

AN EMPIRICAL EXAMINATION OF CEO COMPENSATION  
AND INTERNAL REVENUE CODE SECTION 162(m)

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Submitted to the Graduate Faculty of  
The Joseph M. Katz Graduate School of Business in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy

University of Pittsburgh

2014

UNIVERSITY OF PITTSBURGH

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# AN EMPIRICAL EXAMINATION OF CEO COMPENSATION AND INTERNAL REVENUE CODE SECTION 162(m)

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University of Pittsburgh, 2014

Congress enacted §162(m) based upon the assumption that CEOs controlled their own compensation design. Compliance with §162(m) preserves the firm's tax deduction for CEO compensation, but limits CEO salary and generally increases the use of risky incentives. Therefore, *ceteris paribus*, I predict that CEOs prefer and attempt to use their influence to secure §162(m) noncompliant compensation. To evaluate how CEOs influence firm §162(m) noncompliance, I examine the factors related to firm §162(m) noncompliance, CEO compensation design trends at firms affected by §162(m), and how the SEC's 2003 independence governance requirements and 2006 compensation disclosure mandate affected the CEO power-§162(m) noncompliance relation.

First, I find that CEO power is positively related to firm §162(m) noncompliance behavior, suggesting that CEOs use their influence to increase firm noncompliance. However, I also find that noncompliance with §162(m) is generally related to the economic determinants of CEO compensation design in a manner consistent with agency theory, and do not find consistent evidence that noncompliance is decreasing in the quality of firm governance. Therefore, the evidence does not suggest that §162(m) noncompliance is systematically the consequence of inefficient CEO influence enabled by poor quality governance, consistent with managerial power theory. I find that firm §162(m) noncompliance behavior is generally explained by agency theory.

Second, I document that CEO salaries at firms affected by §162(m) tended to remain relatively flat with evidence of an informal \$1 million benchmark and decreased as a percentage of total compensation. Further, the 2003 SEC board independence regulation weakened the positive relation between CEO power and CEO salary in excess of \$1 million, noncompliant with §162(m), for those firms with lower pre-2003 independent governance processes. These findings suggest that §162(m) weakened CEO influence over salary levels.

Third, I provide evidence that the 2006 disclosure mandate strengthened the CEO power-§162(m) noncompliance relation, instead of weakening it as arguably intended. In addition, I do not find evidence that §162(m) slowed the growth of CEO total compensation levels or increased its relation to firm performance from 1994 through 2012. These findings suggest that that §162(m) did not reduce CEO influence over their total compensation arrangements.

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## PREFACE

I thank all of the members of my dissertation committee, Steven Balsam, Mei Feng, Nandu Nagarajan and Dhinu Srinivasan. Each member has a valuable set of skills that they graciously shared throughout this project and I thank them. However, I especially thank the chair of my committee, Harry Evans, for his great generosity with his time, wisdom, and invaluable advice with this project and my career in general.

This paper benefitted from the helpful comments of Chan Li, Willie Choi, Vicky Hoffmann, and an anonymous attorney who provided me with current, practical insight. The project also benefitted from the helpful comments of workshop participants at the University of Pittsburgh, Youngstown State University, Duquesne University, Pennsylvania State University Behrend, Robert Morris University, and the University of Akron.

I thank John Graham at Duke University for providing his simulated marginal tax rate. I thank Charles Boynton of the Internal Revenue Service for providing me with valuable guidance at the start of my doctoral program and this project.

I thank Elise Boyas for providing so much help with the teaching that I was able to complete this dissertation. I thank Carrie Woods for her help, support, and encouragement since I entered the doctoral program.

The most important thank you goes to my family, my husband Ron and sons Joe, Nick and Ronnie. From not thinking that I was crazy for returning to school to providing me with tech support at any hour, I would not have made it through without your support, encouragement, and ability to drive thru. I love all of you.

## 1.0 INTRODUCTION

### 1.1 INTRODUCTION

The Revenue Act of 1894 established the principle of taxing corporations separate from their owners. Although this particular act was ruled unconstitutional, the principle survived. In 1909, Congress passed a new constitutional method of taxing corporate income and established the federal corporate income tax.<sup>1</sup> Since then, Congress has enacted various tax provisions designed to motivate selected behavior through the use of tax incentives, e.g. research and development credits and opportunity zone credits.

In the early 1990s, believing that powerful CEOs received inefficient, *excessive* compensation arrangements, Congress considered limiting CEO compensation levels (Rose and Wolfram, 2002) or limiting the CEO compensation tax deduction without regard to firm size or performance (Murphy, 2011). Instead, in 1993 Congress enacted Internal Revenue Code §162(m), which does not mandate compensation practices, but provides a tax incentive to firms to increase the link between executive pay and firm performance (Balsam and Ryan, 1996). Compliance with §162(m) generally requires firms to increase their use of incentive compensation, which increases the risk imposed upon the CEO. As a result, §162(m) presents firms with a CEO compensation design decision as to whether to comply with §162(m) to preserve the CEO compensation tax deduction and rely upon risky incentives to satisfy the CEO's reservation utility or to elect some level of noncompliance and sacrifice some tax deduction.

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<sup>1</sup>Jack Taylor for Beth Kilss, Chief, Statistical Section, Internal Revenue Service, *Corporation Income Tax Brackets and Rates, 1909-2002, Data Release*; [www.irs.gov/pub/irs-soi/02corate.pdf](http://www.irs.gov/pub/irs-soi/02corate.pdf)

CEO compensation design is influenced by various factors, including the CEO's preferences (Gibbons, 2005). It is generally accepted that CEOs have some influence over their compensation design, although there is no consensus as to whether the relation between CEO power and compensation design is generally efficient (Core et al., 2005) or excessive (Bebchuk and Fried, 2004). Section 162(m) noncompliance is a compensation design decision because compliance limits fixed salary and increases the use of risky incentives. All else being equal, I predict that risk averse CEOs prefer that firms select §162(m) noncompliance. As a result, CEOs will likely attempt to influence their compensation design to secure noncompliant compensation and their ability to do so should increase with their individual power. Because §162(m) presents firms with a compensation design decision that is likely related to CEO power, I examine firm §162(m) noncompliance behavior, focusing on its relation to CEO power.

Congress enacted §162(m) to affect CEO compensation design and reduce excessive compensation (Balsam and Ryan, 2007). During his presidential campaign, Bill Clinton attacked "overpaid" executives and designated pay above \$1 million as clearly excessive (Rose and Wolfram, 2002). Therefore, firms which limit executive total annual compensation to \$1 million or less are unaffected by §162(m). Public firms which pay an executive<sup>2</sup> annual compensation in excess of \$1 million are subject to and affected by §162(m)'s tax deduction provisions. When calculating their federal taxable income, firms cannot deduct compensation which is noncompliant with §162(m). Since 1994, firms have paid noncompliant<sup>3</sup> compensation every year. From 1994 through 2012, I estimate

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<sup>2</sup> Initially, §162(m) applied to the CEO and the next four highest paid executives. On June 5, 2007, the IRS released Notice 2007-49 to clarify §162(m) in recognition of the 2006 SEC "amended disclosure rules." Per Notice 2007-49 for fiscal years ending on or after December 15, 2006, the CFO is excluded from §162(m) and the CEO and the next three highest paid executives are covered by §162(m).

<sup>3</sup> I define §162(m) *noncompliant* compensation as the sum of the following items, to the extent their payment exceeds \$1 million in a fiscal year: salary, any miscellaneous compensation, non-performance based plan cash awards, and restricted stock awards.

that the 2,872 Execucomp firms paid their executives an estimated \$81.7 billion of noncompliant compensation generating an estimated \$15.8 billion in extra federal tax expense,<sup>4</sup> as shown in Table 1. Of this total, firms paid \$2.2 billion of noncompliant salary, the portion of annual salary in excess of \$1 million. The total annual noncompliant compensation and extra federal corporate income tax expense have increased from 1994 through 2012, as shown in Figures 1 and 2, respectively. Because noncompliant CEO compensation is fundamentally nonperformance-based annual compensation in excess of \$1 million paid to a public firm CEO without the benefit of a tax deduction,<sup>5</sup> it is important to evaluate the factors which influence noncompliant compensation to understand CEO compensation design and the influence of CEOs on these decisions.

[Insert Table 1 here]

[Insert Figure 1 here]

[Insert Figure 2 here]

In Chapter 2, I examine the factors which influence §162(m) noncompliant CEO compensation from 1998 through 2011 to evaluate the extent to which the motivation of CEO compensation design is shareholder welfare maximization as argued by agency theory versus CEO welfare maximization to the detriment of shareholders as argued by managerial power theory. Compensation design defines the tradeoff between fixed salary and incentives, influenced by firm and CEO characteristics, and compliance with §162(m) influences this allocation.

Agency theory and managerial power theory are two of the primary theories proposed to explain CEO compensation design practices. Agency theory predicts that CEO compensation design

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<sup>4</sup> I calculate the tax cost by multiplying the total annual noncompliant compensation paid by the average annual simulated corporate income tax rate of this dissertation's sample set discussed in Chapter 2, Section 2.5.

<sup>5</sup> In addition to the performance-based standard, compensation can be classified as noncompliant if the firm fails to follow certain procedural requirements discussed in greater detail in Chapter 1, Section 1.2.

maximizes shareholder utility, subject to the CEO's reservation utility and incentive compatibility constraints (Holmstrom, 1979). According to agency theory, noncompliance with §162(m) should be influenced by economic factors, such as firm risk, firm size, and firm performance. Managerial power theory proposes that weak governance allows powerful CEOs to secure excess rents and to inefficiently maximize their own welfare, subject primarily to the shareholders' outrage constraint (Bebchuk and Fried, 2004). According to Bebchuk et al. (2002), CEOs camouflage their rent extraction to avoid a negative shareholder response, creating compensation design inefficiency such that the shareholders' losses will exceed the rents extracted by managers. To the extent that managerial power theory explains CEO compensation design, noncompliance behavior should be increasing with CEO power and poor quality governance and may demonstrate less relation with the economic factors that should influence compensation design. Therefore, an examination of the factors associated with noncompliance should provide evidence concerning the relative importance of agency theory and managerial power theory in explaining executive compensation design.

Chapter 2 examines the relation between §162(m) noncompliance and firm, CEO and governance factors and provides evidence generally consistent with agency theory predictions. To examine the influence of firm characteristics as economic determinants of CEO compensation design, I examine the relation of §162(m) noncompliance with firm risk, size and performance. Consistent with agency theory, I predict and find that firm noncompliance behavior generally increases with firm risk in *Hypothesis I*, consistently increases with firm size in *Hypothesis II*, and, with limited evidence, decreases with firm performance in *Hypothesis III*. All three findings support the proposition that firms design their compensation arrangements to maximize shareholder welfare as predicted by agency theory.

I predict that CEOs prefer noncompliant compensation, use their influence to secure noncompliant compensation, and their success in doing so increases with their power. However, a

positive relation between CEO power and noncompliance does not necessarily demonstrate that CEOs inefficiently influence their compensation design. A powerful, yet valuable CEO will likely negotiate a lucrative compensation arrangement to satisfy a high reservation utility. Managerial power theory predicts that excessive, suboptimal CEO influence will be more likely given poor quality firm governance (Bebchuk and Fried, 2004). Therefore, both CEO power and poor quality governance should demonstrate a positive relation with noncompliance if managerial power theory better explains CEO compensation design. Based upon the many documented cases of inefficient, excessive compensation arrangements (Bebchuk and Fried, 2004), I predict that §162(m) noncompliance decreases in the quality of corporate governance.

Chapter 2 examines both the relation between §162(m) noncompliance and CEO power in *Hypothesis IV* and the relation between §162(m) noncompliance and the quality of governance in *Hypothesis V*. Consistent with *Hypothesis IV*, I provide strong evidence that §162(m) noncompliance increases with CEO power. However, my study does not provide consistent evidence that §162(m) noncompliance increases with poor quality governance and therefore does not support *Hypothesis V*. Measures of governance quality, including executive entrenchment, board interlock and board independence, fail to demonstrate a consistent relation with noncompliance and therefore do not support my prediction. I find that noncompliance increases with board size. Because prior literature traditionally predicts that the quality of governance is decreasing in board size, this finding apparently provides initial support for *Hypothesis V*. However, there is recent evidence that board size may not be a good measure of poor governance, particularly for larger firms (Coles et al., 2008), which are generally those affected by §162(m). Therefore, my results do not document a consistent relation between the quality of corporate governance and firm §162(m) noncompliance behavior, and thereby do not support the prediction that noncompliance decreases in the quality of governance.

In summary, Chapter 2 provides evidence that CEO compensation design is generally consistent with shareholder wealth maximization as predicted by agency theory. I find that firm factors, which are economic determinants of compensation, are related to §162(m) noncompliance behavior in a manner consistent with agency theory. I provide strong evidence that noncompliance is positively related to CEO power, but I do not provide consistent evidence of a relation between §162(m) noncompliance and the quality of corporate governance that supports managerial power theory. Because this study provides evidence that §162(m) noncompliance is related to the economic determinants of CEO compensation and mixed evidence relating noncompliance to the quality of governance, there is generally insufficient evidence to conclude that noncompliance behavior is the consequence of poor governance enabling powerful CEOs to control their compensation design as predicted by managerial power theory. Therefore, although there are certainly individual instances of CEO compensation excesses, agency theory appears to offer a more complete description than managerial power theory of the relation of §162(m) and CEO compensation design practices.

Chapter 2 provides evidence of a positive relation between CEO power and firm §162(m) noncompliance behavior over the period 1998 through 2011. However, since the passage of §162(m), two important regulatory changes have affected the environment in which firms make §162(m) noncompliance decisions. The SEC provided SEC Release No. 34-48745 in 2003, which increased board independence requirements, and SEC Release No. 33-8732A in 2006, which increased compensation disclosure requirements. Both regulations were designed to limit the CEO's control over his or her own compensation by expanding the independence and disclosure requirements associated with §162(m). Therefore, in Chapter 3, I examine the extent to which the two SEC regulations influenced the relation between CEO power and firm §162(m) noncompliance behavior. To empirically examine the changing



influence of CEO power in my primary analysis, I use principal component analysis to form a single measure of CEO power.<sup>6</sup>

To better understand CEO compensation design under §162(m) and the influence of CEOs, Chapter 3 also examines CEO compensation design trends for those firms affected by §162(m) from 1994 through 2012. To the extent CEOs influence their own compensation, they will likely use their influence to increase their total compensation levels, increase the fixed salary component, and shield their variable compensation from risk and performance variance. I find that over the 1994 to 2012 period CEO total compensation levels increased, but CEO salary levels stagnated. As a consequence, as a percentage of total compensation, CEO salary declined steadily since 1994. The evidence suggests that §162(m) affected salary levels, establishing \$1 million as an implicit benchmark for CEO annual salary.

While there is some evidence that the relation between CEO compensation and accounting performance increased from 1997 through 2012, the overall evidence concerning CEO pay-for-performance sensitivity is mixed over this period. In summary, the evidence suggests that §162(m) affected CEO salary levels, limiting its growth and minimizing the noncompliant component that is salary in excess of \$1 million, but did not limit the growth of CEO total compensation levels, and at most increased modestly its sensitivity to firm performance. Based upon my descriptive compensation trends analyses, my findings suggest that §162(m) limited CEO influence over salary levels, but did not limit CEO influence over total compensation levels nor did it sharply increase the sensitivity of CEO compensation to firm performance.

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<sup>6</sup> The single measure of CEO power is *CEO FACTOR*. I define *CEO FACTOR* in Section 3.3.1. and provide its loadings and descriptive statistics in Section 3.4.

Issued by the SEC in 2003, Release No. 34-48745 mandated greater independence requirements for a firms' boards of directors and its compensation and nomination committees. CEOs exert some influence over directors and generally have more influence over insider directors (Core et al., 2005). If independent directors design CEO compensation arrangements, the contracts are more likely to be the products of "arm's-length" arrangements over which CEOs have less control (Bebchuk and Fried, 2004; Core et al., 2005). Because the 2003 regulation increased the mandated level of board independence, the SEC regulation should weaken CEO influence over the Board of Directors and compensation design, thereby weakening the relation between CEO power and §162(m) noncompliance.

I predict that the 2003 SEC independent governance regulation weakened the relation between CEO power and §162(m) noncompliance in *Hypothesis VI*. I empirically examine the relation and provide some evidence that the regulation weakened the positive relation between CEO power and §162(m) noncompliant salary at firms with lower pre-2003 board independence. First, I empirically examine all §162(m) affected firms and find no evidence that the 2003 regulation changed the relation between CEO power and firm noncompliance. Second, based upon the assumption that the regulation should have the greatest effect on firms with lower pre-2003 board independence, I divide my sample into two groups, *lower* and *higher* pre-2003 board independence firms,<sup>7</sup> and examine the two groups separately. I find that for those firms with lower pre-2003 board independence, the 2003 regulation weakened the positive relation between CEO power and §162(m) noncompliant salary, which is annual salary in excess of the \$1 million benchmark. However, I find no consistent evidence that the 2003 regulation changed

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<sup>7</sup> I divided firms into *lower* and *higher* board independent firms based upon *BOARD FACTOR*, a general measure of independent governance. I use principal component analysis to construct *BOARD FACTOR* from three proxies of board independence. I define *BOARD FACTOR* in Section 3.3.2. and provide its loadings and descriptive statistics in Section 3.6.2.

the relation between CEO power and §162(m) noncompliant CEO total compensation or §162(m) noncompliance in general.

Issued by the SEC in 2006, SEC Release No. 33-8732A was the first major overhaul of compensation disclosures since the passage of §162(m), significantly increasing the executive compensation disclosure requirements (Robinson et al., 2011). Section 162(m) compliance requires that shareholders vote *ex ante* to authorize incentive performance goals, but does not mandate that firms provide specific, quantitative performance requirements.<sup>8</sup> Following the passage of §162(m), it was common practice for firms to provide lower risk incentives to minimize the costly imposition of risk from §162(m) compliant incentives while satisfying the federal income tax deduction requirements for CEO compensation (Murphy, 2012). These lower risk CEO incentives were designed to reserve board discretion over CEO compensation decisions while still complying with §162(m) deductibility requirements, a practice which generally weakens the link between CEO compensation and firm performance. Prior literature has documented that increased compensation disclosure increases the link between compensation and firm performance, commonly referred to as sensitivity. (Craighead et al., 2004; Ferri and Maber, 2013). Because the 2006 regulations increased the mandatory CEO compensation disclosure requirements, the 2006 regulation may have increased the sensitivity of §162(m) compliant incentives to firm performance, which should limit a firm's ability to provide the CEO with low risk compliant performance goals.

Assuming the 2006 disclosure requirements limited the use of the lower risk but still compliant CEO incentives, without a corresponding increased risk premium, CEO expected utility from compliant incentives would have decreased following the 2006 regulatory changes. That is, following 2006, firms would have to provide higher risk incentives to remain compliant or increase their use of noncompliant

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<sup>8</sup> 26 CFR §1.162-27(e)(4)(iii)(A)

compensation to avoid the costly imposition of additional risk. Because I assume that CEOs prefer noncompliant compensation, I predict that CEOs have greater incentive to use their power to secure noncompliant compensation following 2006.

In *Hypothesis VII*, I predict that the 2006 SEC compensation disclosure regulation strengthened the relation between CEO power and §162(m) noncompliance. I empirically examine the relation and find evidence supporting the prediction. Because I find no evidence that the CEO power-noncompliance relation weakened, including the relation between CEO power and noncompliant salary, the evidence suggests that the increased disclosures did not weaken the ability of CEOs to use their power to secure noncompliant compensation. This finding is also consistent with my assumption that CEOs prefer noncompliant compensation.

In summary, Chapter 3 provides descriptive evidence that §162(m) affected CEO salary levels, providing a \$1 million salary benchmark so that salary as a percentage of CEO total compensation declined from 1994 through 2012. Second, Chapter 3 provides evidence that the 2003 enhanced independence regulation weakened the positive relations between CEO power and §162(m) noncompliant salary for firms with lower pre-2003 board independence. Finally, I find that the 2006 disclosure mandates strengthened the relation between CEO power and noncompliance. The 2006 disclosures did not reduce noncompliance behavior nor reduce the influence of CEOs on their total annual compensation arrangements.

In conclusion, I extend prior literature by conducting a long-term, empirical examination of firm §162(m) noncompliance behavior, focusing on the relation between CEO power and §162(m) noncompliance. I find that CEO power is positively related to §162(m) noncompliance, suggesting that CEOs influence firm noncompliance and their own compensation design. However, I find no consistent evidence that the CEO power-§162(m) noncompliance relation is the result of poor quality governance.

I find that firm §162(m) noncompliance behavior is related to the economic determinants of compensation design in a manner that maximizes shareholder welfare and better explained by agency theory relative to managerial power theory. If noncompliance was systematically the consequence of inefficient, excessive CEO influence, the 2006 increased CEO compensation disclosure requirements should have reduced the suboptimal use of noncompliant compensation and the relation between CEO power and noncompliance. However, noncompliance increased in 2006 and I find no indication that the 2006 disclosures weakened the CEO power-§162(m) noncompliance relation. Instead, I find evidence that the relation strengthened. As a whole, my findings suggest that the use of noncompliant compensation is not necessarily the consequence of poor quality governance, but may well be optimal for shareholders in many cases.

Further, I provide descriptive evidence that §162(m) affected CEO compensation design by affecting CEO salary levels and reducing salary as a percentage of total compensation. The evidence suggests that §162(m) established \$1 million as an implicit benchmark for CEO salary and limited CEO power over salary levels in excess of the benchmark. The 2003 regulation further limited CEO power relating to noncompliant salary for those firms with lower pre-2003 board independence, which provides empirical evidence that increased independent processes improves the quality of governance. However, I find no evidence that §162(m) affected CEO total compensation levels or sensitivity to firm performance. Therefore, in conjunction with my finding that CEO power is positively related to §162(m) noncompliance, I cannot conclude that §162(m) weakened CEO influence over their total annual compensation design from 1994 through 2012.

Next, Section 1.2 provides details of the history and provisions of §162(m). In Chapter 2, I examine the §162(m) noncompliance decision. In Chapter 3, I examine CEO compensation design trends

from 1994 through 2012 and the influence of the 2003 and 2006 SEC regulations on the relation between CEO power and firm noncompliance behavior. I conclude in Chapter 4.

## 1.2 INTERNAL REVENUE CODE SECTION 162(m)

It has been estimated that twenty percent of the 75 wealthiest people of *all time* were a product of the U.S. 19<sup>th</sup> Century Industrial Revolution.<sup>9</sup> The private wealth generated in this era was extraordinary. Perhaps not coincidentally, this era preceded both the 1913 passage of the 16<sup>th</sup> Amendment, which authorized federal income taxes, and the 1934 creation of the U.S. Securities and Exchange Commission, the S.E.C., which mandated executive compensation disclosures.

Since 1934, the SEC has mandated that publicly traded firms disclose CEO compensation levels, which is likely to result in evaluation and comparison of compensation levels. Although the lack of computer records limits access to the pre-1992 compensation data, prior studies have documented a general history of CEO compensation levels since 1934. Adjusting for inflation, average CEO compensation in the period 1934-1938 exceeded average CEO compensation in the period 1974-1986 (Jensen and Murphy, 1990). CEO compensation declined sharply during World War II and slowly in the late 1940s (Fryman and Jenter, 2010). Through the 1950s, '60s and part of the '70s, CEO compensation grew, but slowly, averaging 0.8% growth per year from 1950 to 1975 (Fryman and Jenter, 2010), a growth rate outpaced by the average worker.<sup>10</sup> Starting in the mid-1970s, CEO compensation growth accelerated, both in absolute and relative terms (Fryman and Jenter, 2010). From 1981 to 1991, CEO compensation increased by an average of 212%. In comparison, during the 1980s, factory workers

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<sup>9</sup> The top two are (1) John D. Rockefeller and (2) Andrew Carnegie. Cleopatra is 21st. Outliers: The Story of Success by Malcom Gladwell (2008)

<sup>10</sup> Calvin, Geoffrey, Ann Harrington, and Paola Hjelt (June 25, 2001) The Great CEO Pay Heist Executive Compensation has Become Highway Robbery, *Fortune*

experienced a 53% increase in compensation and the earnings per share on the Standard and Poor's 500 Index grew by 78%.<sup>11</sup> During the 1980s, the growth rate of CEO compensation outpaced most high earners, except for a few "superstars" such as major league baseball players (Hall and Liebman, 2000).

Since the 1950s, the press, the general public, politicians, and academic researchers questioned the legitimacy of CEO pay (Core and Guay, 2010). There were proposals to limit executive pay in the 1980s (Rose and Wolfram, 2002). By the early 1990s, the public sentiment against "excessive" compensation had grown, motivating congressional action (Balsam and Ryan, 1996). The final trigger for §162(m) appears to have been President George H.W. Bush's trip to Japan with U.S. automobile executives in 1991 (Rose and Wolfram, 2002; Donahue, 2008). The sharp contrast between U.S. and Japanese executives caused an international outrage as the media coverage focused on the dramatic comparison of the compensation of the American executives versus the significantly lower paid Japanese executives (Birmbaum, 1992; Cowan, 1992).<sup>12</sup> Congress reacted by enacting §162(m) to modify corporate behavior and increase the link between CEO compensation and firm performance, not to raise revenue (Perry and Zenner, 2001).

Internal Revenue Code §162(a) is a broad statute which authorizes a federal income tax deduction for reasonable and necessary business expenses, including executive compensation. Section 162(m) supersedes §162(a) and prescribes new requirements for publicly traded firms to deduct CEO compensation as a federal income tax expense. By this modification to the tax code, Congress hoped to increase the link between compensation and performance and reduce excessive compensation as reflected in the following statement of the House Ways and Means Committee:

Recently, the amount of compensation received by corporate executives has been the subject of scrutiny and criticism. The committee believes that excessive compensation will be reduced if the deduction for compensation (other than performance-based

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<sup>11</sup> Byrne, J. A. (May 6, 1991) The flap over executive pay, *Business Week* p. 90

<sup>12</sup> In light of the recent automobile bail out scandals, this story becomes rather ironic.

compensation) paid to the top executives of publicly held corporations is limited to \$1 million per year.<sup>13</sup>

President Clinton signed §162(m) into law on August 10, 1993 as part of the Omnibus Budget and Reconciliation Act (OBRA) of 1993 and it became effective for tax years beginning on or after January, 1, 1994.

Section 162(m) authorizes a deduction for the first \$1 million of CEO compensation, but executive compensation over \$1 million is deductible only if two primary requirements are satisfied. First, the firm's compensation committee, comprised of independent directors, must obtain shareholder pre-approval of the executive bonus plan. The bonus plan must specify the incentives that are to be paid "solely on account of the attainment of ... pre-established, objective performance goals," based upon an outcome which is "substantially uncertain."<sup>14</sup> The second requirement is that the compensation committee must certify that the firm satisfied the performance goals. By definition, all salary in excess of \$1 million is nondeductible as a federal income tax expense. Any bonus paid to the CEO pursuant to the pre-approved executive compensation plan is deductible for tax purposes, while any bonus paid outside of the plan is nondeductible to the extent that total executive compensation exceeds \$1 million. If the board fails to follow the statutory bonus qualification requirements, all cash compensation and restricted stock grants in excess of \$1 million are non-tax deductible. I define *noncompliant compensation* as all CEO annual compensation that is nontax deductible pursuant to the requirements provided by §162(m). To estimate *§162(m) noncompliant compensation* for the purposes of this dissertation, I define *noncompliant compensation* as the sum of the following items, to the extent their payment exceeds \$1 million, salary, non-incentive plan based cash bonus, any separately detailed miscellaneous compensation components, and restricted stock awards.

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<sup>13</sup> 1993 U. S. Code Congressional and Administrative News 877

<sup>14</sup> 26 CFR §1.162-27(e)(2)(i)



To illustrate the application of §162(m), Table 2 presents scenarios for three CEOs who receive the same total annual cash compensation of \$8.5 million. CEO#1 of Firm#1 receives compensation which fully complies with §162(m)'s deduction requirements. His salary is limited to \$1 million and his \$7.5 million bonus is fully §162(m)-qualified. Therefore, assuming a flat corporate income tax rate of 35%, Firm#1 can deduct all of CEO#1's \$8.5 million cash compensation as a tax expense, which reduces Firm#1's federal income tax expense by \$2,975,000 ( $\$8.5 \text{ million} \times 35\%$ ). CEO#2 of Firm#2 receives a §162(m)-qualified \$7 million bonus, but his \$1.5 million salary exceeds the \$1 million maximum. Section 162(m) disallows a tax deduction for CEO#2's \$500,000 of salary in excess of \$1 million. Firm#2's CEO compensation tax deduction is therefore limited to \$8 million, which reduces Firm#2's federal income tax expense by \$2.8 million ( $\$8 \text{ million} \times 35\%$ ). CEO#3 of Firm#3 is paid a salary of \$750,000 and a non-§162(m)-qualified bonus of \$7.75 million. CEO#3's cash compensation in excess of \$1 million is nondeductible under §162(m). Firm#3 can deduct only \$1 million of the \$8.5 million total CEO compensation as a tax deduction, which reduces Firm#3's federal income tax expense by only \$350,000 ( $\$1 \text{ million} \times 35\%$ ).

[Insert Table 2 Here]

*Ceteris paribus*, Firm#1 has the greatest book income of the three firms as a direct result of §162(m). Relative to Firm#1, Firm#2 will pay an additional \$175,000 ( $\$2,975,000 - \$2,800,000$ ) of federal income tax expense, reducing net book income by \$175,000. Firm#3 will pay an additional \$2,625,000 ( $\$2,975,000 - \$350,000$ ) of federal income tax expense relative to Firm#1, reducing Firm#3's net book income by \$2,625,000.

Subject to minimal requirements, stock options and stock appreciation rights are deemed to meet the "pre-established objective performance requirement" of §162(m) by definition and qualify as deductible compensation for federal income tax purposes (Kautter, 1994). The options must be granted

by an independent compensation committee and the executive compensation plan must state a maximum number of shares which can be exercised or granted during a specified period.<sup>15</sup> If the option price equals the market value on the date of the option grant, the increase in value is performance based.

I next examine the factors which influence firms' §162(m) noncompliance decisions from 1998 through 2011 in Chapter 2 and further examine the relation between CEO power and §162(m) noncompliance in Chapter 3. Chapter 3 also examines CEO compensation design trends from 1994 through 2012 and how two SEC regulations influenced the CEO power-firm §162(m) noncompliance relation.

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<sup>15</sup> 26 CFR §1.162-27(e)(2)(iv)

## 2.0 AN EXAMINATION OF §162(m) NONCOMPLIANCE

### 2.1 INTRODUCTION

Internal Revenue Code Section 162(m) defines procedures for qualifying the CEO compensation tax deduction for publicly traded firms. The resulting incentive for firms to preserve the tax deduction was intended to result in increased CEO compensation sensitivity to firm performance and to also reduce “excessive” CEO compensation levels (Perry and Zenner, 2001; Balsam and Ryan, 2008). To increase sensitivity, compliance with §162(m) generally requires firms to increase their use of incentive compensation, which increases the risk imposed upon the CEO (Balsam and Ryan, 1996). However, §162(m) does not mandate CEO compensation design and firms may elect some level of noncompliance with the procedures provided in §162(m), which results in firms sacrificing some tax deduction. Given that noncompliance is optional, each affected firm must *select compliance with §162(m) and rely upon inherently risky incentives to satisfy the CEO’s reservation utility or select noncompliance and lose some tax deduction*. Like any compensation design decision, this noncompliance with §162(m) decision is influenced by firm, CEO, and governance characteristics, as well as by the fundamental motivation for CEO compensation design.

Agency theory argues that CEO compensation plans are designed to maximize shareholder utility, subject to the CEO’s reservation utility and incentive compatibility constraints (Holmstrom, 1979). Managerial power theory argues that powerful CEOs influence their compensation arrangements to receive excess rents and maximize their own utility, subject only to a shareholder outrage constraint

(Bebchuk and Fried, 2004). The extraction of the excess rents can potentially lead to suboptimal incentives which reduce shareholder value more than they increase manager wealth (Bebchuk et al., 2002). Because publicly traded firms are a major component of the U.S. economy, it is important to understand whether CEO compensation design practices efficiently maximize shareholder wealth or inefficiently transfer excess rents to managers. Because §162(m) noncompliance is optional and the choice should reflect idiosyncratic firm, CEO and governance characteristics, an examination of the §162(m) noncompliance decision will provide evidence as to the motivation for CEO compensation design. The research question that I address in Chapter II is the extent to which firms' §162(m) decisions are explained by agency theory versus managerial power theory. To address this question, I examine the factors related to firm noncompliance with §162(m).

Following the 1993 passage of §162(m), agency theory predicts that firms would evaluate their compensation arrangements and adjust them to maintain optimality (Core et al., 1999). If the costs of compliance with §162(m), which may include a greater CEO compensation risk premium and greater contracting costs, exceed the costs of noncompliance, which may include the lost tax deduction and intangible political costs, a firm should elect noncompliance (Balsam and Ryan, 1996). Consistent with this prediction, prior literature has documented that from 1994 through 1998, the likelihood of §162(m) noncompliance increased with factors associated with a greater compensation risk premium. These factors include market return variance, the total CEO salary in excess of \$1 million pre-1994 and the number of executives with a minimum salary of \$1 million pre-1994. Further, these studies found that noncompliance decreased with factors associated with a smaller CEO compensation risk premium including firm size, Return-on-Assets, CEO tenure, and CEO abnormal compensation<sup>16</sup> (Balsam and Ryan, 1996; Perry and Zenner, 2001; Balsam and Yin, 2005). Prior literature documented that the likelihood of

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<sup>16</sup> I define abnormal compensation consistent with prior literature as the residual from a cross-sectional regression estimating CEO compensation.

noncompliance decreased with firm size, a factor which is also positively related to public scrutiny and the political costs of noncompliance (Balsam and Ryan, 1996). In addition, the likelihood of §162(m) noncompliance decreased as the tax benefit from compliance increased (Balsam and Ryan, 1996; Balsam and Yin, 2005). Therefore, during the period 1994 through 1998, firms responded to the exogenous shock of the passage of §162(m) in a manner which reflected the costs and benefits of §162(m) noncompliance, consistent with agency theory.

These prior studies laid the foundation for subsequent research concerning firms' §162(m) noncompliance decisions. The prior studies generally focused on firms' initial responses to §162(m) over the period 1994 through 1998. Because of the availability of additional compensation data, changing circumstances, and the accumulation of additional evidence over time, I expect that a new examination of §162(m) is likely to reveal new insight about firm noncompliance behavior and CEO compensation design. I next discuss how changes to data availability and environmental changes may influence §162(m) noncompliance over the longer term from 1998 through 2011.

Because some influential governance measures, such as the board independence percentage, were not available in machine-readable format during the period 1994 through 1998, they were excluded from the original studies of noncompliance behavior. Because I expect firm governance characteristics to influence compensation design (Core et al., 1999) and that data are now available, I include several measures of governance quality in my analysis.

Second, the §162(m) compensation environment changed from 1994 through 2011 because the §162(m) limit of \$1 million of deductible salary is not adjusted for inflation. Time should change the influence of the \$1 million limit on compensation design practices as inflation and economic growth increase executive compensation levels. In 1994, total CEO compensation for the S&P 500 firms averaged \$3.7 million per year. Therefore, an average 1994 CEO with \$3.7 million in total compensation

and a \$1 million compliant salary received 27% of his or her total compensation in the form of salary. By 2004, the average S&P 500 CEO's total compensation increased to \$9.1 million,<sup>17</sup> or \$7,139,333 in 1994 dollars. Further, in 2004, a \$1 million salary had \$784,542<sup>18</sup> of purchasing power in 1994 dollars. Therefore, to comply with §162(m) in 2004, the average CEO could receive only 11% of his total compensation in the form of salary. By 2011, \$1 million in 1994 dollars had less than \$659,000 of purchasing power. Because inflation reduces both the purchasing power of the \$1 million salary allowance and its percentage of total CEO compensation, over time the percentage of incentive compensation paid to CEOs of §162(m) compliant firms must increase, influencing CEO compensation design.

Third, the passage of time with the associated effect of the declining purchasing power of the dollar is likely to have changed the influence of certain factors on noncompliance. In particular, firm size was negatively associated with noncompliance from 1994 through 1998. That is, over this initial period, larger firms were more likely to comply with §162(m). Balsam and Ryan (1996) propose that firm size's influence on CEO compensation resulted from its positive association with the political costs of noncompliance, a consequence of media and shareholder attention increasing with firm size, and its negative influence on risk. From 1998 through 2011, I expect the political costs of noncompliance to have significantly diminished as inflation reduced the purchasing power of the \$1 million salary allowance and its associated public stigma. In addition, while firm size is commonly negatively associated with firm risk, it is also the most important single determinant of CEO compensation levels, consistently demonstrating a positive influence (Murphy, 2012). As firm size increased from 1998 through 2011, CEO compensation levels also increased (Frydman and Jenter, 2010).

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<sup>17</sup> Epstein, Keith and Eamon Javors (November 26, 2006) How Bill Clinton Help Boost CEO Pay, *Bloomberg Business Week Magazine* at Businessweek.com.

<sup>18</sup> The Bureau of Labor Statistics Inflation Calculator at [http://www.bls.gov/data/inflation\\_calculator](http://www.bls.gov/data/inflation_calculator)

For compliant firms which capped CEO salary at \$1 million, an increase in CEO compensation levels would require the increased use of incentive compensation with an associated increase in the risk premium necessary to retain the CEO. Therefore, firm size generates both a negative influence on the compliance risk premium via its negative influence on firm risk and a positive influence on the compliance risk premium through its positive influence of CEO compensation levels. Because firm size generally increases significantly with time over my sample period, I expect firm size's positive influence on the risk premium through the increased compensation levels to dominate its negative influence on firm risk. Coupled with the likelihood that the political costs decreased, this suggests that the likelihood of a positive relation between firm size and noncompliance increased over time and during my sample period. I expect this to result in a different effect of firm size over my sample period of 1998 to 2011 versus the results from the initial studies with sample periods such as 1994 to 1998.

Finally, while the initial studies examined the likelihood that a firm elected noncompliance with §162(m), they did not examine the factors which influence the level of CEO annual compensation that is nontax deductible as a result of §162(m) noncompliance. Therefore, I extend prior research by empirically examining the characteristics which influence §162(m) noncompliance for CEO compensation from 1998 through 2011, including additional firm, CEO, and governance characteristics not examined in the prior studies, and by examining the relation between the characteristics and both the likelihood of noncompliance and the level of noncompliant compensation.

The firm factors affecting §162(m) noncompliance that I examine are firm risk, firm size and firm performance. Consistent with agency theory, I expect noncompliance to increase with firm risk, increase with firm size and decrease with firm performance and I provide evidence consistent with the predictions. I first provide some evidence of a positive association between firm risk and §162(m) noncompliance. Consistent with the prediction, measures of firm risk in terms of firm performance

variance and firm leverage are positively related to noncompliance. In contrast, I find that poor liquidity, another firm risk proxy, is negatively related to noncompliance. However, this association is likely explained by the previously documented positive relation between options, a compliant form of compensation, and poor liquidity (Core and Guay, 2001). That is, cash poor firms rely more heavily on options to compensate their CEOs relative to those firms with greater liquidity. Second, I provide strong, consistent evidence that an increase in firm size increases the likelihood and level of noncompliance from 1998 through 2011. Third, I provide some evidence of a negative relation between firm performance and noncompliant compensation, consistent with more profitable firms being more likely to base their compensation on performance standards. Taken together, my study provides evidence that firm factors relate to noncompliance behavior in a manner consistent with agency theory, suggesting that firm noncompliance behavior is motivated by firms' optimization of shareholder welfare. My analysis also discusses various qualifications of these general patterns.

I predict and provide evidence that CEO power has a positive relation with firm noncompliance behavior from 1998 through 2011. CEO power measures demonstrate a positive influence on the likelihood and level of salary, cash and total noncompliant compensation. Every CEO power measure which I use demonstrates a positive influence in at least some of the empirical tests reported in this chapter.

This positive link between CEO power and \$162(m) noncompliant compensation is potentially consistent with both managerial power and agency theories. Managerial power theory provides that powerful CEOs use their influence to secure a noncompliant compensation arrangement in the absence of effective governance. Agency theory also allows a powerful, yet valuable CEO with a high reservation utility, to demand a high risk premium to accept a compliant compensation arrangement (Core et al., 2005). The firm risks losing the valuable CEO or may fail to motivate the optimal effort if it fails to



compensate the CEO for higher risk associated with compliance. Given these potential opportunity costs, it may be efficient for some firms to provide noncompliant CEO compensation rather than to fully comply with §162(m). Therefore, even a strong, positive link between CEO power and noncompliance does not necessarily demonstrate that the compensation arrangement is inefficient.

Managerial power theory contends that CEOs can abuse their power to secure excess rents when governance fails to operate effectively (Bebchuk and Fried, 2004). Therefore, I predict that noncompliant compensation is decreasing in the quality of firm governance. I examine the relation between the quality of governance and firm noncompliance and fail to detect a consistent association. Governance quality measures, including executive entrenchment, board interlock and board independence, fail to identify a consistent relation between poor quality governance and §162(m) noncompliance. Alternatively, consistent with the prediction, I do find that board size, a common proxy for poor governance, is positively related to noncompliance. However, recent literature provides some evidence that board size is not necessarily a good proxy for governance quality. Larger boards may be optimal for larger, more complex firms (Coles et al., 2008). Because firms affected by §162(m) are generally larger, the quality of governance for §162(m) affected firms may increase with board size, introducing noise into board size as a proxy for poor governance. Therefore, even though there is strong evidence that CEO power is positively related to noncompliance, the evidence of a positive link between poor governance and §162(m) noncompliance is mixed, failing to provide strong support for my prediction.

In summary, this study presents findings generally consistent with agency theory. I find that increased CEO power increases with §162(m) noncompliance behavior and, therefore, my findings suggest that CEOs have some influence over their compensation design, which increases with their power. I also find that one measure of poor governance, board size, is positively related with

noncompliance. Both of these findings are consistent with managerial power theory. However, managerial power theory conditions the ability of CEOs to secure excess rents on poor governance and my study does not produce consistent evidence that noncompliance increases with poor quality governance. Instead, I provide evidence that firm risk, firm size, and, with noted limitations, firm performance are related to §162(m) noncompliance in a manner consistent with agency theory. Because the evidence suggests that noncompliance is related to the economic determinants of compensation and not necessarily poor governance, the evidence does not demonstrate a general pattern of noncompliance resulting from poor governance enabling powerful CEOs to sub-optimally influence their compensation design. As a result, this paper does not provide strong support for the proposition that managerial power theory systematically explains CEO compensation design. The evidence presented in this study is more generally consistent with the positive relation between CEO power and noncompliance being the consequence of firms using noncompliant compensation to satisfy the high reservation utility of a valuable CEO, consistent with an agency theory definition of compensation design.

I present the literature review in Section 2.2 and the hypothesis development in Section 2.3. The research design is presented in Section 2.4 and the sample selection and descriptive statistics in Section 2.5. I present the results in Sections 2.6 and supplemental analysis in Section 2.7. I conclude in Section 2.8.

## 2.2. LITERATURE REVIEW

Following the passage of §162(m) in 1993, many affected firms were forced to restructure their CEO compensation arrangements to comply with §162(m) or to sacrifice some corporate tax deduction for

executive compensation.<sup>19</sup> I provide a detailed discussion of the procedural requirements necessary to comply with §162(m) in Section 3.2.1. The prior literature examined firm response to the passage of §162(m) for the period 1994 through 1998, including the percentage of affected firms which sacrificed some tax deduction and what factors influenced this noncompliance decision.

### 2.2.1. The Percentage of §162(m) Noncompliant Firms

Prior literature first documented that noncompliance with §162(m) differed among affected firms, i.e., some firms fully complied while others chose noncompliance. Because §162(m) applies to all tax years beginning on or after January 1, 1994, Balsam and Ryan (1996) examined firm noncompliance behavior in 1994 to estimate the percentage of firms affected by §162(m) that changed their compensation design to preserve their CEO compensation tax deduction. To focus on firms that were required to either make a change to their pre-1994 CEO compensation design or lose some tax deduction, their sample included only firms which paid their CEO at least \$1 million of cash compensation in 1992. Of the 155 firms included in their sample, 78 (50.3%) did not fully comply in 1994. Of these 78 firms, 48 stated that they would not comply and 30 stated that they needed more time to consider their decision and/or needed the permanent regulations.

Perry and Zenner (2001) and Rose and Wolfram (2002) examined firm noncompliance from 1994 through 1997. Of 143 firms which paid their CEO more than \$1 million in salary during any single fiscal year from 1992 through 1996, 120 (84%) firms did not reduce CEO salary levels to comply with §162(m)

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<sup>19</sup> There is one exception to this statement. If a firm paid only options plus other compensation which totaled \$1 million or less, the firm would already be fully compliant with §162(m) without further action.

from 1994 through 1997 (Perry and Zenner, 2001). From 1994 through 1997, 53% of affected<sup>20</sup> firms paid noncompliant, non-tax deductible bonus compensation (Rose and Wolfram, 2002).

Balsam and Yin (2005) examined noncompliance from 1994 through 1998. Of the 119 firms in their sample that paid their CEO more than \$1 million annual cash compensation, 59 firms paid to their CEO some compensation that is non-tax deductible according to §162(m) at least once during their five year sample period. In total, firms in 38% of their study's firm-year observations sacrificed some tax deduction.

While many firms carefully complied with the provisions of §162(m), the percentage of firms which elected to pay some noncompliant compensation ranged from 38% to 84%, dependent upon the sample selection and form of noncompliant compensation evaluated, either noncompliant salary or cash bonus.

### 2.2.2. The Factors which Influence §162(m) Noncompliance

Because firm response to §162(m) varied, prior literature also examined the factors which increased the likelihood that a firm paid compensation which is noncompliant with §162(m). Agency theory predicts that firms weighed the costs of noncompliance, which include the lost tax deduction and political costs, against the costs of compliance, which include an increased risk premium and increased contracting costs, and selected the option which maximized firm utility (Balsam and Ryan, 1996). Consistent with agency theory, prior literature documented that §162(m) noncompliance behavior was influenced by the costs of the noncompliance decision, as one factor in the design of the firm's executive compensation system and as one component of the firm's corporate tax strategy. I next discuss the

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<sup>20</sup> Rose and Wolfram (2002) defined a firm as affected if its CEO's cash compensation should have exceeded \$1 million based upon pre-1994 compensation practices.

factors that influence the costs of compliance, including the tax costs, the political costs, and the compliance risk premium, and the findings of the prior literature.

If a firm chooses noncompliance with §162(m), it must sacrifice some of its CEO compensation tax deduction and risk poor shareholder relations (Perry and Zenner, 2001). The lost deduction may increase the firm's federal corporate income tax expense as long as the firm faces a positive marginal tax rate. This additional tax that the firm must pay is a cost of §162(m) noncompliance. Consistent with this perspective, the prior literature documented that the likelihood of noncompliance decreased as the tax cost of noncompliance increased (Balsam and Ryan, 1996; Balsam and Yin, 2005).

Because large firms receive more attention and greater public scrutiny, the political costs of noncompliance is hypothesized to increase as firm size increases. Consistent with this analysis, studies based on samples of the initial period between 1994 and 1998 found that firm size was negatively related to noncompliance. That is, larger firms tended to comply more (less noncompliance) with §162(m) (Balsam and Ryan, 1996; Balsam and Yin, 2005).

Compliance with the income tax deduction requirements of §162(m) limits executives' fixed salary to \$1 million and requires that risky incentives provide sufficient utility to satisfy the employee compensation requirements (Reitenga et al., 2002). Therefore, a greater risk premium is a cost of §162(m) compliance and the prior literature documented that firm noncompliance increased with factors which increase compensation risk.

As with all compensation design decisions, the size of the risk premium associated with contingent compensation increases with the riskiness of the factors on which the compensation is based. Unique to §162(m) compliance, the costliness of this compliance risk premium adjustment is also dependent upon the compensation's proximity to compliance as explained next. There are two types of

compliance proximity: magnitude and sensitivity. As an example of magnitude proximity, a firm whose CEO received a pre-§162(m) \$1.1 million salary would need to reduce the salary by \$100,000 in 1994 to be compliant, whereas a firm whose CEO received a pre-§162(m) \$3 million salary would need to make a \$2 million salary reduction. *Ceteris paribus*, the former CEO would likely require a lower risk premium adjustment relative to the latter because the risk premium adjustment should reflect the magnitude of the salary reduction.

As an example of sensitivity proximity, a firm's whose CEO's pre-§162(m) incentive program included clearly defined performance goals which strictly linked cash incentives to firm performance would not need to significantly modify their incentive arrangement, whereas a firm whose CEO's incentive program was at the discretion of a friendly board would need to greatly modify their incentive arrangement to provide performance goals. *Ceteris paribus*, the former CEO would likely require a lower risk premium adjustment relative to the latter because the risk premium adjustment should reflect the different sensitivity adjustment. If the CEO's compensation is already tied to performance pre-1994, §162(m) compliance only requires the formalization of an existing compensation policy with little additional costly risk imposed upon the CEO (Balsam and Ryan, 1996).

The more costly the compliance incentive risk premium, the more likely the firm will select noncompliance. Consistent with agency theory, the prior literature demonstrated that the factors which increase (decrease) compensation risk premiums increased (decreased) the likelihood of §162(m) noncompliance. Balsam and Ryan (1996) document that in 1994, the likelihood of noncompliance decreased as firm size increased, the CEO's abnormal compensation increased, and the strength of the pre-1994 relation between CEO cash compensation and firm performance increased. First, firm size is a common risk measure, with larger firms generally being less risky. Larger firms are generally more diversified and are less risky because they have a lower frequency of failure and provide a lower

variance of rate of return (Beaver et al., 1970; Fama and French, 2002). Second, prior literature suggests that abnormal compensation is negatively related to compensation risk. Greater executive power tends to reduce compensation risk (Bebchuk and Fried, 2004; Albuquerque et al., 2010) and abnormal compensation is a proxy for executive power (Lambert et al., 1993). The third factor measures sensitivity proximity, the firm's compensation sensitivity prior to the passage of §162(m). Because compliance would be less costly for those firms with higher pre-§162(m) compensation sensitivity, greater pre-§162(m) compensation sensitivity should be negatively related to noncompliance. Therefore, risk decreases as each of these three measures increase and, consistent with the corresponding predictions, the Balsam and Ryan (1996) study documented a negative relation between each of these three measures and noncompliance. That is in 1994, noncompliance with §162(m) decreased as measures of compensation risk increased.

Perry and Zenner (2001) examined how the CEO's salary level influenced §162(m) noncompliance. Their study documented that, from 1994 through 1997, firm noncompliance behavior was influenced by magnitude proximity, as measured by the proximity of the CEO's salary level to \$1 million. For CEOs with compensation above \$1 million, the likelihood that the firm reduced the CEO's salary to comply increased as the CEO's pre-§162(m) salary approached the \$1 million deduction allowance.

In their study of firm noncompliance behavior from 1994 through 1998, Balsam and Yin (2005) provided further evidence that noncompliance was influenced by the cost of the compliance risk premium. Factors used to measure risk in the prior literature include firm size and CEO abnormal compensation, as discussed above, and CEO tenure (Finklestein and Hambrick, 1989; Hamm et al., 2011), accounting performance (Bowman, 1980), and performance variance (Core et al., 1999). All of the preceding factors, with the exception of performance variance, are associated with lower risk. Risk

is increasing with performance variance. Results were consistent with the predicted effects. With the exception of performance variance, all of the factors demonstrated a negative relation with noncompliance, while performance variance demonstrated a positive relation with noncompliance. The Balsam and Yin (2005) study also examined factors which measure the compliance risk premium adjustment (magnitude proximity), the level of compensation in excess of \$1 million and the number of executives at a firm with at least \$1 million salary pre-§162(m). Both measures should increase the cost of the compliance risk premium adjustment and, consistent with the prediction, both increased the likelihood of noncompliance.

The prior studies document that from 1994 through 1998 the likelihood that a firm provided noncompliant compensation increased with those factors which should increase the cost of compliance with §162(m), the corporate income tax cost and the compliance risk premium, and decreased with firm size which should be positively related to the political cost of noncompliance. These findings are consistent with agency theory.

### 2.2.3. Summary and Foundation for Research Extension

Therefore, prior literature documented that firms' noncompliance decisions were influenced by the applicable costs. The findings are consistent with agency theory and suggest that firm §162(m) noncompliance behavior from 1994 through 1998 was generally motivated by shareholder welfare maximization.

The prior research has laid the foundation for extending the empirical analysis in several ways. First, the studies cited above examined the influence of factors on the decision to pay noncompliant compensation but did not analyze the level of noncompliant compensation. Second, there is evidence that the quality of corporate governance significantly influences CEO compensation (Lambert et al.,



1993; Core et al., 1999). Many governance measures were not effectively available prior to 1998, and therefore were not included in the 1994 through 1998 studies.

Third, the prior studies examined only the responses of firms over the 1994-1998 period. From 1998 through 2011, several important circumstances have changed. First, from 1998 through 2011, inflation reduced the purchasing power of the \$1 million compliance allowance by an additional 27.5%. This effective reduction of the fixed compensation limit increases the reliance upon incentives in order to qualify all CEO compensation as §162(m) compliant and the associated compliance risk premium. Because continuing inflation during the period 1998 through 2011 changed the noncompliance decision environment, the factors that influence the noncompliance decision, such as firm size, may also have evolved with the passage of time. Further, important changes in regulatory and exchange requirements with respect to firm governance also altered the environment between 1998 and 2011.

In addition, the percentage of affected firms that elect some noncompliance with §162(m) increased significantly from 1994 through 2012. In my Chapter 3 sample of affected firms as provided in Table 13, the percentage of firms paying their CEO some noncompliant salary in excess of \$1 million increased from 9% in 1994 to 28% in 2011 and 25% in 2012. From just 2006 to 2011, the percentage of affected firms paying their CEO some noncompliant cash compensation increased from 66% to 86%, as shown in Table 11. This significant and continued increase in firm noncompliance behavior suggests that the CEO compensation environment, in terms of the costs and benefits of noncompliance, has evolved from the initial studies pre-1999 and through the period Chapter II examines, 1998 through 2011.

Finally, the passage of time revealed that firms' §162(m) noncompliance decisions are generally sticky. Without a CEO turnover, for Chapter 3's 1994 through 2012 observations, 96% of firms which elect to pay their CEO noncompliant compensation in one year will repeat the practice. Because noncompliance is sticky, a firm which elects noncompliance can expect to pay increased tax expense in

the current year and in future years, comparable to an annuity. I estimate that the present-value of the mean (median) expected tax cost from noncompliance is \$4.3 million (\$1.6 million) in the year that a firm first elects to pay noncompliant salary and \$3 million (\$1 million) in the year that the firm first elects to pay some cash compensation that is nontax deductible pursuant to §162(m). A detailed explanation of this calculation and my assumptions are provided in Appendix A. Because noncompliance is a sticky executive compensation design decision that increases a firm's annual federal income tax expense, it is important to understand the motivation of this decision over the longer term.

Therefore, to extend prior literature in light of the preceding changes, I examine the relation of firm, CEO, and governance factors with the likelihood and level of §162(m) noncompliance for the years 1998 through 2011.

### 2.3. HYPOTHESIS DEVELOPMENT

As a compensation design decision, the §162(m) decision is influenced by the factors which influence CEO compensation design. The motivation of the firm's §162(m) noncompliance decision is likely to reflect both pressure for shareholder welfare maximization, as predicted by agency theory (Holmstrom, 1979; Gibbons, 2005), as well as potential executive preference enhancement as predicted by managerial power theory (Bebchuk and Fried, 2004).<sup>21</sup> It then follows that the factors associated with noncompliance should reflect the firm's motivation for its compensation practices. Therefore, I examine the factors related to §162(m) noncompliance as evidence concerning the motivation for CEO compensation design.

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<sup>21</sup> I describe the agency theory and managerial power theory predictions of CEO compensation design in greater detail in Section 2.1.

### 2.3.1. Hypothesis I: Risk and §162(m) Noncompliance

If shareholder welfare is the motivation, firm noncompliance with §162(m) should be related to the costs associated with the noncompliance decision, consistent with prior literature analyzing the 1994 - 1998 period (Balsam and Ryan, 1996; Perry and Zenner, 2001; Balsam and Yin, 2005). Optimal compensation design includes the allocation between salary and variable compensation (Gibbons, 2005). Section 162(m) compliance requires that firms cap CEO salary at \$1 million and rely on incentives for the balance of the CEO compensation arrangement. Because incentives require a risk premium, one cost of §162(m) compliance is an increased compensation risk premium (Balsam and Ryan, 1996). Because the cost of the compliance risk premium increases with risk, the likelihood that the CEO receives noncompliant compensation and the level of noncompliant compensation received by the CEO should increase with risk. Therefore, consistent with the findings of the prior studies of the 1994 through 1998 period, I predict that §162(m) noncompliance is positively related to firm risk.

**Hypothesis I: *The likelihood and level of §162(m) noncompliant compensation increases with firm risk.***

### 2.3.2. Hypotheses II and III: The Relation of Firm Size and Firm Performance with §162(m) Noncompliance

The relation between some risk proxies and the noncompliance decision may have evolved since 1998, the final year included in the prior studies. For example, certain firm characteristics that are sometimes used as measures of firm risk, such as firm size and firm performance, influence noncompliance two ways. The first is based upon their relation with risk and the second is based upon their relation with CEO compensation levels. I will next discuss the two forms of influence of firm size and firm performance.

Larger firms and more profitable firms are generally associated with lower risk (Fama and French, 2002). Based upon their influence on compensation via risk, an increase in firm size and performance should reduce risk, and therefore reduce the cost of the compliance risk premium, all else being equal. Thus, considering only their link with risk, an increase in firm size and performance should reduce noncompliance. However, prior literature has also documented that both firm size (Smith and Watts, 1992; Frydman and Jenter, 2010) and firm performance (Carter et al., 2007) exert a strong, positive influence upon CEO total compensation levels. If the CEO's salary remains capped at \$1 million as the CEO's total compensation level increases, risky incentives must necessarily increase, which increases the cost of the compliance risk premium. Based upon their influence on compensation levels, an increase in firm size and performance should indirectly increase the cost of the compliance risk premium. Therefore from their link with compensation levels, an increase in firm size and performance should indirectly lead to an increase in noncompliance, all else being equal. The theory supports the proposition that firm size and firm performance should demonstrate a negative relation with §162(m) noncompliance because both factors reduce risk and a positive relation with §162(m) noncompliance because both factors increase compensation levels. How firm size and firm performance relate to §162(m) noncompliance is an empirical question which is dependent upon which relation dominates, either firm size's and firm performance's relation with risk or their relation with compensation levels.

Prior research based on the initial period following the passage of §162(m), 1994 through 1998, provides evidence that firm size reduced noncompliance over this period, consistent with the direct effect of firm size on the compliance risk premium dominating the indirect effect on compensation risk premium via firm size's relation with compensation levels. However, this link was examined when the purchasing power of the \$1 million salary allowance was at or near \$1 million in 1994 dollars. As a result of inflation progressively shrinking the purchasing power of \$1 million, CEO total compensation levels would have then had to increase over time in order to maintain CEO reservation utility, all else being

equal. With the purchasing power of the fixed salary component of compensation falling over time, §162(m) compliance would require progressively greater levels of CEO incentive compensation, an effect which is further strengthened by increases in firm size for CEOs in growing firms. Firm size is the single greatest determinant of CEO compensation levels (Murphy, 2012), demonstrating an influence which is 50% greater than firm performance (Boyd, 1994). I predict that the indirect influence of firm size on the risk premium operating through CEO compensation levels will dominate the direct effect of firm size on the compensation risk premium over the longer time examined in my study, 1998-2011. Therefore, in Hypotheses II, I predict that an increase in firm size should increase the likelihood that the firm pays §162(m) noncompliant compensation and the level of noncompliant compensation.

**Hypothesis II: *The likelihood and level of §162(m) noncompliant compensation increases with firm size.***

Prior research based on the initial period following the passage of §162(m), 1994 through 1998, provides evidence that firm performance reduced noncompliance over this period, consistent with the direct effect of firm performance on the compliance risk premium dominating the indirect effect on compensation risk premium via firm performance's relation with compensation levels. Firm performance has a positive influence on CEO total compensation levels to the extent that the CEO's compensation is increasing in firm performance, which is generally the case. Almost all firms rely upon some accounting performance measures in their CEO compensation design (Murphy, 1999).<sup>22</sup> Additionally, prior literature has documented that a firm's market performance has a positive influence upon CEO compensation levels (Lambert and Larcker, 1987; Boschen et al., 2003). However, some prior research finds that the influence of firm performance on compensation levels is not as strong as firm size (Boyd, 1994). Perhaps more importantly, high performance firms are more likely to satisfy incentive

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<sup>22</sup> This statement describes those firms which disclosed quantitative standards (Murphy, 1999).

performance goals, increasing the likelihood that the firm pays compliant compensation, and further, that the amount of such compensation is larger. As a result, I predict that firm performance's direct negative relation with risk continued to dominate is indirect positive relation with risk operating through compensation levels in the longer time examined in my study, 1998-2011. Therefore, consistent with the 1994 through 1998 studies, Hypothesis III predicts that noncompliance is decreasing in firm performance.

**Hypothesis III: *The likelihood and level of §162(m) noncompliant compensation decreases with firm performance.***

#### 2.3.3. Hypothesis IV: CEO Power and §162(m) Noncompliance

Similar to firm size and firm performance, CEO power may influence compensation design in two ways. First, prior literature has documented that greater executive power can enable the CEO to take actions to reduce the CEO's compensation risk and, therefore, the associated incentive risk premium (Albuquerque et al., 2010). However, compliance with §162(m) mandates that shareholders approve incentive performance goals which may weaken the negative relation between CEO power and compensation risk. Alternatively, prior literature has also documented that CEO power has a second, positive influence on CEO total compensation (Core et al., 1999; Bebchuk et al., 2002). CEO tenure and age, common measures of CEO power, consistently demonstrate a positive relation with total compensation levels (Finklestein and Hambrick, 1989; David et al., 1998). As firm size grows and, along with inflation, increases the high reservation utility of powerful CEOs, the relation between CEO power measures and compensation levels should not weaken and, if anything, may strengthen over time. Therefore, I predict that CEO power's positive influence on compensation levels will dominate the negative influence on compensation levels that operates via firm risk.

As compensation levels increase with CEO power, the incentive component of CEO compensation must increase if the firm is to remain compliant, increasing the likelihood and level of noncompliance. More fundamentally, any risk averse CEO would prefer a greater portion of total compensation in the form of a fixed salary and less in the form of risky incentives, which makes noncompliance more likely. CEOs have some influence over their compensation design which increases with their individual power (Core et al., 1999). To some degree this influence may efficiently reflect the board accommodating the CEO's ability to use their power to increase firm value, as provided by agency theory (Core et al., 2005, Section II.A.). A valuable CEO can demand a high risk premium for the risks associated with compliance and the limitations on salary levels. The firm risks losing the CEO or motivating optimal effort if it fails to satisfy the CEO's compensation requirements. Alternatively, a positive association between CEO power and the level of CEO compensation may be the consequence of poor governance, as provided by managerial power theory. Both theories support the proposition that CEO influence is a function of CEO power. Based upon the assumption that CEOs prefer a noncompliant compensation arrangement, I predict that CEOs use their power to secure noncompliant compensation and their success in achieving noncompliant compensation increases with their power. Therefore, Hypothesis IV predicts that CEO power has a positive relation with §162(m) noncompliance.

**Hypothesis IV: *The likelihood and level of §162(m) noncompliant compensation increases with greater CEO power.***

#### 2.3.4. Hypothesis V: Governance and §162(m) Noncompliance

It is generally accepted that CEOs' power enables them to have some influence over their compensation arrangements (Murphy, 1999). However, the fact that a CEO exerts significant power does not necessarily mean that his compensation design is suboptimal for shareholders (Core et al., 2005). A powerful CEO may be valuable with a high reservation utility and still subject to efficient governance

oversight. Without a proper benchmark for comparison, the CEO's compensation can appear excessive even though it is designed to efficiently increase shareholder wealth (Holmstrom and Kaplan, 2003; Core et al., 2005). Firms are increasingly "poaching" executive talent from outside the company (Murphy and Zabojnik, 2007). To retain a valuable CEO, firms may need to proactively adjust compensation to satisfy increasing reservation utility levels (Fulmer, 2009). Lucrative compensation arrangements may reflect the necessary rewards to retain valuable executives (Fulmer, 2009), rather than exclusively representing excess rents.

Managerial power theory proposes that without proper governance or oversight, powerful CEOs exert influence to secure compensation arrangements which are suboptimal for shareholders (Bebchuk and Fried, 2004). The CEO's influence over his or her compensation design may be a consequence of the CEO's power with little to no reference to his or her value to the firm. In other words, a firmly entrenched, but not necessarily talented CEO may influence the board to control his or her compensation design and secure an inefficient, rent extracting compensation arrangement. Inefficient policies that involve excess compensation can arise when boards are not sufficiently independent (Bebchuk and Fried, 2004) and widely dispersed shareholders have little incentive to appropriately monitor compensation policies (Burkart et al., 1997). The level and composition of compensation is likely to reflect the preferences of the group, management or ownership, with the preponderance of power (O'Reilly et al, 1988, David et al., 1998). With proper governance oversight, CEO compensation design should maximize shareholder welfare, even if the CEO is highly influential (Core et al., 1999). With less effective governance, management is more likely to exert more influence on compensation design to reflect management preferences at the expense of shareholders, including the \$162(m) noncompliance decision.



If the CEO is able to use his power to influence compensation design, he will likely use this influence to increase his compensation level and increase the non-incentive proportion of his total compensation arrangement to avoid the risk associated with incentive compensation (David et al., 1998). To the extent that firms select noncompliance and sacrifice some tax deduction to retain valuable and powerful CEOs, CEO power factors may increase the likelihood and levels of noncompliance, as predicted in Hypothesis IV. However, if firms select noncompliance primarily because weak governance enables powerful CEOs to influence their compensation design as predicted by managerial power theory, i.e., without a corresponding benefit to shareholders from allowing the CEO to exert more power, poor governance indicators should be positively associated with noncompliance. Recognizing that there have been many well documented instances of inefficient CEO compensation arrangements (Bebchuk and Fried, 2004), I predict that a weakening of corporate governance increases §162(m) noncompliance.

**Hypothesis V: *The likelihood and level of §162(m) noncompliant compensation is decreasing in the quality of corporate governance.***

## 2.4. RESEARCH METHOD

To test Hypotheses I through V, I estimate Equation (1) relating §162(m) noncompliance to the firm, CEO, and governance measures. As the dependent variable, I use alternative measures of §162(m) noncompliance. When the measure is an indicator variable, I estimate a logistic regression and otherwise I estimate an OLS regression, both with firm and CEO clustered standard errors.

$$\begin{aligned}
NC\ MEASURE_{it} = & \beta_0 + \beta_1 LEVERAGE_{it} + \beta_2 ILLIQUIDITY_{it} + \beta_3 \sigma(ROA)_{it} + \beta_4 \sigma(RET)_{it} \\
& + \beta_5 \ln(ASSETS)_{it} + \beta_6 ROA_{it} + \beta_7 RET_{it} + \beta_8 \ln(CEO\ TENURE)_{it} + \beta_9 CEO\ OWN\%_{it} \\
& + \beta_{10} CEO/CHAIR_{it} + \beta_{11} CEO\ PAY\ SLICE_{it} + \beta_{12} BOARD\ SIZE_{it} + \beta_{13} E - INDEX_{it} \\
& + \beta_{14} INTERLOCK\%_{it} + \beta_{15} Non - I\ BOARD\%_{it} + \beta_{16} Non - I\ COMP\ COMM\%_{it} \\
& + \beta_{17} MTB_{it} + \beta_{18} TAX\ BENEFIT_{it} + \sum YEAR\ INDICATORS + \sum INDUSTRY\ CODES + \epsilon_{it} \quad (1)
\end{aligned}$$

I use six measures of §162(m) noncompliance which I refer to as *NC MEASURE*, three indicators variables and three continuous measures. I define noncompliant compensation as compensation which is non-tax deductible per §162(m). I measure noncompliance in terms of three compensation measures, salary noncompliance, cash noncompliance, and total noncompliance. A firm is salary noncompliant if it pays its CEO a salary in excess of \$1 million (*Salary NC*) because the amount of salary in excess of \$1 million is not deductible by the firm. Similarly, a firm is cash noncompliant if it pays its CEO any noncompliant cash compensation (*Cash NC*). I define cash compensation as noncompliant, and therefore non-tax deductible per §162(m), to the extent the sum of the CEO's salary, non-incentive plan based cash bonus, and miscellaneous compensation, which includes severance payments, debt forgiveness, imputed interest, payouts for cancellation of stock options, payouts for unused vacation, tax reimbursements and signing bonuses, exceeds \$1 million. A firm is total compensation noncompliant if it pays its CEO any noncompliant compensation (*Total NC*). I define compensation as noncompliant, and therefore non-tax deductible per §162(m), to the extent the sum of the CEO's salary, non-incentive plan based cash bonus, restricted stock grants, and miscellaneous compensation exceeds \$1 million.

If a firm is salary noncompliant, the firm's board made an *ex ante* decision to pay its CEO non-tax deductible compensation regardless of performance. In contrast, if a firm is cash noncompliant, the firm's decision to pay its CEO non-tax deductible cash compensation may have been made *ex post*, reflecting a subjective cash bonus awarded by the board based upon firm performance. If a firm is total

compensation noncompliant, the CEO's non-tax deductible compensation may include restricted stock with a value dependent upon market performance.

Therefore, I define §162(m) noncompliance using three compensation measures, salary, cash, and total compensation, and measure each on a dichotomous and also a continuous basis, yielding six measures of noncompliance. To examine the likelihood that the firm pays noncompliant compensation, the first three noncompliance measures are indicator variables, *SALARY\_I*, *CASH\_I*, and *TOTAL\_I*, binary variables equal to 1 if the CEO receives noncompliant salary, cash, and total compensation, respectively and 0 otherwise. To examine the level of noncompliance, the second noncompliance measure is the CEO's noncompliant salary, cash, and total component scaled by the CEO's total compensation, as reflected in the three continuous measures, *SALARY\_R*, *CASH\_R*, and *TOTAL\_R*, respectively.

The independent variables in Equation (1) include firm, CEO, and governance measures. A positive (negative) coefficient on an independent variable will provide evidence that the measure increases (decreases) the likelihood of noncompliance in the logistic regressions or the level of noncompliant compensation in the OLS regressions.

*Firm Measures.* Hypotheses I, II and III predict the relation of three firm characteristics, risk, size and performance, with §162(m) noncompliance. Therefore, the independent variables include measures of these firm characteristics.

To test Hypothesis I concerning the relation of firm risk with the likelihood and levels of §162(m) noncompliance, I include the following four measures of firm risk: *LEVERAGE*, *ILLIQUIDITY*,  $\sigma(\text{ROA})$ , and  $\sigma(\text{RET})$ . The amount of debt in the firm's capital structure is a natural indicator of firm risk (Modigliani and Miller, 1958). A low cash-to-total assets ratio can be an indication that the firm is cash poor and a greater credit risk (Ericsson and Renault, 2006). Therefore, I include the debt-to-total asset ratio,

*LEVERAGE*, (Beaver et al., 1970; Botosan and Plumlee, 2005) and one minus the cash-to-total asset ratio, *ILLIQUIDITY* (Beaver et al, 1970) as measures for firm capital structure risk. As measures of firm performance risk, I include the standard deviation of Return-on-Assets,  $\sigma(ROA)$ , and market returns,  $\sigma(RET)$ , over the five prior years (Balsam and Yin, 2005; Core et al., 2008). A positive coefficient on any of the risk proxies will provide some evidence that noncompliance increases with firm risk.

To test Hypothesis II concerning the relation of firm size with the likelihood and levels of §162(m) noncompliance, I use the natural logarithm of total assets,  $\ln(ASSETS)$ , to measure firm size (Balsam and Yin, 2005; Carter et al., 2007).

To test Hypothesis III concerning the relation of firm performance with the likelihood and levels of §162(m) noncompliance, I include two measures of firm performance. To measure accounting performance, I include Return-on-Assets, book net income scaled by average total assets, *ROA* (Robinson et al., 2011). To measure market performance, I include market returns, *RET* (Balsam and Yin, 2005; Robinson et al., 2011).

*CEO Characteristics.* To test Hypothesis IV concerning the relation of CEO power with the likelihood and level of §162(m) noncompliance, I use four proxies as measures for CEO power:  $\ln(CEO\ TENURE)$ , *CEO OWN%*, *CEO/CHAIR*, and *CEO PAY SLICE*. CEO tenure has long been a common proxy for CEO power (Finklestein and Hambrick, 1989; Laksmana, 2008; Hamm et al., 2011) and increases CEO decision making authority (Dechow and Sloan, 1991). Therefore, I include the natural log of CEO tenure,  $\ln(CEO\ TENURE)$ , as a proxy for the CEO's power as a manager. CEO power should be positively related to the CEO's stock ownership (Ittner et al., 1997) and the CEO's voting power (Mehran, 1995). Therefore, I include the CEO's percent of firm ownership, *CEO OWN%*, as a proxy for the CEO's power as an owner. The CEO's influence over the Board of Directors will generally increase if he also serves as the Chairman of the Board (Ittner et al., 1997) and governance may be influenced by the CEO also serving as

the Chairman (Robinson et al., 2011). Therefore, I include an indicator variable, *CEO/CHAIR*, to represent this additional power over the board which equals 1 if the CEO also serves as the Chairman of the Board, and 0 otherwise (Ittner et al., 1997; Robinson et al., 2011). As defined in Bebchuk et al. (2011), a CEO's pay "*Slice*" is the CEO's fraction of the aggregate compensation of the firm's top-five executives. The "*Slice*" reflects the CEO's power relative to the firm's top-five executive team and his ability to extract rent and is related to lower accounting performance, indicating agency problems (Bebchuk et al., 2011). Therefore, I include *CEO PAY SLICE* as a proxy for CEO power relative to the other top executives.

*Governance Measures.* To test Hypothesis V concerning the relation of the quality of governance with the likelihood and levels of \$162(m) noncompliance, I use the following five measures of the quality of firm governance: *BOARD SIZE*, *E- INDEX*, *INTERLOCK%*, *Non-I BOARD %*, and *Non-I COMP COMM%*. The effect of CEO power is dependent upon the quality of governance and larger boards are generally less effective and more susceptible to CEO influence (Jensen, 1993; Yermack, 1996). Larger boards enable director free-riding which inhibits their monitoring of management (Hermalin and Weisbach, 2003). Board size is a common proxy for the level of board diligence in the governance function (Laksmana, 2008). Therefore, I include the number of members on the board of directors, *BOARD SIZE*, as a measure of board effectiveness. However, some prior literature has provided evidence that larger boards may be optimal for larger, more complex firms (Coles et al., 2008). This introduces noise into the use of *BOARD SIZE* as a governance measure, particularly for my study of large, \$162(m) affected firms.

The board's insulation from shareholder action, commonly referred to as "entrenchment," is positively associated with executive power, rent extraction and lower firm value (Gompers et al., 2003;

Bebchuk et al., 2009). Therefore, I include the Bebchuk et al. (2009)<sup>23</sup> six-factor *E-Index*, *E- INDEX*, as the measure of entrenchment. Because independent directors are more likely to make unbiased judgments, they should be less influenced by CEO preferences (Jensen, 1993). Interlocked and linked directors are less independent of the CEO and more likely to be less effective monitors (Hallock, 1997; Core et al., 1999). Insider directors may be less effective monitors because they are more loyal to management (Pfeffer, 1981) and their careers are subject to the CEO's influence (Byrd and Hickman, 1992). I include three board interlock measures, reflecting insider and linked Board of Director and Compensation Committee members. To measure the relation of interlocked board members, the independent variables include the percent of interlocked board members, *INTERLOCK%*. To measure the relation of insider and linked board and compensation committee members, the independent variables include the percentage of non-independent board members, *Non-I BOARD%*, and the percentage of non-independent compensation committee members, *Non-I COMP COMM%*. For all five governance measures, poor governance is increasing in the measure and a positive coefficient provides some evidence that poor governance increases the likelihood or level of noncompliance.

To control for growth and investment opportunities, I include the Market-to-Book ratio, *MTB*, (Carter et al., 2007; Cadman et al, 2010). To control for the tax cost of noncompliance, I include *TAX BENEFIT*, the simulated marginal tax rate multiplied the CEO's total compensation in excess of \$1 million scaled by firm total assets (Balsam and Ryan, 1996; Balsam and Yin, 2005). To control for year and

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<sup>23</sup> The six factors include staggered board terms, "poison pill" and "golden parachute" provisions, and limitations upon the shareholder ability to amend charter amendments and by-laws and approve mergers. The Bebchuk, Cohen, and Farrell (2009) paper provides a detailed description of the factors within the E-index. [www.law.harvard.edu/faculty/bebchuk/studies.shtml](http://www.law.harvard.edu/faculty/bebchuk/studies.shtml) is the link to a list of research papers which utilize the E-Index, 158 as of October 21, 2012.

industry effects, the independent variables include year indicator variables, *YEAR INDICATORS*, and the Fama/French 12 industry classification<sup>24</sup> indicator variables, *INDUSTRY CODES*, respectively.

Based upon the preceding development, I estimate Equation (1) to examine the relation of factors with firm noncompliance with §162(m) by testing Hypotheses I through V.

## 2.5. SAMPLE SELECTION AND DESCRIPTIVE STATISTICS

I obtain my data from the following *WRDS* data bases: Compustat Execucomp; Compustat North America; Compustat Marginal Tax Rate; and RiskMetrics. Because ExecuComp's reporting of CEO ownership is incomplete, especially through the mid-2000s I hand collected the missing CEO ownership percentage information using annual firm proxy statements publicly available at *sec.gov*. I used two sources of the simulated marginal tax rates. The first is the simulated marginal tax rates available from John Graham, Duke University.<sup>25</sup> The second is the Compustat Marginal Tax Rate database. If only one rate is available for an observation, I use it. If both are available, I use the average of the two. To include all observations affected by §162(m), I included all observations with tax years beginning on or after January 1, 1994 through 2012.

To avoid biased results from the inclusion of small public firms with CEO compensation not large enough to be constrained by §162(m), I include only firms which paid their CEO at least \$900,000 in cash compensation and \$1 million in total compensation for a minimum of two years during the sample period. If a firm satisfies this requirement, I include all of its firm-year observations during the sample period, without interruption for a failure to satisfy the minimum income requirement. However, I

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<sup>24</sup>Fama-French industries are defined at: [http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data\\_library.html](http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html)

<sup>25</sup> <https://faculty.fuqua.duke.edu/~jgraham/taxform.html>

exclude all observations prior to the first year that the firm pays a CEO a minimum of \$1 million total compensation. After excluding observations missing information, the final data set consists of 11,626 unique firm-year observations for the period 1998 through 2011, as shown in Table 3. These observations include 1,601 unique firms with a mean (median) of 7.3 (7) firm-year observations per firm. The observations include 2,399 unique CEOs with an average (median) of 4.8 (4) firm-year observations per CEO.

[Insert Table 3 here]

In Table 4, I provide the descriptive statistics for my sample, which are large firms. Mean (median) firm total book assets equal \$8.7 (2.3) billion with mean (median) total market capitalization of \$9.7 (2.4) billion. The mean (median) CEO tenure is 7.3 (5) years. This is generally comparable to the 6.9 (5) years tenure of CEOs at all Execucomp firms estimated by Cadman et al. (2010). Mean (median) CEO total annual compensation equals \$6.3 (4.0) million of which \$1.7 (0.3) million is noncompliant with §162(m) provisions for tax deductibility. The mean (median) percentage of the board of directors who are insiders is 18% (14%), linked members is 10% (8%), and independent members is 73% (75%).

[Insert Table 4 Here]

I classify the sample firms by industry utilizing the Fama/French 12-Industry Classification. Table 5 provides the number of observations and §162(m) noncompliance rates, Salary NC, Cash NC and Total NC, by industry. Firms paid noncompliant salary, noncompliant cash compensation or any noncompliant compensation in 20%, 50% and 61% of the 11,626 unique firm-year observations, respectively.

[Insert Table 5 Here]



Table 6 presents the descriptive statistics for the independent variables in Equation (1). Mean (median) accounting performance, *ROA*, is 0.05 (0.05) and market performance or annual market return, *RET*, is 0.07 (0.03). The mean (median) CEO firm ownership percentage, *CEO OWN%*, is 2.7% (0.7%). Sixty-five (65%) percent of all CEOs also serve as the Chairman of the Board, *CEO/CHAIR*. Boards have a mean (median) of 9.5 (9) members, *BOARD SIZE*, and the mean (median) E-Index is 2.32 (2).

[Insert Table 6 Here]

## 2.6. REGRESSION RESULTS

Table 7 presents the results of the estimations of Equation (1) to test Hypotheses I through V. To test Hypothesis I, the estimated coefficients and statistical significance for the measures of firm risk, *LEVERAGE*, *ILLIQUIDITY*,  $\sigma(ROA)$ , and  $\sigma(RET)$ , estimate the relation between risk and §162(m) noncompliance, where the predicted signs are positive. The findings, with the exception of the coefficients on *ILLIQUIDITY*, provide at least modest support for Hypothesis I. First, all of the 18 estimated coefficients on *LEVERAGE*,  $\sigma(ROA)$ , and  $\sigma(RET)$  (three measures of firm risk times six measures of noncompliance) are positive. Second, for *LEVERAGE*, two of the six coefficients are positive and statistically significant and two others are positive and at least approach marginal significance. For  $\sigma(ROA)$ , two of the six estimated coefficients are positive and marginally significant. Finally, for  $\sigma(RET)$ , two of the six estimated coefficients are positive and at least marginally statistically significant (one at  $p < 0.01$ , one at  $p < 0.10$ ). Therefore, the coefficients on *LEVERAGE*,  $\sigma(ROA)$ , and  $\sigma(RET)$  provide some empirical evidence supporting Hypothesis I.

The fourth measure of firm risk is *ILLIQUIDITY*. Inconsistent with the prediction, two of the six coefficient estimates on *ILLIQUIDITY* are negative and statistically significant (-0.886,  $p = 0.010$ ; -0.007,

$p=0.008$ ) and a third approaches marginal significance ( $-0.870$ ,  $p=0.157$ ). One potential explanation for the unexpected negative relation between illiquidity and noncompliance concerns the association between illiquidity and the use of option compensation. Prior literature documents that the use of option compensation increases as firm liquidity decreases (Yermack, 1995; Core and Guay, 2001) because firms attempt to conserve cash by compensating employees with options. Because the value of option compensation is dependent upon firm performance, option compensation automatically qualifies under §162(m) as deductible compensation for tax purposes for the firm. Therefore, the negative relation between *ILLIQUIDITY* and noncompliance is most likely the result of firms using option compensation as a result of low liquidity and not evidence that high risk firms pay less noncompliant compensation. Nevertheless, although results for the other measures generally provide modest support for Hypothesis I, this negative relation is inconsistent with the prediction in Hypothesis I.

[Insert Table 7 here]

The coefficients on  $\ln(ASSETS)$  estimate the relation between firm size and noncompliance, which Hypothesis II predicts will have positive signs. Consistent with the prediction, in all six estimations of Equation (1),  $\ln(ASSETS)$  demonstrates a positive, statistically significant ( $p < 0.001$ ) relation with the decision to pay noncompliant compensation and the level of noncompliant compensation. Therefore, the estimations of Equation (1) provide strong evidence that an increase in firm size increases noncompliance, supporting Hypothesis II.

The coefficients of *ROA* and *RET* estimate the relation between firm performance and noncompliance, which Hypothesis III predicts will have negative signs. Consistent with the prediction, the only two statistically significant coefficients are negative. Four of the six coefficients on *ROA*, which measures accounting performance, are negative of which two are statistically significant (*CASH\_R*:  $-0.038$ ,  $p=0.019$ ; *TOTAL\_R*:  $-0.066$ ,  $p=0.016$ ), providing some evidence supporting Hypothesis III. This is

consistent with agency theory and the proposition that a more profitable firm is less risky, and therefore more likely to satisfy its §162(m) performance based standards. The coefficients on RET are mixed and fail to demonstrate statistical significance. Accounting performance may have a greater relation with noncompliance because firms generally rely on accounting performance measures for compensation performance goals. Although the evidence is not strong, the results provide at least modest support firm accounting performance being negatively related to §162(m) noncompliance.

The coefficients on *ln(CEO TENURE)*, *CEO OWN%*, *CEO/CHAIR* and *CEO PAY SLICE* estimate the relation between CEO power and noncompliance, which Hypothesis IV predicts will have positive signs. The results from estimating Equation (1) provide evidence that the relation is positive and support the Hypothesis IV prediction. Of the 24 coefficients, 16 are positive and statistically significant at the .10 level or lower and only one estimated coefficient is negative. In each of the six estimations of Equation (1), there is at least one CEO power measures that demonstrates a positive, statistically significant influence on noncompliance. Further, each of the four CEO power measures has a positive estimate coefficient in at least three of the six estimations of Equation (1). These results provide at least some support for each of the four measures of CEO power being positively associated with the firm's noncompliance decision. In total, CEO power demonstrates a positive relation with the likelihood of all forms of noncompliant compensation and the level of all forms of noncompliant compensation. Therefore, the results in Table 7 provide strong evidence that noncompliance increases with CEO power, supporting Hypothesis IV.<sup>26</sup>

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<sup>26</sup> As a supplemental analysis, based upon the proposition that CEO power is limited by greater board independence, I separated my sample into two groups, low and high board independence firm, and estimated a modified version of Equation (1) separately for each group. The separation was based upon *BOARD FACTOR*, a measure of board independence defined in Section 3.3.2. The positive relation between CEO power and noncompliance was positive and consistent with Table 7 for both groups of firms. Therefore, I do not present these results for brevity.

The coefficients on *BOARD SIZE*, *E-INDEX*, *INTERLOCK%*, *Non-I BOARD%* and *Non-I COMP COMM%* estimate the relation between measures of governance quality and \$162(m) noncompliance and demonstrate mixed results. Positive coefficients on these measures would support Hypothesis V's prediction that noncompliance decreases in the quality of governance. Inconsistent with my prediction, the only statistically significant coefficient on *E INDEX* is negative (-0.003, p=0.008) and three of the six coefficients on *Non-I COMP COMM%* are negative. *INTERLOCK%* and *Non-I BOARD%* demonstrate a mixed relation with noncompliance. Four of the six coefficients on *BOARD SIZE* are positive and statistically significant, the only evidence which is consistent with the prediction. However as noted, some prior literature questions the validity of *BOARD SIZE* as a measure of board effectiveness for larger firms. Therefore in total, there is no clear pattern of influence demonstrated by the measures of governance quality, and therefore the results generally fail to support Hypothesis V.

As a supplemental analysis, I estimate an alternative regression to test Hypotheses I through V. Using principal component analysis, I consolidate the fifteen Equation (1) independent variables that test Hypotheses I, III, IV and V, plus the log of the CEO's age, into seven factors. The CEO's age was excluded from Equation (1) to minimize multicollinearity. I estimate the alternative regression six times using the six measures of firm noncompliance, *NC MEASURE*, discussed in Section 2.4.

Because the results are generally consistent with Equation (1), with the exception of Hypothesis III, I summarize the findings without a detailed discussion. In Appendix C, I provide the tables of the loadings in Table C1 and of the results in Table C2. The four measures of firm risk combine to form two factors, which proxy for firm risk and test Hypothesis I. The coefficients on the proxy for firm structural risk, the factor formed from *LEVERAGE* and *ILLIQUIDITY*, are mixed and do not support Hypothesis I. This is consistent with the Equation (1) results that provide some evidence of a negative relation between *ILLIQUIDITY* and noncompliance. However, the six coefficients on the proxy for firm

performance risk, the factor formed from  $\sigma(ROA)$  and  $\sigma(RET)$ , are all positive with four statistically significant at the .10 level and one marginally significant, also consistent with the Equation (1) results. Therefore, this alternative regression provides evidence that noncompliance increases with firm performance risk, supporting Hypothesis I.

All six coefficients on  $\ln(ASSETS)$  are positive and statistically significant at the .01 level, supporting Hypothesis II and consistent with Equation (1). However, the coefficients on the proxy for firm performance, the factor formed from  $ROA$  and  $RET$ , are mixed and do not support Hypothesis III, somewhat inconsistent with the Equation (1) results that provide limited support for Hypothesis III. Because the coefficients are not generally positive, these results do not provide evidence that noncompliance increases with firm performance.

The five measures of CEO power form two CEO power factors. Eleven of the twelve coefficients on the CEO power factors are positive with ten statistically significant at the .01 level. These results support Hypothesis IV and are consistent with the Equation (1) results. The five measures of board quality form two governance factors. Consistent with the Equation (1) results, the coefficients on the board factors are mixed and fail to provide empirical support for Hypothesis V.

In conclusion, consistent with the results of Equation (1), this supplemental analysis provides some evidence supporting Hypothesis I, II, and IV, but not Hypothesis V. Unlike Equation (1), this analysis does not provide empirical evidence that supports Hypothesis III.

## 2.7. SUPPLEMENTAL ANALYSIS: AN EXAMINATION OF THE CHANGE IN FIRM NONCOMPLIANCE BEHAVIOR

Private firms and small public firms<sup>27</sup> are unaffected by §162(m). However, firms will become affected if they *go public* or grow to the point that CEO total annual compensation exceeds the \$1 million limit. Once affected, the firm must choose between compliance and noncompliance. A firm can reject noncompliance and structure their compensation so as to preserve the tax deduction. However, the firm can also reverse their decision at any point in the future by paying noncompliant compensation. In this supplemental analysis section, I examine the factors which influence a firm's initial decision to pay noncompliant compensation, using three measures of noncompliance, salary in excess of \$1 million, noncompliant cash compensation, and any noncompliant compensation.

To estimate the factors which influence a firm's decision to pay nondeductible compensation for the first time, I estimate Equation (2). Equation (2) is a hazard model, influencing the criteria for admittance into the sample set. Comparable to a survival model in which a patient leaves a clinical trial at death, this hazard model will help demonstrate those factors which influence the initial decision to pay noncompliant salary, cash, or total compensation. In other words, this analysis evaluates those factors which contribute to a firm initially abandoning the practice of compliance with §162(m) just as a survival model evaluates the factors which contribute to the death of the patient.

There are 1,601 firms included in my total sample set. For the hazard model sample set, I exclude the 96 firms which always pay noncompliant salary if *SALARY\_1* is the dependent variable, the 323 firms which always pay noncompliant cash compensation if *CASH\_1* is the dependent variable, and the 451 firms which always pay any form of noncompliant compensation if *TOTAL\_1* is the dependent

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<sup>27</sup> Because firm size is positively related to CEO total compensation levels, I assume that public firms that consistently pay their CEO less than \$1 million annual total compensation are generally smaller firms.

variable.<sup>28</sup> I include the 1,128 firms, 325 firms, and 228 firms which never pay noncompliant salary, cash, or any noncompliant compensation dependent upon whether the dependent variable *SALARY\_I*, *CASH\_I*, or *TOTAL\_I*, respectively. The 377, 953, and 922 remaining firms switch from being salary, cash or total compliant to salary, cash or total noncompliant, respectively. For the switching firms, I include all of their compliant observations and their first year as \$162(m) salary, cash or total noncompliant, as appropriate.

For Equation (2), the independent variables are the same as Equation (1), described above, with the following exceptions. To control for the significant influence from firm size and the likelihood that firm size generally increases so that it is its largest when the firm selects noncompliance, I replaced the natural log of total assets with the natural log of the mean total assets for the five prior years,  $\ln(5 \text{ YR } \mu(ASSETS))$ . Unless *TOTAL\_I* is the dependent variable, the independent variables include *PRIOR NC*, an indicator variable which equals 1 if the firm paid any noncompliant compensation in the prior year, 0 otherwise. This will control for the firm's preference to pay any noncompliant compensation in its decision to pay noncompliant salary or cash compensation. I exclude *PRIOR NC* when the dependent variable is *TOTAL\_I* because *PRIOR NC* equals 0 for all observations.<sup>29</sup>

The dependent variable, *NC MEASURE*, is one of three \$162(m) noncompliant indicators variables, *SALARY\_I*, *CASH\_I*, and *TOTAL\_I*, discussed above. If *SALARY\_I*, *CASH\_I*, or *TOTAL\_I* is the dependent variable, the equation estimates the factors which influence a firm's decision to pay noncompliant salary, noncompliant cash, or any noncompliant compensation, respectively.

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<sup>28</sup> I define a firm as "always" paying a form of compensation if it paid the applicable form of noncompliant compensation in all of the firm's observations in my sample.

<sup>29</sup> For comparison, I also estimate Equation (2) without *PRIOR NC* using *SALARY\_I* or *CASH\_I* as the dependent variable. Because these estimations demonstrate comparable results, I do not present the findings for brevity.

$$\begin{aligned}
NC\ MEASURE_{it} = & \beta_0 + \beta_1 LEVERAGE_{it} + \beta_2 ILLIQUIDITY_{it} + \beta_3 \sigma(ROA)_{it} + \beta_4 \sigma(RET)_{it} \\
& + \beta_5 \ln(5\ YR\ \mu(ASSETS))_{it} + \beta_6 ROA_{it} + \beta_7 RET_{it} + \beta_8 \ln(CEO\ TENURE)_{it} + \beta_9 CEO\ OWN\%_{it} \\
& + \beta_{10} CEO/CHAIR_{it} + \beta_{11} CEO\ PAY\ SLICE_{it} + \beta_{12} BOARD\ SIZE_{it} + \beta_{13} E - INDEX_{it} \\
& + \beta_{14} INTERLOCK\ \%_{it} + \beta_{15} Non - I\ BOARD\ \%_{it} + \beta_{16} Non - I\ COMP\ COMM\%_{it} \\
& + \beta_{17} MTB_{it} + \beta_{18} TAX\ BENEFIT_{it} [+ \beta_{19} PRIOR\ NC_{it}] \dagger \\
& + \sum YEAR\_INDICATORS + \sum INDUSTRY\_CODES + \epsilon_{it}
\end{aligned} \tag{2}$$

†  $\beta_{19}PRIOR\ NC_{it}$  is excluded when  $TOTAL\_I$  is the dependent variable.

Table 8 provides the hazard model estimation results of Equation (2), which examine Hypotheses I through V. The results are generally consistent with the estimations of Equation (1) presented in Tables 7. The estimations of Equation (2) provide additional evidence that noncompliance increases with firm size and CEO power, supporting Hypotheses II and IV, respectively. The results do not provide statistically significant evidence supporting or opposing the Hypotheses I, III, or V.

The coefficients on the risk proxies evaluate Hypothesis I. Eight of the nine coefficients on  $LEVERAGE$ ,  $\sigma(ROA)$  and  $\sigma(RET)$  are positive, but none demonstrate statistical significance at the .10 level. One coefficient on  $ILLIQUIDITY$  is negative and statistically significant, suggesting that poor liquidity reduces the likelihood that a firm pays noncompliant cash compensation for the first time. As discussed previously, this finding may be the consequence of firms with poor liquidity relying more heavily on compliant options. Therefore, Equation (2) does not provide evidence supporting Hypothesis I, but it does not provide strong evidence that noncompliance decreases with firm risk.

Providing additional, consistent support for Hypothesis II, all three coefficients on  $\ln(5\ YR\ \mu(ASSETS))$  are positive and statistically significant ( $p < .001$ ), providing evidence that firm size has a positive relation with firms' initial decisions to pay any form of noncompliant compensation. However,  $ROA$  and  $RET$  demonstrate mixed results and fail to provide additional support for Hypothesis III.



Consistent with Hypothesis IV, seven of the twelve coefficients on the CEO power measures are positive. Eight of the twelve coefficients are statistically significant at the .10 level or lower of which seven are positive. One CEO power proxy, *ln(CEO TENURE)* demonstrates mixed results. While coefficient on *ln(CEO TENURE)* is positive when *SALARY\_I* is the dependent variable (0.273,  $p=.001$ ), the coefficient is negative when *CASH\_I* (-0.133,  $p=.024$ ) and *TOTAL\_I* (-0.277,  $p<.001$ ) are the dependent variables. This mixed result indicates that CEO tenure has a positive relation with a firm's initial decision to pay noncompliant salary, but a negative relation with a firm's initial decision to pay noncompliant cash and total noncompliant compensation.

Consistent with the Equation (1) analysis, the governance quality measures fail to demonstrate a consistent relation with noncompliance. Only two of the fifteen measures demonstrate statistical significance. One coefficient of the three coefficients on *BOARD SIZE* (0.055,  $p=.075$ ) and one of the three coefficients on *Non-I BOARD%* (1.236,  $p=.024$ ), are positive and statistically significant. Both occur when *SALARY\_I* is the dependent variable, suggesting some relation between lower quality corporate governance and firms' initial decision to pay noncompliant salary. However, these findings do not provide consistent evidence that increased poor quality governance increases the likelihood that a firm switches to noncompliant behavior and fail to consistently support Hypothesis V.

In summary, Equation (2) provides additional evidence that firm noncompliance behavior increases with firm size and CEO power. In addition, this analysis provides some weak evidence that a firms' initial decisions to pay their CEO noncompliant salary may increase with poor quality governance.

[Insert Table 8 here]

## 2.8. CONCLUSION

This study examines firms' decisions not to comply with Internal Revenue Code §162(m) to determine the extent to which the motivation for CEO compensation design comes from shareholder utility maximization versus CEO utility maximization. I examine the relation of firm compensation determinants, CEO power measures and measures of governance quality with §162(m) noncompliant compensation and provide evidence that firm §162(m) noncompliant behavior is better defined by shareholder utility maximization as argued by agency theory.

Hypotheses I, II and III make predicts that relate the economic determinants of CEO compensation to firm §162(m) noncompliance behavior in a manner consistent with shareholder utility maximization. Consistent with Hypothesis I, this analysis provides some evidence that noncompliance with §162(m) increases with firm risk. My study provides strong, consistent evidence supporting Hypothesis II which predicts that noncompliance increases with firm size. My study provides some evidence of a negative relation between firm accounting performance and noncompliance, providing limited support for Hypothesis III.

Hypothesis IV predicts a positive relation between CEO power and firm noncompliance which is consistent with a prediction based upon either shareholder or CEO welfare maximization. Consistent with the prediction, this study provides evidence that §162(m) noncompliance increases with CEO power, supporting Hypothesis IV.

If firms' decisions not to comply with §162(m) reflect the motivation of CEO compensation design such that poor governance enables powerful CEOs to secure compensation arrangements that maximize CEO welfare to the detriment of shareholders, measures of the quality of corporate governance should demonstrate a positive relation with firm noncompliance. Hypothesis V predicts that

firm noncompliance is decreasing in the quality of governance and my study does not provide consistent evidence supporting the prediction, with qualifications relating to board size as noted in Section 2.6.

In summary, even though my study provides evidence that CEO power is positively related to noncompliance, I do not find consistent evidence that §162(m) noncompliance increases with poor quality governance. Because managerial power theory conditions excessive CEO influence on poor quality governance, my study does not support the proposition that firm §162(m) noncompliance decisions are explained by managerial power theory. In addition, the economic determinants of compensation, firm risk, size and performance, demonstrate a relation with noncompliance in a manner consistent with shareholder welfare maximization as predicted by agency theory. Because this study provides evidence that noncompliance is influenced less by poor quality governance and more by economic factors, this study does not support the proposition that managerial power theory systematically explains firm §162(m) noncompliance behavior. My study provides evidence that firm §162(m) noncompliance is motivated by shareholder wealth maximization and better explained by agency theory.

My results are generally consistent with agency theory, but subject to the following caveat. Agency theory predicts that CEO compensation design, including firm noncompliance, maximizes shareholder welfare. However, I do not examine the relation between §162(m) noncompliant compensation and shareholder wealth. My study examines how firm noncompliance relates to the quality of governance. Empirical evidence of a negative relation would support the prediction that firms with poor quality governance pay their CEOs more noncompliant compensation, suggesting that noncompliant compensation is positively related to CEOs' inefficiently controlling their own compensation design and, as a consequence, poor future firm performance. However, my study does not provide evidence of a consistent relation between firm noncompliance behavior and the quality of

governance. Therefore, the findings of my study do not support the conclusion that noncompliant compensation is evidence of inefficient CEO influence. The lack of a relation between governance quality and noncompliance suggests that noncompliant compensation may be positively related to future firm performance. However, I do not examine this question nor do I claim that this study documents a positive relation between noncompliant compensation and shareholder wealth. Instead, because my study provides evidence of a positive relation between CEO power and noncompliance, my study lays the foundation for future research to examine the influence that noncompliant compensation has upon future shareholder wealth.

### 3.0 THE EFFECT OF GOVERNANCE AND DISCLOSURE REGULATORY CHANGES ON §162(m) NONCOMPLIANCE

#### 3.1 INTRODUCTION

Congress enacted §162(m) in response to the popular belief that CEOs controlled their own compensation design to the detriment of shareholders (Rose and Wolfram, 2002). Compliance with §162(m) preserves the tax deduction for CEO compensation, but it limits CEO annual salary to \$1 million. Therefore, a §162(m) compliant firm generally must provide increasingly greater levels of performance-based incentive compensation as CEO total compensation increases over time, which will generally increase the riskiness of CEO compensation. Risk averse CEOs would prefer noncompliance with §162(m) if their total compensation remained unchanged and they received a greater proportion of fixed salary with a smaller proportion of uncertain incentive compensation. Further, such CEOs are likely to attempt to influence their compensation arrangements to secure §162(m) noncompliant compensation.

Because a CEO's influence on the firm's CEO compensation design is a function of the CEO's individual power (Core et al., 1999), assuming the CEO's compensation preferences are as described in the preceding paragraph and that the CEO's total compensation is held constant, noncompliance should increase with CEO power. This prediction also assumes that more powerful CEOs are able to bargain more effectively with the board over the design of their compensation contract than are less powerful CEOs. Consistent with this perspective, Chapter II provides evidence that over the period 1998 to 2011 CEO power was generally positively associated with CEO noncompliant compensation. That is, more

powerful CEOs tended to receive a greater proportion of noncompliant compensation than less powerful CEOs. During this period, two major regulatory changes sought to reduce CEO influence over compensation arrangements, the increased board independence requirements of SEC Release No. 34-48745 in 2003, and the increased compensation disclosure requirements of SEC Release No. 33-8732A in 2006. To better understand CEO compensation design and the influence of CEOs, I examine how these two exogenous regulatory shocks to the CEO compensation environment affected the relation between CEO power and firms' §162(m) noncompliance decisions.

The relationship between a publicly owned corporation and its CEO is a classic example of the principal-agent problem (Jensen and Murphy, 1990). Prior to 1900, businesses were predominantly small and managed by their owners. As firms grew,<sup>30</sup> management became more separated from ownership. Well before Jensen and Meckling (1976) formalized the conflict between shareholders and managers and the agency costs of control, firms recognized this conflict and offered incentive compensation to motivate CEOs to act in the shareholders' interest. For example, by 1928 nearly two-thirds of the large, industrial firms offered bonus plans and, in 1929 for those firms which provided bonus plans, bonuses provided 42% of executive compensation (Baker, 1938). However, executive compensation practices remained confidential, unavailable to both shareholders and even to some directors (Washington, 1942; Wells, 2010).

In the early 1930s, fueled by the depression and a series of public scandals which disclosed extraordinary executive compensation levels, the investment community and the general public questioned executive compensation practices and demanded full disclosure (Wells, 2010). Therefore, since the creation of the SEC in 1934, public firms have been required to disclose CEO total

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<sup>30</sup> Between 1895 and 1904, nearly 2,000 small manufacturing firms combined to form 157 large corporations (Murphy, 2012)

compensation and its particular components. Although the SEC increased compensation disclosure requirements in 1978, 1993 and 2006, the belief that powerful CEOs secured inefficient compensation arrangements with excess rents<sup>31</sup> continued, prompting some to conclude that CEO compensation is “*Pay-Without-Performance*” (Bebchuk and Fried, 2004). Because similar claims of excessive executive compensation continue,<sup>32</sup> understanding CEO compensation design and the influence of CEO power remains important.

Prior research generally recognizes that CEOs influence their compensation arrangements and that their influence increases with their individual power (Core et al., 1999; Murphy, 2011). Examining the relation between CEO power and compensation design is difficult because of endogeneity concerns, particularly the firm’s joint design of CEO compensation and whether to comply with §162(m). CEO compensation tends to be sticky over time such that compensation design and §162(m) noncompliance are jointly determined. The allocation between salary and incentives may be affected by CEO power and its association with board quality, firm performance, or other compensation determinants. The two SEC regulations changed the CEO compensation environment, creating natural experiments which alleviate some of the endogeneity concerns. Each regulation produced an exogenous shock which can be exploited to examine the relation between CEO power and firm noncompliance behavior.

I extend the prior literature and empirically examine how the SEC regulatory changes affected the relation between CEO power and §162(m) noncompliance behavior. To provide a single measure of CEO power, I use principal component analysis to combine four proxies of CEO power. By combining

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<sup>31</sup> Compensation arrangements in some circumstances may include optimal *rents*, such as *rents* provided to motivate the CEO to reveal private information, which provides the CEO with above-market compensation while still serving the interests of shareholders. In contrast, throughout this Chapter 3, I use the term *rents* to refer to suboptimal *rents* which are secured by the CEO as a function of CEO power and inefficiently maximize CEO wealth at the expense of the shareholders.

<sup>32</sup> Bloxham, Eleanor (April 13, 2011) How can we address excessive CEO pay? *CNNMoney*; Kim, Susanna (August 16, 2012) Taxpayers Subsidize CEO Pay, Report Says, *abc news*; Smith, Elliot B. and Phil Kuntz (April 30, 2013) CEO Pay 1,795-to-1 Multiple of Wages Skirts U.S. Law, *Bloomberg*

multiple proxies into a single measure, I can use the resulting overall CEO power measure to empirically examine the changing relation between CEO power and §162(m) noncompliance.

To provide the background for understanding CEOs' influence on their own compensation design at firms affected by §162(m), I first describe CEO compensation trends from 1994 through 2012. I find that salary levels stagnated and salary as a percentage of CEO total compensation declined consistently from 1994 through 2012. The evidence supports the proposition that §162(m) defined \$1 million, the tax deductible fixed compensation allowance, as an informal benchmark for CEO fixed salary, suggesting that §162(m) weakened CEO influence over salary levels. However, I find that CEO total compensation levels increased and the sensitivity of CEO total compensation to firm performance did not significantly increase from 1994 through 2012. Although the evidence suggests that §162(m) affected salary levels and the allocation between variable and fixed compensation, my time-series analysis does not reveal general evidence that §162(m) weakened the influence of CEOs over their total compensation design.

In 2003, the SEC issued Release No. 34-48745 which provides that public firms must establish a Board of Directors comprised of a majority of independent directors and compensation and nominating committees comprised solely of independent members to increase board independence and improve the quality of firms' governance processes. Section 162(m) compliance requires that firms establish an independent compensation committee, but imposes no requirement on firms which elect noncompliance with §162(m). Therefore, the 2003 regulation expanded the independence requirements of §162(m) by increasing the mandated level of board independence for all public firms. To the extent that CEOs use their power to influence their compensation arrangements and mandatory board independence reduces CEO influence, the 2003 regulatory changes should weaken the relation



between CEO power and §162(m) noncompliance. Therefore, I predict that the exogenous shock of the 2003 independence regulation weakened the CEO power-firm noncompliance relation.

I empirically examine how the 2003 SEC regulatory change influenced the relation between CEO power and §162(m) noncompliance and provide evidence that the 2003 regulation weakened the positive relation between CEO power and noncompliant salary at firms with lower board independence. I first examine all firms in my sample and find no evidence that the CEO power-firm noncompliance relation was affected over the entire sample. Based upon the assumption that firms with lower board independence should be the most affected by the 2003 regulation, I next divide my sample into those with less versus more independent governance processes based upon their pre-2003 board independence. I examine firms with lower and greater board independence separately and provide evidence that the 2003 regulation weakened the positive relation between CEO power and §162(m) noncompliant salary for firms with lower pre-2003 board independence but not for the regulatory change. This suggests that at firms with lower board independence the 2003 regulation weakened a CEO's ability to use his power to secure §162(m) noncompliant salary, which is salary in excess of \$1 million. For my overall sample, however, I find no consistent evidence that the 2003 regulation affected the relation between CEO power and a firm's general use of §162(m) noncompliant compensation.

For firms with more independent boards, my results suggest that the 2003 regulation did not have a general, broad effect on the relation between CEO power and firm §162(m) noncompliance behavior and, in more general terms, compensation design. This result suggests that either (a) further improving board independence for firms that already had relatively independent boards is not necessary to improve the quality of governance, (b) for such firms, the 2003 regulations did not change board independence sufficiently to have a significant influence on the quality of governance, or (c) for such firms, independent directors are an ineffective mechanism for controlling CEO power because the SEC

definition of an independent director fails to provide independent review. For example, with respect to the final condition, a director with social ties to the CEO can qualify as an independent director and prior literature has documented that social ties influences governance quality (Hwang and Kim, 2009). Therefore, the independence regulations may fail to increase the quality of governance because the regulations allow the CEO to fill the board with “*friends*.”

In summary, I predict that the 2003 board independence regulation weakened the association between CEO power and §162(m) noncompliance and provide some evidence supporting the prediction under very limited circumstances, specifically noncompliant salary at lower board independent firms. Because the SEC further modified the CEO compensation environment in 2006, Chapter 3 also examines how the 2006 regulation changed the link between CEO power and firm §162(m) noncompliance.

In 2006, SEC Release No. 33-8732A mandated a significant increase in the disclosure of CEO compensation arrangements. Compliance with §162(m) to achieve full tax deductibility of all compensation requires that all CEO compensation in excess of \$1 million must be based on shareholder approved performance goals, i.e. risky incentives.<sup>33</sup> Because §162(m) compliance generally increases the reliance on risky incentives, the risk premium for a compliant compensation arrangement should exceed the risk premium for an equivalent noncompliant arrangement (Balsam and Ryan, 1996). Prior literature concludes that to reduce the risk premium from compliance, firms responded to §162(m) by providing lower risk compliant incentives, with performance goals designed to preserve board discretion to award CEO bonuses without requiring high sensitivity between compensation and performance (Murphy, 2012). Because the 2006 regulations greatly increased the compensation disclosure requirements and prior literature has provided evidence that increased disclosure generally increases compensation sensitivity (Craighead et al., 2004; Ferri and Maber, 2013), I propose that the exogenous

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<sup>33</sup> I discuss further procedural requirements in greater detail in Section 3.2.1.

shock of the 2006 regulations increased the sensitivity of compliant incentives, which increases the riskiness of §162(m) compliant incentives.

Assuming that the 2006 disclosure mandates resulted in an increase in the riskiness of compliant incentives, a CEO's expected utility from compliant incentives would have decreased in 2006, in absolute terms and relative to noncompliant incentives. To remain compliant with §162(m), firms can increase the riskiness of the compliant incentives. To avoid the imposition of the additional risk, firms can increase their use of noncompliant compensation. Under such circumstances, because CEOs prefer less risky compensation, they are likely to attempt to influence their compensation arrangements to secure lower risk noncompliant compensation, as discussed in greater detail in Section 2.3.3. Therefore following the 2006 regulatory change, risk averse CEOs have greater incentive to use their influence to secure noncompliant compensation and their success should increase with their individual power. Therefore, I predict that the 2006 SEC disclosure regulation strengthened the relation between CEO power and §162(m) noncompliance.

I empirically examine how the 2006 SEC disclosure regulation influenced the relation between CEO power and §162(m) noncompliance and provide evidence that the 2006 disclosure requirements resulted in a stronger relation. This finding is important for what it reveals about CEO compensation practices and firm §162(m) noncompliance behavior. First, these findings provide some support for the popular belief that firms used low risk performance standards to minimize the compliance risk premium and that increasing shareholder awareness, via increased disclosures, motivates firms to modify their compensation arrangements and §162(m) noncompliance behavior. Second, the evidence supports the proposition that CEOs prefer noncompliant compensation and use their power to secure lower risk, noncompliant compensation.

Finally, because the 2006 changes did not weaken the relation between CEO power and noncompliant compensation, my study provides evidence that the increase in disclosure did not weaken CEO influence over §162(m) noncompliance behavior and his or her own compensation design. The influence of the 2006 mandates on CEO compensation practices demonstrated by my study is consistent with results in Robinson et al. (2011), who demonstrated a positive relation between a firm's failure to properly comply with the 2006 compensation disclosure requirements and excess CEO total compensation levels. This suggests that firms which paid their CEO greater compensation relative to comparable CEOs also tended to fail to fully comply with the 2006 disclosure requirements, consistent with an effort to camouflage compensation practices. After the disclosure defects were made public by the SEC, the firms continued to provide their CEO excess compensation in the subsequent year without any significant reduction. Similar to my study, the disclosures increase shareholder awareness, but do not necessarily reduce CEO influence on CEO compensation design.

Chapter 3 makes three primary contributions to the compensation literature. First, I provide some descriptive evidence that CEO salary levels have not grown in constant dollars, suggesting that §162(m) affected CEO salary levels by providing \$1 million as an effective salary benchmark. One result of this effect was to reduce the percentage of CEO total compensation from fixed salary. This suggests that §162(m) weakened the ability of CEOs to secure salary in excess of this \$1 million benchmark. Second, I provide evidence that at those firms with lower independent governance prior to 2003, the 2003 independence regulations weakened the positive relation between CEO power and §162(m) noncompliant salary in excess of the \$1 million benchmark. This suggests that increased board independence further weakens the ability of CEOs in certain circumstances to use their power to secure noncompliant salary and provides evidence that increased board independence improves the quality of governance. Third, I find that the 2006 disclosure regulations strengthened the relation between CEO power and §162(m) noncompliance. In summary, my study suggests that §162(m) affected salary levels

and the ability of CEO to influence the fixed salary component of their total compensation, but I cannot conclude that §162(m) affected CEO influence over their total compensation design.

I present the background and hypothesis development in Section 3.2. The research methods are presented in Section 3.3. The sample selection and descriptive statistics are presented in Section 3.4. I present CEO compensation trends in Section 3.5 and the regression results in Section 3.6. I conclude in Section 3.7.

## 3.2. BACKGROUND AND HYPOTHESIS DEVELOPMENT

To understand the long-term implications of §162(m) on CEO compensation design and the influence of CEOs, I begin by describing how §162(m) was designed to influence CEO compensation arrangements in Section 3.2.1. Section 3.2.2 presents the prior literature which examined the initial effect<sup>34</sup> of §162(m) on CEO compensation levels and sensitivity. Section 3.2.3 develops my hypotheses.

### 3.2.1. The intention of §162(m) to Influence CEO Compensation

In 1993, Congress passed §162(m) to influence CEO compensation design, specifically to reduce “excessive” compensation and increase the link between compensation and firm performance (Perry and Zenner, 2001; Balsam and Yin, 2005). To accomplish this goal, §162(m) provides a tax incentive such that a firm<sup>35</sup> must design its CEO compensation arrangements to comply with §162(m) or lose some tax deduction. Section 162(m) denies the federal corporate income tax deduction for all CEO compensation in excess of \$1 million, unless the compensation is paid pursuant to a §162(m) compliant performance

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<sup>34</sup> The exact years examined by the early studies vary and are provided in Section 3.2.2, primarily 1994 through 2000.

<sup>35</sup> I refer to those firms affected by §162(m). Section 162(m) applies to only publicly traded firms and only when the firm pays at least one executive more than \$1 million total of annual compensation.

based incentive arrangement which was authorized by an independent compensation committee and pre-approved by the shareholders. Congress intended that §162(m) should influence CEO compensation design by the following three mechanisms: increased use of performance based incentives, increased oversight of compensation arrangements by establishing independent compensation committees, and increased shareholder awareness of, and participation in, CEO compensation practices. The first mechanism is provided to increase the link between CEO compensation and firm performance, an express purpose of §162(m). However, §162(m) was enacted because of the common belief that CEOs controlled their own compensation design (Rose and Wolfram, 2002). Consistent with this belief, the second two mechanisms are provided to reduce CEO influence over his or her own compensation design. I next describe these three mechanisms.

The first mechanism is that §162(m) preserves the tax deduction for executive compensation paid “*solely on account of the attainment of one or more performance goals*,”<sup>36</sup> encouraging firms to use incentive compensation. Empirical studies have documented a positive relation between incentive compensation and firm performance in certain circumstances (Mehran, 1995; Ittner et al., 2003). However, an increased use of incentive compensation may impose additional risk on the CEO for which the firm must provide a risk premium. Therefore, an increased risk premium may be a cost of compliance with §162(m) (Balsam and Ryan, 1996) which should increase CEO compensation levels (Reitenga et al., 2002).

If a firm limited salary to less than \$1 million and closely linked incentives to performance goals prior to the passage of §162(m), compliance with §162(m) only required the formalization of the firm’s compensation policy (Balsam and Ryan, 2008). For these firms, §162(m) compliance imposed little to no additional risk and, as result, required little to no compliance risk premium. If a firm paid a salary in

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<sup>36</sup> 26 USC §162(m)(4)(C)

excess of \$1 million and/or did not closely link incentives to performance pre-§162(m), continued compliance with §162(m) required that the firm modify the CEO's compensation arrangement by increasing their use of performance based incentives, which increased the riskiness of the incentives offered.<sup>37</sup> For these firms, compliance imposed additional risk which required a larger compliance risk premium, increasing compensation levels. However, this increased use of incentives may have also increased the compensation's sensitivity to performance, a goal of §162(m).

The second mechanism is that §162(m) compliance requires that a firm establish and maintain a *Compensation Committee* of two or more members. Based upon the belief that independent review improves the quality of governance which should influence CEO compensation design, only "outside directors"<sup>38</sup> can serve as committee members. The Board *Compensation Committee* is responsible for the review and approval of the compensation arrangements of all executives covered by §162(m), including the CEO. The *Compensation Committee* defines the incentive compensation performance goals, certifies that the goals were satisfied, and authorizes the payment of any §162(m) compliant, performance-based compensation.<sup>39</sup>

The third mechanism through which §162(m) compliance operates is increased shareholder awareness of and participation in CEO compensation practices. Section 162(m) preserves the tax

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<sup>37</sup> Firms could have provided weak, low risk performance standards to avoid the imposition of additional risk as discussed in greater in Section 3.2.3.2.

<sup>38</sup> Section 1.162-27(e)(3)(i) of the Regulations provides that a director is an "outside director" if the director (A) is not a current employee of the publicly held corporation; (B) is not a former employee of the publicly held corporation who receives compensation for prior services (other than benefits under a tax-qualified retirement plan) during the taxable year; (C) has not been an officer of the publicly held corporation; and (D) does not receive remuneration from the publicly held corporation, either directly or indirectly, in any capacity other than as a director. For this purpose, remuneration includes any payment in exchange for goods or services. Section 1.162-27(e)(3)(vi) provides that whether a director is an employee or a former officer is determined on the basis of the facts at the time that the individual is serving as a director on the compensation committee. Thus, a director is not precluded from being an outside director solely because the director is a former officer of a corporation that previously was an affiliated corporation of the publicly held corporation. Revenue Ruling: 2008-32.

<sup>39</sup> 26 USC §162(m)(4)(C)(i)

deduction for incentives only if the performance goals are “*disclosed to shareholders and approved by a majority of the vote in a separate shareholder vote before the payment of such remuneration,*”<sup>40</sup> i.e., *ex ante* shareholder approval of the disclosed incentive compensation performance goals. Furthermore, on November 29, 1993, the SEC mandated that all firms must disclose their §162(m) policy. Therefore, firms must disclose both the incentive performance goals for all executives covered under §162(m) for whom the firm is attempting to qualify<sup>41</sup> their incentive compensation arrangement and the firm’s general §162(m) policy. However, firms are not mandated to disclose if they paid any §162(m) noncompliant compensation. As a result, firms can disclose that they intend<sup>42</sup> to qualify their incentive compensation plans pursuant to §162(m), present §162(m) compliant performance goals to their shareholders, secure *ex ante* shareholder approval of the incentive arrangement, and still pay their CEO compensation which does not qualify under §162(m).

### 3.2.2. Literature Review: The Influence of §162(m) on CEO compensation

Prior studies have examined the impact of §162(m) on CEO compensation levels and sensitivity to firm performance. Overall, CEO total compensation levels grew dramatically from the passage of §162(m) in 1993 (Hall and Liebmann, 2000; Rose and Wolfram, 2000) through the year 2000 (Murphy, 2011). If this increase in total compensation levels is at least partially the result of increased risk premiums from an increased reliance on incentives, the link between CEO compensation and firm performance, pay-for-performance sensitivity (PPS), may have also increased.<sup>43</sup> Consistent with this proposition, there is

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<sup>40</sup> 26 USC §162(m)(4)(C)(ii)

<sup>41</sup> I use the term “qualify” to indicate that the firm seeks to design a compensation arrangement which is compliant with §162(m), and therefore qualifies for the tax deduction.

<sup>42</sup> The exact language of each firm’s §162(m) policy is extremely important. For example, in *Seinfeld v. O’Connor*, 774 F. Supp. 2d 660, 667 (D. Del. 2011), the court emphasized that the firm did not mislead their shareholders because their proxy statement only stated that they *intended* for their incentive compensation plan to qualify under §162(m), but did not assert that it *will* be tax deductible.

<sup>43</sup> The sensitivity studies discussed in this literature review examined the following periods: Hall and Liebman, 1980-1998; Perry and Zenner, 1991-1997; Rose and Wolfram (2000) 1994-1997; Johnson et al., 1993-1994; Balsam and Ryan, 1995-2004; and Rose and Wolfram (2002) 1993-1997.



some indication that CEO PPS increased following the passage of §162(m) (Hall and Liebman, 2000; Perry and Zenner, 2001). Firms reduced their reliance on salary for compensation growth, substituting an increased reliance on performance based incentives which thereby increased PPS, especially for those firms with CEO salaries near the \$1 million limit (Rose and Wolfram, 2000). PPS increased following media attention (Johnson et al., 1997) and for new hires (Balsam and Ryan, 2007). While Perry and Zenner (2001) argued that §162(m) contributed to increased CEO PPS post-1993, Rose and Wolfram (2002) concluded that the early studies failed to provide consistent, reliable evidence that PPS increased as a result of §162(m).

Law review commentators commonly refer to §162(m) as a classic example of a law of unintended consequences (Salley, 2009). It was designed to reduce compensation levels, but instead increased pay packages (Miske, 2004; Polsky, 2007). Firms increased executive compensation while sacrificing valuable tax deductions, both contrary to the intent of Congress (Polsky, 2007).

### 3.2.3. Hypothesis Development

Although there are different theories which seek to describe compensation practices, principally agency and managerial power theories, it is generally accepted that CEOs have some influence over their compensation arrangements and their influence increases with their individual power (Core et al., 1999; Bebchuk and Fried, 2004; Murphy, 2011). Because I predict risk averse CEOs generally prefer noncompliant compensation all else being equal, to the extent that CEOs influence their compensation design, Chapter 2 predicts that CEOs use their influence to increase the use of noncompliant compensation. Consistent with this prediction, Chapter 2 provides evidence that CEO power is positively related to firm §162(m) noncompliance behavior from 1998 through 2011. This evidence suggests that more powerful CEOs are more likely to receive noncompliant compensation and the level of noncompliant compensation increases with their individual power. However, CEO compensation is

highly persistent overtime such that compensation and the influential factors are jointly determined, raising endogeneity concerns (Lilling, 2006).

Since §162(m) became effective on January 1, 1994, the SEC imposed new governance standards in 2003 and expanded compensation disclosure requirements in 2006. As exogenous shocks, these two regulatory changes created natural experiments which alleviate some endogeneity concerns. In addition, these regulations expanded the two §162(m) mechanisms that were designed to limit CEO influence, increased independent governance and shareholder awareness, to all publicly traded firms and not only those firms that elect compliance with §162(m). If the regulations changed CEO influence over his or her compensation design, the relation between CEO power and firm noncompliance behavior should be affected. Therefore, I extend prior literature and examine how these regulatory changes influenced the relation between CEO power and §162(m) noncompliance to better understand how CEOs influence their compensation design.

#### 3.2.3.1. Hypothesis VI: The Influence of Mandatory Board Independence on CEO power

As discussed in Section 3.2.1, an independent *Compensation Committee* is one of the three mechanisms provided by §162(m) to influence the level and pay-performance sensitivity of executive compensation. However, §162(m) does not mandate that noncompliant firms form a *Compensation Committee* consisting of independent members. Therefore, not all firms formed a compensation committee with independent members. In fact, a common error discovered by the IRS on audits were firms which claimed compliance, but had *Compensation Committee* members who failed to qualify as *outside directors*.<sup>44</sup> This provides some indication that even some *pseudo-compliant*<sup>45</sup> firms failed to

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<sup>44</sup> Struve, Robin (2008) *Executive Compensation: A Million Dollar Problem?* Bloomberg Corporate Law Journal, Vol. 3: 556-66.

<sup>45</sup> I refer to those firms which deducted some CEO compensation in excess of \$1 million on their Form 1120, claiming that it qualified under §162(m), but failed to maintain a *Compensation Committee* with only outside directors. Without the proper committee, the CEO compensation tax deduction is limited to \$1 million.

increase the level of independent review provided by their board. Because §162(m) failed to motivate sufficient board independence for many in the investment community, some investors continued to argue for greater independent oversight over executive compensation as evidenced by the following action of the major self-regulating trading organizations and the SEC. On November 4, 2003, at the recommendations of the NYSE, the AMEX and NASDAQ, the SEC issued Release No. 34-48745 (*2003 IND*). Following a phase-in period,<sup>46</sup> this new regulation required public firms to establish a *Compensation Committee* comprised solely of independent members, a *Nominating Committee* comprised solely of independent members, and a *Board of Directors* comprised of a majority of independent directors. Therefore, regardless of a firm's §162(m) noncompliance behavior, the level of board independence and, specifically the independent review of CEO compensation design practices, for publicly traded firms increased for many firms following *2003 IND*.

The board independence requirements provided by §162(m), *2003 IND*, and SOX<sup>47</sup> reflect the popular belief that independent review improves the quality of governance. Prior research documents that director/committee member independence is positively related to firm value (Dahya et al., 2008) and buy-and-hold returns (Farber, 2005), while negatively related to financial reporting fraud (Beasley, 1996; Dechow et al., 1996), poor internal controls (Krishnan, 2005) and earnings management (Klein, 2002). However, there is analytical research which suggests that greater independent governance does not necessarily improve CEO compensation design (Kumar and Sivaramakrishnan, 2008) and the empirical findings are mixed, which I next discuss.

Prior studies provide evidence that director/committee independence is positively related to compensation disclosures (Laksmana, 2008) and equity based compensation (Ryan and Wiggins, 2004),

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<sup>46</sup> Firms had until the earlier of their first annual meeting after January 15, 2004 or October 31, 2004 to comply with the new standards.

<sup>47</sup> SOX mandates that all firms form an independent audit committee charged with the responsibility of hiring the firm's independent auditor.

but can be either negatively (Core et al., 1999; Chhaochharia and Grinstein, 2009) or positively (Armstrong et al., 2012) related to CEO compensation levels. Prior empirical studies document that board independence is negatively related to CEO bonuses (Grinstein and Hribar, 2004), but positively related to CEO total compensation (Guthrie et al., 2012). However, the prior studies may be influenced by an important omitted variable. Directors with social ties to the CEO nevertheless can qualify as independent per the SEC regulations and §162(m). Using a unique data set, Hwang and Kim (2009) demonstrate that the presence of technically independent, but socially connected directors are positive related to CEO compensation levels and reduced pay-for-performance sensitivity, suggesting that socially connected directors weakens the quality of governance. Therefore, unmeasured social relationships may contribute to the mixed results demonstrated by the prior studies. Although the evidence evaluating the relation between board independence and CEO compensation is mixed, increased independent governance processes demonstrate a consistent positive relation with firm performance, internal controls and reporting quality, which provides empirical support for the value of independent review.

Although agency theory predicts that CEO contracts will be designed optimally (Gibbons, 2005), prior literature has documented many instances of ineffective directors enabling powerful CEOs to secure excessive and potentially suboptimal compensation arrangements (Bebchuk and Fried, 2004). CEOs have some influence over directors and generally have more influence over inside directors (Core et al., 2005). If independent directors design CEO compensation arrangements, the contracts are more likely to be the products of “*arm’s-length*” deals over which CEOs have less control (Bebchuk and Fried, 2004; Core et al., 2005). Because 2003 IND increased the mandatory level of board independence, 2003 IND should have reduced CEO influence over the Board of Directors and compensation design, including §162(m) noncompliance decisions. Therefore, I predict that the 2003 IND reduced CEO influence over compensation design, weakening the positive relation between CEO power and §162(m)

noncompliance, such that the positive relation is significantly smaller or insignificant following the 2003 IND.

**Hypothesis VI: *The relation between CEO power and §162(m) noncompliance weakened following the 2003 SEC increased independence requirements.***

### 3.2.3.2. Hypothesis VII: The Influence of Increased Mandatory Compensation Disclosure on CEO power

As discussed in Section 3.2.1, increased reliance on incentive compensation is another mechanism provided by §162(m) to increase the link between CEO compensation and firm performance. To qualify as a tax deductible expense under §162(m),<sup>48</sup> executive compensation in excess of \$1 million must not be fixed salary, but instead be incentives that are payable “*solely on account of the attainment of one or more performance goals.*”<sup>49</sup> However, §162(m) does not define “*performance goals.*” Instead, the statute provides that the performance goals must be “*determined by*” the independent Compensation Committee<sup>50</sup> and “*disclosed to*” and “*approved by*” the shareholders.<sup>51</sup> Therefore, the efficiency of CEO incentive compensation performance goals depends upon the other two §162(m) mechanisms, the board’s independent review and shareholder awareness.

An increased use of incentives will generally increase the risk imposed upon the CEO for which the CEO must receive a costly risk premium, the compliance risk premium. As discussed in Section 3.1, because §162(m) does not define “*performance goals,*” firms could minimize the cost of the compliance risk premium by providing performance goals which imposed minimal risk on the executive (Rose and Wolfram, 2002). Firms have taken advantage of this opportunity (Crystal, 1995), prompting Murphy and

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<sup>48</sup> I define *compliant* compensation as compensation that is *qualified* under §162(m) and, therefore, tax deductible.

<sup>49</sup> 26 USC §162(m)(4)(C)

<sup>50</sup> 26 USC §162(m)(4)(C)(i)

<sup>51</sup> 26 USC §162(m)(4)(C)(ii)

Oyer (2004) to comment that some firms replaced pre-§162(m) “*sensible*” incentive compensation plans with “*overly generous formulas*” which preserve the compensation tax deduction while minimizing the imposition of costly risk on the executive.<sup>52</sup> Such low-risk incentive plans are designed to preserve the board’s discretion over the incentives and not to closely link CEO compensation to objective firm performance measures. However, the board does not have sole discretion over §162(m) compliant incentives because the shareholders must vote to authorize the incentive plan.<sup>53</sup> The shareholders’ vote should be influenced by their awareness of the firm’s compensation practices. I assume that shareholder awareness is a function of firm disclosure because shareholders are generally dependent upon disclosures for information concerning the firm’s compensation practices.

On September 8, 2006, the SEC published Release No. 33-8732A (2006 DIS), effective for fiscal years ending on or after December 15, 2006 and requiring that firms must include a new “*Compensation Discussion and Analysis*” section in their proxy statements. Each firm must provide an explanation and analysis of all material elements of the firm’s compensation goals, practices, and decisions for the CEO, the CFO, the three other highest-paid executive officers, and the directors (Robinson et al., 2011). Murphy (2012) describes the required disclosures as a “plethora” of additional information. This information must be certified by the CEO and CFO. Because §162(m) does not define “*performance goals*” nor require any specific disclosures, all disclosures required under 2006 DIS expand the mandatory disclosures for all §162(m) affected firms, both compliant and noncompliant.

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<sup>52</sup> With an overly generous formula, the board increases the likelihood that firm’s performance easily satisfies the incentive performance goals, authorizing an excessively large bonus. From this excessively large authorized bonus (which qualifies under §162(m)), the board can exercise negative discretion and grant a bonus of a smaller amount that they deem advisable. This procedure helps to minimize the riskiness of the incentives.

<sup>53</sup> The shareholders’ vote must take place a minimum of every five years if the compensation committee is granted the discretion to establish the annual performance targets. 26 CFR §1.162-27(a)(4)(vi)

However, what are the effects of increased compensation disclosure? The governance improvement hypothesis<sup>54</sup> posits that increased disclosure reduces executive compensation excess rents (Lo, 2003). Autrey et al. (2007) establish conditions which characterize how mandated disclosure relates to CEO performance. If the CEO can influence the measure disclosed, risk may increase, but so should CEO effort which may increase firm performance. If CEO effort cannot influence the disclosed measure, the disclosure will impose risk and create compensation design inefficiencies (Autrey et al., 2007).

Prior literature has empirically examined the benefits and limitations of increased compensation disclosure. Results generally indicate that executive perquisites increased following the 1978 disclosure mandates, options increased dramatically following the 1993 disclosure mandates, and Canadian executive compensation levels significantly increased following the 1993 Canadian disclosure mandates. Citing this evidence, Murphy (2012) concludes that *“there is little evidence that enhanced disclosure has lead to reductions in objectionable practices.”*

Alternatively, prior literature has provided some empirical evidence demonstrating other circumstances in which improvements to compensation design followed increased disclosure. Canadian executive compensation increased following the 1993 compensation disclosure mandates, but so did the link between CEO compensation and firm performance or pay-performance sensitivity (Craighead et al., 2004). The UK’s “Say-on-Pay” vote<sup>55</sup> had no effect on compensation levels or growth, but there is evidence that the “Say-on-Pay” requirements led to increased CEO compensation pay-for-performance sensitivity (Ferri and Maber, 2013). Bebchuk et al. (2002) contends that CEOs have the incentive to obscure and legitimize their extraction of rents, through a process termed *camouflage*, leading to

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<sup>54</sup> The *Governance Improvement Hypothesis* argues that increased disclosure should lead to value-increasing governance improvements, including the reduction of executive compensation rents. Therefore, increased disclosures should reduce the CEO’s ability to extract inefficient rents and inefficiently influence his or her own compensation design (Lo, 2003).

<sup>55</sup> The UK mandates an annual, non-binding shareholder vote to approve their firm’s annual executive pay report.

inefficient compensation arrangements. Lo (2003) provided empirical evidence of conditions under which increased disclosure reduces compensation rents. Therefore, although there are conditions under which increased disclosure may increase inefficiency, specifically when the incentives are based on noisy performance measures, and empirical evidence is mixed, such that increased compensation disclosures can either increase or decrease total compensation levels, prior research provides some evidence that increased disclosure affects CEO compensation design by strengthening the relation between compensation and firm performance.

The *2006 DIS* was the first major compensation disclosure overhaul since the passage of §162(m) in 1993 and it greatly expanded compensation disclosures (Robinson et al., 2011). In 2006, proxy statements averaged 45 pages for the 100 largest firms.<sup>56</sup> One year later, in 2007, their proxy statements averaged more than 70 pages, with the increased focused largely on compensation (Murphy, 2012). In the first year following the *2006 DIS*, even though prior literature documents that disclosure defects were common, the majority of firms provided compensation benchmarks, the elements of compensation, and the specific factors and criteria considered for determining CEO compensation (Robinson et al., 2011). Despite the reporting errors, this represents a significant increase in the extent of compensation design information being disclosed.

Because compensation disclosures increased significantly for the first time since 1994 and prior literature has documented that increased disclosure can increase the link between compensation and firm performance, I propose that the *2006 DIS* increased the link between §162(m) compliant incentives and firm performance. These changes should reduce firms' use of low risk (to the executive) "*overly generous formulas*" for compliant incentives, which were designed to preserve board discretion and not to closely link compliant incentives to performance.

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<sup>56</sup> These firms are classified as the largest based upon revenues (Murphy, 2012).



Without the low risk formulas, firms can provide more objective, less flexible performance goals, which increase the risk of §162(m) compliant incentives. An increase in risk reduces the CEO's expected utility from the compliant incentives in the absence of an increase in the corresponding risk premium. To avoid the associated risk, firms can elect noncompliance with §162(m) to some greater degree. Because CEOs prefer lower risk compensation as discussed, CEOs have greater incentive to use their influence to secure noncompliant compensation following the 2006 regulatory change. Therefore, I predict that CEOs will exert more influence to secure noncompliant compensation following the 2006 regulatory change, and further that the likelihood of their success increases with their individual power. As a consequence, I predict that the 2006 DIS strengthened the relation between CEO power and §162(m) noncompliance.

To illustrate the influence of the 2006 DIS on noncompliance behavior, consider the following examples of the number of pages of the firm's annual proxy statement dedicated to executive compensation and each firm's statement of their §162(m) policy. These examples illustrate how executive compensation disclosure expanded following the 2006 DIS with a corresponding change of the firm's §162(m) policy, electing greater noncompliance behavior.

Intel's 2006<sup>57</sup> proxy statement, its last pre-2006 DIS proxy statement, dedicated 13 pages to executive compensation and provided the following §162(m) policy statement:

*"... Intel's Executive Officer Incentive Plan ... have each been approved by stockholder vote; as a result ... are qualified ... performance-based compensation not subject to Section 162(m) of the Tax Code. However, to maintain flexibility in compensating Intel's executive officers in a manner designed to promote varying corporate goals, it is not a policy of the Committee that all executive compensation must be deductible."*

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<sup>57</sup> Intel's 2006 proxy statement, filed with the SEC on March 28, 2006, reports CEO compensation through the year ended December 31, 2005. All of the information and statements presented in this section are available online at [sec.gov](http://sec.gov).

Although Intel directors in 2006 reserved the right to pay noncompliant compensation, the statement clearly indicates that their incentive compensation programs are qualified under §162(m), i.e. compensation that is tax deductible pursuant to §162(m). One year later and subject to the 2006 DIS requirements, Intel's compensation discussion increased to 22 pages. In addition, the proxy statement indicates Intel's plan to modify its §162(m) policy and provide noncompliant incentives with the following statement:

*"Intel's Executive Officer Incentive Plan and 2006 Equity Incentive Plan have each been structured with the intention that cash payments and stock options awarded under these plans be qualified performance-based compensation not subject to Section 162(m) of the tax code. **Proposal 4 in this proxy statement is proposing that stockholders approve the 2007 Executive Officer Incentive Plan; however, due to the plan's design, it is not expected to meet other qualifications for tax deductibility under Section 162(m) of the tax code.**<sup>58</sup> To maintain flexibility in compensating Intel's executive officers in a manner designed to promote varying corporate goals, it is not a policy of the Committee that all executive compensation must be tax-deductible."*

In the 2008 proxy statement, the second year in which Intel was subject to 2006 DIS, Intel's compensation discussion grew to 28 pages, providing discussions of compensation determinants, peer groups and even a section titled the *"History of Executive Compensation at Intel."* In addition, the 2008 §162(m) policy statement clearly indicates Intel's policy of providing noncompliant incentives.

*"Certain performance-based compensation approved by stockholders is not subject to this deduction limit. Intel structured its 2006 Equity Incentive Plan with the intention that stock options awarded under this plan would qualify for tax deductibility. However, in order to maintain flexibility and promote simplicity in the administration of these arrangements, other compensation such as RSUs and payments under the 2007 Executive Officer Incentive Plan are not designed to qualify for tax deductibility."*

In two years, Intel increased its discussion of executive compensation and transformed its §162(m) policy from compliant incentives in 2005 to noncompliant incentives in 2007. Therefore, during

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<sup>58</sup> Emphasis added.

this two year period of increasing compensation disclosures, Intel decreased its use of compliant incentives and increased its use of noncompliant incentives.

As a second example, Micros Systems, Inc.'s §162(m) policy also changed following *2006 DIS*. Prior to the passage of *2006 DIS*, Micros Systems' proxy statement included the following wording:

*"The Company **expects** that [§162(m)] will not limit its tax deductions for executive compensation in the near term."*<sup>59</sup>

Following the passage of *2006 DIS* but prior to its taking effect, Micros Systems dedicated seven pages to executive compensation and provided a clear indication of some noncompliance with the following statement:

*"[§162(m)] limited the Company's compensation deductions in fiscal year 2006. These provisions may limit the Company's tax deductions for executive compensation in the future."*

Subject to *2006 DIS*, Micros Systems increased its compensation discussion to 13 pages and modified its §162(m) policy disclosure as follows:

*"To the extent feasible, we structure executive compensation to preserve deductibility for federal income tax purposes. In this regard, our stock option plan is designed to preserve, to the extent otherwise available, the deductibility of income realized upon the exercise of stock options. However, the availability of tax deductions is not a factor that the Compensation Committee considers in determining the amounts or types of compensation offered."*

Similar to Intel, Micros Systems transformed its §162(m) policy from generally compliant incentives to noncompliant incentives as the firms incorporated the *2006 DIS* changes. Both firms may have changed their §162(m) policy to avoid the litigation experienced by Archer-Daniels-Midland (ADM). Because ADM's CEO's total compensation exceeded \$1 million in 1993, ADM has been affected by §162(m) since it was first effective in 1994. Following the *2006 DIS* mandates, a shareholder filed a

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<sup>59</sup> Emphasis added.

derivative claim based upon §162(m) (Resnik v. Woertz, et al., C.A. No 10-527-GMS, filed June 6, 2010). The shareholder claimed waste, breach of fiduciary duty, unjust enrichment and inadequate disclosure, largely because ADM's incentive program permitted aggregate payments to directors and executives of \$1,263,500,000 in a single year, including \$90,250,000 per individual director.<sup>60</sup> Because the limits were so high, the shareholder claimed that the limits on the §162(m) performance-based awards were "*illusory*," a claim, which implies that ADM used an "*overly generous formula*" in the terminology of Murphy and Oyer (2004). Following the court's refusal to dismiss the claim, the parties settled wherein the defendants stipulated to limits under the plan of \$45 million per executive officer and \$5 million per non-employee director.<sup>61</sup> In addition, the executives agreed to greater compensation disclosures and to pay up to \$1.5 million of plaintiffs' legal fees. If ADM had avoided using "*illusory*" §162(m) performance-based award limits following the 2006 DIS, this law suit and its settlement may have been avoided.

Following the passage of §162(m), some firms immediately and carefully modified their compensation arrangements to comply (Livingstone, 1997). These actions may have been based less on tax savings and more on promoting positive shareholder relations. Survey results found that 87% of firms intended to implement §162(m) changes for positive shareholder relations while only 43% of firms felt that the tax savings from §162(m) compliance was important, Towers Perrin Survey, *Investor's Business Daily*, March 10, 1995 (Perry and Zenner, 2001). Similarly, with the increased compensation disclosures mandated in 2006, firms likely considered the effect of the new disclosures on shareholder relations in their CEO compensation design, including the firm's §162(m) noncompliance decisions. Illustrating the continued importance of shareholder relations and compensation disclosures, Intel and Micros Systems modified their §162(m) noncompliance policy as compensation disclosures increased.

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<sup>60</sup> [blogs.law.harvard.edu](http://blogs.law.harvard.edu) (February 5, 2013) *Recent Developments in Executive Compensation Litigation*, Posted by Richard J. Sandler, Davis Polk & Wardwell LLP

<sup>61</sup> David H. Kistenbroker, Joni S. Jacobsen, Carl E. Volz, and Angela M. Liu (February 11, 2013) *Defending Section 162(m) Executive Compensation Derivative Suits in the United States*, *DechertOnPoint*,

Firms may generally act preemptively to avoid negative relations such as those experienced in the ADM case.

Based upon the preceding development, I propose that the 2006 regulation generally increased the inherent risk of compliant incentives because firms proactively modified their compensation arrangements to avoid the negative shareholder relations that may develop if the firms disclose their “*overly generous*” compliant performance goals. To avoid this increased risk, risk averse CEOs have greater incentive to use their influence to secure more noncompliant compensation following 2006. Therefore, I predict that the 2006 DIS affected firm noncompliance behavior by strengthening the relation between CEO power and §162(m) noncompliance.

**Hypothesis VII: *The association between CEO power and §162(m) noncompliance became stronger following the 2006 SEC increased disclosure requirements.***

### 3.3. RESEARCH METHOD

#### 3.3.1. Relating CEO power to §162(m) Noncompliance

Hypotheses VI and VII predict how CEO influence on §162(m) noncompliance changed following the 2003 and 2006 regulatory changes. To test these hypotheses, I estimate Equation (3) which relates §162(m) noncompliance to CEO power. To further examine Hypothesis VI, I also estimate Equation (4) which I discuss in Section 3.3.2. For both Equations (3) and (4), when the dependent variable is an indicator variable, I estimate a logistic regression. Otherwise, I estimate an OLS regression.

$$\begin{aligned}
NC\ MEASURE_{it} = & \beta_0 + \beta_1 CEO\ FACTOR_{it} + \beta_2 CEO\ FACTOR_{it} * POST\ CHANGE_{it} \\
& + \beta_3 Ln(ASSETS)_{it} + \beta_4 ROA_{it} + \beta_5 RET_{it} + \beta_6 LEVERAGE_{it} + \beta_7 LIQUIDITY_{it} \\
& + \beta_8 \sigma(ROA)_{it} + \beta_9 \sigma(RET)_{it} + \beta_{10} MTB_{it} + \beta_{11} TAX\ BENEFIT_{it} + \beta_{12} BOARD\ SIZE_{it} \\
& + \beta_{13} INTERLOCK\%_{it} + \beta_{14} Non - I\ BOARD\%_{it} + \beta_{15} Non - I\ COMP\ COMM\%_{it} \\
& + \beta_{16} E - INDEX_{it} + \sum YEAR\ INDICATORS + \sum INDUSTRY\ CODES + \epsilon_{it} \quad (3)
\end{aligned}$$

*POST CHANGE<sub>it</sub>* = An indicator variable which equals 1 if the year t is in the Base Period, and 0 otherwise. The years included in the Base Period are determined by the hypothesis. If the estimation of Equation (3) tests Hypothesis VI (VII), the Base Period includes those years prior to the implementation of the 2003 (2006) regulation as provided in Section 3.3.

Equation (3)'s dependent variable measures §162(m) noncompliance. I use six measures of noncompliance, three indicator and three continuous variables, which I refer to as *NC MEASURE*, explained in detail in Section 2.4.

The independent variables include a measure of CEO power, *CEO FACTOR*, created using principal component analysis. The principal component analysis combines multiple measures or proxies of a characteristic into a single measure with minimal loss of information. I form *CEO FACTOR* from four proxies of CEO power, *CEO TENURE*, *CEO AGE*, *CEO OWN%*, and *CEO/CHAIR*. *CEO TENURE* is a common proxy for CEO power (Finklestein and Hambrick, 1989; Laksmana, 2008; Hamm et al., 2011) and is typically positively correlated with CEO decision making authority (Dechow and Sloan, 1991). Second, *CEO AGE* may significantly influence CEO compensation since age influences his or her employment horizon (Mehran, 1995) and can significantly influence CEO power apart from tenure (Rose and Shepard, 1997). Third, the CEO's stock ownership, *CEO OWN%*, determines the CEO's voting authority and is positively related to CEO power (Ittner et al., 1997; Mehran, 1995). Fourth, a CEO who also serves as the Chairman of the Board will generally have greater power (Ittner et al., 1997) which may have a negative influence on the quality of governance (Robinson et al., 2011). Therefore, the final proxy which I use to form *CEO FACTOR* is *CEO/CHAIR*, an indicator variable which equals 1 if the CEO also serves as the Chairman of the Board, and 0 otherwise (Ittner et al., 1997; Robinson et al., 2011).

The estimated regression coefficient on *CEO FACTOR* measures the relation between CEO power and firm §162(m) noncompliance behavior. The coefficient of interest is on *CEO FACTOR \* POST CHANGE*, which measures how the relation between CEO power and firm §162(m) noncompliance behavior changed following either the 2003 regulation in Hypothesis VI or the 2006 regulation in Hypothesis VII. The definition of *POST CHANGE* and the sample observations depend upon the applicable hypothesis as discussed below.

For Hypothesis VI, which predicts that the CEO power-noncompliance relation weakened following the 2003 board independence regulation, the sample includes first, observations with firm years ending from June 15, 2003 through May 31, 2004, the Base Period in which the observations are not subject to the influence of *2003 IND*. The sample also includes observations from August 15, 2004 through July 31, 2005, the Post Period in which the observations are subject to *2003 IND*. I separate the Base Period and Post Period because *2003 IND* provides for a phase-in of its effectiveness discussed in Section 3.2.3.1. *POST CHANGE* equals 1 for the Post Period observations, and 0 otherwise. A negative, statistically significant coefficient on *CEO FACTOR\* POST CHANGE* would provide evidence that the relation between *CEO FACTOR* and *NC MEASURE* changed following *2003 IND*, consistent with the relation between CEO power and §162(m) noncompliance weakening following the *2003 IND* and supporting Hypothesis VI.

For Hypothesis VII, which predicts that the CEO power-noncompliance relation strengthened following the 2006 disclosure regulation, the sample set includes observations with firm years ending from December 15, 2005 through November 30, 2007. The *2006 DIS* regulations are effective for years ending on or after December 15, 2006. Therefore, *POST CHANGE* equals 1 for those observations with years ending on or after December 15, 2006, and 0 otherwise. A positive, statistically significant coefficient on *CEO FACTOR\* POST CHANGE* provides evidence that *2006 DIS* changed the relation

between *CEO FACTOR* and *NC MEASURE*, consistent with the relation between CEO power and §162(m) noncompliance becoming stronger following *2006 DIS*, supporting Hypothesis VII.

*Controls.* I include independent variables to control for the influence of firm and governance factors. I include the natural logarithm of total assets, *ln(ASSETS)* to control for firm size (Balsam and Yin, 2005; Carter et al., 2007) and Return-on-Assets, *ROA*, and buy-and-hold market returns, *RET*, to control for firm performance (Robinson et al., 2011). To control for firm risk, I include debt-to-total asset ratio, *LEVERAGE*, (Beaver et al., 1970; Botosan and Plumlee, 2005); one minus the cash-to-total asset ratio, *ILLIQUIDITY* (Beaver et al., 1970); the standard deviation of Return-on-Assets,  $\sigma(ROA)$ , and the standard deviation of market returns,  $\sigma(RET)$ , over the five prior years (Balsam and Yin, 2005; Core et al., 2008). I include the Market-to-Book ratio, *MTB*, to control for growth and investment opportunities (Carter et al., 2007; Cadman et al., 2010). To control for the tax cost of noncompliance, I include *TAX BENEFIT*, the simulated marginal tax rate multiplied the CEO's total compensation in excess of \$1 million scaled by firm total assets (Balsam and Ryan, 1996; Balsam and Yin, 2005). To control for the quality of governance, I include board size, *BOARD SIZE* (Yermack, 1996; Laksmana, 2008); the percent of interlocked board members, *INTERLOCK%* (Hallock, 1997; Core et al., 1999); and the percentage of non-independent board members, *Non-I BOARD%*, and compensation committee members, *Non-I COMP COMM%* (Pfeffer, 1981; Byrd and Hickman, 1992). To control for the board's insulation from shareholder action, commonly referred to as "entrenchment," I include the Bebchuk et al. (2009)<sup>62</sup> six-factor *E-Index*, *E- INDEX*, as the measure of entrenchment.

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<sup>62</sup> The six factors include staggered board terms, "poison pill" and "golden parachute" provisions, and limitations upon the shareholder ability to amend charter amendments and by-laws and approve mergers. The Bebchuk, Cohen, and Farrell (2009) paper provides a detailed description of the factors within the E-index. [www.law.harvard.edu/faculty/bebchuk/studies.shtml](http://www.law.harvard.edu/faculty/bebchuk/studies.shtml) is the link to a list of research papers which utilize the E-Index, 158 as of October 21, 2012.



The independent variables also include the Fama/French 12 industry classification<sup>63</sup> indicator variables, *INDUSTRY CODES*, and year indicators, *YEAR INDICATORS*, to control for industry and year effects, respectively.

### 3.3.2. CEO power and \$162(m) Noncompliance Before versus After the 2003 Regulatory Change

The regulatory change in 2003, which I label *2003 IND*, was designed to reduce inefficient CEO influence over CEO compensation design by mandating increased independence within the firm governance process. Because board independence varied across sample firms prior to the *2003 IND*, the influence of the *2003 IND* on CEO power may depend upon each firm's pre-*2003 IND* board independence level, which I label Base Period independence. I expect those firms which already had stronger Base Period board independence to be less affected by *2003 IND* than those firms with weaker Base Period board independence. Therefore, I divide the sample into two groups based upon each firm's Base Period board independence, and examine if the expanded board independence requirements captured by *2003 IND* influenced each group differently.

To divide the sample based on each firm's general base period board independence, I use principal component analysis to form a single measure of board independence, *BOARD FACTOR*, from the three measures of board independence, *INTERLOCK%*, *Non-I BOARD%*, and *Non-I COMP COMM%*, as detailed in Section 3.3.1. Based upon the sample median Base Period *BOARD FACTOR*, I divide the sample into the two groups: firms with low Base Period independence, *LOW*, and firms with high Base Period independence, *HIGH*.

To examine if the influence of the *2003 IND* depended upon the firm's Base Period board independence, I estimate Equation (4) separately for *LOW* and *HIGH* independent firms. Equation (4)

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<sup>63</sup> Fama-French industries are defined at: [http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data\\_library.html](http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html)

relates CEO power to §162(m) noncompliance. Because the LOW/HIGH classification is dependent upon the Base Period *BOARD FACTOR*, I exclude all firms from the Post Period which were not included in the Base Period.

$$\begin{aligned}
 NC\ MEASURE_{it} = & \beta_0 + \beta_1 CEO\ FACTOR_{it} + \beta_2 CEO\ FACTOR_{it} * POST\ CHANGE_{it} \\
 & + \beta_3 Ln(ASSETS)_{it} + \beta_4 ROA_{it} + \beta_5 RET_{it} + \beta_6 LEVERAGE_{it} + \beta_7 ILLIQUIDITY_{it} \\
 & + \beta_8 \sigma(ROA)_{it} + \beta_9 \sigma(RET)_{it} + \beta_{10} MTB_{it} + \beta_{11} TAX\ BENEFIT_{it} + \beta_{12} BOARD\ SIZE_{it} \\
 & + \beta_{13} E - INDEX_{it} + \sum YEAR\ INDICATORS + \sum INDUSTRY\ CODES + \epsilon_{it} \quad (4)
 \end{aligned}$$

The dependent variables measure §162(m) noncompliance, *NC MEASURE*, and are the same as the variables used in Equation (1). The independent variables measure CEO power, *CEO FACTOR*, and the changing influence of CEO power, *CEO FACTOR\*POST CHANGE*, the same variables as used in Equation (3), but only to test Hypothesis VI. The independent variables which serve as the controls are also the same as the controls in Equation (3) with the following exceptions. Because I divide the firm into LOW governance independence and HIGH governance independence firms based upon *INTERLOCK%*, *Non-I BOARD%*, and *Non-I COMP COMM%*, as detailed in this Section 3.3.2, I exclude these three measures from Equation (4).

### 3.4. SAMPLE SELECTION AND DESCRIPTIVE STATISTICS

I obtain my data from the following *WRDS* data bases, Compustat Execucomp; Compustat North America; Compustat Marginal Tax Rate; and RiskMetrics; annual firm proxy statements publicly available at *sec.gov*; and the simulated marginal tax rates available from John Graham, Duke University<sup>64</sup> as described in Section 2.5. To include all observations affected by §162(m), I include all firm-year observations with tax years beginning on or after January 1, 1994 through 2012. To avoid biased results

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<sup>64</sup> <https://faculty.fuqua.duke.edu/~jgraham/taxform.html>

from the inclusion of small public firms with CEO compensation not large enough to be constrained by §162(m), I include only firms which satisfy certain compensation requirements also described in Section 2.5. After excluding observations missing net income, total assets or CEO compensation information, the final data set consists of 18,504 firm-year observations for the period 1994 through 2012, as shown in Table 9. These observations include 1,916 unique firms with a mean (median) of 9.7 (9) firm-year observations per firm. The observations include 3,119 unique CEOs with a mean (median) of 5.9 (5) firm-year observations per CEO. I calculate all analyses utilizing 1994 constant dollars, unless otherwise noted.

[Insert Table 9 here]

In Table 10, I provide the descriptive statistics for my sample. The mean (median) firm total book assets equaled \$7.9 (2.1) billion with mean (median) total market capitalization of \$8.3 (2.0) billion. The average (median) CEO was 56 (56) years old with 7.2 (5) years tenure as the CEO. Mean (median) CEO annual compensation totaled \$5.9 (3.5) million with \$789,000 (734,000) in the form of salary, \$1.3 (0.7) million from cash incentives and \$3.5 (1.6) million from equity compensation. I define noncompliant compensation §162(m) in Section 2.4. CEO total compensation included a mean (median) of 17% (3%) noncompliant compensation, which I define as noncompliant compensation, defined in Section 2.4, scaled by CEO total annual compensation. The mean (median) firm paid \$370,000 (19,000) of additional annual tax expense<sup>65</sup> as a result of the lost tax deduction, which includes the 8,070 (44%) compliant firm-year observations with zero additional tax expense. Of the total sample, 1,683 firms paid noncompliant compensation for a mean (median) of 6 (5) years.

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<sup>65</sup> I estimate the annual extra tax expense by multiplying the CEO's total noncompliant compensation by the firm's estimated marginal tax rate.

[Insert Table 10 Here]

Table 11 provides the annual number of observations and §162(m) noncompliance rates based on the Salary NC, Cash NC, and Total NC definitions of noncompliance, defined in Section 2.4. Firms paid noncompliant salary, noncompliant cash compensation or any compensation which is noncompliant with §162(m) in 18%, 44% and 56% of Chapter 3's 18,504 firm-year observations, respectively. The percentage of §162(m) affected firms that paid noncompliant compensation increased from 1994 to 2012 for all definitions of noncompliance, even though the number of affected firms, which is the denominator for calculating the noncompliant percentage, also increased each year. Inflation likely contributed to the growth of noncompliance behavior because the \$1 million non-performance based compensation deduction allowance is not adjusted for inflation, as discussed in Section 2.1. In 1994, 337 (68%) of the 496 affected firms in my sample paid no noncompliant compensation. By 2006, 800 (66%) of the 1,213 sample observations paid some noncompliant cash compensation. Of the 1,916 total firms in my sample, 1,683 paid some noncompliant compensation, 1,552 paid some noncompliant cash compensation, and 579 paid some noncompliant salary from 1994 through 2012.

[Insert Table 11 Here]

My measure of CEO power, *CEO FACTOR*, is formed using principal component analysis from four proxies of CEO power, *CEO TENURE*, *CEO AGE*, *CEO OWN%*, and *CEO/CHAIR*, as explained in Section 3.3.1. *CEO FACTOR*, the principal component, is a linear combination of the proxies. Each proxy contributes to the principal component as measured by its *loading*. Table 12 presents the *loadings* in Panel A and the descriptive statistics of *CEO FACTOR* in Panel B. *CEO FACTOR* has a mean (median) value of 4.0 (3.9), an eigenvalue of 1.80 and explains 44.9% of the variance of the four proxies.

[Insert Table 12 Here]

### 3.5. CEO COMPENSATION DESIGN TRENDS

Section 162(m) was enacted to improve CEO compensation design and weaken CEO influence through the mechanisms detailed in Section 3.2.1. If CEOs influence their compensation design, it is reasonable to expect that CEOs will use their influence to increase their compensation levels, especially salary, and to shield their compensation from performance variance, which reduces compensation sensitivity. To provide the background for understanding how §162(m) affected CEO influence over compensation design, I describe CEO compensation of §162(m) affected firms from 1994 through 2012 by providing a general time-series analysis of CEO compensation trends that does not provide statistical tests. My descriptive analyses illustrate that CEO compensation levels increased, CEO salary levels have stagnated and demonstrate a trend that suggests that §162(m) established an informal benchmark of \$1 million annual salary, fixed salary as a percentage of total compensation decreased, and pay-for-performance sensitivity varied, but has not consistently increased or decreased from 1994 through 2012. I next present my analyses of CEO total compensation levels, the composition of CEO compensation, and CEO compensation sensitivity of §162(m) affected firms from 1994 through 2012. I use constant dollars unless otherwise noted.

#### 3.5.1. CEO Total Compensation Levels

I find that CEO total compensation levels of §162(m) affected firms increased from 1994 through 2012. As illustrated in Figure 3 and consistent with prior studies, my study provides evidence that mean CEO total annual compensation increased following the passage of §162(m). After peaking in 2000, mean CEO total compensation declined until 2003. From 2003 through 2012, mean CEO total compensation

remained relatively stagnant, but still above 1994 levels. From 1994 through 2012, median CEO total annual compensation demonstrates a relatively consistent increase.

My sample only includes firms which are affected by §162(m) so that the number of firms in my sample increased each year as more firms became affected by §162(m). Over time and as a result of inflation, smaller firms, which paid their CEOs lower total compensation levels, paid their CEO increasing levels of annual compensation to eventually surpass \$1 million and became affected by §162(m). As these smaller firms joined my sample, the sample should be biased against finding an increase in CEO total compensation levels. Even with this bias and after controlling for inflation, this study provides evidence that CEO compensation levels increased during the tenure of §162(m) and, therefore, this analysis does not provide evidence that CEO influence over total annual compensation levels weakened from 1994 through 2012.

[Insert Figure 3 here]

### 3.5.2. The Composition of CEO Compensation

Figures 4a and 4b show that the mean and median CEO salary levels stagnated from 1994 through 2012. Prior studies documented that the growth rate of salary levels slowed following the passage of §162(m) in 1994 through 1998 (Hall and Liebman, 2000; Rose and Wolfram, 2000), particularly for CEOs whose salary levels were above or close to the \$1 million fixed compensation limit (Rose and Wolfram, 2000, 2002; Perry and Zenner, 2001). Therefore, my descriptive analysis suggests that §162(m)'s initial constraining influence on the growth of CEO salary levels continued over the longer term, through 2012.

[Insert Figures 4a and 4b here]

As further evidence that §162(m) affected salary growth, Figure 5a provides CEO annual salary levels in nominal, non-CPI adjusted dollars. I include the annual mean, median, and 90<sup>th</sup> percentile CEO

salary levels and a line representing the effect of inflation on an initial salary of \$1 million in 1994. From 1994 through 2012, inflation's growth rate outpaced the growth of CEO salary levels, including the 90<sup>th</sup> percentile CEO salary levels. To further illustrate how salary levels are benchmarked at the \$1 million mark, Figure 5b provides the median and 90<sup>th</sup> percentile CEO salary and variable compensation levels in non-CPI adjusted dollars. While the salary levels remain near \$1 million and demonstrate little variation from 1994 through 2012, variable compensation increases and displays a considerable difference between the median and 90<sup>th</sup> percentile levels. Therefore, I find that salary levels stagnated from 1994 through 2012, informally benchmarked near §162(m)'s \$1 million tax deduction allowance, so that firms primarily rely on variable compensation for the growth in CEO total compensation levels.

[Insert Figures 5a and 5b here]

My study illustrates that CEO total compensation levels grew while salary levels stagnates for the period 1994 through 2012. Therefore, I examine salary as a percentage of total compensation, defined as CEO annual salary divided by total annual compensation. Figures 6a and 6b show that the mean and median salary as a percentage of CEO total compensation declined following the passage of §162(m) in 1994 and through 2012. In 1994, salary provided a mean (median) of 29% (27%) of CEO total compensation. This percentage consistently declined to a mean (median) of 21% (17%) in 2011 and 23% (18%) in 2012. Because the reliance on fixed compensation decreased for CEOs at §162(m) affected firms, this finding is consistent with CEO influence over fixed compensation weakening during the tenure of §162(m).

[Insert Figures 6a and 6b here]

Consistent with prior studies such as Murphy (2011), I find that the increase in variable compensation was primarily the consequence of an increased use of equity compensation. Figures 7a

(7b) provide the mean (median) annual percentages of CEO total compensation from 1994 through 2012 from option compensation, defined as the value of options grants divided by total compensation, from restricted stock grants, defined as the value of restricted stock grants divided by total compensation, and from cash incentives, defined as cash incentives divided by total compensation. From 1994 through 2001, options provided the increase in total compensation, increasing both absolutely and as a percentage of CEO total compensation, while cash incentives declined as a percentage of CEO total compensation. Between 1995 and 2001, approximately 80% of Execucomp firms granted options to their CEOs compared to the 20% which granted restricted stock (Carter et al., 2007). Prior studies document two reasons for the strong use of options. First, the pre-2006 preferential accounting treatment for options in which firms were not required to deduct the extrinsic value of option grants contributed to their use (Hall and Murphy, 2002; Carter et al., 2007). Second, option compensation is deemed to meet §162(m)'s "pre-established objective performance requirement" (Kautter, 1994), meaning option compensation qualifies as a tax deduction pursuant to §162(m) subject to only minor procedural requirements. For firms affected by §162(m), the attractiveness of options increased relative to all other forms of compensation in 1994 (Balsam and Ryan, 2008). Suggesting that §162(m) contributed to the growth of CEO option compensation, the increased use of options was greater for firms affected by §162(m) relative to unaffected firms (Balsam and Ryan, 2008).

Following 2001, I find that options as a percentage of CEO total compensation decreased, likely influenced by the 2000 "dot.com" bubble reducing the attractiveness of options, and the use of restricted stock grants and cash incentives as percentages of CEO compensation increased. Figures 7a and 7b show that following 2001, the growth of stock grants outpaced all other forms of compensation, surpassing the use of CEO option compensation in 2006 when FAS 123R eliminated option's preferential accounting treatment. From 2006 through 2012, I find that restricted stock grants exceeded option



grants for firms affected by §162(m). Since 2008, restricted stock is the single largest component of CEO compensation.

[Insert Figures 7a and 7b here]

Figure 8 illustrates the mean annual percentages of total compensation from noncompliant salary, defined as salary in excess of \$1 million divided by CEO total compensation, from noncompliant cash compensation, defined as all §162(m) noncompliant cash compensation divided by CEO total compensation, and from total noncompliant compensation, defined as all §162(m) noncompliant compensation divided by CEO total compensation. Mean noncompliant salary as a percentage of total compensation remained relatively flat, increasing from 0.6% in 1994 to 0.9% (1.3%) in 2011 (2012). The mean percentage of noncompliant cash compensation also remained relatively flat, but for the 2006 increase that corresponds with the 2006 disclosure mandates.

However, the mean percentage of total noncompliant compensation steadily increased from 2001 through 2012. Total noncompliant compensation includes the noncompliant portion of restricted stock grants,<sup>66</sup> the use of which has grown as illustrated by Figures 7a and 7b. I assume that restricted stock grants are §162(m) noncompliant because they historically have been time-based and, as a consequence, cannot qualify under §162(m). Even if the restricted stock grants are performance based, the awards do not automatically qualify under §162(m) as do options. The analysis provided in Figure 8 suggests that the increased use of noncompliant compensation is principally the consequence of the increased use of restricted stock grants.

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<sup>66</sup> I define the noncompliant portion of restricted stock grants as the portion of the award in excess of \$1 million, once considering the other nonperformance based cash awards. For example, if the CEO received no other compensation, the noncompliant portion is the value of the restricted stock grant less \$1 million. Alternatively, if the CEO received \$1 million in salary, all of the stock award is noncompliant compensation.

[Insert Figure 8 here]

In summary, variable compensation as a percentage of CEO total compensation increased from 1994 through 2012. However, I find that the composition of the variable component changed. From 1996 through 2005, options provided the largest component of CEO compensation. Because the value that options provide the CEO is dependent upon firm performance increasing the firm's market value while subject to market wide performance, this increased reliance on options suggests that CEO influence over compensation design weakened following the passage of §162(m). Following 2001, the use of restricted stock and cash incentives increased. Because stock grants<sup>67</sup> and cash incentives provide the CEO value even if the firm's market value decreases, which makes these forms of compensation less dependent upon firm performance, the substitution of restricted stock and cash incentives for options suggests an increase of CEO influence. Therefore while the increase in variable compensation supports the proposition that CEO influence over compensation design weakened, the form of variable compensation used does not provide evidence of a consistent change of CEO influence.

### 3.5.3. CEO Compensation Pay-for-Performance Sensitivity

I find little or no evidence of a consistent increase in CEO compensation sensitivity to firm performance from 1994 through 2012. This is significant because the express purpose of §162(m) was to increase the link between CEO compensation and firm performance (Balsam and Ryan, 1996). Pay-for-performance sensitivity (PPS) relates the change of CEO total compensation to the change of firm performance (Jensen and Murphy, 1990). Therefore to examine the changing CEO compensation sensitivity to firm performance, I conduct a time-series analysis of annual CEO PPS from 1994 through 2012.

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<sup>67</sup> Stock grants provide the CEO some value as long as the market value of the firm's stock exceeds \$0.

To measure annual PPS from 1994 through 2012, I estimate Equation (5) annually. The dependent variable is the change of the natural log of CEO total compensation,  $\Delta \ln(TOTAL\ COMPENSATION)$  (Leone et al., 2006). PPS is measured by the coefficient,  $\alpha_1$ , on the independent variable of interest, the change in performance,  $\Delta PERFORMANCE$ . I use two measures of performance, return-on-assets for accounting performance,  $\Delta ROA$ , and buy-and-hold returns for market performance,  $\Delta RET$ . Control variables include the natural log of total firm revenues,  $\ln(SALES)$ , to control for firm size (Leone et al., 2006) and the Fama/French 12 industry classification indicator variables,  $INDUSTRY\ CODES$ , to control for industry effects.

To provide a benchmark for comparison, I also estimate Equation (5) for firms unaffected by §162(m).<sup>68</sup> I obtain the control group CEO compensation data from Execucomp and the firm performance data from Compustat. To select the control group, I include all CEOs from 1994 through 2012 but exclude all observations for a CEO once his firm joins my sample, which yields 12,835 firm-year observations. I exclude all observations in which mean CEO total compensation for years t and t-1 equals or exceeds \$1 million, which reduces the sample to 5,572 observations. Excluding all observations without the lag data for the same CEO reduces the sample to 3,531 observation and excluding observations without the data for the lagged ROA or RET reduces the sample to 2,933 and 3,265 observations, respectively.

$$\begin{aligned} \Delta \ln(TOTAL\ COMPENSATION) = & \alpha_0 + \alpha_1 \Delta PERFORMANCE + \alpha_2 \ln(SALES) \\ & + \sum INDUSTRY\ CODES + \epsilon \end{aligned} \quad (5)$$

I first estimate Equation (5) measuring the change of performance,  $\Delta PERFORMANCE$ , using the change of accounting performance,  $\Delta ROA$ , and plot the estimated annual PPS coefficient,  $\alpha_1$ , in Figure 9. I estimate Equation (5) separately for my sample of affected firms and for the control group. For

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<sup>68</sup> All public firms are subject to the requirements of §162(m). However, I define firms as unaffected if their annual CEO total compensation is less than \$1 million because they are within §162(m)'s annual tax deduction allowance.

affected firms, PPS increased from 1994 to 1995, but then decreased through 1997. However, beginning in 1997, PPS demonstrates an overall upward trend, providing some indication that the relation between CEO total compensation and accounting performance increased from 1997 through 2012. The control group did not replicate this general upward trend post 1997.

[Insert Figure 9]

I next estimate Equation (5) measuring  $\Delta PERFORMANCE$  using the change of market performance,  $\Delta RET$ , separately for my sample of affected firms and for the control group. I plot the estimated annual PPS measure of CEO total compensation sensitivity to market performance,  $\alpha_1$ , in Figure 10. Similar to Figure 9, PPS demonstrates an initial increase from 1994 through 1995, but decreases through 1997. Beginning in 1997, although there were some years which demonstrate an increase, CEO compensation's sensitivity to market performance remains relatively unchanged through the remaining tenure of §162(m). The control group demonstrates a similar pattern, but with greater variability.

[Insert Figure 10]

In summary, my 1994 through 2012 time-series analysis of CEO compensation of §162(m) affected firms provides evidence that CEO compensation levels increased, CEO fixed salary levels stagnated, CEO fixed salary as a percentage of total compensation decreased, and CEO PPS varied. This descriptive evaluation of CEO compensation suggests that §162(m) influenced salary levels, establishing an informal \$1 million annual salary benchmark, and limited the CEO's ability to receive high levels of unconditioned compensation. However, I do find consistent evidence that §162(m) affected the influence that CEOs have over their total compensation levels or the sensitivity of their compensation to firm performance.

### 3.6. REGRESSION RESULTS

I next present the results of testing Hypotheses VI and VII using Equations (3) and (4).

#### 3.6.1. Hypothesis VI: Relating CEO power to §162(m) Noncompliance

Table 13 presents firms' Base Period and Post Period *2003 IND* board independence statistics. The median (mean) number of non-independent board members fell from 3 (2.8) members in the Base Period to 2 (2.6) members in the Post Period, Panel A. Although the majority of firms provided a board of directors with an independent majority and a fully independent compensation committee in the Base Period, board independence increased slightly in the Post Period, increasing from a mean (median) of 70% (71%) in the Base Period to 72% (73%) in the Post Period, Panel B.

[Insert Table 13 Here]

Table 14 presents the results of testing Hypothesis VI using Equation (3), which relates CEO power to §162(m) noncompliant compensation. Hypothesis VI predicts that the CEO power-§162(m) noncompliance relation weakened following the 2003 SEC board independence regulation, which I refer to as *2003 IND*. Based on the results of Equation (3), I find no evidence that the *2003 IND* changed the association between CEO power and §162(m) noncompliance, failing to support Hypothesis VI. In four of the six estimations, the estimated coefficients on *CEO FACTOR* are positive and statistically significant. These findings provide evidence that as CEO power increased during the years prior to the influence of the *2003 IND*, the likelihood and level of noncompliant salary and cash compensation also increased. The change in the relation between CEO power and §162(m) noncompliance is measured by the coefficient on the independent variable of interest, the interaction term *CEO FACTOR\*POST CHANGE*. None of the coefficients on *CEO FACTOR\*POST CHANGE* are statistically significant. Therefore, the

estimation of Equation (3) fails to provide any evidence that 2003 *IND* changed the association between CEO power and firm §162(m) noncompliance behavior.

[Insert Table 14 Here]

### 3.6.2. Hypothesis VI: Relating CEO power to §162(m) Noncompliance dependent upon Board Independence

Equation (4) relates CEO power to §162(m) noncompliance separately for firms with lower and higher board independence. To estimate Equation (4), I first divide firms into *LOW* and *HIGH* board independent firms based upon their Base Period board independence as measured by *BOARD FACTOR*. I form *BOARD FACTOR* using principal component analysis from three measures of board independence, *Non-I BOARD%*, *Non-I COMP COMM%*, and *INTERLOCK%*. The Base Period mean (median) *BOARD FACTOR* score is 3.054 (2.755). The lack of board independence increases as *BOARD FACTOR* increases. Therefore, a *LOW* independent score ranges from 2.755 to 8.956 and a *HIGH* score ranges from 1.837 to 2.755. In the Post Period, the mean (median) *BOARD FACTOR* is 2.948 (2.700), suggesting a slight increase in board independence. Table 15 presents the definitions and loadings of the board independence measures and *BOARD FACTOR*'s descriptive statistics.

[Insert Table 15 Here]

Table 16 presents firms' Base and Post periods board independence statistics. Because firms are classified based upon the Base Period that is pre-2003 *IND*, I remove firms which are not present in the Base Period must be removed from the sample, reducing the observations from the 1,663 included in Table 14 to 1,603.

[Insert Table 16 Here]

Table 17 presents the results of estimating Equation (4) which examines Hypothesis VI for *LOW* board independent firms in Panel A and *HIGH* board independent firms in Panel B. I expect that the 2003 *IND* will have the greatest influence on the firms with *LOW* Base Period board independence because these firms should experience the greatest change to the independence of their governance processes.

[Insert Table 17 Here]

The estimation results suggest that the 2003 regulation had a greater influence on those firms with lower pre-2003 *IND* board independence in regards to noncompliant salary, but otherwise the results do not provide evidence that the 2003 *IND* affected the CEO power-§162(m) noncompliant relation. Consistent with Hypothesis VI, when the dependent variable is *SALARY\_I*, which indicates whether the CEO received some noncompliant salary in excess of \$1 million, the coefficient on *CEO FACTOR\*POST CHANGE* is negative and statistically significant, (-0.379, p=0.090). This finding suggests that, for firms with *LOW* Base Period board independence, the positive relation between *CEO FACTOR* and *SALARY\_I* decreased from 0.681 (p<0.001) in the Base Period to 0.302 (0.681-0.379=0.302) in the Post Period. Therefore, for firms with *LOW* Base Period board independence, the positive relation between CEO power and the likelihood that the firm pays their CEO §162(m) noncompliant salary weakened following the 2003 *IND*.

However, for the *LOW* board independent firms, five of the six coefficients of interest, on *CEO FACTOR\*POST CHANGE*, fail to demonstrate statistical significance and indicate mixed results with two positive and three negative coefficients. Therefore with the exception of noncompliant salary, Equation (5) does not provide evidence that the 2003 regulation affected the relation between CEO power and non-salary §162(m) noncompliant compensation, even for firms with lower board independence prior to the passage of the 2003 regulation.

Panel B presents the estimation results for firms with *HIGH* Base Period board independence. The results are fully consistent with Table 14 and provide no empirical support for Hypothesis VI. Four of the six coefficients on *CEO POWER* are positive and statistically significant and none of the coefficients on the variable of interest, *CEO FACTOR\*POST CHANGE*, demonstrate statistical significance.

Therefore, Equation (4) provides only very limited evidence that the 2003 *IND* weakened the relation between CEO power and noncompliant compensation for those firms with lower board independence prior to 2003. I find statistical significance only for the salary component of compensation and only at the .09 level and the remainder of the estimations, five for the *LOW* and all six of the *HIGH* firms, do not provide support for Hypothesis VI. I next estimate Equation (4) for an extended sample period.

### 3.6.3. Hypothesis VI: Extended Analysis Relating CEO power to §162(m) Noncompliance dependent upon Board Independence

Because the initial analyses in Sections 3.6.1 and 3.6.2 do not provide consistent evidence that the 2003 *IND* changed the relation between CEO power and §162(m) noncompliance, with the exception of the noncompliant salary for CEOs at lower board independent firms, I extend the sample period of the Hypothesis VI analysis and estimate Equation (4) using a two-year Base Period and a two-year Post Period. The SEC signed the 2003 *IND* on November 4, 2003. Firms were not required to comply to 2003 *IND* immediately, but some firms may have responded early for positive shareholder relations. Therefore, I set a two-year Base Period which ends on November 30, 2003. Firms must meet the requirements beginning with their first meeting after January 15, 2004, such that firms must comply with 2003 *IND* for years ending in September 2004. Therefore, I set the two-year Post Period which begins with firm years ending on or after September 15, 2004.



Table 18 presents the extended Base Period and Post Period board independence statistics. With this longer period, I find a greater increase in board independence. The median (mean) number of non-independent board members decreased from 3 (3.1) in the Base Period to 2 (2.6) in the Post Period while the number of independent members increased from 6 (6.6) to 7 (7.0), as shown in Panel A. The percentage of independent board members increased from a mean (median) of 68% (70%) in the Base Period to 73% (75%) in the Post Period, as shown in Panel B.

[Insert Table 18 Here]

I repeat the earlier analysis for the longer sample period. I test Hypothesis VI by estimating Equation (4), which relates CEO power to firm noncompliance, separately for *LOW* and *HIGH* board independent firms.

[Insert Table 19 Here]

Table 19 presents the extended period results of estimating Equation (4) for *LOW* board independent firms in Panel A and *HIGH* board independent firms in Panel B. Consistent with Hypothesis VI and the Table 17 results, the coefficient of interest on *CEO FACTOR\*POST CHANGE* is negative and statistically significant (-0.379, p=0.018) for *LOW* board independent firms when the dependent variable is *SALARY\_I*. This finding suggests that the 2003 regulatory change weakened the positive relation between CEO power and noncompliant salary from 0.814 in the Base Period (p<.001) to 0.435 (0.814-0.379=0.435) in the Post Period for firms with lower board independence prior to 2003.

However similar to the Table 17 results, the results of estimating Equation (4) for the extended period fail to provide consistent evidence that the 2003 regulation otherwise affected the relation between CEO power and firm §162(m) noncompliance. The remaining five estimations of Equation (4) for the *LOW* board independent firms fail to demonstrate statistical significance. Similarly, five of the six

estimations of Equation (4) for the *HIGH* board independent firms fail to demonstrate statistical significance. One of the six coefficients on *CEO FACTOR\*POST CHANGE* for *HIGH* board independent firms is negative and statistically significant, when *TOTAL\_I* is the dependent variable (-.338; p=.073), which provides very limited support for Hypothesis VI.

In summary, the estimation results do not provide consistent evidence that the 2003 regulation reduced the relation between CEO power and all §162(m) noncompliant compensation. However, I find that the regulation reduced the positive relation between CEO power and noncompliant salary for those firms with lower board independence prior to the regulatory change. The evidence suggests that in those firms with lower independent governance prior to 2003, the mandated increase in board independence weakened the ability of a CEO to use his or her influence to secure an annual salary in excess of \$1 million. Therefore, the estimations of Equation (4) provides only limited support for Hypothesis VI, which predicts that increased board independence improves the quality of governance.

#### 3.6.4. Hypothesis VII: Relating CEO power to §162(m) Noncompliance

Table 20 presents the results of estimating Equation (3) and provides support for Hypothesis VII. Equation (3) relates my measure of CEO power, *CEO FACTOR*, to six measures of §162(m) noncompliant compensation, *NC MEASURE*, and estimates the change in that relation following the 2006 disclosure regulation, measured by the coefficient on *CEO FACTOR\*POST CHANGE*. All six of the coefficients of interest on *CEO FACTOR\*POST CHANGE* are positive and four are statistically significant at the .001 level. This provides evidence that the relation between *CEO FACTOR* and *NC MEASURE* strengthened following the 2006 *DIS*, supporting the prediction that the relation between CEO power and §162(m) noncompliance strengthened following the 2006 increased compensation disclosure mandates and supporting Hypothesis VII.

When the dependent variable, *NC MEASURE*, measures some level of \$162(m) noncompliant cash compensation, including salary, three of the four coefficients on *CEO FACTOR* are positive and statistically significant at the .05 level or lower. When the dependent variable, *NC MEASURE*, can be based only on the use of noncompliant restricted stock grants with no noncompliant cash compensation, the two coefficients on *CEO FACTOR* are negative with one statistically significant at the .07 level. However, all six estimations of Equation (3) provide evidence of a positive relation between *CEO FACTOR* and all measures of noncompliance, *NC MEASURE*, following the 2006 *DIS*, which supports the proposition that there is a stronger, positive relation between CEO power and firm \$162(m) noncompliance following the 2006 *DIS*.

[Insert Table 20 Here]

### 3.6.5. Hypothesis VII: Extended Analysis Relating CEO power to \$162(m) Noncompliance

To further evaluate how the relation between CEO power and noncompliant salary was affected by the 2006 regulation, I extend the sample period and estimate Equation (3) to test Hypothesis VII. In the shorter time period discussed in Section 3.6.4, the coefficient which measures the changed CEO power-noncompliance relation, *CEO FACTOR\*POST CHANGE*, did not demonstrate statistical significance at the .10 level when *NC MEASURE* measured noncompliant salary. However, fixed compensation is inherently more “sticky” than variable compensation. Therefore, it may take longer for the 2006 regulation to strengthen the relation between CEO power and noncompliant salary and an extended analysis may better evaluate the effect of the 2006 *DIS* on the CEO power-noncompliance relation. I extend the time period in the Hypothesis VII sample such that the Base Period includes observations with years ending December 15, 2004 through December 14, 2006 and the Post Period includes observations with years ending December 15, 2006 through November 30, 2008.

Table 21 presents the Equation (3) coefficients and levels of significance. Consistent with Hypothesis VII and Table 20, all six coefficients on *CEO FACTOR\*POST CHANGE* are positive and four are statistically significant at the .10 level. For the two estimations which relate CEO power to noncompliant salary, statistical significance improves. Although both estimations do not demonstrate significance at the .10 level, the positive relation between *CEO FACTOR* and *SALARY\_I* improves to demonstrate marginal significance (.100; p=.118). This provides some indication that the positive relation between CEO power and the likelihood that the CEO receives noncompliant salary increased following 2006.

[Insert Table 21 Here]

### 3.7. CONCLUSION

Section 162(m) was enacted with the express purpose of reducing excessive compensation. Assuming that powerful CEOs controlled their own compensation design, §162(m) provides mechanisms to reduce CEO influence. However, scandals continued and the tech bubble burst. Further regulation attempted to limit CEO power, specifically the increased independent requirements of 2003 and the increased disclosures of 2006. I examine CEO compensation design, §162(m), and the influence of the environmental changes to determine if the regulations influenced the relation of CEO power and §162(m) noncompliance.

I find, relying upon a series descriptive time-series analyses, that salary levels have not grown in constant dollars so that salary as a percentage of total compensation decreased, but CEO total compensation increased and sensitivity to performance demonstrates no persistent trend from 1994 through 2012. Consistent with Hypothesis VI, I find that the 2003 independence regulation reduced the positive relation between CEO and §162(m) noncompliant salary at firms with lower board

independence prior to 2003. Consistent with Hypothesis VII, this study provides evidence that the 2006 *DIS* strengthened the relation of CEO power and §162(m) noncompliance behavior.

These findings contribute the following to the compensation literature. First, the analyses in this study suggest that §162(m) affected CEO salary levels, establishing \$1 million as an informal benchmark for CEO salary and reducing salary as a percentage of CEO total compensation. However, I do not find that §162(m) reduced CEO total compensation levels or consistently increased pay-for-performance sensitivity.

Second, the 2003 *IND* weakened the relation between CEO power and noncompliant salary at firms with lower board independence. This evidence supports the proposition that increased independent governance processes reduce the ability of a CEO to use his power to secure noncompliant salary, which is salary above the \$1 million §162(m) benchmark. This finding supports that proposition that increased board independence increases the quality of governance.

Finally, my study provides evidence that the relation between CEO power and firm §162(m) noncompliance behavior strengthened following the 2006 *DIS*. These results suggest that the 2006 *DIS* influenced compensation disclosures, influenced compliant incentives, and influenced CEO compensation design. Arguably, the increase in disclosures should have weakened the positive association between CEO power and §162(m) noncompliance. The fact that I find no weakening of the CEO power-§162(m) noncompliance relation provides evidence that CEOs prefer noncompliant compensation and the increase disclosure did not weaken CEO influence over firm noncompliance or, in general terms, compensation design. Although the increased compensation disclosure likely failed to weaken the relation between CEO power and noncompliance, §162(m) noncompliant compensation may provide measure of powerful CEOs following 2006.

## 4.0 CONCLUSION

Chapter 4 summarizes my dissertation and findings. I present an overview in Section 4.1. I summarize the findings in Section 4.2. Section 4.3 presents my contributions to the literature and recommendations for future research. I conclude in Section 4.4.

### 4.1. OVERVIEW

Congress enacted §162(m) to increase the link between CEO compensation and firm performance and reduce “excessive” CEO compensation, but it was enacted because of the popular belief that CEOs controlled their own compensation design. Section 162(m) noncompliance is a compensation design decision. Therefore, I examine the factors which influence §162(m) noncompliance from 1998 through 2011, focusing on the influence of CEOs, and CEO compensation design trends of firms affected by §162(m) from 1994 through 2012 to examine the motivation of CEO compensation design and the influence of CEOs. To examine how CEOs influence their compensation design, specifically §162(m) noncompliance, I also exploit two SEC regulations that changed the CEO compensation environment exogenous of CEO power during the sample period that I study, 1994 through 2012. The SEC regulations increased independent governance requirements in 2003 and increased compensation disclosures in 2006. Because these two exogenous shocks changed the CEO compensation design environment and were intended to affect CEO influence, I examine how these regulations changed the relation between

CEO power and §162(m) noncompliance to better understand how CEOs influence their own compensation design.

#### 4.2. SUMMARY OF THE FINDINGS

Chapter 2 examines the factors which influence noncompliance with §162(m) from 1998 through 2011.

I find that §162(m) noncompliance is positively related to firm size, firm risk, and CEO power and, with limited evidence, negatively related to firm performance. These findings are consistent with agency theory, which argues that CEO compensation is designed to maximize shareholder welfare. If my empirical analysis provided evidence that §162(m) noncompliance increases with CEO power and poor quality governance, my study would support managerial power theory, which argues that CEOs systematically control their own compensation design because public corporations inherently provide poor quality governance. I find that §162(m) noncompliance is positively related to CEO power. While I find that §162(m) noncompliance is positively related to CEO power and board size, one common measure of governance quality that recent literature suggests is a poor proxy of governance quality at large firms, I do not provide consistent evidence that firm noncompliance behavior increases with poor quality governance. Therefore, although Chapter 2 provides evidence that CEO power is positively related to firm §162(m) noncompliance behavior, because I find that firm §162(m) noncompliance behavior is related to the economic determinants of CEO compensation design and not poor quality governance, my findings suggest that firm §162(m) noncompliance behavior maximizes shareholder welfare. Therefore, my findings suggest that agency theory better explains firm §162(m) noncompliance behavior relative to managerial power theory.

Chapter 3 examines CEO compensation design trends for those firms affected by §162(m). I document that CEO salary levels of §162(m) affected firms tended to remain flat from 1994 through 2012, concentrating near or below \$1 million in absolute dollars. With little growth in salary levels, salary as a percentage of CEO total compensation decreased, from a mean (median) of 29% (27%) in 1994 to 21% (17%) in 2011 and 23% (18%) in 2012. Because §162(m) provides a fixed compensation tax deduction allowance of \$1 million, these results suggest that §162(m) established \$1 million as the benchmark for CEO annual salary from 1994 through 2012. However during this same period, I find that CEO total compensation levels increased and sensitivity to firm performance did not consistently increase. Therefore, although the evidence suggests that §162(m) affected CEO salary levels, which implies that §162(m) weakened CEO control over their salary in excess of the \$1 million benchmark, I do not find strong evidence that §162(m) affected CEO total compensation levels or sensitivity, which implies that §162(m) did not affect CEO influence over their total compensation design.

Chapter 3 examines how the 2003 SEC regulation, which mandated increased board independence requirements, affected the relation between CEO power and §162(m) noncompliance. I provide evidence that the 2003 SEC regulation weakened the positive relation between CEO power and §162(m) noncompliant salary for those firms with lower pre-2003 board independence. This evidence suggests that greater board independence weakens CEO influence over §162(m) noncompliant salary, which is salary in excess of the \$1 million benchmark. This finding supports the proposition that increased independent governance improves governance quality. However, I find no evidence that the 2003 regulation affected the CEO power-non-salary §162(m) noncompliance relation. This finding is consistent with the compensation trend analysis, supporting the proposition that §162(m) affected CEO salary levels, but not necessarily total compensation design.

Chapter 3 examines how the 2006 SEC regulation, which mandates increased compensation disclosures, affected the relation between CEO power and §162(m) noncompliance. I provide evidence



that the 2006 SEC regulation strengthened the relation between CEO power and §162(m) noncompliance. Arguably, increased compensation disclosure should remediate agency problems so as to weaken the relation between CEO power and §162(m) noncompliance. Because the evidence suggests that increased disclosure strengthened the CEO power-§162(m) noncompliance relation, the evidence provided in this study supports the proposition that the increased disclosures limited the ability of firms to provide lower risk, “*overly generous*” compliant incentives, that CEOs prefer lower risk, noncompliant compensation and they use their power to secure it. Because the increased disclosure did not reduce noncompliance or weaken the relation between noncompliance and CEO power, my study supports the proposition that CEOs have some influence over their own compensation design, their influence did not weaken as a consequence of the 2006 increased disclosures, and CEO influence over their own compensation design may reflect CEO value in a manner that is acceptable by shareholders.

#### 4.3. CONTRIBUTIONS TO THE LITERATURE AND RECOMMENDATIONS FOR FUTURE RESEARCH

My study makes five primary contributions to the literature. First, I examine noncompliance behavior over the longer-term, from 1998 through 2011, including measures of governance quality and levels of §162(m) noncompliant compensation, and provide evidence that firm §162(m) noncompliance behavior is principally related to the economic determinants of compensation design, specifically firm risk, firm size, and firm performance, and not measures of poor quality governance, with the exception of board size. Therefore, my study provides evidence that agency theory better explains the relation between §162(m) and CEO compensation design relative to managerial power theory. My analysis also discusses various qualifications of these general patterns.

Second, Chapter II provides evidence that firm §162(m) noncompliance behavior increases with CEO power. Although the Chapter II analysis does not prove causality, this finding implies that CEOs use their influence to secure noncompliant compensation.

Third, I document that CEO salary levels at §162(m) affected firms stagnated, suggesting that §162(m) affected CEO salary levels from 1994 through 2012. The prior literature documented that §162(m) slowed the growth of salary levels immediately following the passage of §162(m), from 1994 through 1998. My study expands these earlier analyses to illustrate that CEO salary levels have stagnated through 2012, suggesting that §162(m) effectively established \$1 million as an annual CEO salary benchmark.

Fourth, I provide evidence that the 2003 board independence regulation weakened the positive relation between CEO power and §162(m) noncompliant salary for those firms with lower independent governance. This suggests that greater board independence weakens CEOs' influence over his or her compensation design, specifically the ability to secure §162(m) noncompliant salary, salary in excess of the \$1 million benchmark. In general terms, this finding provides evidence that increased independent governance processes improves the quality of governance.

Finally, Chapter III provides evidence that the relation between CEO power and §162(m) noncompliance strengthened following the 2006 disclosure mandates. I provide evidence that CEO power is positively related to all measures of §162(m) noncompliance following 2006. Because I find that the 2006 regulation did not weaken the CEO power-§162(m) noncompliance relation, that CEO total compensation levels increased, and no consistent evidence that pay-for-performance sensitivity increased, my study supports the proposition that the 2006 regulation did not reduce CEO power over their total compensation design.

Future research of §162(m) noncompliance behavior can provide valuable information concerning the influence that CEOs have over their own compensation design. Because I find that there is a strong positive relation between CEO power and all of my measures of §162(m) noncompliant compensation following 2006, my findings suggest that CEOs influence firm noncompliance. Therefore, further studies can examine the quality of noncompliant compensation as a measure or proxy of CEO power. In addition, because §162(m) noncompliance is a compensation design decision, my study suggests that CEOs influence their own compensation design. Therefore, future studies can examine the relation between noncompliant compensation and subsequent firm performance to help determine if the CEO influence over noncompliance benefits future shareholder wealth. In addition, future studies can compare the sensitivity of CEOs at compliant versus noncompliant firms to determine if §162(m) noncompliance behavior reflects the willingness of firms to subject their CEO compensation design to strict firm performance requirements.

#### 4.4. CONCLUSION

My dissertation provides evidence of a positive relation between CEO power and §162(m) noncompliance, but I do not find evidence that this relation is inefficient or detrimental to shareholders. First, I find that §162(m) noncompliance is related to economic factors in a manner consistent with shareholder welfare maximization and not measures of poor quality governance. Second, increased disclosures did not weaken the CEO power-§162(m) noncompliance relation, suggesting that the investment community generally accepts some level of firm noncompliance, which provides further support for the proposition that §162(m) noncompliance is not *per se* inefficient CEO rent extraction. My study suggests that firm noncompliance behavior is a compensation design decision which reflects compensation determinants, which must necessarily include CEO risk preferences. I provide evidence

that §162(m) affected CEO salary levels, but I cannot conclude that it affected total compensation design or the influence of CEOs in general. Therefore, my study does not provide evidence that §162(m) weakened the influence which CEOs have over their compensation design. However, my findings suggest that following 2006, §162(m) noncompliant compensation may be an informative measure of CEO power.

Table 1: Total annual §162(m) noncompliant/non-tax deductible compensation paid to Execucomp executives and the estimated total annual tax expense from §162(m) noncompliance

YEAR	Total Noncompliant Compensation	Mean Marginal Tax Rate	Total Annual Tax Cost From §162(m)
1994	\$ 465,343,046	28%	\$130,296,053
1995	647,567,654	28%	181,318,943
1996	1,006,627,743	27%	271,789,491
1997	1,544,899,738	27%	417,122,929
1998	2,714,120,522	25%	678,530,131
1999	1,924,902,990	25%	481,225,747
2000	2,366,568,065	24%	567,976,336
2001	1,987,370,526	23%	457,095,221
2002	2,278,996,675	23%	524,169,235
2003	2,766,343,719	23%	636,259,055
2004	3,471,641,307	23%	798,477,501
2005	3,925,210,217	22%	863,546,248
2006	7,204,107,195	22%	1,584,903,583
2007	8,934,580,028	21%	1,876,261,806
2008	7,786,179,572	18%	1,401,512,323
2009	6,300,086,095	15%	945,012,914
2010	8,138,493,184	15%	1,220,773,978
2011	9,138,141,267	15%	1,370,721,190
2012	9,080,503,526	15%	1,362,075,529
TOTAL	\$81,681,683,068		\$15,769,068,212

n=164,136

I estimate the annual §162(m) noncompliant/non-tax deductible compensation paid to Execucomp executives by calculating the *§162(m) noncompliant compensation* paid to each *covered executive* listed on Execucomp and summing the total.

IRC Section 162(m) defines the tax deduction for public firms' top executives, which I refer to as *covered executives*, described in Section 1.1 of this dissertation.

I define *§162(m) noncompliant* compensation as the sum of the following items, to the extent their payment exceeds \$1 million in a fiscal year: salary, any miscellaneous compensation, non-performance based plan cash awards, and restricted stock awards.

*Total Noncompliant Compensation* is the sum of all *§162(m) noncompliant* compensation paid to all *covered executives* listed on Execucomp, by year and for the whole sample period from 1994 through 2012

The *Mean Marginal Tax Rate* is the mean annual simulated marginal tax rate for all firms in my sample described in detail in Section 2.5 of this dissertation.

I calculate the *Total Annual Tax Cost From §162(m)* by multiplying the *Total Noncompliant Compensation*, per year, by the *Mean Marginal Tax Rate*, for that particular year.

Table 2: Presentation of Three CEO scenarios

CEO	Total Cash Compensation \$8.5 Million		§162 (m) Non-Compliant CEO Compensation		CEO's COMPENSATION TAX DEDUCTION	§162(m) ADDITIONAL TAX EXPENSE†
	SALARY	BONUS	SALARY	BONUS	TAX BENEFIT	
#1	1,000,000	7,500,000	-0-	-0-	\$8,500,000 * 35% = \$2,975,000	-0-
#2	1,500,000	7,000,000	500,000	-0-	\$8,000,000 * 35% = \$2,800,000	500,000 * 35% = 175,000
#3	750,000	7,750,000	-0-	7,500,000	\$1,000,000 * 35% = \$350,000	7,500,000 * 35% = 2,625,000

† Additional Tax Expense is the estimated corporate federal income tax payable by the firm as a direct result of the lost compensation tax deduction from the firm's failure to fully comply with the deductibility requirements of §162(m), assuming the flat corporate income tax rate of 35%.

Table 3: Chapter 2 Sample Selection

	Firm-Year Observations
Compustat Firms with a CEO included on Execucomp as of June 1, 2013 for Fiscal years beginning on or after January 1, 1994 through 2012	33,273
Deletions:	
Firms which did not pay a single CEO $\geq$ \$1 million total compensation for a minimum of 2 years	(4,686)
Firms which did not pay a single CEO $\geq$ \$900,000 cash compensation for a minimum of 2 years	(4,116)
Observations missing key firm financial data: Compensation components, total assets, net income, or market returns	(5,250)
Observations prior to the first year the firm paid \$1 million total compensation	(717)
Observations missing data required for Equation (1)	(6,878)
Final Sample	11,626

Table 4: Chapter 2 Descriptive Statistics

Variable	n	Mean	Standard Deviation	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> Percentile
<b><u>Firm Characteristics</u></b>						
Total Assets (in millions)	11,626	8,734	28,691	928	2,305	6,943
Market Capitalization (in millions)	11,626	9,737	28,173	942	2,355	6,936
Marginal Tax Rate	11,626	26%	10%	18%	33%	35%
<b><u>CEO Characteristics</u></b>						
Tenure as CEO	11,626	7.3	7.2	2	5	10
CEO's age	11,613	55.8	7.0	51	56	60
<b><u>Compensation</u></b> (in thousands of dollars)						
Total <sup>1</sup>	11,626	6,346	11,754	2,138	3,966	7,334
<b>AMOUNT OF TOTAL COMPENSATION WHICH IS \$162(m):</b>						
Compliant <sup>2</sup>	11,626	4,688	8,962	1,690	2,884	5,143
Noncompliant <sup>3</sup>	11,626	1,658	7,119	0	255	1,711
<b><u>Board Characteristics</u></b>						
Insider %	11,626	18%	9%	11%	14%	22%
Linked %	11,626	10%	12%	0%	8%	15%
Independent %	11,626	73%	15%	63%	75%	86%
<b><u>Compensation Committee</u></b>						
Insider %	11,626	0.3%	3%	0%	0%	0%
Linked %	11,626	5%	14%	0%	0%	0%
Independent %	11,626	95%	15%	100%	100%	100%

<sup>1</sup> I define CEO *Total Compensation* as CEO total annual compensation, reported by Execucomp as *TDC1*.

<sup>2</sup> I define the CEO's \$162(m) *compliant* compensation the CEO's *Total Compensation* less the \$162(m) *noncompliant* compensation portion.

<sup>3</sup> I define \$162(m) *noncompliant* compensation as the sum of the following items, only to the extent their payment exceeds \$1 million: salary, any miscellaneous compensation, non-incentive plan based cash bonus and restricted stock awards.

Descriptive statistics are not CPI adjusted.

Years: 1998 – 2011



Table 5: Chapter 2 Sample Compliance Rates by Industry

Fama/French 12-Industry Classification	Observations per Industry	% of Noncompliant Firms		
		Salary NC <sup>1</sup>	Cash NC <sup>2</sup>	Total NC <sup>3</sup>
Consumer Non-Durables	950	25%	48%	61%
Consumer Durables	330	22%	52%	63%
Manufacturing	1,870	19%	47%	60%
Energy	545	29%	62%	75%
Chemicals & Allied Products	552	23%	51%	67%
Business Equipment	2,014	9%	43%	51%
Telephone & Television	247	51%	72%	81%
Utilities	835	21%	49%	66%
Shops	1,657	26%	51%	62%
Health	1,006	26%	53%	61%
Money & Finance	129	10%	43%	61%
Other	1,491	16%	50%	63%
TOTAL	11,626	20%	50%	61%

<sup>1</sup> I define a firm as *Salary NC* if it paid its CEO a salary in excess of \$1 million.

<sup>2</sup> I define a firm as *Cash NC* if it paid its CEO any \$162(m) noncompliant cash compensation. I define cash compensation as noncompliant if any salary, miscellaneous compensation or non-incentive plan based cash bonus exceeds \$1 million.

<sup>3</sup> I define a firm as *Total NC* if it paid its CEO any \$162(m) noncompliant compensation. I define compensation as noncompliant if any salary, miscellaneous compensation, non-incentive plan based cash bonus or restricted stock grants exceed \$1 million.

I calculate the percentage of noncompliant firms by dividing the number of *Salary NC*, *Cash NC*, and *Total NC* firm-year observations in an industry or in the total sample by the total number of firm-year observations for the respective industry or the total sample of 11,626 firm-year observations, as appropriate.

Table 6: Descriptive Statistics of Equation (1) Independent Variables

Variable	n	Mean	Standard Deviation	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> Percentile
<i>LEVERAGE</i>	11,626	0.55	0.20	0.41	0.55	0.68
<i>ILLIQUIDITY</i>	11,626	0.87	0.15	0.82	0.93	0.98
$\sigma(ROA)$	11,626	0.05	0.08	0.01	0.03	0.06
$\sigma(RET)$	11,626	1.41	33.96	0.24	0.34	0.51
$\ln(ASSETS)$	11,626	7.63	1.42	6.56	7.47	8.57
<i>ROA</i>	11,626	0.05	0.09	0.02	0.05	0.09
<i>RET</i>	11,626	0.07	0.69	-0.21	0.03	0.26
$\ln(CEO\ TENURE)$	11,626	1.55	0.97	0.69	1.61	2.30
<i>CEO OWN%</i>	11,626	2.7%	6.8%	0.2%	0.7%	1.9%
<i>CEO/CHAIR</i>	11,626	0.65	0.48	0	1	1
<i>CEO PAY SLICE</i>	11,626	40%	11%	34%	40%	47%
<i>BOARD SIZE</i>	11,626	9.5	2.3	8	9	11
<i>E-INDEX</i>	11,626	2.32	1.21	1	2	3
<i>INTERLOCK%</i>	11,626	0.6%	2.8%	0.0%	0.0%	0.0%
<i>NI BOARD%</i>	11,626	27.4%	15.4%	14.3%	25.0%	37.5%
<i>NI COMP COMM%</i>	11,626	5.5%	14.8%	0.0%	0.0%	0.0%
<i>MTB</i>	11,626	1.94	1.32	1.20	1.54	2.19
<i>TAX BENEFIT</i>	11,626	0.54	1.48	0.08	0.22	0.55

**VARIABLE DEFINITIONS:**

<i>LEVERAGE<sub>it</sub></i>	=	total debt/total assets of firm i in year t
<i>ILLIQUIDITY<sub>it</sub></i>	=	1- cash plus cash equivalents/ total assets of firm i in year t
$\sigma(ROA)_{it}$	=	standard deviation of firm i's <i>ROA</i> for years t-1 through t-5
$\sigma(RET)_{it}$	=	standard deviation of firm i's <i>RET</i> for years t-1 through t-5
$\ln(ASSETS)_{it}$	=	natural log of total assets at the end of fiscal year t for firm i
<i>ROA<sub>it</sub></i>	=	book net income/average total assets of firm i in year t
<i>RET<sub>it</sub></i>	=	buy and hold market returns of firm i in year t
$\ln(CEO\ TENURE)_{it}$	=	natural log of the number of years the CEO has been in that position (if missing, the number of years at the firm) in firm i as of the end of year t
<i>CEO OWN%<sub>it</sub></i>	=	percentage of shares owned by the CEO in firm i at the end of year t
<i>CEO/CHAIR<sub>it</sub></i>	=	an indicator variable which equals 1 if the CEO also serves as the Chairman of the Board of firm i in year t, and 0 otherwise
<i>CEO PAY SLICE<sub>it</sub></i>	=	CEO total compensation/(the sum of the CEO and four highest paid executives' total compensation) of firm i in year t
<i>BOARD SIZE<sub>it</sub></i>	=	number of members on the firm i's board of directors in year t
<i>E-INDEX<sub>it</sub></i>	=	sum of six entrenchment indicators: staggered board terms, a "poison pill" provision, a "golden parachute" provision, and limitations upon the shareholder ability to amend the charter, amend the by-laws and approve mergers (Bebchuk, Cohen, and Farrell, 2008).
<i>INTERLOCK%<sub>it</sub></i>	=	percentage of interlocked board members
<i>NI BOARD%<sub>it</sub></i>	=	(insider board members + linked board members)/total board members of firm i in year t
<i>NI COMP COMM%<sub>it</sub></i>	=	(insider compensation committee members + linked compensation committee members)/total compensation committee members of firm i in year t
<i>MTB<sub>it</sub></i>	=	(market value of equity + book value of liabilities)/book value of assets of firm i in year t
<i>TAX BENEFIT<sub>it</sub></i>	=	((non-cpi adjusted CEO total compensation - \$1 million)*simulated corporate federal income tax marginal tax rate)/non-cpi adjusted total assets of firm i in year t

Table 7: An examination of the influence of firm, CEO, and board characteristics on §162(m) noncompliance

DEPENDENT VARIABLE:	Predicted	\$162 Non-compliance Indicator:			\$162 NC Compensation scaled by Total Compensation:		
NC MEASURE	Sign	SALARY_I	CASH_I	TOTAL_I	SALARY_R	CASH_R	TOTAL_R
Intercept		-19.098 *** ( $<.001$ )	-10.050 *** ( $<.001$ )	-7.915 *** ( $<.001$ )	-0.037 *** ( $<.001$ )	-0.087 *** ( $<.001$ )	-0.365 *** ( $<.001$ )
<u>HYPOTHESIS I:</u>							
LEVERAGE	+	0.720 ** (0.037)	0.331 (0.159)	0.356 (0.129)	0.0004 (0.809)	0.004 (0.555)	0.034 ** (0.040)
ILLIQUIDITY	+	-0.870 (0.157)	-0.886 *** (0.010)	-0.087 (0.770)	-0.007 *** (0.008)	-0.003 (0.786)	-0.015 (0.496)
$\sigma(ROA)$	+	0.639 (0.383)	0.115 (0.787)	0.193 (0.625)	0.004 (0.121)	0.019 (0.139)	0.004 (0.866)
$\sigma(RET)$	+	0.001 * (0.052)	0.001 (0.158)	0.0004 (0.442)	0.0000 (0.153)	0.0000 (0.236)	0.0001 *** (0.008)
<u>HYPOTHESIS II:</u>							
$\ln(ASSETS)$	+	1.427 *** ( $<.001$ )	0.787 *** ( $<.001$ )	0.607 *** ( $<.001$ )	0.005 *** ( $<.001$ )	0.009 *** ( $<.001$ )	0.037 *** ( $<.001$ )
<u>HYPOTHESIS III:</u>							
ROA	-	1.135 (0.111)	-0.275 (0.498)	0.280 (0.470)	-0.001 (0.800)	-0.038 ** (0.019)	-0.066 ** (0.016)
RET	-	-0.086 (0.310)	-0.034 (0.527)	0.120 (0.140)	0.000 (0.938)	-0.001 (0.280)	0.002 (0.592)
<u>HYPOTHESIS IV:</u>							
$\ln(CEO TENURE)$	+	0.458 *** ( $<.001$ )	0.021 (0.662)	-0.069 * (0.100)	0.001 *** (0.005)	0.004 ** (0.015)	-0.004 (0.236)
CEO OWN%	+	3.073 * (0.008)	1.245 * (0.097)	0.926 (0.198)	0.046 ** (0.021)	0.098 ** (0.024)	0.043 (0.368)
CEO/CHAIR	+	0.820 *** ( $<.001$ )	0.297 *** (0.001)	0.137 (0.102)	0.003 *** ( $<.001$ )	0.005 * (0.082)	0.004 (0.502)
CEO PAY SLICE	+	3.792 *** ( $<.001$ )	4.241 *** ( $<.001$ )	4.704 *** ( $<.001$ )	-0.004 (0.355)	0.052 *** ( $<.001$ )	0.430 *** ( $<.001$ )
<u>HYPOTHESIS V:</u>							
BOARD SIZE	+	0.109 *** ( $<.001$ )	0.072 *** (0.001)	0.072 *** ( $<.001$ )	0.001 *** (0.001)	0.0001 (0.892)	0.0002 (0.894)
E-INDEX	+	0.024 (0.614)	-0.028 (0.408)	0.010 (0.766)	-0.001 (0.116)	-0.003 *** (0.008)	-0.003 (0.282)
INTERLOCK%	+	0.433 (0.821)	-0.080 (0.945)	2.613 ** (0.014)	0.004 (0.807)	-0.049 * (0.060)	0.095 (0.201)
Non-I BOARD%	+	1.036 ** (0.036)	-0.142 (0.661)	-0.565 * (0.060)	0.005 (0.104)	0.017 (0.103)	-0.024 (0.266)
Non-I COMP COMM%	+	-1.029 ** (0.015)	-0.288 (0.313)	-0.178 (0.486)	-0.005 ** (0.045)	-0.014 * (0.070)	0.005 (0.792)
<u>CONTROLS:</u>							
MTB		0.057 (0.224)	-0.037 (0.326)	-0.114 *** (0.002)	0.000 * (0.077)	-0.001 (0.148)	-0.006 ** (0.015)
TAX BENEFIT		0.036 (0.254)	0.119 (0.157)	0.290 *** ( $<.001$ )	0.000 (0.169)	0.002 (0.183)	0.011 * (0.050)
R-Square		0.3507	0.4289	0.3166	0.1318	0.1125	0.3377

$$NC MEASURE_{it} = \beta_0 + \beta_1 LEVERAGE_{it} + \beta_2 ILLIQUIDITY_{it} + \beta_3 \sigma(ROA)_{it} + \beta_4 \sigma(RET)_{it} + \beta_5 \ln(ASSETS)_{it} + \beta_6 ROA_{it} + \beta_7 RET_{it} + \beta_8 \ln(CEO TENURE)_{it} + \beta_9 CEO OWN\%_{it} + \beta_{10} CEO/CHAIR_{it} + \beta_{11} CEO PAY SLICE_{it} + \beta_{12} BOARD SIZE_{it} + \beta_{13} E-INDEX_{it} + \beta_{14} INTERLOCK\%_{it} + \beta_{15} Non-I BOARD\%_{it} + \beta_{16} Non-I COMP COMM\%_{it} + \beta_{17} MTB_{it} + \beta_{18} TAX BENEFIT_{it} + \sum YEAR\_INDICATORS + \sum INDUSTRY\_CODES + \epsilon_{it}$$

Equation (1)

\*\*\*, \*\*, and \* indicate that statistical significance is demonstrated at the .01, .05, and .10 levels, respectively.

p values in parentheses; Years: 1998 through 2011; n=11,626, See Table 3; Firm and CEO clustered standard errors

Multicollinearity diagnostics for all estimations: VIF <1.7; Condition Index < 40; No variable contributes more than 40% to the variance of two or more variables.

Variable Definitions: Appendix B

Table 8: An examination of the factors which influence firms' initial decisions to be §162(m) noncompliant

DEPENDENT VARIABLE: <i>NC MEASURE</i>	Predicted Sign	<u>§162 Compensation Type</u>		
		<i>SALARY_I</i>	<i>CASH_I</i>	<i>TOTAL_I</i>
Intercept		-16.463 *** ( $<.001$ )	-7.725 *** ( $<.001$ )	-5.037 *** ( $<.001$ )
<u>HYPOTHESIS I:</u>				
<i>LEVERAGE</i>	+	0.180 (0.622)	0.362 (0.220)	0.447 (0.145)
<i>ILLIQUIDITY</i>	+	0.652 (0.352)	-1.140 *** (0.005)	-0.469 (0.247)
$\sigma(ROA)$	+	0.843 (0.268)	0.235 (0.663)	-0.086 (0.859)
$\sigma(RET)$	+	0.000 (0.869)	0.001 (0.409)	0.001 (0.732)
<u>HYPOTHESIS II:</u>				
$\ln(5 \text{ YR } \mu(ASSETS))$	+	0.990 *** ( $<.001$ )	0.421 *** ( $<.001$ )	0.241 *** ( $<.001$ )
<u>HYPOTHESIS III:</u>				
<i>ROA</i>	-	2.246 ** (0.049)	-1.376 *** (0.009)	-0.750 (0.175)
<i>RET</i>	-	-0.193 (0.267)	-0.037 (0.734)	0.302 *** (0.003)
<u>HYPOTHESIS IV:</u>				
$\ln(CEO \text{ TENURE})$	+	0.273 *** (0.001)	-0.133 ** (0.024)	-0.277 *** ( $<.001$ )
<i>CEO OWN%</i>	+	0.353 (0.713)	-0.071 (0.928)	-0.228 (0.794)
<i>CEO/CHAIR</i>	+	0.614 *** ( $<.001$ )	0.253 ** (0.028)	-0.010 (0.932)
<i>CEO PAY SLICE</i>	+	2.969 *** ( $<.001$ )	4.666 *** ( $<.001$ )	4.018 *** ( $<.001$ )
<u>HYPOTHESIS V:</u>				
<i>BOARD SIZE</i>	+	0.055 * (0.075)	0.042 (0.121)	0.046 (0.108)
<i>E-INDEX</i>	+	0.038 (0.475)	0.028 (0.497)	0.068 (0.131)
<i>INTERLOCK%</i>	+	1.224 (0.542)	0.838 (0.559)	1.531 (0.305)
<i>Non-I BOARD%</i>	+	1.236 ** (0.024)	0.241 (0.544)	0.005 (0.990)
<i>Non-I COMP COMM%</i>	+	-0.582 (0.251)	-0.364 (0.300)	-0.131 (0.725)
<u>CONTROLS:</u>				
<i>MTB</i>		0.107 ** (0.040)	-0.014 (0.740)	-0.143 *** (0.006)
<i>TAX BENEFIT</i>		0.016 (0.384)	0.033 (0.642)	0.214 *** ( $<.001$ )
<i>PRIOR NC</i>		0.614 *** ( $<.001$ )	0.395 *** ( $<.001$ )	
R-Square		0.0617	0.2120	0.1383
n		8,553	5,016	3,156

$$\begin{aligned}
 NC \text{ MEASURE}_{it} = & \beta_0 + \beta_1 LEVERAGE_{it} + \beta_2 ILLIQUIDITY_{it} + \beta_3 \sigma(ROA)_{it} + \beta_4 \sigma(RET)_{it} \\
 & + \beta_5 \ln(5 \text{ YR } \mu(ASSETS))_{it} + \beta_6 ROA_{it} + \beta_7 RET_{it} + \beta_8 \ln(CEO \text{ TENURE})_{it} + \beta_9 CEO \text{ OWN}\%_{it} \\
 & + \beta_{10} CEO/CHAIR_{it} + \beta_{11} CEO \text{ PAY SLICE}_{it} + \beta_{12} BOARD \text{ SIZE}_{it} + \beta_{13} E - INDEX_{it} + \beta_{14} INTERLOCK\%_{it} \\
 & + \beta_{15} Non - I \text{ BOARD}\%_{it} + \beta_{16} Non - I \text{ COMP COMM}\%_{it} + \beta_{17} MTB_{it} + \beta_{18} TAX \text{ BENEFIT}_{it} [+ \beta_{19} PRIOR \text{ NC}_{it}] \dagger \\
 & + \sum YEAR\_INDICATORS + \sum INDUSTRY\_CODES + \epsilon_{it}
 \end{aligned}$$

Equation (3)

\*\*\*, \*\*, and \* indicate that statistical significance is demonstrated at the .01, .05, and .10 levels, respectively.  
p values in parentheses; Years: 1998 through 2011; Firm and CEO clustered standard errors.

Table 8 (continued)

† The independent variable, *PRIOR NC*, is excluded when *TOTAL\_I* is the dependent variable.

Multicollinearity diagnostics for all estimations of Equation (2a): VIF < 1.7; Condition Index < 40; No variable contributes more than 40% to the variance of two or more variables.

*Firms' Initial Decisions:* Firms generally compensate their CEO compliant compensation and, following their *initial decision* to compensate their CEO with some noncompliant compensation, generally continue with the practice of compensating that executive with noncompliant compensation in future years, discussed in greater detail in Section 2.7. It is this *initial decision*, i.e. the first time they pay a form of noncompliant compensation, which I examine in Section 2.7. To examine firms' initial decisions to pay noncompliant compensation, I use a hazard model and limit the sample observations as detailed in Section 2.7. I exclude all of the observations of those firms that always in my sample paid their CEO noncompliant salary, noncompliant cash compensation or any noncompliant compensation if the dependent variable is *SALARY\_I*, *CASH\_I*, and *TOTAL\_I*, respectively. I include all of the observations of those firms that never in my sample paid their CEO noncompliant salary, noncompliant cash compensation or any noncompliant compensation if the dependent variable is *SALARY\_I*, *CASH\_I*, and *TOTAL\_I*, respectively. For all other firms, I exclude all observations following the year that the firm initially pays their CEO noncompliant salary, noncompliant cash compensation or any noncompliant compensation if the dependent variable is *SALARY\_I*, *CASH\_I*, and *TOTAL\_I*, respectively.

Variable Definitions: Appendix B

Table 9: Chapter 3 Sample Selection

	Firm-Year Observations
Compustat Firms with a CEO included on Execucomp for Fiscal years beginning on or after January 1, 1994 through 2012	33,273
Deletions:	
Firms which did not pay a single CEO $\geq$ \$1 million total compensation for a minimum of 2 years	(4,686)
Firms which did not pay a single CEO $\geq$ \$900,000 cash compensation for a minimum of 2 years	(4,116)
Observations missing key firm financial data: Compensation components, total assets, net income, or market returns	(5,250)
Observation prior to the first year the firm paid \$1 million total compensation	(717)
Final Sample	18,504

Table 10: Chapter 3 Descriptive Statistics

Variable	n	Mean	Standard Deviation	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> Percentile
<b><u>Firm Characteristics</u></b>						
Total Assets (in millions)	18,504	7,862	26,555	818	2,061	6,107
Market Capitalization (in millions)	18,504	8,277	24,332	813	2,045	5,833
Marginal Tax Rate	17,196	26%	11%	18%	33%	35%
<b><u>CEO Characteristics</u></b>						
Tenure as CEO	18,504	7.2	7.3	2	5	10
CEO's age	18,465	56	7.0	51	56	60
<b><u>Compensation</u> (in thousands)</b>						
Total <sup>1</sup>	18,504	5,898	10,867	1,923	3,522	6,631
Salary	18,504	789	382	556	734	960
Cash Incentives <sup>2</sup>	18,504	1,302	2,243	351	746	1,509
Equity Incentives <sup>3</sup>	18,504	3,507	9,948	500	1,566	3,850
Deferred	18,504	121	496	0	8	88
Miscellaneous <sup>4</sup>	18,504	179	1,461	0	0	68
<b><u>§162(m):</u></b>						
Noncompliant Percentage <sup>5</sup>	18,504	17%	23%	0%	3%	31%
Tax Expense (in thousands) <sup>6</sup>	17,196	370	2,014	0	19	284
<b>NONCOMPLIANT FIRMS:<sup>7</sup></b>						
Years of Noncompliance <sup>8</sup>	1,683	6.2	4.1	3	5	8
Years in Sample <sup>9</sup>	1,683	10.3	5.25	5	10	15

<sup>1</sup> Total compensation is CEO total annual compensation, reported by Execucomp as *TDC1*.

<sup>2</sup> Cash Incentives is the sum of the CEO's cash bonus plus all non-equity incentive compensation.

<sup>3</sup> Equity Incentives is the sum of the option grants and restricted stock grants, which are included in CEO Total Compensation.

<sup>4</sup> Miscellaneous compensation includes severance payments, debt forgiveness, imputed interest, payouts for cancellation of stock options, payment for unused vacation, tax reimbursements, plus signing bonuses.

<sup>5</sup> §162(m) Noncompliant Percentage = §162(m) Noncompliant Compensation / CEO Total Compensation

I define §162(m) Noncompliant Compensation as the sum of the following items, only to the extent their payment exceeds \$1 million: salary, any miscellaneous compensation, non-incentive plan based cash bonus and restricted stock awards.

<sup>6</sup> Tax Expense = §162(m) Noncompliant Compensation \* Simulated Marginal Tax Rate as defined in Section 2.5

<sup>7</sup> NONCOMPLIANT FIRMS are the 1,683 unique firms in the Chapter 3 sample that pay some §162(m)

Noncompliant Compensation to their CEO. Chapter 3's sample includes a total of 1,916 unique firms, detailed in Table 9. The NONCOMPLIANT FIRMS' descriptive statistics, including Years of Noncompliance and Years in Sample, are calculated using only the 1,683 noncompliant firms.

<sup>8</sup> Years of Noncompliance is the number of years that the firm paid some §162(m) Noncompliant Compensation to their CEO.

<sup>9</sup> Years in Sample is the number of years that the firm was included in the Chapter 3 sample.

Descriptive statistics are not CPI adjusted.

Years: 1994 - 2012

n=18,504, see Table 9

Table 11: The annual number of observations and percentages of §162(m) noncompliant firms

YEAR	Observations	% of Noncompliant Firms		
	Per Year	Salary NC <sup>1</sup>	Cash NC <sup>2</sup>	Total NC <sup>3</sup>
1994	496	9%	15%	32%
1995	696	9%	15%	32%
1996	795	9%	17%	33%
1997	870	9%	17%	33%
1998	922	11%	18%	35%
1999	955	11%	19%	34%
2000	974	13%	22%	36%
2001	984	15%	22%	38%
2002	1,013	15%	23%	40%
2003	1,065	16%	25%	46%
2004	1,116	18%	27%	53%
2005	1,144	19%	26%	59%
2006	1,213	21%	66%	73%
2007	1,276	22%	77%	78%
2008	1,274	25%	80%	80%
2009	1,279	24%	78%	79%
2010	1,255	25%	82%	83%
2011	1,114	28%	86%	87%
2012	63	25%	94%	94%
TOTAL	18,504	18%	44%	56%
Number of Unique Firms:				
TOTAL		Salary NC	Cash NC	Total NC
1,916		579	1,552	1,683

<sup>1</sup> I define a firm as *Salary NC* if it paid its CEO a salary in excess of \$1 million.

<sup>2</sup> I define a firm as *Cash NC* if it paid its CEO any §162(m) noncompliant cash compensation. I define cash compensation as noncompliant if any salary, miscellaneous compensation or non-incentive plan based cash bonus exceeds \$1 million.

<sup>3</sup> I define a firm as *Total NC* if it paid its CEO any §162(m) noncompliant compensation. I define compensation as noncompliant if any salary, miscellaneous compensation, non-incentive plan based cash bonus or restricted stock grants exceed \$1 million.

I calculate the percentage of noncompliant firms by dividing the number of *Salary NC*, *Cash NC*, and *Total NC* firms in a year or in the total sample of 18,504 firm-year observations by the total number of observations for the respective year or the total sample, as appropriate.



Table 12: Descriptive Statistics of *CEO FACTOR*, the Chapter 3 measure of CEO power

PANEL A: Loadings estimated using principle component analysis for *CEO FACTOR*

MEASURE	LOAD
<i>CEO TENURE</i>	80
<i>CEO AGE</i>	71
<i>CEO OWN%</i>	59
<i>CEO/CHAIR</i>	55
Eigenvalue	1.80
% Variance explained	45%

PANEL B: *CEO FACTOR* Descriptive Statistics

N	Mean	Standard Deviation	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
18,268	4.000	1.000	1.798	3.444	3.892	4.439	11.323

VARIABLE DEFINITIONS:

- CEO TENURE* = the number of years the CEO has been in that position (if missing, the number of years at the firm) in firm *i* as of the end of year *t*
- CEO AGE* = the CEO's age at firm *i* as of the end of year *t*
- CEO OWN%* = CEO percentage of ownership of firm *i* in year *t*
- CEO/CHAIR* = an indicator variable which equals 1 if the CEO also serves as the Chairman of the Board of firm *i* in year *t*, and 0 otherwise

Table 13: Board Independence Descriptive Statistics by Period, Using One-Year Base and Post Periods

PANEL A: The number of Independent Board Members pre and post 2003 IND								
PERIOD	N	TYPE OF MEMBER	MEAN	Number of Board Members				
				MINIMUM	Q1	MEDIAN	Q3	MAXIMUM
Base Period	811	Non-independent	2.8	1	2	3	4	12
		Independent	6.6	0	5	7	8	17
Post Period	852	Non-independent	2.6	1	2	2	3	9
		Independent	6.7	2	5	7	8	16

PANEL B: The pre and post 2003 IND CEO Power measure, *CEO FACTOR*, and Board Independence Descriptive Statistics

VARIABLE	MEAN	MINIMUM	Q1	MEDIAN	Q3	MAXIMUM
BASE Period						
<i>CEO FACTOR</i>	4.00	1.96	3.40	3.92	4.45	9.54
Percentage of Interlocked Board Members	1%	0%	0%	0%	0%	20%
Percentage of Independent Board Members	70%	0%	60%	71%	82%	94%
Percentage of Independent Compensation Committee Members	93%	0%	100%	100%	100%	100%
POST Period						
<i>CEO FACTOR</i>	4.04	2.08	3.42	3.91	4.47	10.62
Percentage of Interlocked Board Members	0%	0%	0%	0%	0%	22%
Percentage of Independent Board Members	72%	18%	63%	73%	83%	94%
Percentage of Independent Compensation Committee Members	94%	0%	100%	100%	100%	100%

YEARS: Base Period – Years ending June 15, 2003 through May 31, 2004

Post Period – Years ending August 15, 2004 through July 31, 2005

*CEO FACTOR* is a measure of CEO power formed from *CEO TENURE*, *CEO AGE*, *CEO OWN%*, and *CEO/CHAIR*. I predict that the CEO's power increases as the value estimated for *CEO FACTOR* increases.

Table 14: Hypothesis VI: An examination of how the 2003 SEC independence regulation influenced the CEO power - §162(m) noncompliance relation, using one-year base and post periods

DEPENDENT VARIABLE: NC MEASURE	predicted sign	§162 Non-compliance Indicator			§162 NC Compensation scaled by Total Compensation		
		NC Compensation Type			NC Compensation Type:		
		SALARY_I	CASH_I	TOTAL_I	SALARY_R	CASH_R	TOTAL_R
CEO FACTOR	+	0.772 *** ( $<.001$ )	0.283 *** (0.005)	-0.042 (0.622)	0.003 ** (0.017)	0.007 ** (0.019)	-0.005 (0.457)
CEO FACTOR* POST CHANGE	-	-0.105 (0.379)	0.033 (0.733)	-0.011 (0.900)	0.000 (0.652)	-0.005 (0.143)	-0.003 (0.607)
ln(ASSETS)		1.649 *** ( $<.001$ )	0.951 *** ( $<.001$ )	0.666 *** ( $<.001$ )	0.005 *** ( $<.001$ )	0.008 *** ( $<.001$ )	0.036 *** ( $<.001$ )
ROA		4.542 (0.118)	2.772 (0.132)	0.431 (0.712)	0.021 (0.263)	0.001 (0.968)	-0.090 (0.204)
RET		0.065 (0.783)	0.255 (0.134)	0.388 *** (0.002)	0.000 (0.985)	0.001 (0.770)	0.015 * (0.062)
LEVERAGE		1.716 *** (0.001)	0.636 (0.186)	0.334 (0.333)	0.003 (0.279)	0.008 (0.169)	0.033 (0.181)
ILLIQUIDITY		-2.564 ** (0.031)	-1.458 * (0.060)	-0.183 (0.755)	-0.011 *** (0.006)	-0.015 * (0.050)	-0.026 (0.508)
$\sigma$ (ROA)		0.383 (0.860)	0.565 (0.523)	0.791 (0.203)	0.004 (0.221)	0.008 (0.215)	-0.008 (0.782)
$\sigma$ (RET)		-0.511 (0.255)	-0.162 (0.411)	-0.479 *** (0.009)	0.000 (0.612)	0.000 ** (0.017)	-0.001 *** ( $<.001$ )
MTB		-0.029 (0.865)	-0.142 (0.192)	-0.276 *** (0.001)	-0.001 (0.109)	-0.003 ** (0.020)	-0.016 *** (0.001)
TAX BENEFIT		0.263 *** (0.005)	0.266 (0.136)	0.638 *** ( $<.001$ )	0.000 (0.767)	0.003 (0.105)	0.041 *** ( $<.001$ )
BOARD SIZE		0.066 (0.238)	0.067 (0.116)	0.086 ** (0.024)	0.000 (0.198)	0.000 (0.955)	0.002 (0.466)
INTERLOCK%		-7.495 * (0.082)	-2.121 (0.536)	0.765 (0.780)	-0.033 ** (0.038)	0.009 (0.925)	0.009 (0.966)
Non-I BOARD%		0.209 (0.824)	-0.475 (0.471)	-0.777 (0.151)	0.002 (0.659)	-0.001 (0.940)	0.013 (0.737)
Non-I COMP COMM%		-0.325 (0.677)	0.188 (0.754)	0.324 (0.504)	0.001 (0.889)	-0.004 (0.628)	-0.037 (0.275)
E-INDEX		0.141 (0.131)	0.111 (0.101)	0.122 ** (0.044)	-0.001 (0.239)	0.001 (0.348)	0.005 (0.265)
R-Square		0.3481	0.2471	0.2260	0.1611	0.0635	0.1432
n		1,663	1,663	1,663	1,663	1,663	1,663

$$NC\ MEASURE_{it} = \beta_0 + \beta_1 CEO\ FACTOR_{it} + \beta_2 CEO\ FACTOR_{it} * POST\ CHANGE_{it} + \sum CONTROLS + \sum YEAR\_INDICATORS + \sum INDUSTRY\_CODES + \epsilon_{it} \quad \text{Equation (4)}$$

\*\*\*, \*\*, and \* indicate that statistical significance is demonstrated at the .01, .05, and .10 levels, respectively.

Year and industry indicator variables included, but not listed for brevity.

p values in parentheses; Years provided in Table 13.

Multicollinearity diagnostics for all estimations: VIF < 1.9; Condition Index < 40.01; No variable contributes more than 38% to the variance of two or more variables.

Variable Definitions: Appendix B

Table 15: The Descriptive Statistics of *BOARD FACTOR*, a measure of board independence

PANEL A: Loadings estimated using principle component analysis for *BOARD FACTOR*

MEASURE	LOAD
<i>Non-I BOARD%</i>	86
<i>Non-I COMP COMM%</i>	83
<i>INTERLOCK%</i>	29
Eigenvalue	1.52
% Variance explained	51%

PANEL B: *BOARD FACTOR* Descriptive Statistics

	N	Mean	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
Pre 2003 IND	851	3.054	1.837	2.298	2.755	3.436	8.956
Post 2003 IND	880	2.948	1.823	2.240	2.700	3.313	7.808

VARIABLE DEFINITIONS:

- Non-I BOARD%*<sub>it</sub> = (insider board members + linked board members)/total board members of firm i in year t
- Non-I COMP COMM%*<sub>it</sub> = (insider compensation committee members + linked compensation committee members)/total compensation committee members of firm i in year t
- INTERLOCK%*<sub>it</sub> = percentage of interlocked board members

Table 16: Board Independence Descriptive Statistics by Period, Using One-Year Base and Post Periods for the Alternate/Equation (5) Analysis

PANEL A: The number of Independent Board Members pre and post 2003 IND								
PERIOD	N	TYPE OF MEMBER	MEAN	Number of Independent Board Members				
				MINIMUM	Q1	MEDIAN	Q3	MAXIMUM
Base Period	811	Non-independent	2.8	1	2	3	4	12
		Independent	6.6	0	5	7	8	17
Post Period	792	Non-independent	2.6	1	2	2	3	9
		Independent	6.8	2	5	7	8	16

PANEL B: The pre and post 2003 IND Board Independent measure, *BOARD FACTOR*, CEO Power measure, *CEO FACTOR*, and Board Independence Descriptive Statistics

VARIABLE	MEAN	MINIMUM	Q1	MEDIAN	Q3	MAXIMUM
BASE Period						
<i>BOARD FACTOR</i>	3.1	1.8	2.3	2.8	3.5	9.0
<i>CEO FACTOR</i>	4.0	2.0	3.4	3.9	4.4	9.5
Percentage of Interlocked Board Members	1%	0%	0%	0%	0%	20%
Percentage of Independent Board Members	70%	0%	60%	71%	82%	94%
Percentage of Independent Compensation Committee Members	93%	0%	100%	100%	100%	100%
POST Period						
<i>BOARD FACTOR</i>	2.9	1.8	2.2	2.7	3.3	7.2
<i>CEO FACTOR</i>	4.1	2.1	3.5	3.9	4.5	9.7
Percentage of Interlocked Board Members	0%	0%	0%	0%	0%	22%
Percentage of Independent Board Members	72%	18%	63%	74%	83%	94%
Percentage of Independent Compensation Committee Members	94%	0%	100%	100%	100%	100%

YEARS: Base Period – Years ending June 15, 2003 through May 31, 2004

Post Period – Years ending August 15, 2004 through July 31, 2005

*BOARD FACTOR* is a measure of board independence formed from *Non-I BOARD%*, *Non-I COMP COMM%*, and *INTERLOCK%*. The board's independence decreases as the value estimated for *BOARD FACTOR* increases.

*CEO FACTOR* is a measure of CEO power formed from *CEO TENURE*, *CEO AGE*, *CEO OWN%*, and *CEO/CHAIR*. I predict that the CEO's power increases as the value estimated for *CEO FACTOR* increases.

Table 17: Hypothesis VI: An examination of how the 2003 SEC independence regulation influenced the CEO power - §162(m) noncompliance relation, using one-year base and post periods and dividing the firms based upon base period independence

PANEL A: Hypothesis VI - Firms with LOW Board Independence in the Base Period							
$NC\ MEASURE_{it} = \beta_0 + \beta_1 CEO\ FACTOR_{it} + \beta_2 CEO\ FACTOR_{it} * POST\ CHANGE_{it} + \sum CONTROLS + \sum YEAR\_INDICATORS + \sum INDUSTRY\_CODES + \epsilon_{it}$							
Equation (5)							
DEPENDENT VARIABLE:		§162 Non-compliance Indicator			§162 NC Compensation scaled by		
		NC Compensation Type			Total Compensation		
NC MEASURE	predicted sign	SALARY_I	CASH_I	TOTAL_I	SALARY_R	CASH_R	TOTAL_R
CEO FACTOR	+	0.681 *** (<.001)	0.162 (0.213)	-0.148 (0.188)	0.003 *** (<.001)	0.007 ** (0.011)	-0.014 * (0.062)
CEO FACTOR*							
POST CHANGE	-	-0.379 * (0.090)	0.017 (0.919)	-0.017 (0.910)	0.000 (0.973)	-0.005 (0.186)	-0.006 (0.533)
ln(ASSETS)		1.770 *** (<.001)	0.926 *** (<.001)	0.753 *** (<.001)	0.005 *** (<.001)	0.007 *** (0.003)	0.033 *** (<.001)
ROA		3.002 (0.323)	0.779 (0.709)	-2.929 * (0.084)	-0.001 (0.943)	0.004 (0.918)	-0.224 ** (0.042)
RET		-0.532 (0.192)	-0.459 (0.121)	0.003 (0.990)	-0.001 (0.672)	-0.003 (0.578)	-0.007 (0.654)
LEVERAGE		1.519 * (0.076)	0.431 (0.515)	-0.138 (0.794)	0.003 (0.522)	0.012 (0.314)	0.032 (0.339)
ILLIQUIDITY		-3.111 ** (0.046)	-2.294 ** (0.031)	-0.202 (0.815)	-0.022 *** (0.001)	-0.022 (0.299)	-0.023 (0.689)
σ(ROA)		-2.142 (0.486)	-1.100 (0.636)	0.475 (0.768)	0.000 (0.963)	0.005 (0.774)	0.006 (0.911)
σ(RET)		-1.650 *** (0.011)	-0.471 (0.216)	-0.867 *** (0.004)	0.000 (0.699)	0.000 (0.784)	-0.006 (0.204)
MTB		-0.328 * (0.094)	-0.273 * (0.062)	-0.294 ** (0.021)	-0.001 (0.431)	-0.006 * (0.051)	-0.020 ** (0.012)
TAX BENEFIT		0.867 *** (<.001)	0.553 *** (<.001)	0.994 *** (<.001)	0.001 (0.581)	0.009 *** (0.005)	0.054 *** (<.001)
BOARD SIZE		-0.017 (0.809)	0.066 (0.213)	0.093 ** (0.047)	0.001 ** (0.030)	0.001 (0.458)	0.005 (0.155)
E-INDEX		0.171 (0.134)	0.187 ** (0.030)	0.132 * (0.069)	-0.001 (0.319)	0.001 (0.665)	0.004 (0.403)
R-Square		0.3336	0.2449	0.2672	0.1893	0.0653	0.1680
n		769	769	769	769	769	769

Table 17 (continued)

## PANEL B: Hypothesis VI - Firms with HIGH Board Independence in the Base Period

$$NC\ MEASURE_{it} = \beta_0 + \beta_1 CEO\ FACTOR_{it} + \beta_2 CEO\ FACTOR_{it} * POST\ CHANGE_{it} + \sum CONTROLS + \sum YEAR\_INDICATORS + \sum INDUSTRY\_CODES + \epsilon_{it}$$

Equation (5)

DEPENDENT VARIABLE:	predicted	§162 Non-compliance Indicator NC Compensation Type			§162 NC Compensation scaled by Total Compensation NC Compensation Type:		
NC MEASURE	sign	SALARY_I	CASH_I	TOTAL_I	SALARY_R	CASH_R	TOTAL_R
CEO FACTOR	+	1.158 *** (.001)	0.481 ** (0.014)	0.153 (0.335)	0.004 ** (0.012)	0.007 ** (0.034)	0.015 (0.221)
CEO FACTOR* POST CHANGE	-	0.061 (0.862)	-0.088 (0.743)	-0.071 (0.752)	-0.000 (0.856)	-0.004 (0.447)	-0.002 (0.883)
ln(ASSETS)		1.868 *** (.001)	1.148 *** (.001)	0.658 *** (.001)	0.005 *** (.001)	0.010 *** (.001)	0.040 *** (.001)
ROA		6.089 ** (0.041)	2.573 (0.222)	2.694 * (0.077)	0.037 *** (0.008)	-0.011 (0.727)	-0.106 (0.354)
RET		0.187 (0.594)	0.448 ** (0.020)	0.567 *** (0.006)	0.000 (0.999)	0.002 (0.484)	0.025 ** (0.045)
LEVERAGE		2.133 ** (0.015)	0.513 (0.422)	0.530 (0.282)	0.001 (0.753)	0.002 (0.819)	0.012 (0.754)
ILLIQUIDITY		-2.547 (0.102)	-0.283 (0.779)	-0.016 (0.982)	-0.001 (0.900)	-0.003 (0.823)	-0.002 (0.976)
$\sigma(ROA)$		3.711 (0.369)	3.014 (0.271)	1.639 (0.420)	0.014 (0.423)	0.055 (0.180)	0.005 (0.975)
$\sigma(RET)$		-0.164 (0.776)	-0.019 (0.832)	-0.251 (0.265)	0.000 (0.947)	0.000 (0.634)	-0.001 (0.506)
MTB		-0.042 (0.813)	-0.090 (0.483)	-0.247 ** (0.015)	-0.002 * (0.094)	-0.002 (0.418)	-0.017 ** (0.028)
TAX BENEFIT		0.308 (0.209)	0.403 *** (0.001)	0.547 *** (.001)	-0.001 (0.612)	0.002 (0.287)	0.057 *** (.001)
BOARD SIZE		0.152 ** (0.034)	0.086 (0.127)	0.098 ** (0.046)	0.000 (0.900)	-0.001 (0.391)	0.000 (0.957)
E-INDEX		0.129 (0.260)	0.029 (0.744)	0.111 (0.136)	-0.001 ** (0.029)	0.002 (0.195)	0.003 (0.549)
R-Square		0.4065	0.3048	0.2159	0.1674	0.0851	0.1609
n		834	834	834	834	834	834

\*\*\*, \*\*, and \* indicate that statistical significance is demonstrated at the .01, .05, and .10 levels, respectively.

Year and industry indicator variables included, but not listed for brevity.

p values in parentheses

YEARS: Base Period – Years ending June 15, 2003 through May 31, 2004

Post Period – Years ending August 15, 2004 through July 31, 2005

Firms with a Based Period *BOARD FACTOR* greater than (less than or equal to) the mean are classified as LOW (HIGH) board independent.

Multicollinearity diagnostics for all estimations: VIF &lt;1.9; Condition Index &lt; 40.01; No variable contributes more than 38% to the variance of two or more variables.

Variable Definitions: Appendix B

Table 18: Board Independence Descriptive Statistics by Period, Using Two-Year Base and Post Periods

PANEL A: The number of Independent Board Members pre and post 2003 IND								
PERIOD	N	TYPE OF MEMBER	MEAN	Number of Board Members				
				MINIMUM	Q1	MEDIAN	Q3	MAXIMUM
Base Period	1,386	Non-independent	3.1	1	2	3	4	13
		Independent	6.6	0	5	6	8	17
Post Period	1,390	Non-independent	2.6	1	2	2	3	9
		Independent	7.0	2	5	7	9	16

PANEL B: The pre and post 2003 IND Board Independent measure, *BOARD FACTOR*, CEO Power measure, *CEO FACTOR*, and Board Independence Statistics

VARIABLE	MEAN	MINIMUM	Q1	MEDIAN	Q3	MAXIMUM
BASE Period						
<i>BOARD FACTOR</i>	3.1	1.8	2.3	2.8	3.5	8.4
<i>CEO FACTOR</i>	4.0	1.9	3.4	3.9	4.4	8.6
Percentage of Interlocked Board Members	1%	0%	0%	0%	0%	50%
Percentage of Independent Board Members	68%	0%	57%	70%	80%	94%
Percentage of Independent Compensation Committee Members	91%	0%	100%	100%	100%	100%
POST Period						
<i>BOARD FACTOR</i>	2.8	1.8	2.2	2.5	3.2	7.3
<i>CEO FACTOR</i>	4.0	2.1	3.4	4.0	4.5	9.7
Percentage of Interlocked Board Members	0%	0%	0%	0%	0%	22%
Percentage of Independent Board Members	73%	18%	64%	75%	83%	94%
Percentage of Independent Compensation Committee Members	94%	0%	100%	100%	100%	100%

YEARS: Base Period – Years ending December 15, 2001 through November 30, 2003

Post Period – Years ending September 15, 2004 through August 30, 2006

*BOARD FACTOR* is a measure of board independence formed from *Non-I BOARD%*, *Non-I COMP COMM%*, and *INTERLOCK%*. The board's independence decreases as the value estimated for *BOARD FACTOR* increases.

*CEO FACTOR* is a measure of CEO power formed from *CEO TENURE*, *CEO AGE*, *CEO OWN%*, and *CEO/CHAIR*. I predict that the CEO's power increases as the value estimated for *CEO FACTOR* increases.



Table 19: Hypothesis VI: An examination of how the 2003 SEC independence regulation influenced the CEO power - §162(m) noncompliance relation, using two-year base and post periods and dividing the firms based upon base period independence

PANEL A: Hypothesis VI - Firms with LOW Board Independence in the Base Period							
$NC\ MEASURE_{it} = \beta_0 + \beta_1 CEO\ FACTOR_{it} + \beta_2 CEO\ FACTOR_{it} * POST\ CHANGE_{it} + \sum CONTROLS + \sum YEAR\_INDICATORS + \sum INDUSTRY\_CODES + \epsilon_{it}$							
Equation (5)							
DEPENDENT VARIABLE:	predicted sign	§162 Non-compliance Indicator NC Compensation Type			§162 NC Compensation scaled by Total Compensation NC Compensation Type:		
NC MEASURE	sign	SALARY_I	CASH_I	TOTAL_I	SALARY_R	CASH_R	TOTAL_R
CEO FACTOR	+	0.814 *** (<.001)	0.270 *** (0.006)	-0.047 (0.571)	0.005 *** (<.001)	0.005 *** (0.009)	-0.007 (0.245)
CEO FACTOR*							
POST CHANGE	-	-0.379 ** 0.018	-0.058 (0.645)	-0.013 (0.906)	-0.001 0.584	-0.001 0.824	0.005 (0.549)
ln(ASSETS)		1.533 *** (<.001)	0.864 *** (<.001)	0.637 *** (<.001)	0.004 *** (<.001)	0.003 ** (0.023)	0.028 *** (<.001)
ROA		3.273 * (0.066)	-0.322 (0.752)	-0.080 (0.926)	0.004 (0.593)	-0.089 *** (<.001)	-0.118 ** (0.045)
RET		0.272 (0.364)	0.292 (0.143)	0.507 *** (0.003)	0.000 (0.960)	-0.004 (0.389)	0.014 (0.266)
LEVERAGE		0.971 * (0.094)	0.420 (0.309)	-0.047 (0.893)	0.004 (0.272)	0.015 * (0.064)	0.035 (0.147)
ILLIQUIDITY		-1.844 (0.107)	-1.501 ** (0.038)	1.305 ** (0.037)	-0.014 ** (0.017)	-0.018 (0.191)	0.042 (0.307)
σ(ROA)		0.993 (0.596)	0.308 (0.752)	0.072 (0.931)	0.004 (0.467)	-0.010 (0.441)	-0.019 (0.611)
σ(RET)		-0.590 (0.120)	-0.090 (0.407)	-0.035 (0.345)	0.000 (0.985)	0.000 (0.853)	-0.002 (0.524)
MTB		-0.112 (0.389)	-0.081 (0.371)	-0.136 * (0.075)	0.000 (0.910)	0.001 (0.700)	-0.006 (0.270)
TAX BENEFIT		0.309 *** (0.001)	0.299 *** (<.001)	0.616 *** (<.001)	-0.001 (0.252)	0.001 (0.257)	0.027 *** (<.001)
BOARD SIZE		0.052 (0.287)	0.069 * (0.066)	0.092 *** (0.005)	0.001 *** (0.001)	0.001 (0.400)	-0.003 (0.239)
E-INDEX		0.203 *** (0.010)	0.142 ** (0.019)	0.159 *** (0.002)	-0.001 (0.285)	0.001 (0.356)	0.008 ** (0.036)
R-Square		0.3210	0.2190	0.2390	0.1566	0.0552	0.1419
n		1,456	1,456	1,456	1,456	1,456	1,456

Table 19 (continued)

## PANEL B: Hypothesis VI - Firms with HIGH Board Independence in the Base Period

$$NC\ MEASURE_{it} = \beta_0 + \beta_1 CEO\ FACTOR_{it} + \beta_2 CEO\ FACTOR_{it} * POST\ CHANGE_{it} + \sum CONTROLS + \sum YEAR\_INDICATORS + \sum INDUSTRY\_CODES + \epsilon_{it}$$

Equation (5)

DEPENDENT VARIABLE:	predicted sign	§162 Non-compliance Indicator NC Compensation Type			§162 NC Compensation scaled by Total Compensation NC Compensation Type:		
		SALARY_I	CASH_I	TOTAL_I	SALARY_R	CASH_R	TOTAL_R
NC MEASURE							
CEO FACTOR	+	1.161 *** (<.001)	0.699 *** (<.001)	0.262 * (0.056)	0.004 *** (<.001)	0.005 (0.217)	-0.011 (0.261)
CEO FACTOR*							
POST CHANGE	-	0.016 (0.960)	-0.303 (0.184)	-0.338 * (0.073)	-0.001 (0.522)	-0.002 (0.762)	0.014 (0.317)
ln(ASSETS)		2.066 *** (<.001)	1.176 *** (<.001)	0.747 *** (<.001)	0.006 *** (<.001)	0.007 *** (<.001)	0.033 *** (<.001)
ROA		1.503 (0.454)	0.458 (0.745)	1.277 (0.258)	-0.004 (0.710)	0.004 (0.899)	0.056 (0.477)
RET		0.387 (0.234)	0.199 (0.350)	0.291 * (0.097)	-0.001 (0.480)	-0.010 ** (0.047)	0.017 (0.176)
LEVERAGE		3.228 *** (<.001)	1.134 ** (0.034)	0.428 (0.327)	-0.002 (0.640)	0.009 (0.492)	0.002 (0.962)
ILLIQUIDITY		-1.075 (0.388)	-0.480 (0.540)	-0.377 (0.545)	0.000 (0.983)	0.015 (0.417)	-0.001 (0.989)
σ(ROA)		1.763 (0.593)	-0.211 (0.927)	0.362 (0.836)	-0.013 (0.389)	0.046 (0.347)	0.122 (0.321)
σ(RET)		-1.088 ** (0.027)	-0.218 (0.481)	-0.073 (0.704)	0.000 (0.310)	0.000 (0.708)	0.000 (0.748)
MTB		0.134 (0.346)	-0.007 (0.943)	-0.294 *** (0.001)	-0.001 * (0.079)	-0.001 (0.610)	-0.026 *** (<.001)
TAX BENEFIT		0.604 *** (<.001)	0.557 *** (<.001)	0.549 *** (<.001)	0.000 (0.676)	0.003 (0.215)	0.047 *** (<.001)
BOARD SIZE		-0.043 (0.431)	-0.016 (0.698)	0.029 (0.427)	-0.001 ** (0.020)	-0.002 (0.104)	-0.002 (0.549)
E-INDEX		0.119 (0.183)	0.003 (0.966)	0.067 (0.246)	-0.002 *** (0.001)	-0.002 (0.294)	0.002 (0.671)
R-Square		0.4027	0.2885	0.2336	0.1787	0.0411	0.1520
n		1,320	1,320	1,320	1,320	1,320	1,320

\*\*\*, \*\*, and \* indicate that statistical significance is demonstrated at the .01, .05, and .10 levels, respectively.

Year and industry indicator variables included, but not listed for brevity.

p values in parentheses

YEARS: Base Period – Years ending December 15, 2001 through November 30, 2003

Post Period – Years ending September 15, 2004 through August 30, 2006

Firms with a Based Period *BOARD FACTOR* greater than (less than or equal to) the mean are classified as LOW (HIGH) board independent.

Multicollinearity diagnostics for all estimations: VIF &lt;1.9; Condition Index &lt; 40.01; No variable contributes more than 38% to the variance of two or more variables.

Variable Definitions: Appendix B

Table 20: Hypothesis VII: An examination of how the 2006 SEC compensation disclosure mandate influenced the CEO power - §162(m) noncompliance relation

DEPENDENT VARIABLE: NC MEASURE	predicted sign	§162 Non-compliance Indicator NC Compensation Type			§162 NC Compensation scaled by Total Compensation NC Compensation Type:		
		SALARY_I	CASH_I	TOTAL_I	SALARY_R	CASH_R	TOTAL_R
CEO FACTOR	+	0.833 *** (.001)	-0.165 * (0.054)	-0.106 (0.160)	0.005 *** (.001)	0.005 ** (0.045)	-0.010 * (0.069)
CEO FACTOR* POST CHANGE	+	0.073 (0.300)	0.379 *** (.001)	0.218 *** (.001)	0.000 (0.767)	0.014 *** (.001)	0.023 *** (.001)
ln(ASSETS)		1.628 *** (.001)	0.916 *** (.001)	0.823 *** (.001)	0.005 *** (.001)	0.008 *** (.001)	0.059 *** (.001)
ROA		2.388 (0.168)	-2.332 ** (0.033)	-2.498 ** (0.011)	-0.010 (0.250)	-0.071 (0.189)	-0.193 ** (0.024)
RET		0.082 (0.728)	-0.083 (0.562)	0.328 ** (0.046)	0.000 (0.559)	-0.007 (0.132)	0.028 ** (0.025)
LEVERAGE		1.601 *** (0.009)	0.216 (0.586)	-0.072 (0.858)	-0.002 (0.453)	-0.002 (0.912)	0.050 (0.181)
ILLIQUIDITY		-0.515 (0.643)	-0.395 (0.478)	0.021 (0.969)	-0.002 (0.723)	0.014 (0.444)	0.018 (0.694)
σ(ROA)		-1.089 (0.569)	0.662 (0.387)	1.118 (0.113)	0.004 (0.527)	0.015 (0.427)	0.071 (0.289)
σ(RET)		-0.002 (0.750)	0.001 (0.379)	0.003 (0.622)	0.000 (0.294)	0.000 * (0.060)	0.000 (0.754)
MTB		0.101 (0.357)	-0.001 (0.992)	-0.079 (0.324)	0.001 (0.230)	-0.002 (0.553)	-0.020 *** (0.004)
TAX BENEFIT		0.405 *** (0.001)	0.674 *** (.001)	1.051 *** (.001)	0.002 (0.237)	0.010 * (0.061)	0.082 *** (.001)
BOARD SIZE		0.056 (0.273)	0.103 *** (0.003)	0.087 ** (0.016)	0.001 ** (0.021)	0.001 (0.608)	-0.005 (0.135)
INTERLOCK%		1.792 (0.710)	0.807 (0.772)	2.971 (0.438)	-0.036 ** (0.043)	-0.228 *** (.001)	0.198 (0.462)
Non-I BOARD%		0.258 (0.753)	-0.896 (0.108)	-0.538 (0.343)	0.008 (0.140)	0.006 (0.783)	-0.101 ** (0.036)
Non-I COMP COMM%		-0.568 (0.331)	0.021 (0.967)	-0.147 (0.741)	-0.006 * (0.070)	-0.017 (0.266)	0.016 (0.683)
E-INDEX		0.099 (0.173)	0.043 (0.406)	0.060 (0.251)	0.000 (0.695)	-0.005 ** (0.012)	0.000 (0.970)
R-Square		0.3757	0.3699	0.2175	0.1739	0.1100	0.2215
n		2,197	2,197	2,197	2,197	2,197	2,197

$$NC\ MEASURE_{it} = \beta_0 + \beta_1 CEO\ FACTOR_{it} + \beta_2 CEO\ FACTOR_{it} * POST\ CHANGE_{it}$$

$$+ \sum CONTROLS + \sum YEAR\_INDICATORS + \sum INDUSTRY\_CODES + \epsilon_{it}$$

Equation (4)

YEARS: Base Period – Years ending December 15, 2005 through December 14, 2006

Post Period – Years ending December 15, 2006 through November 30, 2007

\*\*\*, \*\*, and \* indicate that statistical significance is demonstrated at the .01, .05, and .10 levels, respectively.

Control, year indicators and industry indicator variables included, but not listed for brevity.

p values in parentheses

Multicollinearity diagnostics for all estimations: VIF <1.9; Condition Index < 40.01; No variable contributes more than 38% to the variance of two or more variables.

Variable Definitions: Appendix B

Table 21: Hypothesis VII: An examination of how the 2006 SEC compensation disclosure mandate influenced the CEO power - §162(m) noncompliance relation, using two-year base and post periods

DEPENDENT VARIABLE: NC MEASURE	predicted sign	§162 Non-compliance Indicator NC Compensation Type			§162 NC Compensation scaled by Total Compensation NC Compensation Type:		
		SALARY_I	CASH_I	TOTAL_I	SALARY_R	CASH_R	TOTAL_R
CEO FACTOR	+	0.742 *** (<.001)	-0.076 (0.318)	-0.097 (0.119)	0.004 *** (<.001)	0.004 ** (0.019)	-0.010 ** (0.020)
CEO FACTOR* POST CHANGE	+	0.100 (0.118)	0.434 *** (<.001)	0.192 *** (<.001)	0.000 (0.537)	0.014 *** (<.001)	0.020 *** (<.001)
ln(ASSETS)		1.571 *** (<.001)	0.892 *** (<.001)	0.770 *** (<.001)	0.005 *** (<.001)	0.009 *** (<.001)	0.055 *** (<.001)
ROA		1.816 * (0.077)	-1.419 ** (0.034)	-1.672 ** (0.013)	-0.004 (0.485)	-0.062 * (0.057)	-0.188 *** (0.001)
RET		-0.081 (0.655)	-0.057 (0.612)	0.355 *** (0.004)	-0.001 (0.155)	-0.009 ** (0.014)	0.018 * (0.051)
LEVERAGE		1.393 *** (0.002)	0.413 (0.171)	0.228 (0.437)	-0.001 (0.771)	0.005 (0.618)	0.056 ** (0.039)
ILLIQUIDITY		-0.633 (0.468)	-0.505 (0.274)	0.085 (0.848)	-0.004 (0.275)	0.007 (0.586)	0.005 (0.887)
σ(ROA)		-0.520 (0.721)	0.470 (0.465)	0.894 (0.118)	0.003 (0.474)	0.019 (0.194)	0.056 (0.231)
σ(RET)		0.001 * (0.049)	0.001 (0.290)	0.002 (0.633)	0.000 (0.765)	0.000 * (0.090)	0.000 (0.382)
MTB		0.114 (0.188)	-0.033 (0.580)	-0.145 ** (0.029)	0.000 (0.418)	-0.001 (0.831)	-0.017 *** (0.002)
TAX BENEFIT		0.304 *** (0.001)	0.560 *** (<.001)	0.903 *** (<.001)	0.001 (0.119)	0.006 ** (0.035)	0.069 *** (<.001)
BOARD SIZE		0.068 (0.107)	0.084 *** (0.004)	0.089 *** (0.003)	0.001 ** (0.011)	0.001 (0.619)	-0.002 (0.371)
INTERLOCK%		4.051 (0.326)	-0.223 (0.907)	1.693 (0.523)	-0.024 ** (0.048)	-0.156 *** (<.001)	0.005 (0.979)
Non-I BOARD%		-0.309 (0.664)	-0.971 ** (0.038)	-0.864 * (0.062)	0.008 * (0.063)	0.013 (0.414)	-0.112 *** (0.004)
Non-I COMP COMM%		-0.257 (0.625)	0.365 (0.375)	0.224 (0.561)	-0.004 (0.210)	-0.019 * (0.085)	0.029 (0.378)
E-INDEX		0.094 (0.129)	0.022 (0.618)	0.047 (0.280)	0.000 (0.831)	-0.003 * (0.069)	0.002 (0.578)
R-Square		0.3686	0.3823	0.2175	0.1751	0.1285	0.2480
n		3,914	3,914	3,914	3,914	3,914	3,914

$$NC\ MEASURE_{it} = \beta_0 + \beta_1 CEO\ FACTOR_{it} + \beta_2 CEO\ FACTOR_{it} * POST\ CHANGE_{it}$$

$$+ \sum CONTROLS + \sum YEAR\_INDICATORS + \sum INDUSTRY\_CODES + \epsilon_{it} \quad \text{Equation (4)}$$

YEARS: Base Period – Years ending December 15, 2004 through December 14, 2006

Post Period – Years ending December 15, 2006 through November 30, 2008

\*\*\*, \*\*, and \* indicate that statistical significance is demonstrated at the .01, .05, and .10 levels, respectively.

Year and industry indicator variables included, but not listed for brevity.

p values in parentheses

Multicollinearity diagnostics for all estimations: VIF <1.9; Condition Index < 40.01; No variable contributes more than 38% to the variance of two or more variables.

Variable Definitions: Appendix B

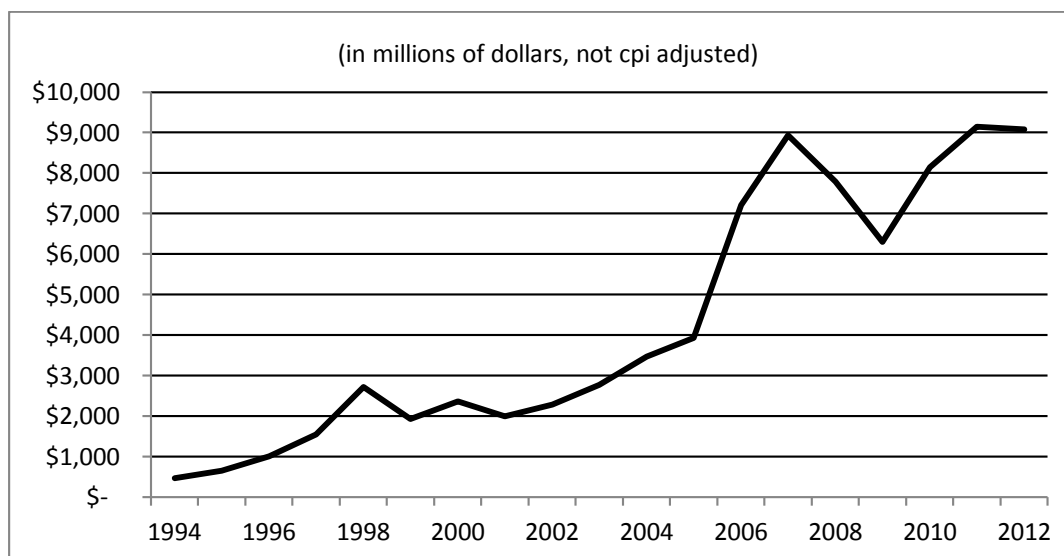


Figure 1: Total annual §162(m) noncompliant/non-tax deductible compensation paid to Execucomp executives

n=164,136

I estimate the annual §162(m) noncompliant/non-tax deductible compensation paid to Execucomp executives by calculating the *§162(m) noncompliant compensation* paid to each *covered executive* listed on Execucomp and summing the total.

I define *§162(m) noncompliant* compensation as the sum of the following items, to the extent their payment exceeds \$1 million in a fiscal year: salary, any miscellaneous compensation, non-performance based plan cash awards, and restricted stock awards.

IRC Section 162(m) defines the tax deduction for public firms' top executives, which I refer to as *covered executives*, described in Section 1.1 of this dissertation.

*Total Noncompliant Compensation* is the sum of all *§162(m) noncompliant* compensation paid to all *covered executives* listed on Execucomp, by year from 1994 through 2012.

Table 1 lists the total annual *§162(m) noncompliant* compensation.

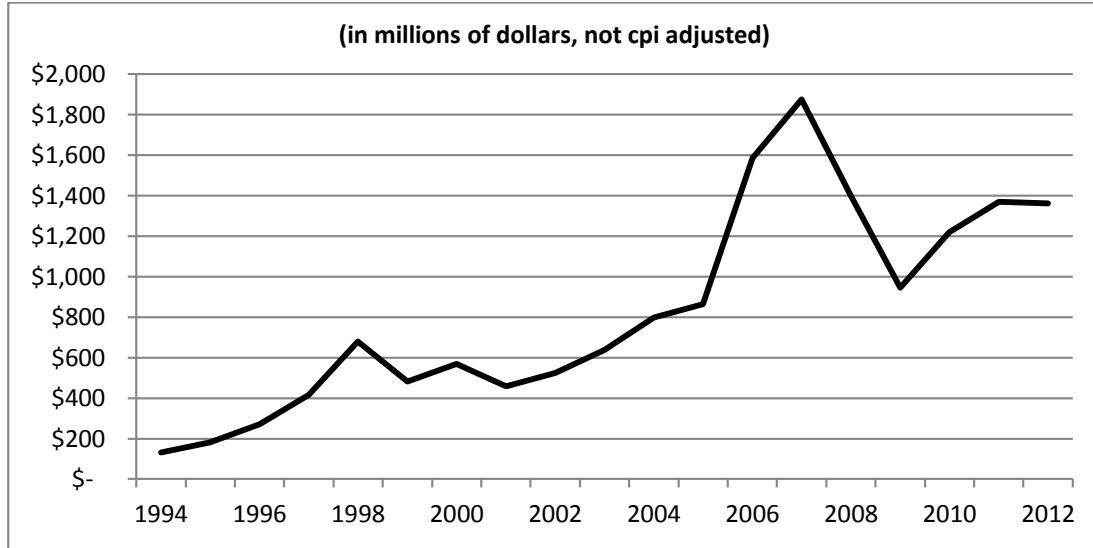


Figure 2: Estimated total annual tax cost from §162(m) noncompliance

n=164,136

I calculate the *Total Annual Tax Cost From §162(m)* by multiplying the *Total Noncompliant Compensation*, per year, by the *Mean Marginal Tax Rate*, for that particular year.

*Total Noncompliant Compensation* is the sum of all *§162(m) noncompliant* compensation paid to all *covered executives* listed on Execucomp, by year from 1994 through 2012.

I define *§162(m) noncompliant* compensation as the sum of the following items, to the extent their payment exceeds \$1 million in a fiscal year: salary, any miscellaneous compensation, non-performance based plan cash awards, and restricted stock awards.

IRC Section 162(m) defines the tax deduction for public firms' top executives, which I refer to as *covered executives*, described in Section 1.1 of this dissertation.

The *Mean Marginal Tax Rate* is the mean annual simulated marginal tax rate for all firms in my sample described in detail in Section 2.5 of this dissertation.

Table 1 provides the total annual *§162(m) noncompliant* compensation. The mean (median) simulated marginal tax rate for the Chapter 3 sample is 26% (33%), see Table 10.

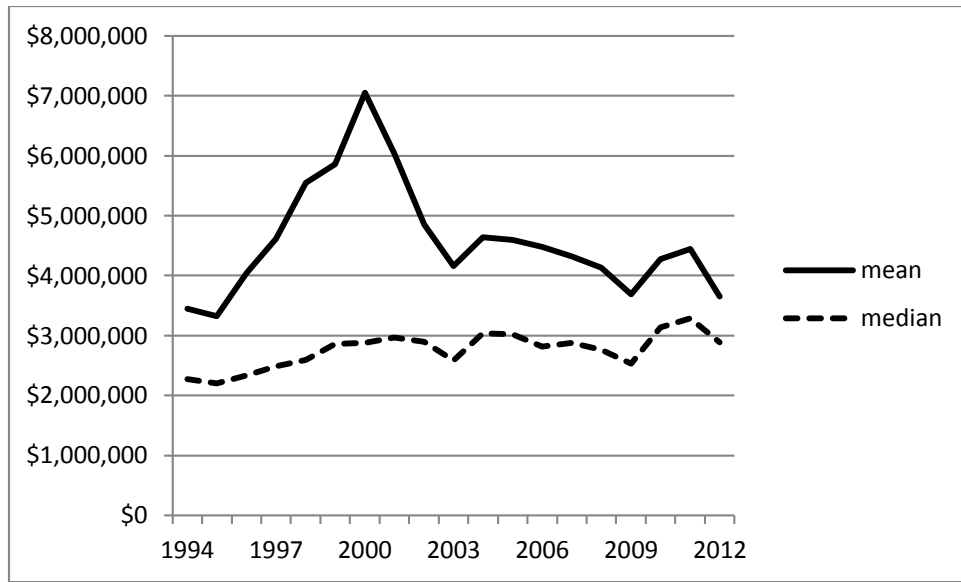


Figure 3: Mean and median CEO total annual compensation levels

n=18,504, Chapter 3's sample of §162(m) affected firms defined in Table 9

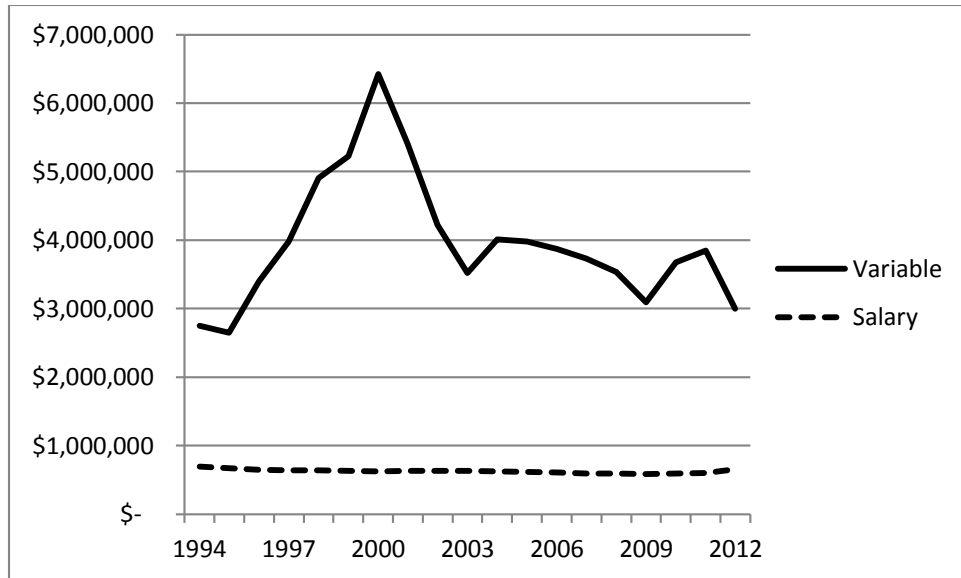


Figure 4a: Mean annual CEO salary and variable compensation levels

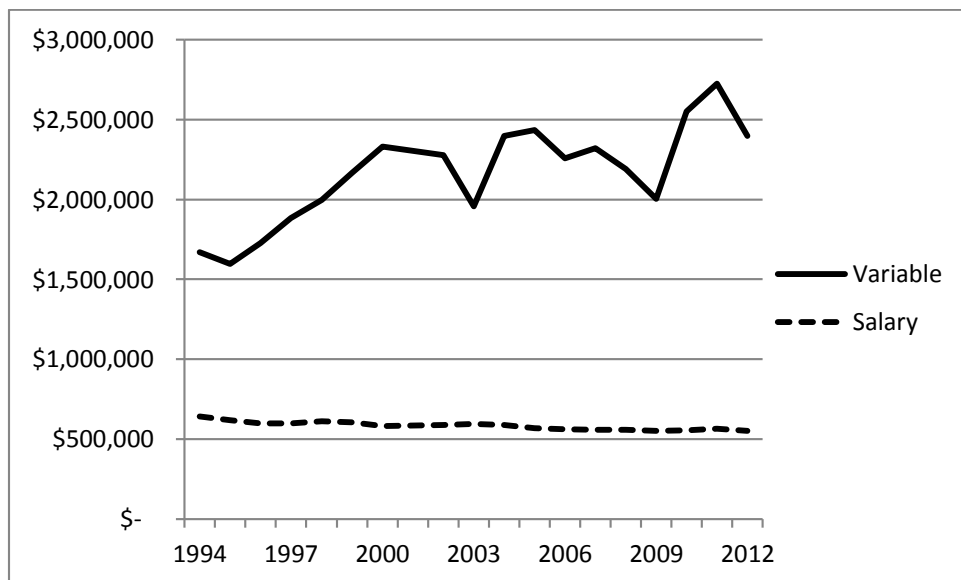


Figure 4b: Median annual CEO salary and variable compensation levels

For Figures 4a and 4b:

n=18,504, Chapter 3's sample of \$162(m) affected firms defined in Table 9



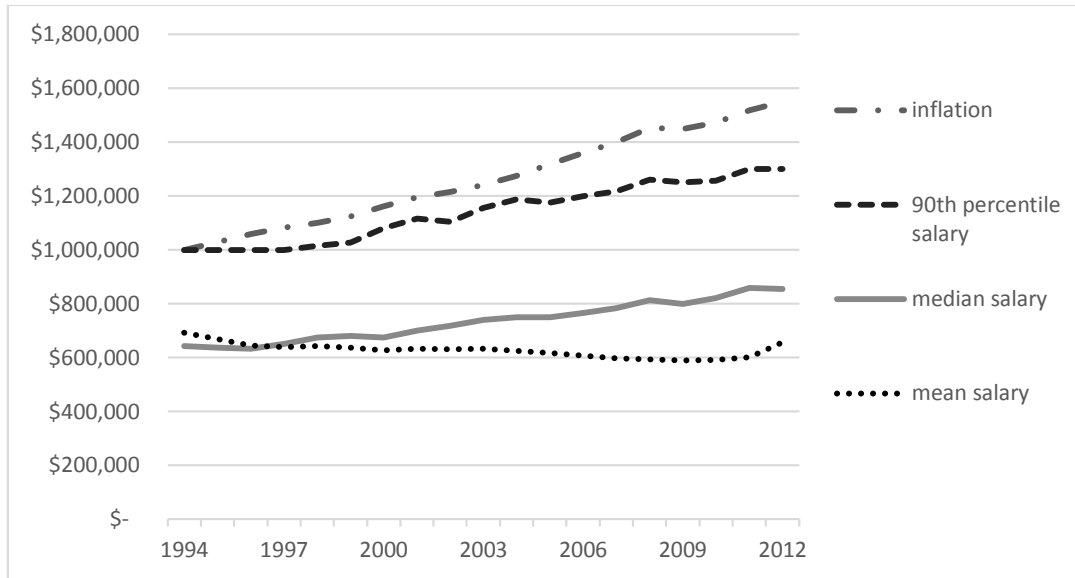


Figure 5a: Mean, median, and 90th percentile CEO annual salary levels in non-cpi adjusted dollars, compared to inflation



Figure 5b: Median and 90<sup>th</sup> percentile CEO annual salary and variable compensation levels in non-cpi adjusted dollars

For Figures 5a and 5b:

n=18,504, Chapter 3's sample of \$162(m) affected firms defined in Table 9

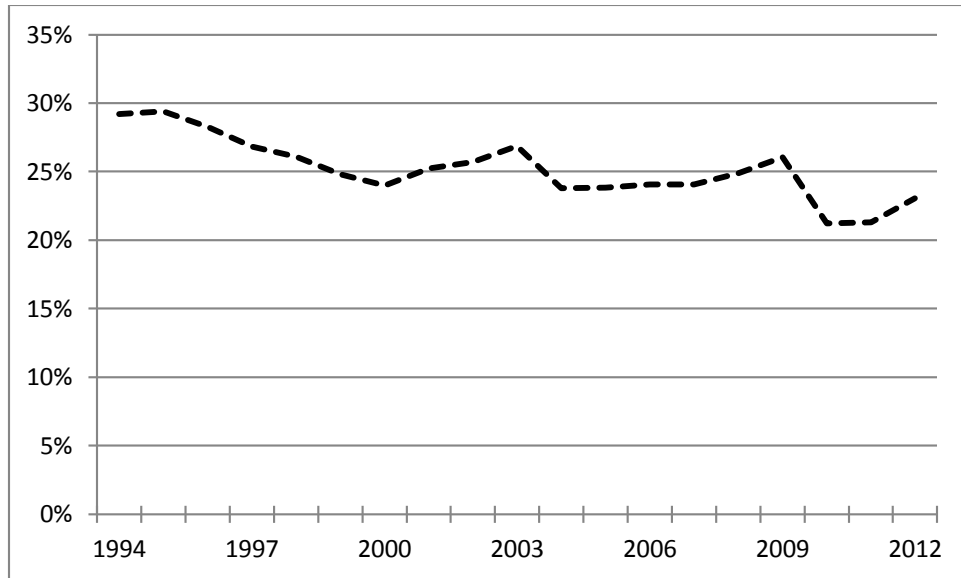


Figure 6a: Mean annual CEO Salary as a percentage of Total Compensation

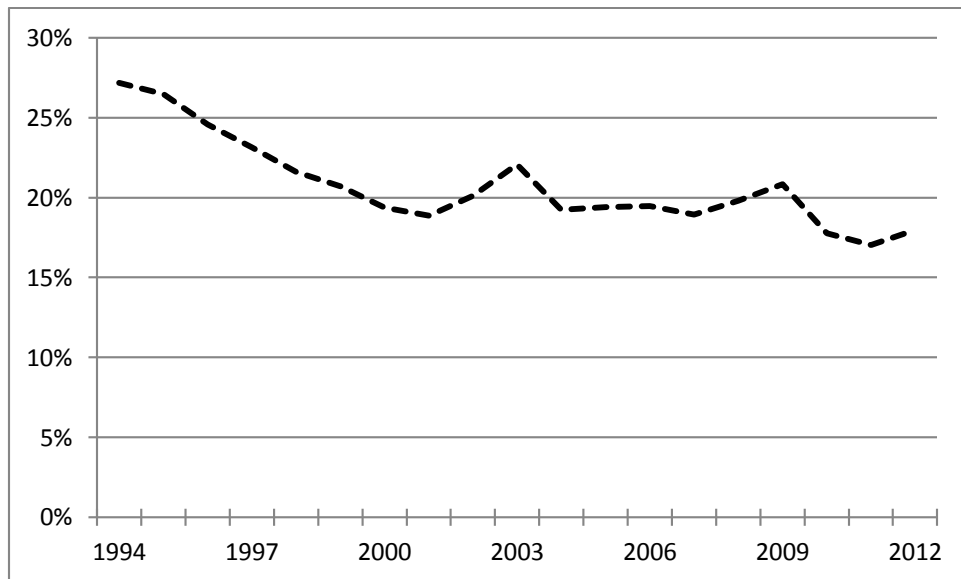


Figure 6b: Median annual CEO Salary as a percentage of Total Compensation

For Figures 6a and 6b:

Salary Compensation Percentage=Salary/Total Compensation

n=18,504, Chapter 3's sample of \$162(m) affected firms defined in Table 9

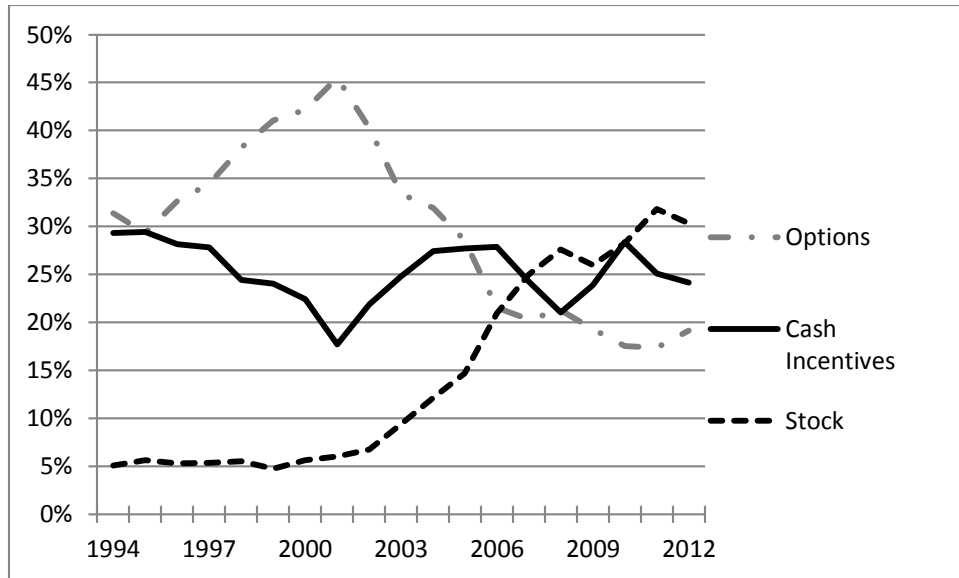


Figure 7a: Mean annual percentages of total compensation from options, stock, and cash incentives

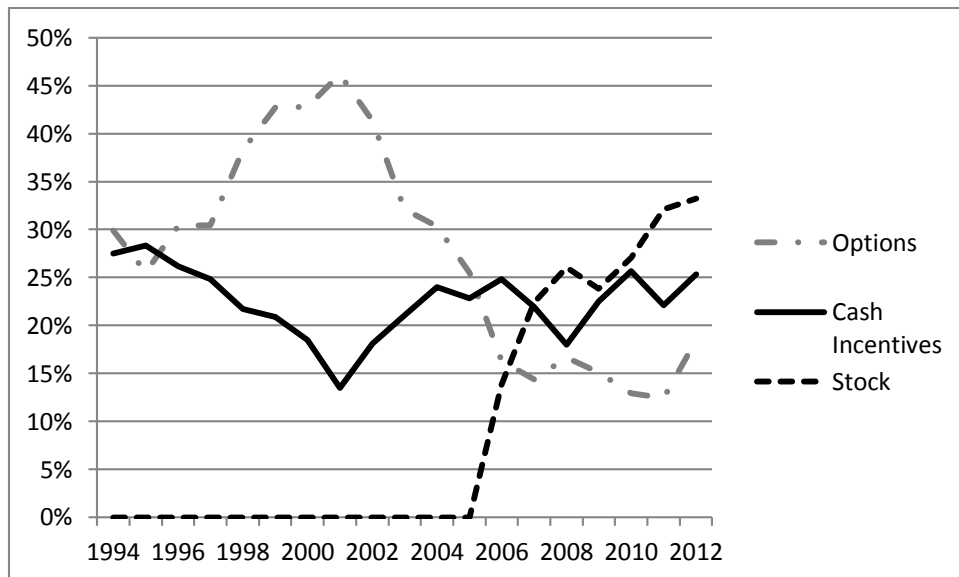


Figure 7b: Median annual percentages of total compensation from options, stock, and cash incentives

For Figures 7a and 7b:

The percentage of total compensation from:

Options = Option Grants/Total Compensation

Cash Incentives = Non-Salary Cash Compensation/Total Compensation

Stock = Restricted Stock Grants/Total Compensation

n=18,504, Chapter 3's sample of §162(m) affected firms defined in Table 9

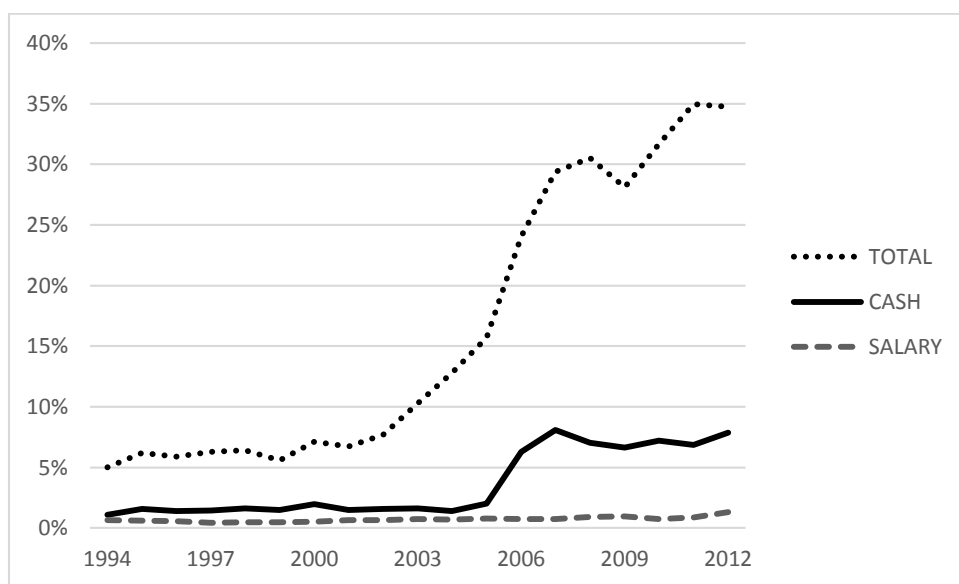


Figure 8: Mean annual percentage of CEO total compensation from noncompliant salary, noncompliant cash compensation, and any compensation that is §162(m) noncompliant

Percentage of Noncompliant Compensation is defined as follows:

SALARY=Salary in excess of \$1 million / CEO Total Compensation

CASH=Noncompliant Cash Compensation defined in Section 2.4 / CEO Total Compensation

TOTAL=Noncompliant Compensation defined in Section 2.4 / CEO Total Compensation

n=18,504, Chapter 3's sample of §162(m) affected firms defined in Table 9

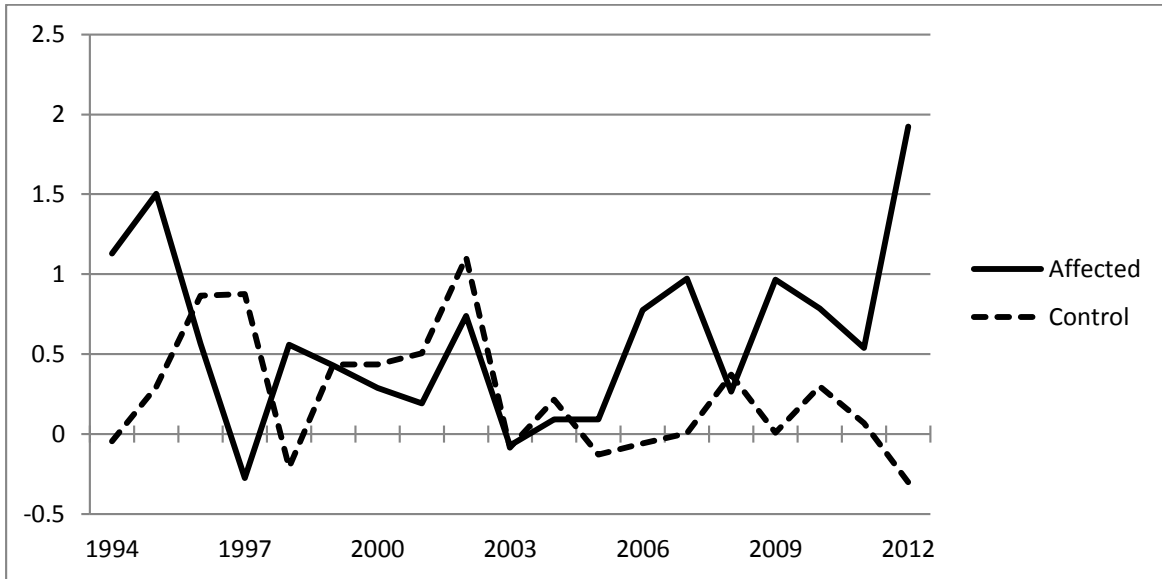


Figure 9: Annual CEO compensation sensitivity to accounting performance

Figure 9 illustrates annual CEO compensation sensitivity to accounting performance by plotting  $\alpha_1$  from estimating the following equation annually for affected firms and for control firms:

$$\Delta \ln(TOTAL\ COMPENSATION) = \alpha_0 + \alpha_1 \Delta ROA + \alpha_2 \ln(SALES) + \sum INDUSTRY\ CODES + \epsilon$$

*Affected* = The Chapter 3 sample of firms affected by §162(m); Of the total 18,504 firm-year observations in Chapter 3, 2,841 are excluded because of missing data. Therefore, the total sample for this analysis is 15,663 firm-year observations.

*Control* = Firms unaffected by §162(m); The definition and sample selection of the 2,933 firm-year observations is provided in Section 3.5.3.

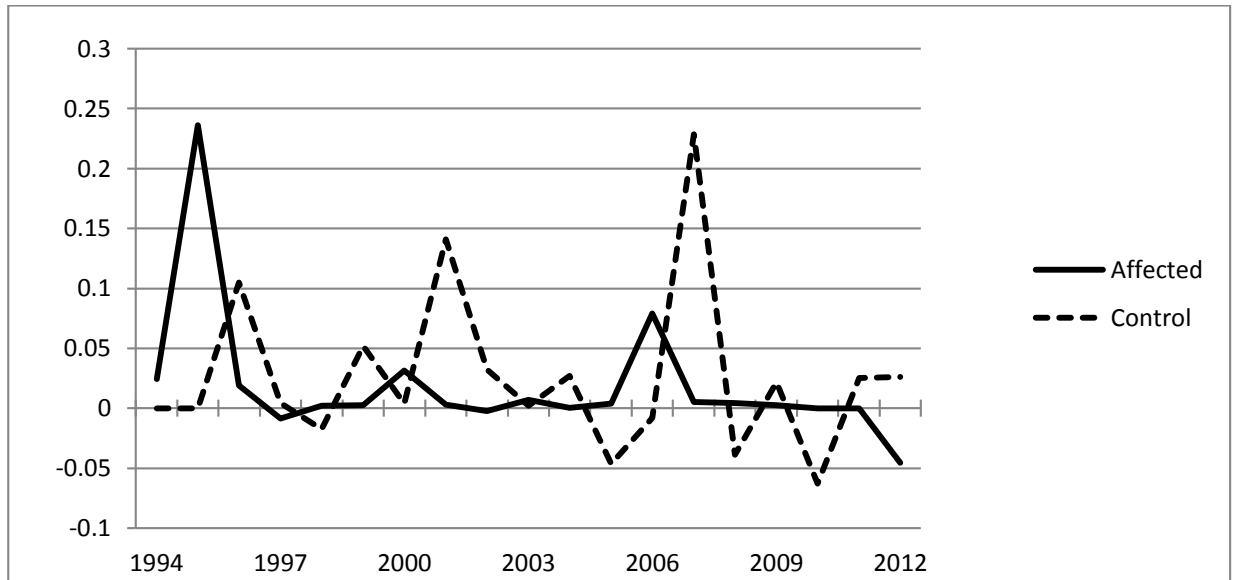


Figure 10: Annual CEO compensation sensitivity to market performance

Figure 10 illustrates annual CEO compensation sensitivity to market performance by plotting  $\beta_1$  from estimating the following equation annually for affected firms and for control firms:

$$\Delta \ln(TOTAL\ COMPENSATION) = \beta_0 + \beta_1 \Delta RET + \beta_2 \ln(SALES) + \sum INDUSTRY\ CODES + \epsilon$$

*Affected* = The Chapter 3 sample of firms affected by §162(m); Of the total 18,504 firm-year observations in Chapter 3, 2,841 are excluded because of missing data. Therefore, the total sample for this analysis is 15,663 firm-year observations.

*Control* = Firms unaffected by §162(m); The definition and sample selection of the 3,265 firm-year observations of firms unaffected by §162(m) is provided in Section 3.5.3.

# APPENDIX A:

## THE PRESENT-VALUE COST OF \$162(M) NONCOMPLIANCE

Table 22: Estimated annual and present-value federal income tax cost from noncompliance with \$162(m)

<u>FIRMS WHICH PAY THEIR CEO:</u>		Noncompliant Salary (SALARY NC <sup>1</sup> )	Noncompliant Cash Compensation (CASH NC <sup>2</sup> )	Any Noncompliant Compensation (TOTAL NC <sup>3</sup> )
Panel A: Annual <i>TAX COST</i> and noncompliant compensation for noncompliant firms				
<i>TAX COST</i>	mean	995,585	699,653	646,650
	(median)	(385,480)	(223,447)	(217,879)
	n	3,090	7,765	9,828
<i>N-C COMPENSATION</i>	mean	3,781,460	2,849,120	2,581,170
	(median)	(1,994,230)	(1,261,800)	(1,082,890)
	n	3,299	8,182	10,434
<i>TAX COST</i> as a percentage of CEO Total Compensation, Mean (Median)		8% (5%)	7% (5%)	7% (5%)
Panel B: Estimated present-value tax cost of a firm's noncompliant election in year the firm elects to first pay some noncompliant salary, cash or any noncompliant compensation				
<i>P-V TAX COST*</i>	mean	4,307,350	3,033,642	2,769,611
	(median)	1,570,184	982,039	942,540

*TAX COST*: *N-C COMPENSATION* multiplied by the firms estimated marginal tax rate, defined in Section E

*N-C COMPENSATION*: I define compensation as noncompliant, non-tax deductible per \$162(m), to the extent the sum of the CEO's salary, non-incentive plan based cash bonus, restricted stock grants, and miscellaneous compensation, which includes severance payments, debt forgiveness, imputed interest, payouts for cancellation of stock options, payouts for unused vacation, tax reimbursements and signing bonuses, exceeds \$1 million.

*P-V TAX COST*: The discounted, present value of the expected *TAX COST* in the first year that the firm pays noncompliant salary, cash or any noncompliant compensation. I assume annual inflation of 3.1%, which is the average cpi-inflation rate from 1994 through 2012, and five years of noncompliance, which is the mean period of noncompliance in my sample. The median period of noncompliance is six years, which should increase with time.

<sup>1</sup> *SALARY NC*. I define a firm as *SALARY NC* if the firm paid their CEO a salary in excess of \$1 million.

<sup>2</sup> *CASH NC*. I define a firm as *CASH NC* if the firm paid their CEO any \$162(m) noncompliant cash compensation. I defined cash compensation as noncompliant if any salary, miscellaneous compensation, which includes severance payments, debt forgiveness, imputed interest, payouts for cancellation of stock options, payouts for unused vacation, tax reimbursements and signing bonuses, or post-2006 non-incentive plan based cash bonus exceeds \$1 million.

<sup>3</sup> *TOTAL NC*. I define a firm as *TOTAL NC* if the firm paid their CEO paid any \$162(m) noncompliant compensation. I defined compensation as noncompliant if any salary, miscellaneous compensation, which includes severance

payments, debt forgiveness, imputed interest, payouts for cancellation of stock options, payouts for unused vacation, tax reimbursements and signing bonuses, post-2006 non-incentive plan based cash bonus or restricted stock grants exceed \$1 million.



## APPENDIX B:

### VARIABLE DEFINITIONS

Definitions of the Dependent Variables: The Measures of Noncompliant Compensation, *NC MEASURE*  
*NC MEASURE* = \$162(m) Noncompliant Compensation, defined three ways, SALARY, CASH or TOTAL

SALARY is noncompliant if it exceeds \$1 million.

*SALARY\_I* equals 1 is the CEO's SALARY exceeds \$1 million, and 0 otherwise.

*SALARY\_R* is the amount of salary paid in excess of \$1 million divided by CEO total compensation.

CASH compensation includes a noncompliant component if the sum of salary, miscellaneous compensation and non-incentive plan based cash bonus exceeds \$1 million.

*CASH\_I* equals 1 is the CEO's compensation contains a \$162(m) noncompliant cash component, and 0 otherwise.

*CASH\_R* is the amount of noncompliant cash compensation divided by CEO total compensation.

TOTAL compensation includes a noncompliant component if the sum of salary, miscellaneous compensation, non-incentive plan based cash bonus, and restricted stock exceeds \$1 million.

*TOTAL\_I* equals 1 is the CEO's compensation contains a \$162(m) noncompliant component, and 0 otherwise.

*TOTAL\_R* is the amount of noncompliant compensation divided by CEO total compensation.

### Definitions of the Independent Variables

<i>BOARD FACTOR<sub>it</sub></i>	= Measure of board independence formed by principal component analysis from the following variables: <i>INTERLOCK%</i> , <i>Non-I BOARD%</i> and <i>Non-I COMP COMM%</i> of firm i in year t
<i>BOARD SIZE<sub>it</sub></i>	= number of members on the firm i's board of directors in year t
<i>CEO AGE</i>	= the CEO's age at firm i as of the end of year t
<i>CEO/CHAIR<sub>it</sub></i>	= an indicator variable which equals 1 if the CEO also serves as the Chairman of the Board of firm i in year t, and 0 otherwise
<i>CEO FACTOR<sub>it</sub></i>	= Measure of CEO power formed by principal component analysis from the following variables: <i>CEO TENURE</i> , <i>CEO AGE</i> , and <i>CEO/CHAIR</i> of firm i in year t
<i>CEO OWN%<sub>it</sub></i>	= percentage of shares owned by the CEO in firm i at the end of year t
<i>CEO PAY SLICE<sub>it</sub></i>	= CEO total compensation/(the sum of the CEO and four highest paid executives' total compensation) of firm i in year t
<i>CEO TENURE</i>	= the number of years the CEO has been in that position (if missing, the number of years at the firm) in firm i as of the end of year t

$E-INDEX_{it}$	= sum of six entrenchment indicators: staggered board terms, a “poison pill” provision, a “golden parachute” provision, and limitations upon the shareholder ability to amend the charter, amend the by-laws and approve mergers (Bebchuk, Cohen, and Farrell, 2008).
$INTERLOCK\%_{it}$	= percentage of interlocked board members
$LEVERAGE_{it}$	= total debt/total assets of firm i in year t
$ILLIQUIDITY_{it}$	= 1- cash plus cash equivalents/ total assets of firm i in year t
$Ln(ASSETS)_{it}$	= natural log of total assets at the end of fiscal year t for firm i
$Ln(CEO\ TENURE)_{it}$	= natural log of the number of years the CEO has been in that position (if missing, the number of years at the firm) in firm i as of the end of year t
$Ln(5\ YEAR\ MEAN\ ASSETS)_{it}$	= natural log of mean total assets for firm i for years t-1 through t-5
$MTB_{it}$	= (market value of equity + book value of liabilities)/book value of assets of firm i in year t
$Non-I\ BOARD\%_{it}$	= (insider board members + linked board members)/total board members of firm i in year t
$Non-I\ COMP\ COMM\%_{it}$	= (insider compensation committee members + linked compensation committee members)/total compensation committee members of firm i in year t
$POST\ CHANGE_{it}$	= Indicator Variable which equals 1 if year t is in Base Period, and 0 otherwise.
$PRIOR\ NC_{it}$	= An indicator variable which equals 1 if the firm paid any noncompliant compensation in the year t-1, and 0 otherwise.
$RET_{it}$	= buy and hold market returns of firm i in year t
$ROA_{it}$	= book net income/average total assets of firm i in year t
$\sigma(RET)_{it}$	= standard deviation of firm i's $RET$ for years t-1 through t-5
$\sigma(ROA)_{it}$	= standard deviation of firm i's $ROA$ for years t-1 through t-5
$TAX\ BENEFIT_{it}$	= ((non-cpi adjusted CEO total compensation - \$1 million)*simulated corporate federal income tax marginal tax rate)/non-cpi adjusted total assets of firm i in year t
$BOARD\ SIZE_{it}$	= number of members on the firm i's board of directors in year t
$INTERLOCK\%_{it}$	= percentage of interlocked board members
$Non-I\ BOARD\%_{it}$	= (insider board members + linked board members)/total board members of firm i in year t
$Non-I\ COMP\ COMM\%_{it}$	= (insider compensation committee members + linked compensation committee members)/total compensation committee members of firm i in year t
$E-INDEX_{it}$	= sum of six entrenchment indicators: staggered board terms, a “poison pill” provision, a “golden parachute” provision, and limitations upon the shareholder ability to amend the charter, amend the by-laws and approve mergers (Bebchuk, Cohen, and Farrell, 2008)

# APPENDIX C:

## CHAPTER 2 SUPPLEMENTAL FACTOR ANALYSIS

Table 23: The loadings estimated using principal component analysis to construct the factors measuring firm risk, firm performance, CEO power and the quality of governance

HYPOTHESIS:	H1		H3	H4		H5	
	Firm Risk		Firm Performance	CEO Power		Governance Quality	
PC FACTOR:	<i>RISK Str</i>	<i>RISK Perf</i>	<i>PERF Factor</i>	<i>CEO Exper</i>	<i>CEO Exec</i>	<i>BD NonI</i>	<i>BD Eff</i>
<u>MEASURES</u>							
<i>LEVERAGE</i>	82	3					
<i>ILLIQUIDITY</i>	84	-14					
$\sigma(ROA)$	-27	74					
$\sigma(RET)$	14	82					
<i>ROA</i>			74				
<i>RET</i>			74				
<i>ln(CEO TENURE)</i>				75	-20		
<i>ln(CEO AGE)</i>				70	-3		
<i>CEO OWN%</i>				44	-52		
<i>CEO/CHAIR</i>				67	25		
<i>CEO PAY SLICE</i>				14	84		
<i>BOARD SIZE</i>						4	78
<i>E-INDEX</i>						-22	51
<i>INTERLOCK%</i>						48	43
<i>Non-I BOARD%</i>						85	-15
<i>Non-I COMP COMM%</i>						80	-8
Eigenvalue	1.487	1.238	1.090	1.717	1.075	1.637	1.088
Variance Explained	68%		55%	70%		54%	

Principal Component (PC Factor) Interpretations:

*RISK Str*: Because *LEVERAGE* and *ILLIQUIDITY* significantly contribute to this principal component, I use this PC Factor to measure firm risk based upon corporate structure.

*RISK Perf*: Because  $\sigma(ROA)$  and  $\sigma(RET)$  significantly contribute to this principal component, I use this PC Factor to measure firm risk based upon performance variability.

Table 23 (continued)

CEO Exper: Because *ln(CEO TENURE)*, *ln(CEO AGE)*, and *CEO/CHAIR* provide the greatest contribution to this principal component, along with *CEO OWN%* to a lesser degree, I use this PC Factor to measure the CEO's power principally from his experience and position in the firm.

CEO Exec: *CEO PAY SLICE* provides the greatest contribution to this principal component, followed by *CEO/CHAIR*. Therefore, I use this PC Factor to measure the CEO's power in relation to the firm's executive team.

Table 23 (continued)

BD NonI: Because *Non-I BOARD%* and *Non-I COMP COMM%* provide the greatest contribution to this principal component, along with *INTERLOCK%* to a lesser degree, I use this PC Factor to measure the lack of independent governance processes.

BD Eff: Because *BOARD SIZE* and *E-INDEX* provide the greatest contribution to this principal component, along with *INTERLOCK%* to a lesser degree, I use this PC Factor to measure board effectiveness.

Variable Definitions: Appendix B

Table 24: An examination of the influence of firm, CEO, and board characteristics on §162(m) noncompliance

DEPENDENT VARIABLE: <i>NC MEASURE</i>	Predicted Sign	§162 Non-compliance Indicator:			§162 NC Compensation scaled by Total Compensation:		
		<i>SALARY_I</i>	<i>CASH_I</i>	<i>TOTAL_I</i>	<i>SALARY_R</i>	<i>CASH_R</i>	<i>TOTAL_R</i>
Intercept		-15.358 *** ( $<.001$ )	-8.442 *** ( $<.001$ )	-5.435 *** ( $<.001$ )	-0.039 *** ( $<.001$ )	-0.060 *** ( $<.001$ )	-0.197 *** ( $<.001$ )
<u>HYPOTHESIS I:</u>							
<i>RISK Str</i>	+	0.029 (0.752)	-0.041 (0.448)	0.062 (0.217)	-0.001 ** (0.016)	0.000 (0.936)	0.005 (0.139)
<i>RISK Perf</i>	+	0.045 ** (0.020)	0.062 (0.118)	0.049 (0.242)	0.0002 * (0.087)	0.002 ** (0.023)	0.003 ** (0.035)
<u>HYPOTHESIS II:</u>							
<i>ln(ASSETS)</i>	+	1.440 *** ( $<.001$ )	0.825 *** ( $<.001$ )	0.617 *** ( $<.001$ )	0.006 *** ( $<.001$ )	0.009 *** ( $<.001$ )	0.036 *** ( $<.001$ )
<u>HYPOTHESIS III:</u>							
<i>PERF Factor</i>	-	0.031 (0.522)	-0.037 (0.313)	0.077 ** (0.034)	-0.000 (0.616)	-0.003 ** (0.016)	-0.003 (0.372)
<u>HYPOTHESIS IV:</u>							
<i>CEO Exper</i>	+	0.875 *** ( $<.001$ )	0.261 *** ( $<.001$ )	0.118 *** (0.004)	0.004 *** ( $<.001$ )	0.011 *** ( $<.001$ )	0.008 ** (0.011)
<i>CEO Exec</i>	+	0.226 *** ( $<.001$ )	0.376 *** ( $<.001$ )	0.425 *** ( $<.001$ )	-0.002 ** (0.015)	0.001 (0.599)	0.042 *** ( $<.001$ )
<u>HYPOTHESIS V:</u>							
<i>BD NonI</i>	+	0.008 (0.892)	-0.025 (0.550)	-0.020 (0.578)	0.000 (0.348)	0.001 (0.245)	0.003 (0.204)
<i>BD Eff</i>	+	0.158 *** (0.004)	0.068 (0.101)	0.145 *** ( $<.001$ )	0.000 (0.501)	-0.004 *** (0.006)	-0.002 (0.427)
<u>CONTROLS:</u>							
<i>MTB</i>		0.101 ** (0.026)	-0.028 (0.445)	-0.126 *** ( $<.001$ )	0.000 (0.245)	-0.002 * (0.096)	-0.007 *** (0.006)
<i>TAX</i>		0.075 (0.184)	0.174 ** (0.048)	0.354 ** ( $<.001$ )	0.0004 * (0.085)	0.003 (0.112)	0.015 *** (0.035)
R-Square		0.3505	0.4245	0.3077	0.1279	0.1117	0.3258

$$NC\ MEASURE_{it} = \beta_0 + \beta_1 RISK\ Str_{it} + \beta_2 RISK\ Perf_{it} + \beta_3 \ln(ASSETS)_{it} + \beta_4 PERF\ Factor_{it} + \beta_5 CEO\ Exper_{it} + \beta_6 CEO\ Exec_{it} + \beta_7 BD\ NonI_{it} + \beta_8 BD\ Eff_{it} + \beta_9 MTB_{it} + \beta_{10} TAX\ BENEFIT_{it} + \sum YEAR\_INDICATORS + \sum INDUSTRY\_CODES + \epsilon_{it}$$

\*\*\*, \*\*, and \* indicate that statistical significance is demonstrated at the .01, .05, and .10 levels, respectively.

p values in parentheses

Years: 1998 through 2011

n=11,613, Table 3's firm-year observations less 13 observations without the CEO's age

Firm and CEO clustered standard errors.

Multicollinearity diagnostics for all estimations: VIF <1.4; Condition Index <20; No variable contributes more than 40% to the variance of two or more variables.

## BIBLIOGRAPHY

- Albuquerque, Ana, George Papadakis, and Peter Wysocki (2010) The impact of risk and monitoring on CEO compensation, *SSRN*.
- Armstrong, Christopher S., Christopher D. Ittner, and David F. Larcker (2012) Corporate governance, compensation consultants, and CEO pay levels, *Review of Accounting Studies* 17: 322-51.
- Autrey, Romana L., Shane S. Dikolli and D. Paul Newman (2007) Career concerns and mandated disclosures, *Journal of Accounting and Public Policy* 26: 527-54.
- Baker, John C. (1938) *Executive Salaries and Bonus Plan* (McGraw Hill).
- Balsam, Steven, and David H. Ryan (1996) Response to Tax Law Changes Involving the Deductibility of Executive Compensation: A Model Explaining Corporate Behavior, *Journal of the American Taxation Association* 18(Supp.): 1-12.
- Balsam, Steven, and David H. Ryan (2007) Limiting Executive Compensation: The Case of CEOs Hired after the Imposition of 162(m), *Journal of Accounting, Auditing and Finance* 22 (4): 599-621.
- Balsam, Steven and David H. Ryan (2008) The Effect of Internal Revenue Code Section 162(m) on the Issuance of Stock Options, *Advances in Taxation* 18: 3-18.
- Balsam, Steven and Qin Jennifer Yin (2005) Explaining firm willingness to forfeit tax deductions under Internal Revenue Code Section 162(m): The million-dollar cap, *Journal of Accounting and Public Policy* 24: 300-24.
- Beasley, M.S. (1996) An Empirical Analysis of the Relation between the Board of Director Composition and Financial Statement Fraud, *Journal of Law and Economics* 42: 309-42
- Beaver, William, Paul Kettler, and Myron Scholes (1970) The Association Between Market Determined and Accounting Determined Risk Measures, *The Accounting Review* 45(4): 654-82.
- Bebchuk, Lucian A., and Jesse M. Fried (2004) *Pay without Performance: The Unfulfilled Promise of Executive Compensation*, Harvard University Press, Cambridge, MA.
- Bebchuk, Lucian, Alma Cohen, and Allen Ferrell (2009) What Matters in Corporate Governance? *Review of Financial Studies* 22(2): 783-827.
- Bebchuk, Lucian A., Jesse M. Fried, and David I. Walker (2002) Managerial Power and Rent Extraction in the Design of Executive Compensation, *The University of Chicago Law Review* 69: 751-846.

- Bebchuk, Lucian, K.J. Martijn Cremers, and Urs C. Peyers (2011) The CEO Pay Slice, *Journal of Financial Economics* 102: 199-221.
- Birnbaum, Jeffrey H. (1992) From Quayle to Clinton, Politicians are Pouncing on the Hot Issue of Top Executives' Hefty Salaries, *Wall Street Journal*, January 15: A14
- Boschen, John F., Augustine Duru, Lawrence A. Gordon, and Kimberly J. Smith (2003) Accounting and Stock Price Performance in Dynamic CEO Compensation Arrangements, *The Accounting Review* 78(1): 143-68.
- Botosan, Christine A., and Marlene A. Plumlee (2005) Assessing Alternative Proxies for the Expected Risk Premium, *The Accounting Review* 80(1): 21-53.
- Bowman, E. H. (1980) A risk-return paradox for strategic management, *Sloan Management Review* 21(3): 17-31.
- Boyd, Brian K. (1994) Board Control and CEO Compensation, *Strategic Management Journal* 15: 335-44.
- Burkart, Mike, Denis Gromb, and Fausto Panunzi (1997) Large Shareholders, Monitoring, and the Value of the Firm, *Quarterly Journal of Economics* 112(3): 693-728.
- Byrd, John W., and Kent A. Hickman (1992) Do outside directors monitor managers? Evidence from tender offer bids, *Journal of Financial Economics* 32(2): 195-221.
- Cadman, Brian, Sandy Klasa, and Steve Matsunaga (2010) Determinants of CEO Pay: A Comparison of Execucomp and Non-Execucomp Firms, *The Accounting Review* 85(5): 1,511-43.
- Carter, Mary Ellen, Luann J. Lynch, and Irem Tuna (2007) The Role of Accounting in the Design of CEO Equity Compensation, *The Accounting Review* 82(2): 327-57.
- Chhaochharia, Vidhi and Yaniv Grinstein (2009) CEO Compensation and Board Structure, *The Journal of Finance* 64(1): 231-61.
- Coles, Jeffrey L., Naveen D. Daniel, and Lalitha Naveen (2008) Boards: Does one size fit all? *Journal of Financial Economics* 87(2): 329-56.
- Core, John E. and Wayne Guay (2001) Stock Option Plans for Non-executive Employees, *Journal of Financial Economics* 61(2): 253-87.
- Core, John E. and Wayne Guay (2010) Is There a Case for Regulating Executive Pay in the Financial Services Industry? *SSRN*.
- Core, John E., Wayne Guay, and David F. Larcker (2008) The power of the pen and executive compensation, *Journal of Financial Economics* 88: 1-25.
- Core, John E., Wayne Guay, and Randall S. Thomas (2005) Is U.S. CEO Compensation Inefficient Pay without Performance? A review of Pay Without Performance: The Unfulfilled Promise of Executive Compensation, *Michigan Law Review* 103(6): 1,142-85.

- 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.
- Cowan, Alison L., (1992) The High-Energy Board Room, *The New York Times*, October 28: D1..
- Craighead, Jane, Michel Magnan, and Linda Thorne (2004) The Impact of Mandated Disclosure on Performance-Based CEO Compensation, *Contemporary Accounting Research* 21(2): 369-98.
- Crystal, Graef (1995) Commentary Need a Good Laugh? Look at Caps on Executive Pay, *Los Angeles Times*, May 21: 2.
- Dahya, Jay, Orlin Dimitrov, and John J. McConnell (2008) Dominant shareholders, corporate boards, and corporate value: A cross-country analysis, *Journal of Financial Economics* 87(1): 73-100.
- David, Parthiban, Rahul Kochhar, and Edward Levitas (1998) The Effect of Institutional Investors on the Level and Mix of CEO Compensation, *Academy of Management Journal* 41(2): 200-8.
- Dechow, P., R. Sloan and A.P. Sweeney (1996) Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by the SEC, *Contemporary Accounting Research* 13: 1-36.
- Dechow, P., and R. Sloan (1991) Executive Incentive and the Horizon Problem, *Journal of Accounting and Economics* 14(1): 51-89.
- Donahue, Sean (2008) Section 162(m): Executive Compensation and the Implications of Revenue Ruling 2008-13; [works.bepress.com](http://works.bepress.com)
- Ericsson, Jan and Olivier Renault (2006) Liquidity and Credit Risk, *The Journal of Finance* 61(5): 2,219 – 50.
- Fama, Eugene F., and Kenneth R. French (2002) Testing trade-off and pecking order predictions about dividends and debt, *Review of Financial Studies* 15(1): 1-33.
- Farber, David B. (2005) Restoring Trust after Fraud: Does Corporate Governance Matter? *The Accounting Review* 80(2): 539-61.
- Ferri, Fabrizio and David A. Maber (2013) Say on Pay Votes and CEO Compensation: Evidence from the UK, *Review of Finance* 17(2): 527-63.
- Finklestein, Sydney, and Donald C. Hambrick (1989) Chief Executive Compensation: A Study of the Intersection of Markets and Political Processes, *Strategic Management Journal* 10: 121-34.
- Frydman, Carola, and Dirk Jenter (2010) CEO Compensation, *Annual Review of Financial Economics* 2: 75-102.
- Fulmer, Ingrid S. (2009) The Elephant in the Room: Labor Market Influences on CEO Compensation Design, *Personnel Psychology* 62: 659-95.
- Gibbons, Robert (2005) Incentives Between Firms (and Within), *Management Science* 51(1): 2-17.



- Gompers, Paul A., Joy L. Ishii and Andrew Metrick (2003) Corporate Governance and Equity Prices, *Quarterly Journal of Economics* 118(1): 107-55.
- Grinstein, Yaniv and Paul Hribar (2004) CEO compensation and incentives: Evidence from M & A bonuses, *Journal of Financial Economics* 73: 119-43.
- Guthrie, Katherine, Jan Sokolowsky, and Kam-ming Wan (2012) CEO Compensation and Board Structure Revisited, *The Journal of Finance* 67(3): 1,149 – 68.
- Hall, Brian J., and Jeffrey B. Liebman (2000) The Taxation of Executive Compensation, *Tax Policy and the Economy*, Poterba (ed.) 14: 1-44.
- Hall, Brian J., and Kevin J. Murphy (2002) Stock options for undiversified executives, *Journal of Accounting and Economics* 33(1): 3-42.
- Hallock, Kevin F. (1997) Reciprocally Interlocking Board of Directors and Executive Compensation, *Journal of Financial and Quantitative Analysis* 32 (3): 331-44.
- Hamm, Sophia J. W., Michael J. Jung, and Clare Wang (2011) One Dollar CEO Salaries: An Empirical Examination of the Determinants and Consequences, SSRN.
- Hermalin, Benjamin E., and Michael S. Weisbach (2003) Boards of Directors As An Endogenously Determined Institution: A Survey of the Economic Literature, *Economic Policy Review* 9(1): 7-26.
- Holmstrom, Bengt (1979) Moral Hazard and Observability, *The Bell Journal of Economics* 10(1): 74-91.
- Holmstrom, Bengt R. and Steven Kaplan (2003) The State of U.S. Corporate Governance: What's Right and What's Wrong? *Journal of Applied Corporate Finance* 15(3): 8-20.
- Hwang, Byoung-Hyoun and Seoyoung Kim (2009) It pays to have friends, *Journal of Financial Economics* 93(1): 138-58.
- Ittner, Christopher D., Richard A. Lambert, and David F. Larcker (2003) The structure and performance consequences of equity grants to employees of new economy firms, *Journal of Accounting and Economics* 34: 89-127.
- Ittner, Christopher D., David F. Larcker and Madhav V. Rajan (1997) The Choice of Performance Measures in Annual Bonus Contracts, *The Accounting Review* 72(2): 231-55.
- Jensen, Michael C., (1993) The modern industrial revolution, exit, and the failure of internal control systems, *Journal of Finance* 48: 831-80.
- Jensen, Michael, and W. Meckling (1976) Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, *Journal of Financial Economics* 3: 305-60.
- Jensen, Michael, and Kevin J. Murphy (1990) Performance Pay and Top-Management Incentives, *Journal of Political Economy* 98(2): 225-64.

- Johnson, Marilyn F., Susan Porter and Margaret B. Shackell (1997) Stakeholder Pressure and the Structure of Executive Compensation, *SSRN*
- Kautter, D. J. (1994) The \$1 million Cap on Compensation Deductions, *Tax Adviser* 25(6): 327-35.
- Klein, April (2002) Audit committee, board of director characteristics, and earnings management, *Journal of Accounting and Economics* 33(3): 375-400.
- Krishnan, Jayanthi (2005) Audit Committee Quality and Internal Control: An Empirical Analysis, *The Accounting Review* 80(2): 649-75.
- Laksmana, Indrarini (2008) Corporate Board Governance and Voluntary Disclosure of Executive Compensation Practices, *Contemporary Accounting Research* 25(4): 1,147-82.
- Lambert, Richard A. and David F. Larcker (1987) An Analysis of the use of Accounting and Market Measures of Performance in Executive Compensation Contracts. *Journal of Accounting Research* 25(Supp.): 85-125.
- Lambert, Richard A., David F. Larcker, and Keith Weigelt (1993) The Structure of Organizational Incentives, *Administrative Science Quarterly* 38(3): 438-61.
- Leone, Andrew J., Joanna Shuang Wu and Jerold L. Zimmerman (2006) Asymmetric sensitivity of CEO cash compensation to stock returns, *Journal of Accounting and Economics* 42(1-2): 167-92.
- Lilling, Matthew S. (2006) The Link between CEO Compensation and Firm Performance: Does Simultaneity Matter? *Atlantic Economic Journal* 34(1): 101-14.
- Livingstone, J.R. (1997) Executive compensation contracting and responses to increased tax costs, working paper, Pennsylvania State University
- Lo, Kin (2003) Economic consequences of regulated changes in disclosure: the case of executive compensation, *Journal of Accounting and Economics* 35: 285-314.
- Mehran, Hamid (1995) Executive compensation structure, ownership, and firm performance, *Journal of Financial Economics* 38(2): 163-84.
- Miske, Ryan (2004) Can't Cap Corporate Greed: Unintended Consequences of Trying to Control Executive Compensation Through the Tax Code, *Minnesota Law Review* 88: 1673-87.
- Modigliani, Franco and Merton H. Miller (1958) The Cost of Capital, Corporation Finance, and the Theory of Investment. *The American Economic Review* 48(3): 261-97
- Murphy, Kevin J. (1999) Executive Pay, *Handbook of Labor Economics* Vol. 3, North Holland, Ashenfelter and Card (eds.)
- Murphy, Kevin J. (2011) The Politics of Pay: A Legislative History of Executive Compensation, *The Research Handbook on Executive Pay*, Edward Elgar Publishers, Hill and Thomas (eds.)

- Murphy, Kevin J. (2012) Executive Compensation: Where We Are, and How We Got There, *Handbook of the Economics of Finance*, North Holland, Constantinides, Harris and Stulz (eds.)
- Murphy, Kevin J., and Paul Oyer (2004) Discretion in Executive Incentive Contracts: Theory and Evidence, SSRN.
- Murphy, Kevin J., and Jan Zabojsnik (2007) Managerial Capital and the Market for CEOs, SSRN
- O'Reilly, C.A., B. Main, and G. Crystal (1988) CEO compensation as a tournament and social comparison: A tale of two theories, *Administrative Science Quarterly* 33: 257-74.
- Perry, Tod and Marc Zenner (2001) Pay for performance? Government regulation and the structure of compensation contracts, *Journal of Financial Economics* 62: 453-88.
- Pfeffer, Jeffery (1981) *Power in organizations*, Pitman, Boston, MA
- Polsky, Gregg D. (2007) Controlling Executive Compensation Through the Tax Code, *Washington & Lee Law Review* 64: 877-926.
- Reitenga, Austin, Steve Buchheit, Qui Jennifer Yin, and Terry Baker (2002) CEO Bonus Pay, Tax Policy, and Earnings Management, *The Journal of the American Taxation Association* 24(Supp.): 1-23.
- Robinson, John R., Yanfeng Xue, and Yong Yu (2011) Determinants of Disclosure Noncompliance and the Effect of the SEC Review: Evidence from the 2006 Mandated Compensation Disclosure Regulations, *The Accounting Review* 86(4): 1,415-44.
- Rose, Nancy L. and Andrea Shepard (1997) Firm diversification and CEO compensation: Managerial ability or executive entrenchment? *Rand Journal of Economics* 28: 789-514.
- Rose, Nancy L., and Catherine Wolfram (2000) Executive Compensation: Has the "Million-Dollar Cap" Affected CEO Pay? *American Economic Review* 90(2): 197202.
- Rose, Nancy L. and Catherine Wolfram (2002) Regulating Executive Pay: Using the Tax Code to Influence Chief Executive Office Compensation, *Journal of Labor Economics* 20(2): 138-75.
- Ryan, Harley E. Jr. and Roy A. Wiggins, III (2004) Who is in whose pocket? Director compensation, board independence, and barriers to effective monitoring, *Journal of Financial Economics* 73: 497-524.
- Salley, Stephen M. (2009) "Fixing" Executive Compensation: Will Congress, Shareholder Activism, or the New SEC Disclosure Rules Change the Way Business is Done in American Boardrooms? *Ohio State Law Journal* 70(3): 753-91.
- Smith, Clifford W., Jr., and L. Watts (1992) The investment opportunity set and corporate financing, dividend and compensation policies, *Journal of Financial Economics* 32: 263-92.
- Wells, Harwell (2010) "No man can be worth \$1,000,000 a year": The fight over executive compensation in 1930s America, *University of Richmond Law Review* 44: 689-769.
- Washington, George T. (1942) *Corporate Executives' Compensation*, Ronald Press Company

Yermack, David (1995) Do corporations award CEO stock options effectively? *Journal of Financial Economics* 39(2-3): 237-69.

Yermack, David (1996) Higher market valuation of companies with a small board of directors, *Journal of Financial Economics* 40(2): 185-211.