before tax, extraordinary items and discontinued operations divided by average total assets;

OCOMP is the ratio of director compensation paid in stock options to total compensation, where stock option compensation is calculated as the per share Black-Scholes option value multiplied by the number of shares awarded;

SCOMP is the ratio of director compensation paid in stock to total compensation, where stock compensation is calculated as the number of shares granted to a firm director multiplied by the average stock price. Average stock price is the average of the beginning and end of year stock prices, following Bryan et al. (2000a);

EOCOMP is the ratio of CEO compensation paid in stock options to total compensation, where stock-option compensation is calculated as the per share Black-Scholes option value multiplied by the number of shares awarded.

ESCOMP is the ratio of CEO compensation paid in stock to total compensation, where stock compensation is taken from the Standard & Poor's ExecuComp database;

OCOMP2 is the square of director stock option compensation;

SCOMP2 is the square of director stock compensation;

OUTOCOMP is the interaction between outside director ownership and director stock option compensation;

OUTSCOMP is the interaction between outside director ownership and director stock compensation;

All other variables are defined in Table 2.

**Table 7. Regressions of Average Common Stock Return on Director Stock Option Compensation, Director Stock Compensation, Interaction, and Non-linear Variables**  
 Industry and year controls are included in the regression but not reported. t-statistics for two-tailed tests indicated in parentheses beneath the coefficients.

Independent Variable	Average RET for period		
	+1 year RET1	+3 Years RET3	+5 Years RET5
Intercept	1.1916*** (4.70)	2.2137*** (4.18)	3.8963** (2.03)
OCOMP	0.1423 (0.87)	0.8051** (2.05)	4.3345** (2.53)
SCOMP	-0.0507 (-0.30)	0.1459 (0.35)	0.3873 (0.21)
OCOMP2	-0.2617 (-1.27)	-1.1637** (-2.35)	-7.7124*** (-2.69)
SCOMP2	0.0378 (0.15)	-0.2529 (-0.43)	-0.8613 (-0.24)
OUTOCOMP	0.7193 (0.32)	1.5974 (0.29)	16.4831 (0.51)
OUTSCOMP	0.9337 (0.71)	1.2148 (0.38)	-8.0045 (-0.93)
EOCOMP	0.0558 (0.93)	0.0415 (0.29)	0.3150 (0.65)
ESCOMP	-0.0758 (-0.88)	-0.2173 (-1.07)	-1.1802 (-1.61)
SRET	-0.1282** (-2.07)	-0.5075*** (-3.42)	0.2866 (0.59)
LMVE	-0.0688*** (-5.17)	-0.1260*** (-3.95)	-0.0410 (-0.37)
MB	-0.0005 (-0.54)	-0.0020 (-0.84)	0.0188 (0.33)
INSIDE	0.1238 (0.79)	1.2395*** (3.28)	2.8257*** (3.02)
OUTSIDE	-0.4184 (-0.77)	-0.9362 (-0.72)	4.0488 (1.35)
BOARD	-0.1975* (-1.90)	0.0347 (0.14)	0.3709 (0.54)
INST	-0.0201 (-0.18)	0.0012 (0.00)	-0.0617 (-0.08)
INDIV	-0.1062 (-0.40)	0.2522 (0.40)	0.2369 (0.15)
CHAIR	0.0062 (0.17)	-0.1068 (-1.21)	-0.5760** (-2.18)

**Table 7. (continued)**

TENURE	-0.0036 (-1.01)	-0.0138 (-1.62)	-0.0255 (-1.02)
NBOARDS	-0.0019 (-0.19)	-0.0323 (-1.34)	-0.0559 (-0.84)
FIN	-0.3534** (-2.49)	-0.6687* (-1.96)	-1.0679** (-2.08)
Adj R <sup>2</sup>	20.8%	21.9%	16.3%
F	2.89***	3.06***	1.72***
N	500	500	250

\*\*\* Indicates statistical significance at the .01 level, two-tailed

\*\* Indicates statistical significance at the .05 level, two-tailed

\* Indicates statistical significance at the .10 level, two-tailed

**Variable definitions:**

RET1, RET3, and RET5 are the average common stock returns for the fiscal year, three fiscal years, or five fiscal years, respectively, after compensation is awarded;

OCOMP is the ratio of director compensation paid in stock options to total compensation, where stock option compensation is calculated as the per share Black-Scholes option value multiplied by the number of shares awarded;

SCOMP is the ratio of director compensation paid in stock to total compensation, where stock compensation is calculated as the number of shares granted to a firm director multiplied by the average stock price. Average stock price is the average of the beginning and end of year stock prices, following Bryan et al. (2000a);

ECOMP is the ratio of CEO compensation paid in stock options to total compensation, where stock-option compensation is calculated as the per share Black-Scholes option value multiplied by the number of shares awarded.

ESCOMP is the ratio of CEO compensation paid in stock to total compensation, where stock compensation is taken from the Standard & Poor's ExecuComp database;

OCOMP2 is the square of director stock option compensation;

SCOMP2 is the square of director stock compensation;

All other variables are defined in Table 2.



point, stock option compensation can induce a negative effect on firm performance. In the returns models, the interaction variables are never significant.<sup>23</sup>

So, while both models find a relation between director stock-based compensation and firm performance, the results of the regressions differ. While stock compensation appears to have an effect on return on assets, stock option compensation – and not stock compensation – is significant in the stock returns model. And although the interaction term OUTOCOMP indicates that stock option compensation coupled with ownership does positively affect firm performance in the ROA model, this result does not hold in the returns model.

### 6.3 Control Variables

Although no hypotheses were made with regards to the corporate governance variables, the above regressions provide some interesting information about the effect of these variables on firm performance. First, inside director stockholdings (INSIDE) appear to positively affect firm performance in the mid- and long-run. All models (Tables 4-7) yield a positive and significant coefficient on INSIDE in the +3-year and +5-year models. Outside director stock ownership (OUTSIDE) also has a positive and significant effect in the mid- and long-run models, but only when using ROA as the measure of firm performance (Tables 4 and 6). In the returns models, outside stock ownership is never significant.

BOARD is the ratio of outside to total directors. Higher proportions of this variable suggest a more independent board. As discussed previously, both the NYSE and

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<sup>23</sup> These models were run separately – first including only the variables testing for non-linearity and then including only the variables testing for interaction effects. The results obtained when running the models individually are quantitatively the same as those obtained when running the full model.

Nasdaq are pushing for more independent boards on the theory that, because they have fewer ties to management, outside directors are better monitors. However, this theory has not generally been borne out in empirical studies. This study also does nothing to advance that theory. In fact, the only time a significant coefficient appears on the BOARD variable is in the RET1 models, and then that coefficient is negative, suggesting that a more independent board has a *negative* effect on short-run performance.

While institutional shareholdings (INST) is never significant in the RET models, INST is generally negative and significant in the ROA models (Tables 4 and 6). This finding suggests that, while institutional shareholders have no effect on average stock returns, they have a negative effect on firm performance as measured by return on assets. These results are consistent with findings by Pound (1988) and Graves (1988) that institutional ownership induces managerial myopia because institutional owners tend to focus on short-term results.

Corporate governance experts advocate separating the CEO and chairman of the board positions. This paper provides weak support for that proposal. The coefficient on CHAIR (indicating CEO/chair duality) is negative and significant in the RET5 regressions suggesting that, in the long run, combining the CEO/chair position has a negative effect on stock returns. CHAIR is insignificant in all models of average return on assets.

Interestingly, while the coefficient on FIN, the proportion of financial directors to total outside directors, is insignificant in the basic ROA models, it is consistently negative and significant in every period for all of the stock returns (RET) models. Additionally, FIN is negative and significant in the ROA models testing for non-linearity

and interaction effects (Table 6) in the mid- and long-term models. While Lee et al. (1999) find that the appointment of a financial director to a firm's board is associated with positive abnormal returns; they do not examine the performance of these firms *after* the appointment. Lee et al. attribute their findings to smaller firms, suggesting that smaller firms add financial outside directors to their boards to gain access to financial markets or to obtain financial expertise. As this study examines large S&P firms, the motivation for having a financial director on the board may be different than for smaller firms. For example, firms who are performing poorly may be more likely to have a financial director (e.g., their banker) sitting on the board.

The results on the effect of director tenure on firm performance are rather weak and inconsistent. The ROA models reflect a positive and significant relation between tenure and firm performance, but only in the short-run (ROA1) models. The stock returns models generally reflect no relation between tenure and firm performance except in the basic RET3 model (Table 5), and this coefficient is *negative*. Overall, it appears that director tenure has little effect on firm performance. Finally, the coefficients on INDIV, individuals holding greater than 5% of the common stock outstanding, and NBOARDS, the average number of directorships held per director, are never significant in any regression.

## CHAPTER 7 SENSITIVITY ANALYSIS

### 7.1 Definition of Outside Directors

The models were run using alternate definitions of outside and inside directors. Initially, the definition described above in Section 4.3 was used in the regressions, defining an inside director as one who is a current or former employee, relatives of firm employees, or the firm's attorney, banker, or consultant. All other directors were considered outside directors. The basic regressions were then rerun, and inside directors were defined as current or former employees of the firm and relatives of current firm employees. Accountants, attorneys, and consultants currently engaged by the firm were considered to be outside directors. The results for all director compensation and outside director stock ownership variables were unchanged regardless of how outside directors were defined.

### 7.2 Financial Firms and Utilities

Fich and Shivdasani (2004) exclude financial firms (SIC codes 6000-6999) and utilities (SIC codes 4900-4999) from their sample on the premise that these firms operate in regulated environments and are therefore limited in the compensation alternatives they can offer to their employees. This author saw no mention of boundaries in compensating directors when coding the proxy statements. Since outside directors are not employees of the firm, their compensation may not be regulated or may be less regulated. However, to make sure that these firms are not in some way driving the results of this study, the basic regressions were rerun excluding financial firms and utilities.

Excluding financial firms and utilities from the sample reduced the sample size to 386 firms. While the R-squares dropped drastically in every model, the results of the

regressions were essentially the same. All test variables that were significant in the full sample regressions remained significant in the reduced sample regressions and in the same direction. As an additional test to make sure that financial firms and utilities are not unduly affecting the results, each of the two digit industry codes for these firms was interacted with OCOMP and SCOMP. The results of all regressions remained quantitatively the same. It does not appear that utilities or financial firms are driving the results.

### 7.3 Outlier Analysis

The basic models were rerun deleting any outlying observations based on the studentized residuals. Deleting outliers produced no significant change in results for the returns models. However, for the ROA models, deleting outliers strengthened the results of the main models. Specifically, OCOMP becomes significant and positive in all periods (OCOMP was positive, but insignificant, in Table 4) and SCOMP becomes significant and negative in ROA3 and ROA5 (SCOMP was negative, but insignificant, in Table 4).

When the model containing non-linear and interaction effects is rerun deleting outliers SCOMP2 becomes positive and significant in ROA1 (SCOMP2 was positive, but insignificant, in Table 6). For the ROA3 and ROA5 models, outlier analysis yields the same results for all test variables (SCOMP negative and significant, SCOMP2 positive and significant, and OUTOCOMP positive and significant), however, in the ROA5 model OUTSCOMP becomes negative and significant indicating that stock ownership coupled with stock compensation has a negative effect on firm performance.

Finally, when outlier analysis is performed on the interaction/non-linear returns models OCOMP2 becomes negative and significant in RET1, but OCOMP and OCOMP2, which were significant in Table 7, become insignificant in the RET3 model. For RET5, OCOMP remains positive and significant, OCOMP2 remains negative and significant, and OUTSCOMP becomes negative and significant.

#### 7.4 Alternative Definitions of the Dependent Variables

Regressions using return on assets as the dependent variable were rerun replacing ROA with an alternative measure of accounting performance, return on net assets (RONA), which excludes the effect of short-term financing decisions. Changing the dependent variable had no effect on the overall results. Model R-squares dropped slightly, but all test variables that were significant in the ROA models were also significant in the RONA models, and all signs were in the same direction.

Regressions were also run using return on equity (ROE) as the dependent variable. For the mid- and long-run regressions, the R-squares dropped considerably. The ROE3 model has an R-square of 0.0995 (as compared to 0.3731 for the ROA3 model and 0.2193 for the RET3 model) and the ROE5 model has an R-square of .0815 (as compared to 0.3704 for the ROA5 model and 0.1629 for the RET5 model). Additionally, with the exception of NBOARDS (which becomes positive and significant), all of the variables become insignificant in both the ROE3 and ROE5 models. For the ROE1 model, OUTOCOMP and OUTSCOMP both become significant and negative ( $p < .0001$ ) and OUTSIDE is significant and positive. Finally, ESCOMP is negative and CHAIR is positive in the ROE1 model. All other variables are insignificant.

## 7.5 Additional Control Variables

### 7.5.1 Meeting frequency

Vafeas (1999b) finds that firms increasing meeting frequency experience improved performance. Specifically, he finds that boards meet more often following poor firm performance and that firm performance improves for these firms in the year after they increase the frequency of board meetings. This improvement in performance continues over the two and three years after the year of abnormal meeting frequency. However, Vafeas (1999b) examines firms that increase their board meeting frequency – presumably as a response to this poor performance. Alternatively, Hempel and Fay (1994) find no relation between frequency of board meetings and firm performance.

To further examine this relation, board-meeting frequency was added to the models. Board meeting frequency was first defined as the log of the number of meetings (LMTG) and then as a dummy variable (DMTG) with the value of one for firms meeting seven or more times.<sup>24</sup> In the ROA1 model, LMTG was significant and negative ( $p = 0.0039$ ). When LMTG was replaced with DMTG, DMTG is also significant and negative ( $p = 0.0272$ ) in the ROA1 model. Contrary to Vafeas' (1999b) findings, this suggests that firms with a high frequency of board meetings have lower performance in the year following the observation year. Additionally, in the short-term returns model (RET1) both LMTG and DMTG are insignificant.

In the RET5 model, LMTG is significant and positive ( $p = 0.0429$ ) suggesting that firm performance does improve in the long run for firms who had high meeting frequency in the observation year, however, when DMTG is used in the model, it is insignificant. In all other models, both LMTG and DMTG are insignificant. Overall,

there appears to be little evidence of a relation between the number of board meetings and firm performance.

### 7.5.2 Proportion of “new” directors

While Hermalin and Weisbach (1991) and Fiegner, et al. (1996) find a positive relation between outside director tenure and firm performance, the main results of this study (discussed above) provide little evidence to support their findings. To further examine director tenure, the proportion of new outside directors to total outside directors (NEW) was included in the analysis. New outside directors are defined as directors in their first or second year as a director for the sample firm. NEW was never significant in any of the models, however, when NEW is added to the ROA1 model, the positive and significant coefficient on TENURE becomes insignificant. The results of this study provide no evidence of a relation between director tenure and firm performance.

### 7.5.3 CEO tenure

Fuerst and Kang (2004) find that CEO tenure is negatively related to both firm operating performance and market value. They speculate that, as the CEO gains more status within a firm, he “shirks” more. They also conjecture that, as the CEO gets closer to retirement, he under-invests in profitable projects. On the other hand, Agrawal and Kneiber (1996) find no relation between firm performance and CEO tenure. To further explore this relation CEO tenure (CEOTEN), measured as the number of years the CEO has been in office, was added as an independent variable to the regressions. For RET1, CEOTEN was negative and significant ( $p = 0.0997$ ). For all other regressions, the coefficient on CEO tenure was insignificant.

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<sup>24</sup> The average firm in the sample met 7.77 times and the median firm met seven times.



## 7.6 Analysis of the Data by Observation Year

The non-linear/interaction model was run separately for each year for the ROA1, RET1, and RET3 models. Table 8 shows a comparison for each of the models in full and by year. For ROA1 (Panel A) using only 1992 data, SCOMP is negative and significant and SCOMP2 is positive and significant. Although both of these coefficients were insignificant when the full sample was examined, note that these variables were also significant in the ROA3 and ROA5 models (Table 6), which use only 1992 data.<sup>25</sup> Although OUTOCOMP is significant and positive in the ROA3 and ROA5 models, it remains insignificant in the ROA1 1992 model.

For the ROA1 model using 2000 data only, several changes are noted. First, although significant when examining the 1992 data separately, now SCOMP and SCOMP2 become insignificant again. However, OCOMP now becomes negative and significant and OCOMP2 becomes positive and significant. While these variables were significant in the RET3 and RET5 (Table 7) full sample regressions, *the signs are now in the opposite direction.*

In examining the RET1 model by year (Panel B), OCOMP becomes positive and significant and OCOMP2 becomes negative and significant for the 1992 analysis. Again, both variables were insignificant when the full sample was examined, but were significant in the RET3 and RET5 analysis.<sup>26</sup> For the 2000 sample, these coefficients remain significant but, again, the signs reverse.

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<sup>25</sup> 2003 data was unavailable from Compustat at the time of this analysis.

**Table 8. Comparison of the ROA1, RET1, and RET3 Regressions on Director Stock Option Compensation, Director Stock Compensation, Interaction, and Non-linear Variables by Year**

All control variables from the previous regressions were included in the model but, for brevity, are not shown in the tables below.

**Panel A: Dependent Variable is ROA1**

Independent Variable	Full Sample	1992 Only	2000 Only
OCOMP	-0.0227 (-0.64)	0.0270 (0.46)	-0.1506*** (-2.71)
SCOMP	0.0055 (0.15)	-0.1561** (-2.43)	0.0306 (0.54)
OCOMP2	0.0386 (0.88)	0.0231 (0.23)	0.1853*** (2.93)
SCOMP2	0.0145 (0.27)	0.3687*** (2.95)	-0.0687 (-0.93)
OUTOCOMP	0.5435 (1.09)	1.6576 (1.51)	0.0144 (0.02)
OUTSCOMP	-0.1108 (-0.38)	-0.2635 (-0.84)	-0.2229 (-0.24)
Adj R <sup>2</sup>	22.2%	39.1%	17.5%
F	3.10***	3.54***	1.84***
N	500	250	250

**Panel B: Dependent Variable is RET1**

Independent Variable	Full Sample	1992 Only	2000 Only
OCOMP	0.1423 (0.87)	0.8670*** (2.73)	-0.4481** (-2.01)
SCOMP	-0.0507 (-0.30)	-0.1542 (-0.44)	0.2253 (1.02)
OCOMP2	-0.2617 (-1.27)	-1.1897** (-2.21)	0.4921* (1.91)
SCOMP2	0.0378 (0.15)	0.4146 (0.61)	-0.4271 (-1.47)
OUTOCOMP	0.7193 (0.32)	2.4972 (0.42)	0.7414 (0.20)
OUTSCOMP	0.9337 (0.71)	0.0328 (0.02)	1.0032 (0.27)
Adj R <sup>2</sup>	20.8%	28.3%	22.9%
F	2.89***	2.53***	2.16***
N	500	250	250

<sup>26</sup> The RET3 model was analyzed using 1992 and 2000 data (which was obtained from CRSP), while the RET5 model contains only 1992 observations.

**Table 8. (continued)****Panel C: Dependent Variable is RET3**

Independent Variable	Full Sample	1992 Only	2000 Only
OCOMP	0.8051** (2.05)	3.0271*** (3.12)	-0.4372 (-1.24)
SCOMP	0.1459 (0.35)	-0.3639 (-0.34)	0.7072** (2.02)
OCOMP2	-1.1637** (-2.35)	-4.3542*** (-2.65)	0.3696 (0.91)
SCOMP2	-0.2529 (-0.43)	0.3030 (0.15)	-1.0711** (-2.34)
OUTOCOMP	1.5974 (0.29)	9.4018 (0.51)	4.3780 (0.74)
OUTSCOMP	1.2148 (0.38)	-0.7829 (-0.16)	5.9334 (1.03)
Adj R <sup>2</sup>	21.9%	15.4%	37.5%
F	3.06***	1.71***	3.34***
N	500	250	250

\*\*\* Indicates statistical significance at the .01 level, two-tailed

\*\* Indicates statistical significance at the .05 level, two-tailed

\* Indicates statistical significance at the .10 level, two-tailed

Variable definitions:

ROA1, ROA3, and ROA5 are the average return on assets for the year, three years, or five years after compensation is awarded, respectively, calculated as income before tax, extraordinary items and discontinued operations divided by average total assets;

RET1, RET3, and RET5 are the average common stock returns for the fiscal year, three fiscal years, or five fiscal years, respectively, after compensation is awarded;

OCOMP is the ratio of director compensation paid in stock options to total compensation, where stock option compensation is calculated as the per share Black-Scholes option value multiplied by the number of shares awarded;

SCOMP is the ratio of director compensation paid in stock to total compensation, where stock compensation is calculated as the number of shares granted to a firm director multiplied by the average stock price. Average stock price is the average of the beginning and end of year stock prices, following Bryan et al. (2000a);

ECOMP is the ratio of CEO compensation paid in stock options to total compensation, where stock-option compensation is calculated as the per share Black-Scholes option value multiplied by the number of shares awarded.

ESCOMP is the ratio of CEO compensation paid in stock to total compensation, where stock compensation is taken from the Standard & Poor's ExecuComp database;

OCOMP2 is the square of director stock option compensation;

SCOMP2 is the square of director stock compensation;

OUTOCOMP is the interaction between outside director ownership and director stock option compensation;

OUTSCOMP is the interaction between outside director ownership and director stock compensation;

All other variables are defined in Tables 2 and 3.

Finally, in examining RET3 by year, the 1992 analysis confirms the full-sample analysis, with OCOMP remaining positive and significant and OCOMP2, negative and significant. But again, the 2000 analysis reveals a completely different pattern. In 2000, both OCOMP and OCOMP2 are insignificant, while SCOMP is positive and significant and SCOMP2, negative and significant. Up to this point, the stock compensation variables had only been significant in the ROA models and, again, the signs are in the opposite directions.

Table 3 shows a significant decrease in mean outside director stock ownership from 1992 to 2000. To test if this decrease in stock ownership resulted in the change in signs on the compensation variables in 2000 (i.e., directors reacted differently to the way in which they were compensated because of their decreased ownership) the interaction between outside director stock ownership and compensation was examined using different partitions of outside stock ownership ranging from 0.1 percent to 10 percent. Results remained quantitatively the same for all partitions. Differences in stock ownership levels do not seem to explain the change in sign on the compensation variables for the 2000 data.

The stock market and economy changed dramatically from 1992 to 2000, with the market crashing in 2000 and remaining weak through 2003. As argued previously, option compensation is thought to be more effective in inducing managers (and directors) to take risks. If so, the change in coefficients on OCOMP and OCOMP2 in 2000 could be tied to risk. Specifically, if stock option compensation induces directors to take more risks, these firms could suffer more in a market downturn. Ultimately, the results of the regressions are sensitive to the year examined.

## CHAPTER 8 SUMMARY

The above findings provide some interesting insights into the relation between director compensation and firm performance. Prior studies have only examined the existence of a stock-based compensation plan for directors rather than the value of the stock-based compensation in proportion to the total compensation package. With the exception of Fich and Shivdasani (2004), these studies have been unable to detect any relation between stock-based director compensation and firm performance. The results of this study suggest that there *is* a relation between stock-based director compensation and firm performance.

From the findings of this study, one can infer several things. First, stock-option compensation is more effective if directors are also stockholders. When director stock-based compensation is examined in tandem with director ownership, stock option compensation is positively related to firm performance in the long run. Additionally, probably due to risk factors, directors seem to be motivated differently by stock compensation than by stock option compensation.

Stock compensation generally has a negative effect on firm performance – unless directors are given enough of it. Stock option compensation appears to have the opposite effect – stock option compensation is generally positively related to firm performance. However, at some point, too much stock option compensation appears to have a negative effect on firm performance.

Experts have recommended contradicting pay methods with some suggesting that directors should be paid solely in cash, some suggesting all equity, and others falling

somewhere in between. The findings of this paper suggest that directors should be compensated in at least some equity. However, the results of this study do not provide a clear-cut solution to director-compensation puzzle. While it appears that stock-based director compensation is related to firm performance, the results of this study are not easy to generalize as the models differ in their findings. One thing seems clear – additional research is needed before we assume that stock-based director compensation is a necessity for all firms.

## REFERENCES CITED

- Agrawal, Anup and Charles R. Knoeber. 1996. Firm performance and mechanisms to control agency problems between managers and shareholders. *Journal of Financial & Quantitative Analysis*, 31: 377-397.
- \_\_\_\_\_ and \_\_\_\_\_. 1999. Outside directors, politics, and firm performance. Working paper, University of Alabama, Tuscaloosa and North Carolina State University – General.
- Antle, Rick and Abbie Smith. 1986. An empirical investigation of the relative performance evaluation of corporate executives. *Journal of Accounting Research*, 24: 1-39.
- Archer, Edward C. 2001. Equity domination in directors pay. *Corporate Governance Advisor*, 9: 1-9.
- Baber, William R., Surya N. Janakiraman, and Sok-Hyon Kang. 1996. Investment opportunities and the structure of executive compensation. *Journal of Accounting & Economics*, 21: 297-318.
- Baliga, B. Ram, R. Charles Moyer and Ramesh S. Rao. 1996. CEO duality and firm performance: What's the fuss? *Strategic Management Journal*, 17: 41-53.
- Balsam, Steven. 2002. *An Introduction to Executive Compensation*. San Diego, CA: Academic Press.
- Berle, Adolf A. and Gardiner C. Means. 1932. *The Modern Corporation and Private Property*. New York, NY: Macmillan.
- Beasley, Mark S. 1996. An Empirical Analysis of the Relation Between the Board of Director Composition and Financial Statement Fraud. *The Accounting Review*, 71: 443-465.
- Bhagat, Sanjai and Bernard Black. 2002. The non-correlation between board independence and long-term firm performance. *The Journal of Corporation Law*, 27: 231-273.
- \_\_\_\_\_ and \_\_\_\_\_. 1999. The uncertain relationship between board composition and firm performance. *Business Lawyer*, 54: 921-963.
- \_\_\_\_\_, Sanjai, Dennis C. Carey, and Charles M. Elson. 1999. Director ownership, corporate performance, and management turnover. *Business Lawyer*, 54: 885-919.

- Bhojraj, Sanjeev and Partha Sengupta. 2003. Effect of corporate governance on bond ratings and yields: The role of institutional investors and outside directors. *Journal of Business*, 76: 455-475.
- Boyd, Brian K. 1995. CEO duality and firm performance: A contingency model. *Strategic Management Journal*, 16: 301-312.
- Brick, Ivan E., Oded Palmon, and John K. Wald. 2002. CEO compensation, director compensation, and firm performance: Evidence of cronyism. Working paper, Rutgers Business School – Newark and New Brunswick.
- Brickley, James A., Ronald C. Lease, and Clifford W. Smith, Jr. 1988. Ownership structure and voting on antitakeover amendments. *Journal of Financial Economics*, 20: 267-291.
- Bryan, Stephen, Lee-Seok Hwang, April Klein, and Steven Lilien. 2000a. Compensation of outside directors: An empirical analysis of economic determinants. Working paper, Wake Forest University, Baruch College, New York University, and Baruch College.
- \_\_\_\_\_, Lee-Seok Hwang, and Steven Lilien. 2000b. CEO stock-based compensation: An empirical analysis of incentive intensity, relative mix, and economic determinants. *The Journal of Business*, 73: 661-693.
- The Business Roundtable. 2002. *Principles of Corporate Governance*. Washington, D.C.: The Business Roundtable.
- \_\_\_\_\_. 1997. *Statement on Corporate Governance*. Washington, D.C.: The Business Roundtable.
- California Public Employees Retirement System. 1998. *Corporate Governance Core Principles & Guidelines: The United States*, April 13. Sacramento, CA. California Public Employees Retirement System.
- Chaganti, Rajeswararao S., Vijay Mahajan, and Suhash Sharma. 1985. Corporate board size, composition and corporate failures in retailing industry. *Journal of Management Studies*, 22: 400-417.
- Contrada, John Della. 2002. Enron debacle example of “agency problem” within boards of directors. Newswise, January 25, 2002. Retrieved August 26, 2002 from <http://www.newswise.com/articles/2002/1/ENRON2.UBM.html>
- Core, John E., Robert W. Holthausen, and David F. Larcker. 1999. Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics*, 51: 371-406.



- Corporate Governance Center at Kennesaw State University. 2002. 21<sup>st</sup> Century Governance and Financial Reporting Issues. Retrieved September 18, 2002 from <http://ksuemail.kennesaw.edu/~dhermans/principl.htm>
- Creswell, Julie. 1998. The board's turn: More companies are linking directors' pay to performance; but is it a no-lose deal? *The Wall Street Journal*, April 9: R6.
- Crystal, Graef. S. 1991. *In search of excess: The Overcompensation of American Executives*. New York: W. W. Norton & Company.
- Daily, Catherine M. and Dan R. Dalton. 2002. The problem with equity compensation. *Journal of Business Strategy*, 23: 28-30.
- \_\_\_\_\_, S. Trevis Dalto, and Dan R. Dalton. 1999. Pay directors in stock? No. *Across the Board*, 36: 46-50.
- Dalton, Dan R. and Catherine M. Daily. 1999. Directors and shareholders as equity partners? Handle with care! *Director's Compensation*, 31: 73-79.
- \_\_\_\_\_, and Paula L. Rechner. 1989. On the antecedents of corporate severance agreements: An empirical assessment. *Journal of Business Ethics* 8: 455-462.
- Dechow, Patricia M., Richard G. Sloan, and Amy P. Sweeney. 1996. Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by the SEC. *Contemporary Accounting Research*: 1-36.
- Donaldson, Lex and James H. Davis. 1991. Stewardship theory or agency theory: CEO governance and shareholder returns. *Australian Journal of Management*, 16: 49-65.
- Drucker, Peter F. 1986. Corporate takeovers – what is to be done? *Public Interest*, 82: 3-24.
- Dunn, David J. 1987. Directors aren't doing their jobs. *Fortune*, March 16: 117-119.
- Elson, Charles M. 1997. Applying theory on directors to real world. *Pensions & Investments*, 25: 12.
- Fama, Eugene F. and Kenneth R. French. The cross-section of expected stock returns. *The Journal of Finance*, 47: 427-465.
- \_\_\_\_\_, and Michael Jensen. 1983. Separation of ownership and control. *Journal of Law and Economics*, 26: 301-325.

- Ferris, Stephen P., Murali Jagannathan and Adam C. Pritchard. 1999. Monitoring by directors with multiple board appointments: Corporate performance and the incidence of securities fraud. Working paper, University of Missouri Department of Finance and University of Michigan Law School.
- Fich, Eliezer M. and Anil Shivdasani. 2004. The impact of stock-option compensation for outside directors on firm value. Forthcoming in *The Journal of Business*.
- Fiegenger, Mark, James Nielsen, and James R. Sisson. 1996. Tenure characteristics of outside directors and financial performance: Results from the banking industry. *American Business Review*: 89-96.
- Finkelstein, Sydney and Richard A. D'Aveni. 1994. CEO duality as a double-edged sword; how boards of directors balance entrenchment avoidance and unity of command. *Academy of Management Journal*: 1079-1108.
- Firstenberg, Paul B. and Burton G. Malkiel. 1994. The twenty-first century boardroom: Who will be in charge? *Sloan Management Review* 36: 27-38.
- Fuerst, Oren and Sok-Hyon Kang. 2004. Corporate governance, expected operating performance, and pricing. *Corporate Ownership & Control*: 13-30.
- Gaver, Jennifer J. and Kenneth M. Gaver. 1993. Additional evidence on the association between the investment opportunity set and corporate financing, dividend, and compensation policies. *Journal of Accounting & Economics*, 16: 125-160.
- \_\_\_\_\_ and \_\_\_\_\_. 1995. Compensation policy and the investment opportunity set. *Financial Management*, 24: 19-32.
- Gimein, Mark, Eric Dash, Lisa Munoz, and Jessica Sung. 2002. You bought. They sold. *Fortune*, September 2: 64-70.
- Graves, Samuel B. 1988. Institutional ownership and corporate R&D in the computer industry. *Academy of Management Journal*, 31: 417-428.
- Hambrick, Donald C. and Eric M. Jackson. 2000. Outside directors with a stake: The linchpin in improving governance. *California Management Review*, 42: 108-127.
- Hempel, Paul and Charles Fay. 1994. Outside director compensation and firm performance. *Human Resource Management* 33: 111-133.
- Hermalin, Benjamin E. and Michael S. Weisbach. 1991. The effects of board composition and direct incentives on firm performance. *Financial Management*, Winter: 101-112.

- Herman, Edward S. 1981. *Corporate Control, Corporate Power*. Cambridge, New York: Cambridge University Press.
- Hutchinson, Marion. 2002. An analysis of the association between firms' investment opportunities, board composition, and firm performance. Working paper, Deakin University.
- The Institute of Internal Auditors. 2002. Recommendations for Improving Corporate Governance. Retrieved September 18, 2002 from [http://www.theiia.org/ecm/guide-pc.cfm?doc\\_id=3602](http://www.theiia.org/ecm/guide-pc.cfm?doc_id=3602).
- Jensen, Michael C. 1993. The modern industrial revolution, exit, and the failure of internal control systems. *Journal of Finance*, 48: 301-339.
- \_\_\_\_\_ and W. Meckling. 1976. Theory of the firm: managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics*, 3: 305-360.
- Kiel, Geoffrey C. and Gavin J. Nicholson. Board composition and corporate performance: how the Australian experience informs contrasting theories of corporate governance. *Corporate Governance: An International Review*: 189-203.
- Kren, Leslie and Jeffery L. Kerr. 1997. The effects of outside directors and board shareholdings on the relation between chief executive compensation and firm performance. *Accounting and Business Research*, 27: 297-309.
- Lee, Yung Sheng, Stuart Rosenstein and Jeffrey G. Wyatt. 1999. The value of financial outside directors on corporate boards. *International Review of Economics & Finance*, 8: 421-431.
- Linden, Dana Wechsler and Robert Lenzner. 1995. The cosseted director. *Forbes*, 11: 168-173.
- Lowenstein, Roger. 1996. Corporate governance's sorry history. *The Wall Street Journal*, April 18: C1.
- Lublin, Joann S. 1994. Executive pay (a special report) – Director's cut: more companies are giving stock options to outside board members in lieu of cash. *The Wall Street Journal*, April 13: R5.
- \_\_\_\_\_. 1996. Sunbeam's chief picks holder activist and close friend as outside director. *The Wall Street Journal*, September 26: B9.
- Mace, Myles L. 1971. *Directors: Myth and Reality*. Boston: Harvard Business School Press.

- Meyer, Harvey. 2000. Boards take on the heavy lifting. *The Journal of Business Strategy*, 21: 18-23.
- Morck, Randall, Andrei Shleifer and Robert W. Vishny. 1988. Management ownership and market valuation: an empirical analysis. *Journal of Financial Economics* 20: 293-315.
- Murphy, Kevin. 1985. Corporate performance and managerial remuneration: An empirical analysis. *Journal of Accounting & Economics*, 7: 11-42.
- National Association of Corporate Directors. 2000. *1999-2000 Director Compensation Survey*. Washington, D.C. : National Association of Corporate Directors.
- Nuelle, Frances. 1995. Motivating directors: The how and how much. *Chief Executive*, September: 64.
- Orwall, Bruce and Joann S. Lublin. 1998. Investors take aim at Disney board again. *The Wall Street Journal*, Feb 20: C1.
- Osteryoung, Jerome, Richard L. Constand and Donald Nest. 1992. Financial ratios in large public and small private firms. *Journal of Small Business Management*, July: 35-46.
- Pearl Meyer & Partners. 2004. *2003 Director Compensation*. New York: Pearl Meyer & Partners.
- Perry, Tod. 1999. Incentive compensation for outside directors and CEO turnover. Working paper, Arizona State University.
- Phelps, David and Patrick Kennedy. 2002. Fees, perks, stock programs for directors vary widely. *Star Tribune*, August 11. Retrieved September 6, 2002 from <http://www.startribune.com/stories/1734/3153235.html>.
- Pi, Lynne and Stephen G. Timme. 1993. Corporate control and bank efficiency. *Journal of Banking and Finance*, 17: 515-530.
- Plitch, Phyllis. 2002. Reform spurs debate over role of big shareholders on boards. *The Wall Street Journal*, September 5.
- Pomeranz, Felix. 1998. Corporate governance: opportunity for institutions. *Journal of Investing*, 7: 25-29.

- Porter, Michael E. 1992. *Capital Choices: Changing the Way America Invests in Industry*. Washington: Council on Competitiveness and Harvard Business School.
- Pound, John. 1988. Proxy contests and the efficiency of shareholder oversight. *Journal of Financial Economics*, 20: 237-265.
- Rechner, Paula L. and Dan R. Dalton. 1991. CEO duality and organizational performance: a longitudinal analysis. *Strategic Management Journal*, 12: 155-160.
- Rhoades, Dawna L., Paula L. Rechner, and Chamu Sundaramurthy. 2000. Board composition and financial performance: a meta-analysis of the influence of outside directors. *Journal of Managerial Issues*, 12: 76-91.
- Roe, Mark J. 1992. That menace, the small shareholder. *The Wall Street Journal*, May 21: A19.
- Schaff, William. 2002. Taking stock: boards of directors don't always protect shareholders' interests. *InformationWeek*, August 12: 58.
- Shleifer, Andrei and Robert W. Vishny. 1986. Large shareholders and corporate control. *The Journal of Political Economy*, 94: 461-488.
- Smith, Clifford W. and Ross L. Watts. 1982. Incentive and tax effects of executive compensation plans. *Australian Journal of Management*, 7: 139-157.
- \_\_\_\_\_ and \_\_\_\_\_. 1992. The investment opportunity set and corporate financing, dividend, and compensation policies. *Journal of Financial Economics*, 32: 263-292.
- Soloman, Deborah. 2002. Quest cuts full-year outlook; nears risky debt-ebitda ratio. *The Wall Street Journal*, Aug 9: B5.
- Springsteel, Ian. 2001. Counting their chickens. *CFO*, 17: 52-57.
- Teachers Insurance and Annuity Association – College Retirement Equities Fund. 2000. *Corporate Governance: TIAA-CREF's Policy Statement on Corporate Governance*. New York. Teachers Insurance and Annuity Association – College Retirement Equities Fund.
- Vafeas, Nikos. 1999a. Determinants of the adoption of director incentive plans. *Journal of Accounting, Auditing & Finance*: 453-474.

- Vafeas, Nikos. 1999b. Board meeting frequency and firm performance. *Journal of Financial Economics*: 113-142.
- Vafeas, Nikos. 2003. Length of board tenure and outside director independence. *Journal of Business Finance & Accounting*: 1043-1064.
- Walker, Ernest W. and J. William Petty, III. 1978. Financial differences between large and small firms. *Financial Management*, 7: 61-68.
- Westphal, James D. 1999. Collaboration in the boardroom: Behavioral and performance consequences of CEO-board social ties. *Academy of Management Journal*, 42: 7-24.
- Williams, Harold Marvin. 1979. *Power and Accountability: The Changing Role of the Corporate Board of Directors*. The 1979 Benjamin F. Fairless Memorial Lecture. Pittsburgh: Carnegie Mellon University Press.
- Yermack, David. 1996. Higher market valuation of companies with a small board of directors. *Journal of Financial Economics*, 40: 185-212.
- \_\_\_\_\_. 2003. Remuneration, retention, and reputation incentives for outside directors. Working paper, New York University.

## APPENDIX A

### **DIRECTOR COMPENSATION POLICIES: EXCERPTS TAKEN FROM PROXY STATEMENTS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION**

#### **Excerpt on director compensation from Kmart Corporation's proxy statement filed with the Securities and Exchange Commission on April 4, 2001**

How are directors compensated?

Directors who are not employees of the Company or its subsidiaries receive an annual retainer of \$50,000, with no additional amount payable for attending meetings. Fifty percent (and at the election of the director, up to 100%) of the annual retainer is paid in Common Stock in lieu of cash pursuant to the Directors Stock Plan. In addition, under the Directors Stock Plan, restricted stock units, which are distributed as shares of Common Stock upon termination of Board service, are accrued for a period of time equal to the director's Board service, but no more than ten years, in an amount equal to 50% of the annual retainer, plus, for Committee chairpersons, an amount equal to 10% of the annual retainer.

Under the Company's Deferred Compensation Plan for Non-Employee Directors and the Directors Stock Plan, a director may elect to defer all or any portion of his or her compensation for services as a director which is payable in cash or Common Stock. Under these Plans, deferred cash amounts earn interest at a rate equivalent to the ten-year U.S. Treasury Note rate plus 5%, and deferred shares of Common Stock are credited with an amount equal to any dividends payable on such shares, which are converted on a quarterly basis to additional shares.

In addition, on January 27, 2000, each of the Company's non-employee directors received an option grant pursuant to the Directors Stock Plan which entitles them to purchase 6,600 shares of Common Stock. This option vests in three equal installments on each of the first three anniversaries of the date of grant and has a per share exercise price of \$8.84.

**Excerpt on director compensation from Walt Disney Company's proxy statement filed with the Securities and Exchange Commission on January 4, 2002**

How are directors compensated?

**Base Compensation.** Each non-employee director receives an annual retainer of \$45,000 and a fee of \$1,000 per Board or Committee meeting attended. Non-employee directors may elect to receive all or part of their retainer and meeting fees in common stock or in cash or stock unit accounts. Any such elections are effective until termination of the participating director's service as a director. All of the non-employee directors other than Fr. O'Donovan are currently participating in this plan. Directors who are also employees of the Company receive no additional compensation for service as directors.

**Options.** Each non-employee director receives an automatic grant, on March 1 of each year, of options to purchase 6,000 shares of Disney common stock. For fiscal 2001, Ms. Bowers, Ms. Estrin, Ms. Van de Kamp, Fr. O'Donovan and Messrs. Bryson, Gold, Lozano, Mitchell, Murphy, Poitier, Stern, Watson and Wilson received grants under this plan. Each option grant, vesting in equal installments over five years and having a ten-year term, permits the holder to purchase shares at their fair market value on the date of grant, which was \$30.49 in the case of options granted in 2001.

**Excerpt on director compensation from Ford Motor Company's proxy statement filed with the Securities and Exchange Commission on April 16, 1999**

**COMPENSATION OF DIRECTORS**

**GOAL.** Ford wants the directors' compensation to be tied to your interests as stockholders. Accordingly, 25% (\$10,000) of a director's annual Board membership fee is deferred in the form of common stock units. This deferral, together with the restricted stock given to directors and director stock ownership goals, is part of Ford's commitment to link director and stockholder interests. These compensation programs are described below.

**FEES.** The following fees are paid to directors, other than the Chairman of the Board, who are not Ford employees:

Annual Board membership fee.....	\$40,000
Annual Committee membership fee.....	\$10,000
Attendance fee for each Board meeting.....	\$ 1,000



The Chairman of the Board is paid a Chairman fee for each calendar quarter of \$375,000, paid in restricted shares of common stock. These shares cannot be sold for one year and are subject to the conditions of the 1998 Long-Term Incentive Plan.

**DEFERRED COMPENSATION PLAN.** Under this plan, 25% of a director's annual Board membership fee must be deferred in common stock units. Directors also can choose to have the payment of all or some of the remainder of their fees deferred in the form of cash and/or common stock units. Each common stock unit is equal in value to a share of common stock and is ultimately paid in cash. These common stock units generate Dividend Equivalents in the form of additional common stock units. These units are credited to the directors' accounts on the date common stock cash dividends are paid. Any fees deferred in cash are held in the general funds of the Company. Interest on fees deferred in cash is credited semiannually to the directors' accounts at the then-current U.S. Treasury Bill rate plus 0.75%. In general, deferred amounts are not paid until after the director retires from the Board. The amounts are then paid, at the director's option, either in a lump sum or in annual installments over a period of up to ten years.

**RESTRICTED STOCK PLAN.** Nonemployee directors also receive restricted shares of common stock. Each nonemployee director who has served for at least six months receives 2,000 shares of common stock subject to restrictions on sale. In general, the restrictions expire for 20% of the shares each year following the year of the grant. Each nonemployee director receives an additional 2,000 shares on the same terms when the restrictions on all of the prior 2,000 shares end.

**STOCK OWNERSHIP GOALS.** To further link director and stockholder interests, Ford established stock ownership goals for nonemployee directors in 1995. Each nonemployee director has a goal to own common stock equal in value to five times the sum of the director's annual Board and Committee fees within five years.

**LIFE INSURANCE.** Ford provides nonemployee directors with \$200,000 of life insurance and \$500,000 of accidental death or dismemberment coverage. The life insurance coverage continues after the director retires from the Board if the director is at least age 55 and has served for at least five years. A director who retires from the Board after age 70, or, with Board approval, after age 55, and who has served for at least five years may elect to have the life insurance reduced to \$100,000 and receive \$15,000 a year for life. The accidental death or dismemberment coverage may, at the director's expense, be supplemented up to an additional \$500,000 and ends when the director retires from the Board.

**MATCHING GIFT PROGRAM.** Nonemployee directors may give up to \$25,000 per year to certain tax-exempt organizations under the Ford Fund Matching Gift Program. For each dollar given, the Ford Motor Company Fund contributes two dollars.

**Excerpt taken from General Motors Corporation's proxy statement filed with the Securities and Exchange Commission on April 18, 2000**

**DIRECTOR COMPENSATION**

Only non-employee directors receive payment for serving on the Board. Since Messrs. Smith, Pearce, and Wagoner are employees of the Corporation, they are not compensated as directors. Non-employee directors are not eligible to participate in the executive incentive program, Savings-Stock Purchase Program, or any of the Retirement Programs for General Motors employees. Other than as described in this section, there are no separate benefit plans for directors.

Compensation paid to non-employee directors is as follows:

- \* Annual retainer -- \$ 120,000 (a)
- \* Retainer for Committee chair -- \$ 5,000
  
- \* Per diem for special services -- \$ 1,000

(a) Under the General Motors Compensation Plan for Non-Employee Directors (the "Plan"), non-employee directors are required to defer \$60,000 of the above annual retainer in restricted units of GM common stocks or stock options valued at \$60,000. In addition, under the Plan directors may also elect to defer all or a portion of the remaining compensation in cash or units of GM common stocks.

Restricted Stock Units under the Plan are credited with dividend equivalents in the form of additional stock units of the same class. Amounts deferred under the Plan are generally not available until after the director retires from the Board at age 70. After the director leaves the Board, payment under the Plan is made in cash based on the number of stock units and the market price of the related GM common stocks at the time of payment.