ESSAYS ON CORPORATE GOVERNANCE AND EXECUTIVE COMPENSATION

by

PATRICK BERNARD WASHINGTON

SHANE UNDERWOOD, COMMITTEE CHAIR
SHAWN MOBBS
DAVID CICERO
GARY HOOVER
WILLIAM JACKSON

A DISSERTATION

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Abstract

This dissertation is composed of three essays that study the interconnections between blockholders and CEO power, and the link between deferred compensation (inside debt) and financial performance/firm behavior.

In the first chapter, I consider agency theory's prediction that a large shareholder, "blockholder," can serve as an effective governance mechanism when monitoring managers by reducing CEO dominance. However, not all blockholders are created equally. Inside blockholders with large equity stakes may be subject to CEO influence. Outside blockholders may not fear the same career concerns. Using a novel approach, I separate blockholders into insiders (officers & directors) and outsiders when considering their relationship to CEO power, which is proxied by the CEO Pay Slice (CPS). However, separating blockholders into outside and officer specifications reveals that director blockholders reduce CEO power. Economic theory suggests that firms with multiple classes of shares have weak governance structures. A significant difference in CEO dominance inside dual class share firms versus single class share firms has been documented. This paper expounds on previous research and shed's light on the effect of insiders' differential shareholder rights in dual class share firms. Evidence is provided that shows as insiders' percentage of voting rights increase then CEO power (CPS) decreases. Also, the results reveal that as insiders' percentage of cash flow rights increase then CEO power (CPS) increases.

In the second chapter, I study recent literature's documentation that inside debt is widely used in executive compensation contracts. Prior research has only focused on the CEO's level of inside debt. However, the inner workings of the top executive team, and their importance for firm performance are difficult to observe and measure. In this essay, I aim to contribute to the subject by introducing new measures pertaining to the relationship between the CEO and the other members of the top executive team, as well as studying the relation between these measures and the value, performance, and behavior of public firms. My novel measure is the Slice of CEO Inside Debt (SCID) – the fraction of the aggregate deferred compensation (inside debt) of the top-five executive team captured by the CEO. The effects of total deferred compensation account balances, firm contributions, executive contributions, and earnings on deferred compensation accounts are examined with respect to SCID. This research provides evidence of increased CEO tenure (entrenchment) in relation to the earnings measure of SCID, reduced spending on research and development in relation to the earnings measure of SCID, increased spending on capital expenditures in relation to the executive contributions measure of SCID, and a lower probability of bankruptcy in relation to the executive contributions measure of SCID. Also, this paper shows that as the CEO's slice of deferred compensation from firm contributions and executive contributions increases then firm liquidity, i.e. working capital, decreases.

In the final chapter, I consider prior research that has shown firms with CEOs who have less power take less risk. Thus, theory suggests that reducing CEO power through the use of deferred compensation, "inside debt," should motivate executives to become more risk averse. This essay investigates the relationship between the Slice of CEO Inside-Debt (SCID) — the fraction of the aggregate deferred compensation (inside debt) of the top-five executive team captured by the CEO — and CEO power (CPS–CEO Pay Slice) and corporate social responsibility (CSR). The effects of firm contributions, executive contributions, and earnings on deferred compensation accounts are examined with respect to SCID in relation to CPS and CSR. This research provides evidence of increased CEO power by showing that firms with CEOs who contribute more money to their deferred

compensation accounts relative to the total amount deferred by the top five executives, including the CEO, have CEOs with greater power in the following year. Additionally, this essay studies firms use of inside debt and its effect on corporate social responsibility. Empirical evidence is provided that firms with CEOs who experience increased earnings on their deferred compensation accounts relative to the account earnings of top five executives are positively correlated with being more socially responsible.

Dedication

This dissertation is dedicated to my father, Dr. Wesley E. Jones, for instilling in me the value of hard work and patience, my mother, Gwendolyn Washington Jones, for allowing me to believe that I could accomplish anything that I dreamed, and to my siblings (Wesley Jones, Jr., Sean Washington, Kim Jones, and Corey Washington) for preparing me to be me. Lastly, I would like to dedicate my dissertation to the memory of my late father Tony Bernard Washington.

List of Abbreviations, Acronyms, and Symbols

$	American Dollar
=	Equal to
%	Percent
CPS	CEO Pay Slice
CRS	Corporate Social Responsibility
Max	Maximum Value
Min	Minimum Value
Obs.	Number of Observations
R^2	R-squared
SCID	Slice of CEO Inside Debt

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1 Introduction

As economists we are interested in the effect of agency conflicts on corporate outcomes. Large stakeholders and firm insiders might discipline management deviations from their interests. The question is what happens in corporate settings where agent's interests are (potentially) misaligned with principal stakeholders. Do different types of blockholders better promote monitoring and diminish potential costs? And does the presence of insiders, who have a large share voting rights, exacerbate the impact of agency costs on corporate outcomes?

There are two alternative methods to constructing CEO contracts in the United States. In the contracting view, pay is used to solve an agency problem: the compensation committee optimally chooses pay contracts which give the CEO incentives to maximize shareholder wealth (see, e.g., Holmstrom and Kaplan (2003) and Edmans and Gabaix (2009)). In the alternative, "skimming," view pay is the result of an agency problem: CEOs have managed to capture the pay process so that they set their own pay, constrained somewhat by the availability of cash or by a fear of drawing shareholders' attention. (see, e.g., Bebchuk and Fried (2004) and Morse, Nanda and Seru (2011)). Bertrand and Mullainathan (BM, 2001) argue that both views have merit: bargaining takes place in firms with strong governance and skimming in firms with weak governance. Shleifer and Vishny (1986) show that a large shareholder, by overcoming the free-rider problem in monitoring managers, can serve as an effective governance mechanism.

This paper seeks to answer the following questions:

1. Does the presence of blockholders, whether inside or outside, relate to the CEO Pay Slice (CPS)?

2. Is the value relevance of blockholders conditioned by management entrenchment?

3. What, if any, is the relation between inside voting rights and cash flow rights and the CEO Pay Slice (CPS)?

Although the compensation of executives has been the subject of much research in economics and finance at it relates to governance, the distribution of pay in the top executive team has received relatively little attention from financial economists when considering the effect of blockholders and insider's rights in dual class firms. I seek to help fill this void by investigating in this paper the presence of blockholders and the separation of firm ownership and control. I hypothesize that less blockholders and the separation of firm cash flow and voting rights allows CEOs to gain control of the pay setting process itself. CEOs skim what they can from shareholders, constrained perhaps by the amount of funds in the firm, by an unwillingness to draw the attention of shareholder activist groups or by a fear of becoming a takeover target. Within these constraints, however, they pay themselves as much as possible. Where as pay in the contracting view is an attempt to solve moral hazard, pay in the skimming view is the result of moral hazard.

I propose two tests to examine the skimming view. In the first test, I examine whether blockholders decrease the power of dominant CEOs. I use Bebchuk, Cremers, and Peyer's (2011) approach to measure CEO dominance. Using this method, a CEO with a larger pay slice is regarded as more dominant or influential in regards to affecting corporate policy. The CEO pay slice (CPS) represents the fraction of the combined salaries of the top-five executives rewarded to the CEO. This variable is used to proxy for CEO dominance and relates to corporate results such as firm performance, Tobin's q, accounting profitability, credit ratings and the cost of debt financing (Bebchuk, Cremers, and Peyer, 2011; Liu and Jiraporn, 2010). Since CPS is a continuous measure it is preferred relative to other indicators of CEO dominance such as CEO duality.

As a second test of CEOs skimming, I examine the effect of insider shareholder rights on CEO dominance. The percentage of insider's voting rights is used as a proxy for blockholder's percentage of shares. Both blockholders and insiders have an interest in monitoring executive management. My research aims to show that their interests are similar in regards to executive compensation.

I find that CPS is lower when increasing the percentage of blockholders who are directors. I find that CPS is lower (higher) when insiders' voting (cash flow) rights increase.

The remainder of this article is organized as follows. Section 2 discusses the pertinent literature and develops the hypotheses. Section 3 discusses the sample, data and methodology. Section 4 presents the results on blockholders and shareholder's rights/power. Finally, Section 5 concludes.

2 LITERATURE REVIEW and HYPOTHESIS DEVELOPMENT

2.1 CEO Dominance (The CEO Pay Slice)

CEO dominance signals how much managerial influence the CEO maintains within the executive management team. There are numerous aspects to the perception of "power," some of which are not easily observable. Finkelstein (1992) identifies four sources of power: structural, ownership, expert, and prestige. Structural power is frequently mentioned in relevant research and is based on the conventional management system of employee rank (Brass, 1984; Hambrick, 1981; Perrow, 1970; Tushman and Romanelli, 1983). Similar to Adam, Almeida, and Ferreira (2005) and Chintrakarn, Jiraporn, and Liu (2012), my study highlights structural power, specifically the power of the CEO over the top executive team. I do not contend that blockholders affect all partitions of CEO power. However, this paper additionally studies the effect of shareholder ownership power on CEO structural power.

Current empirical research establishes that strong CEO dominance appears to provide negative shocks to agency costs and on firm performance. In a compelling study, Bebchuck, Cremers, and Peyer (2007) outline how strong CEO dominance is correlated with lower firm value in relation to Tobin's q and lower accounting profitability. In addition, dominant CEOs are more inclined to make inappropriate acquisitions that diminish firm value, as evaluated by the market's reception to the disclosure of the acquisition. The authors suggest it is conceivable that low firm productive outcomes are associated with agency conflict due to evidence of substantial CEO power's connection to examples of agency-related results. Notably, strong CEO power has been shown to relate to increased odds of a CEO acquiring a "lucky" option grant at the lowest price of the month.

And CEO power reveals an increased bias towards rewarding the CEO for luck as a result of positive shocks to the industry. Also, firms with influential CEOs display lower CEO turnover after accounting for previous accomplishments and decreased firm-specific volatility sustained in future stock returns.

The research in Bebchuk et al. (2011) establishes a substantial example that CEO dominance is a meaningful variable that affects several essential corporate results. Additionally, the mechanism which allows CEO power to impact firm outcomes implies that agency costs should be a significant consideration. Specifically, the evidence suggests that strong CEO power allows the CEO to act in manners advantageous to himself but not necessarily to the shareholders, thereby worsening the agency conflict.

In a related study, Liu and Jiraporn (2010) explore the agency conflict between shareholders and bondholders. They report that bondholders regard CEO dominance as a critical determinant of the cost of debt. In particular, firms where the CEO plays a more dominant role incur significantly higher costs of debt in terms of bond yields. Similarly, firms with more powerful CEOs also experience lower credit ratings. Additional analysis also reveals that, as CEO dominance strengthens, the firm experiences a higher degree of informational asymmetry, making it more difficult for bondholders to monitor managers' actions. All in all, the evidence suggests that CEO dominance fosters managerial entrenchment, worsens the asset substitution problem, and reduces reporting transparency. As a result, bondholders demand higher returns from firms with more dominant CEOs.

In a similar vein, Adam, Almeida, and Ferreira (2005) investigate how CEO power influences performance variability. They hypothesize that powerful CEOs are less likely to have to compromise with other top executives, resulting in more extreme decisions, either beneficial or deleterious to the firm. The evidence corroborates this hypothesis, suggesting that variability in firm performance increases with the degree of CEO influence because extreme decisions are more likely to be taken when the CEO is more dominant. Finally, Morse, Nanda, and Seru (2011) report that powerful CEOs "rig" the incentive part of their compensation. In particular, powerful CEOs induce their boards to shift the weight on performance measures towards the more favorable measures. Furthermore,

they also document a decline in future firm performance and value for firms where the rigging of incentive pay takes place. All of the aforementioned studies demonstrate CEO power has a material impact on corporate outcomes.

2.2 The Role of Blockholders on CEO Dominance

Having a blockholder can lead to more monitoring (Shleifer and Vishny (1986)), and there is much empirical evidence that block ownership can influence governance, particularly executive compensation [Cyert, Kang, and Kumar (2002), Core, Holthausen, and Larcker (1999), Hambrick and Finkelstein (1995), Tosi and Gomez-Meija (1989), and Bertrand and Mullainathan (2000, 2001)].

However, the literature on the role of blockholders as it relates to CEO dominance in which I seek to contribute is limited. Many of the articles on this subject utilize flawed or limited blockholder data. Using the Thompson 13F database, Bebchuk, Cremers, and Peyer (2007) demonstrate that CPS is lower in the presence of only "institutional" blockholders. In this paper, I seek to add to the literature by using a dataset of "all" blockholders.

Blockholder information is available from several sources, such as Compact Disclosure, ExecuComp, IRRC Directors, Thomson Reuters (13F), 13D/G filings, and insider trading filings (Forms 3, 4, and 5). However, these sources suffer from various problems: Compact Disclosure often double-counts blockholdings (Dlugosz et al. 2006); ExecuComp and IRRC Directors only provide the ownership of top managers and directors; Thomson Reuters (13F) only covers institutional investors and suffers from classification errors (Chen, Harford, and Li 2007); the 13D/G filing requirements do not apply to existing blockholders; and the reliance on aggregated insider trading may lead to incorrect inferences regarding the holdings of large shareholders (Anderson and Lee 1997; Jeng, Metrick, and Zeckhauser 2003). In this paper, I utilize the blockholder database constructed by Dlugosz (et al. 2006) which corrects for the previous concerns. Also, they demonstrate that the corrections in their database are economically and statistically significant in an

analysis of the relationship between firm value and outside blockholders.

Shleifer and Vishny (1986) predict that the presence of blockholders will have a positive effect on a the market value of a firm. Holderness (2003) suggests that few major corporate decisions have been shown to be different in the presence of a blockholder. However, Cronqvist and Fahlenbrach (2009) find that blockholders have a significant effect on corporate financial and investment policies. They also show that firm performance is higher when blockholders hold larger blocks, have board seats or have management involvement. Becker, Cronqvist and Fahlenbrach (2011) find that blockholder presence reduces a firm's investment, cash holdings and top executive pay, and increases payout and firm performance.

Agrawal and Nasser (2012) show that independent directors who are blockholders (IDB) have more bargaining power in constructing CEO contracts. Their results suggest that better contracting, monitoring, and valuation are promoted by the presence of IDB. Research by Guthrie, Sokolowsky, and Wan (2012) illustrate that CEO pay decreases significantly more in firms that did not comply with the NYSE/Nasdaq board independence requirement versus firms that were compliant. Their research also suggests that independent directors may be ineffective in constraining CEO pay. According to the managerial power hypothesis, CEOs have too much power over their boards. Compensation contracts are not negotiated at arm's-length as they would be if shareholders had a seat at the contract-negotiating table. Excessive compensation levels is the result of the lack of arm's length bargaining. However, blockholders have the ability to better monitor and influence the construction compensation contracts. My paper seeks to show that CEO pay relative to other top management is sensitive to the presence of blockholders.

Hypothesis 1. Firms with a higher (lower) percentage of blockholders experience a negative (positive) effect on CEO pay slice.

I find evidence that presence of blockholders lowers the pay disparity between executives. But, this effect is dependent on the type of blockholder: outside (insignificant

effect), officer (insignificant effect), or non-officer director (negative effect) blockholder.

2.3 The Role of Insider's Rights on CEO Dominance

In the previous section of this paper, the role of blockholder's effect on CEO power was examined. The blockholder dataset in this study constructed by Dlugosz (et al. 2006) shows that a special subset of the IRRC companies – less than 10 percent in all years – have multiple classes of common stock. Their paper discusses the many problems with the Compact Disclosure data which are very difficult to fix. So, they eliminate all multiple-class companies from the database. However, my paper strives to consider the effect of dual class firms.

It is not possible to have a comprehensive discussion of CEO power without considering the fact that the separation of ownership and control creates agency problems between managers and shareholders (see, e.g., Jensen and Meckling (1976)). These problems can affect a firm's financial and investment policies.

Studies have examined how CEO pay is correlated with protection from takeovers and the strength of shareholder rights (Borokhovich, Brunarski, and Parrino (1997)). They examine the fractional voting rights attributable to all classes of voting stock in order to obtain a measure of the ability of the CEO and blockholders to affect the outcome of a takeover bid. Bebchuk, Cremers, and Peyer (2007) study variables that relate to the power of shareholders, such as the entrenchment index (Eindex), a broader governance index (Gindex), institutional block ownership, and the 'abnormal' level of compensation to the top executives relative to the firm's industry and size.

Masulis, Wang and Xie (2009) examine how divergence between insider voting and cash flow rights affects managerial extraction of private benefits of control. They find that as this divergence widens, corporate cash holdings are worth less to outside shareholders, CEOs receive higher compensation, managers make shareholder value-destroying acquisitions more often, and capital expenditures contribute less to shareholder value. Masulis and Zhang (2012) show that the relationship between the productivity of Qualified Inter-

nal Candidates (defined as the top 5 executives excluding the CEO) and the compensation gap is stronger in single-class share firms than in dual-class firms. I propose that there is a significant negative relationship between insider voting rights and the compensation gap in dual-class firms. The following hypothesis seeks to add to their result on dual class share firms.

Hypothesis 2. Dual-class firms with a higher percentage of insider voting rights have a lower CEO pay slice

3 Sample, data and methodology

In this section, I describe my sample construction that combines blockholder, executive compensation, and dual class firm information. I continue by introducing the research design and the identification strategy I use to capture blockholders' and shareholder right's influence on CPS.

3.1 Sample Construction

Firms are matched to industries based on GICS classification. The GICS scheme is designed for financial analysts and investment managers who may benefit from this paper's analysis. Chan, Lakonishok, and Swaminathan (2007) note that assigning companies to industries on the basis of six-digit GICS codes is more effective than the Fama-French classification system because it generates higher average within-industry correlation (0.43) and greater contrast (0.17) between inside- and outside-industry correlations (versus 0.40 and 0.13 for the FF system).

The following three datasets detailed in this section are combined to yield to unique datasets. The subsample of the CEO pay slice data and the blockholder data dates from 1996 to 2001 with 346 firms. My final subsample of the combined CEO pay slice data and dual class insider data dates from 1996 to 2002 with 115 unique dual class firms.

3.2 Measuring CEO Dominance Using CEO Pay Slice (CPS)

Because CEO dominance is not directly observable, it is necessary to construct a variable that empirically captures CEO dominance. The measurement of power has been a major stumbling block in investigations of various phenomena in the literature (March, 1966; Pfeffer, 1981). One of the serious problems has been an overreliance on perceptual indicators of power and a lack of objectivity in the resulting measures (Finkelstein, 1992). Perceptual indicators or measures include structural power (CEOs have high structural power over other members of the top executive team because of their formal organizational position), ownership power (a top manager with significant shareholdings in an organization will be more powerful than a manager without a comparative base of control), expert power (managers with relevant expertise may have significant influence on a particular strategic choice), and prestige power (managers' reputation in the institutional environment and among stakeholders influences others' perceptions on their influence). Perceptual measures assume that social actors (individuals who pursue their vision of the public interest) are knowledgeable about power within their organizations and informants (insiders) are willing to divulge what they know about power distributions (Pfeffer, 1981). Several previous studies use perceptual measures of power (Pfeffer, 1981; Perrow, 1970; Hinings and Colleagues, 1974), Pfeffer and Salancik, 1974; Hambrick, 1981; and Tushman and Romanelli, 1983). Recognizing the potentially unreliable nature of the perceptual measures of power, several other studies argue in favor of more objective power indicators (Pfeffer, 1981; Hills and Mahoney, 1978; Pfeffer and Moore, 1980; Salancik and Pfeffer, 1974; Pfeffer, Salancik, and Leblebici, 1976; and Provan, 1980).

One way to capture CEO power more objectively is to examine his/her relative compensation among top executives (Finkelstein, 1992; Bebchuk et al., 2011). Bebchuk, Cremers and Peyer (2011) argue that the CEO's pay slice (CPS) captures the relative significance of the CEO in terms of abilities, contribution or power. Thus, I consider CPS an adequate proxy to measure the power structure between the CEO and the top

management team. This particular measure of CEO power is especially interesting because Bebchuk et al. (2011) find that CPS has strong explanatory power for some key critical corporate outcomes, including firm value as measured by Tobin's Q, accounting profitability, and stock market reactions to acquisition announcements.

I follow Bebchuk et al.'s (2011) approach and define CPS (i.e., the CEO's pay slice) as the CEO's total compensation as a fraction of the combined total compensation of the top five executives (including the CEO) in a given company. Total compensation includes salary, bonus, other annual pay, long-term incentive payouts, the total value of restricted stock granted that year, the Black-Scholes value of stock options granted that year, and all other total compensation (EXECUCOMP item TDC1).

The data in Table 1 shows that the CPS is relatively consistent ($CPS \approx$0.28—0.31) during each year under study. However, average CEO total compensation increases every year in my sample until after the "Dot-com Bubble Burst" in 2000. CEO's average total compensation ranges between \$2.8—\$5.6 million dollars throughout my observation period. The median CEO compensation increases monotonically throughout the sample period. The data illustrates that a subsample CEOs skew the average total compensation higher. Irrespective of the skewed total compensation data, the CEO Pay Slice (CPS) remains fairly consistent. A CEO's average age is nearly 52 years old and average tenure is approximately 7.22 years at their particular firm (the median CEO tenure is 4 years). Most CEOs (essentially 25% of CEOs in my sample) come from outside the firm.

3.3 Blockholder

Many researchers are interested in knowing whether a specific blockholder is an "insider' or an "outsider" to the firm. The role of large shareholders in corporate governance is often treated differently depending on the classification of the shareholder. Unlike many papers which only research institutional blockholders, this study examines all blockholders. Blockholders are defined according to SEC Rule 13d-1(a) which sets the threshold for beneficial ownership at 5% or more of a class of stock. Following the best practices of

current economic and corporate governance theory, outside blockholders, in my sample, represent the largest percentage of blockholders to mitigate agency costs. In Table 2, the data (1,913 firms with 7,649 firm years) offers the advantage of including all blockholders, in addition to non-institutional blockholders, for the years 1996-2001. My data shows the percentage of shares held by all blockholders (range = 21.66% [in 1996] to 25.02% [in 2001]). However, I focus my empirical analysis on four separate blockholder variables: (1) the percentage of shares held by officer blockholders (sample period mean = 2.51%), (2) the percentage of shares held by director blockholders (increases monotonically from 1.07% [in 1996] to 1.47% [in 2000] and then decreases to 1.29% [in 2001] following the Dot-com Bubble Burst, (3) the percentage of shares held by ESOP (Employee Stock Option Plan) blockholders (is convex decreasing from 1.34% [in 1996] to 1.03% [in 2001] and (4) the percentage of shares held by outside blockholders (increases from 14.40% [in 1996] to 18.02% [in 2001] over the sample period).

The increase in outside blockholders positively correlates with the increase in CEO total compensation. However, one should note that the CPS remains fairly stable throughout the sample period. This result may suggest that outside blockholders are ineffective at mitigating the rise in CEO compensation. Instead, outside blockholders may pursue an executive compensation package following the pay equity theory. Thus, outside blockholders may consider it more important that the top executives maintain a smaller and consistent pay gap regardless of the total compensation of each individual top executive.

3.4 Dual Class Sample-Insider Voting/Cash Flow Rights

Table 3 presents a comprehensive set of dual-class firms that I obtain from GIM (2010) where they constructed a list of all possible dual class firms. The SEC filings of each candidate were then inspected to determine whether it was actually a dual-class firm. The candidate sample was built using data from the Securities Data Company (SDC), S&P's Compustat, the Center for Research in Security Prices (CRSP), and the Investor Responsibility Research Center (IRRC).

The insider ownership for each class of stock in every year is included in dual class sample. Since SEC disclosures often combine the ownership of stock in the same table with ownership of options, warrants, deferred shares, and other purchase rights, GIM (2010) were able to compute the common stock ownership, excluding all options and other rights. Dividend data for all firms was collected since the share classes sometimes have differing cash-flow rights.

Panel A presents a corporate landscape of dual class firms with a focus on insider cash-flow rights, insider voting rights, and the wedge between them. The data shows consistent insider voting rights (approximately 60%), cash flow rights (approximately 40%), and wedge (approximately 20%) from 1996-2001. Panel B presents insider's percentage of voting and cash flow rights within class A shares (superior class) and non-class A shares (inferior class). The data provides evidence that insiders hold the majority (approximately 80% annually) of cash flow and voting rights within the class A shares. Panel C presents insider's percentage of voting and cash flow rights of the firm's total outstanding shares from the superior or inferior class. The data reveals that 24% of insider's cash flow rights and 53% of insider's voting rights are from class A shares. The remainder of insider's percentage cash flow rights is from the inferior class (approximately 16% annually). The remainder of insider's percentage voting rights is from the inferior class (approximately 7% annually).

3.5 Empirical Methodology

In order to study the distribution of pay in the top executive team in public companies, I rely on data from the Compustat ExecuComp database from 1996—2001. In particular, I compute the CEO's pay slice (CPS), defined as the fraction of the CEO's total compensation relative to the combined total compensation of the top five executives (including the CEO) in that company, such that the CPS will be in the unit interval. My measurement variable is based on the total compensation to each executive, including

salary, bonus, other annual pay, the total value of restricted stock granted that year, the Black-Scholes value of stock options granted that year, long-term incentive payouts, and all other total compensation (as reported in ExecuComp item "TDC1").

My initial set of results relate to the empirical analysis based on CPS and blockholders. To identify the effect of blockholders on the CEO pay slice, a pooled time-series, cross sectional multiple regression is used. CPS is regressed on specified blockholders and economic, governance and ownership control variables.

$$CPS_t = \alpha + \beta_1 \times SumOut_1 + \beta_2 \times SumOff_2 + \beta_3 \times SumDir_3 + \beta_t \times Controls + \varepsilon_t$$

[Model 1]

where CPS_t is the CEO pay slice in year t, SumOut_t is the percentage of shares held by "outside" blockholders in year t, SumOff_t is the percentage of shares held by all "officer" blockholders in year t, SumDir_t is the percentage of shares held by all "non-officer director" blockholders in year t.

My regressions include the standard controls used in the literature. In particular, I control for CEO ownership, profitability (ROA), the ratio of capital expenditures to assets (Capex/Assets), leverage, tenure (see Bebchuk, L. A., Cremers, K. J., and Peyer, U. C. (2011)), inside ownership (e.g., Boone et al. (2004)), log of CEO age, acquisitions, dividends, EBITDA, capital expenditures, deferred taxes, the ratio of ROA to assets (ROA/Assets), size (lag of total assets), and investment opportunity set (market-to-book value of equity).

The next set of results relates to the empirical analysis based on CPS and insider vs. shareholder voting rights. Dual-class firms have been shown to be significantly more levered than single-class firms (Gompers, Ishii, and Metrick (2010)). In their paper, the authors raise an interesting question regarding whether dual-class firms possess other off-setting governance mechanisms such as outside directors. Thus, I test the significance of insider variables (cash-flow rights (CF) and voting rights (Vote)) as governance mechanisms. The idea behind this model is that cash-flow rights and voting rights are different incentives for corporate insiders, and each type of ownership can exert an independent effect as suggested by Morck, Shleifer, and Vishny (1988). I use cash-flow rights (CF)

and voting rights (Vote) as the key independent variables. To deal with nonlinearities in these effects, many previous papers have estimated piecewise regressions. I avoid having to choose specific piecewise thresholds by including squared terms in some of the specifications. I estimate the regression

$$CPS_t = \alpha + \beta_1 \times CF_t + \beta_2 \times CF_2^2 + \beta_3 \times Vote_t + \beta_4 \times Vote_t^2 + \beta_t \times Controls + \varepsilon_t$$

[Model 2]

where CPS_t is the CEO pay slice in year t, CF_t is the percentage of cash flow rights held by insiders in year t, CF_t^2 is the "squared" percentage of cash flow rights held by insiders in year t, $Vote_t$ is the percentage of voting rights held by insiders in year t, $Vote_t^2$ is the "squared" percentage of voting rights held by insiders in year t. This regression also includes the standard control variables for determining CPS in the literature.

4 EMPIRICAL EVIDENCE

4.1 Blockholder's Effect on CEO Dominance

Table 4 reports multivariate regressions of CPS on the percentage of shares held by "all" blockholders (AllBlks), the percentage of shares held by "outside" blockholders (SumOut), the percentage of shares held by all "officer" blockholders (SumOff), and the percentage of shares held by all "non-officer director" blockholders (SumDir). Column (1) reports the results of the OLS regression, which is my baseline specification. I adjust standard errors by clustering at the firm level. According to models [3] and [4], as the number of shares controlled by director blockholders increases then CPS decreases. Looking at models [3] and [4], this result is supported with industry and year fixed effects. These results follows Becker, Cronqvist and Fahlenbrach (2011) findings that suggest that executive pay is compressed as a result of the presence of blockholders.

Additionally, model [3] and model [4] suggest that firms that have a higher percentage of shares controlled by blockholders who are directors are found to have a significantly higher CPS. Director blockholders who Agrawal and Nasser (2012) identify as "independent directors who are blockholders (IDBs)" are significant in my results. Their results

suggest that IDBs lower CEO compensation and may explain why my results show that blockholders who are directors have a negative correlation with CPS. Some of the controls (which include EBITDA and CEO Ownership 5—25%) generate counterintuitive results. For instance, using the results drawn from increasing EBITDA 1%, in each model, CEO power is reduced approximately between −0.0235% to −0.0243%.

In order to address concerns with endogeneity, in Table 5, I use Arellano Bond model to deal with endogenous variables. After accounting for endogeneity, model [3] and model [4] reveal that the effect of director blockholders is robust. An increase in the percentage of share shares held by director blockholders decreases ceo power by -0.591% in model [4]. Firms that exhibit a larger percentage of shares held by outside blockholders are found to have an insignificant effect on CPS in models [1] and [2]. These results oppose the findings in the previous literature. Mehran (1995) examines the relationship between both managerial and external blockholders and the form of executive compensation. He finds that the use of incentive-based compensation declines with the percentage of stock held by outside blockholders. External (Outside) blockholders appear to monitor the form and level of managerial compensation. Brennan and Franks (1997) suggest that managers underprice their firms at the IPO due to their desire to maintain private benefits of control. Thus, managers aim to discourage share acquisitions by blockholders who would monitor them. Their main hypothesis is that " the greater the degree of underpricing, the smaller the block holdings of outsiders." Deferred taxes appears to increase CPS in each model. Acquisitions reduce CEO power according to each model. Outside and officer blockholders appear to have an insignificant effect on CEO power (CPS).

4.2 Insider's Rights Effect on CEO Pay Slice

To deal with nonlinearities in the effect of insider voting rights and cash flow rights, I estimate piecewise quadratic regressions. Table 6 reports multivariate regressions of CPS on the percentage of insider cash-flow rights (CF), the percentage of insider voting rights (Vote), CF^2, and $Vote^2$. Column (1) reports the results of the OLS regression, which is

my baseline specification. The results in each model are insignificant.

model [2], show an increasing marginal effect of insider's voting rights on CEO power as the squared term is marginally significant (t-statistic = 1.85). However, lower amounts of insider voting rights produce a decreasing marginal effect on CPS. The results can be interpreted as increasing the percentage of insiders' voting rights strengthens corporate governance. However, too much insider voting rights weakens corporate governance and increases CEO power. Model [2] also suggests that large percentages of insider cash flow rights produces a diminishing marginal effect on CEO power. Corporate governance is strengthened when insiders have a significant amount of cash flow that can be lost through executive mismanagement. Models [3] and [4] which both have industry fixed effects suggest that CEOs hired from outside the firm decrease CEO power.

To address concerns with endogeneity, Table 7 reports an Arellano Bond regression of CPS on the percentage of insider cash-flow rights (CF), the percentage of insider voting rights (Vote), CF^2, and $Vote^2$. Models [2] and [3] display a convex relationship between insiders' voting rights and CPS in which the squared insider cash flow rights reveals a increasing marginal effect to CEO power. This result can be interpreted, in model [3], as increasing the percentage of insiders' voting rights by 1% strengthens corporate governance and decreases CEO power by 70.41%. However, large percentages of insider voting rights marginally decreases the effectiveness of corporate governance and increases CEO power at a rate of 34.64%. One can interpret this result, as when insiders have more voting power then CEOs are forced to share more power with the other top executives. However, when the percentage of insider voting rights becomes too high then CEOs become more powerful as in the case of dual class firms. When controlling for insider voting rights in model [3], increasing cash flow rights by 1% is significant in increasing CEO power by 62.51%. Large percentages of insider cash flow rights appear to b marginal effect CPS by diminishing the rate at which CEO power increases. One can interpret this result, as when insiders have more cash at risk then CEOs' power starts to diminish relative to the other top four executives.

5 Conclusions

This paper contends that shareholder rights have not been fully represented in the literature. One serious drawback of much of the existing empirical work on shareholder rights and the compensation of top executives is the use of flawed or limited data. For example, studies that examine the executive management pay gap based on data from Compact Disclosure often double-counts blockholdings; ExecuComp and IRRC Directors only provide the ownership of top managers and directors; Thomson Reuters (13F) only covers institutional investors and suffers from classification errors; the 13D/G filing requirements do not apply to existing blockholders. In contrast to much of the extant literature, this paper uses a corrected sample of blockholders. However, none of the previous research has looked at blockholders effect on CEO power. So, this paper extends the literature to better understand pay disparity among top executives while considering a blockholder dataset that is cleaner than those utilized in most other articles.

This paper contributes to the literature stream that examines the effects of blockholders on executive compensation. Specifically, my research focuses on the effects of blockholders on the executive compensation pay gap. My results are in line with executive compensation literature streaam suggesting that a sample of director blockerholders are better able to monitor compensation by decreasing the CEO pay slice. This study finds that as the percentage of director blockholders increases then CEO power is reduced.

A significant difference in CEO dominance inside dual class share firms versus single class share firms has been documented. But, this paper expounds on previous research and shed's light on the effect of insiders' differential shareholder rights in dual class share firms. Dual-class firms have been shown to be significantly more levered than single-class firms (Gompers, Ishii, and Metrick (2010)). In their paper, the authors raise an interesting question regarding whether dual-class firms possess other offsetting governance mechanisms such as outside directors. This paper answers the question of whether there are governance mechanisms (insiders' voting rights and cash flow rights) in place at dual class firms to reduce the agency costs. I find that as insiders' percentage of cash flow

rights increase then the CEO pay slice increases up to a optimal point. Further increases in insider cash flow rights, results in marginal decreases in CEO power. Also, as insiders' percentage of voting rights increase then the CEO power (CPS) decreases. These results lead to the conclusion that better data allows us to shed light on the effects blockholders and CEO power proxied by the CEO pay slice (CPS). Additionally, CEO power is a function of the percentage of insider voting and cash flow rights.

Table 1: CEO Dominance Summary Statistics

	1996	1997	1998	1999	2000	2001
CPS						
Mean	0.31	0.29	0.30	0.29	0.28	0.28
Median	0.30	0.28	0.27	0.28	0.26	0.25
Sd	0.15	0.13	0.15	0.15	0.16	0.15
N	102	107	169	197	222	212
Total Compensation						
Mean	2802.61	3036.71	3080.72	4509.95	5695.52	4504.91
Median	1342.86	1557.17	1592.92	1760.92	1957.46	2059.68
Sd	6532.79	5178.61	6684.93	11632.12	22897.96	8280.65
N	102	107	169	197	222	212
Age						
Mean	51.09	51.44	51.42	51.59	50.88	51.15
Median	53.00	53.00	52.00	52.00	51.00	51.00
Sd	7.33	7.52	7.79	7.58	7.41	6.99
N	88	81	131	145	165	159
Tenure						
Mean	6.07	6.96	8.87	8.96	6.85	5.63
Median	4.00	4.00	4.00	4.00	4.00	3.00
Sd	6.71	7.00	6.90	6.82	6.91	7.30
N	57	52	90	96	110	102
CEO from Outside						
Mean	0.27	0.18	0.27	0.27	0.24	0.25
Median	0.00	0.00	0.00	0.00	0.00	0.00
Sd	0.45	0.39	0.45	0.45	0.43	0.43
N	48	49	78	89	98	93

Table 2: Blockholder Summary Statistics

	1996	1997	1998	1999	2000	2001
Total Firms in Sample	1,130	1,046	1,510	1,387	1,336	1,240
Number of Blockholders	2.12	2.1	2.41	2.44	2.53	2.5
Sum of All Blockholders (%)	21.66	21.35	24.51	24.95	25.47	25.02
Held by:						
Officers						
Number	0.16	0.15	0.2	0.2	0.21	0.2
% Shares Owned	2.20%	2.11%	2.73%	2.73%	2.79%	2.55%
Directors						
Mean Number	0.09	0.1	0.11	0.12	0.12	0.11
% Shares Owned	1.07%	1.09%	1.31%	1.36%	1.47%	1.29%
ESOPs						
Mean Number	0.12	0.13	0.09	0.09	0.09	0.1
% Shares Owned	1.34%	1.33%	0.95%	0.93%	0.99%	1.03%
Outside Blockholders						
Mean Number	1.6	1.58	1.87	1.9	1.97	1.97
% Shares Owned	14.40%	14.31%	17.24%	17.75%	18.18%	18.02%

Table 3: Dual Class Statistics

	1996	1997	1998	1999	2000	2001
Number of Dual Class Firms	437	485	505	490	487	435
Panel A: Ownership Structure						
CF						
Mean	0.40	0.40	0.39	0.39	0.40	0.40
Sd	0.21	0.23	0.23	0.23	0.24	0.24
N	437	485	505	490	487	435
Vote						
Mean	0.60	0.59	0.59	0.59	0.60	0.61
Sd	0.25	0.27	0.28	0.28	0.29	0.28
N	426	471	482	466	466	418
Wedge						
Mean	0.21	0.20	0.20	0.20	0.21	0.21
Sd	0.20	0.20	0.20	0.20	0.21	0.21
N	426	471	482	466	466	418
Panel B: Insider Percentage of Rights within Superior and Inferior Classes						
Insider Percentage of Cash Flow Rights: Superior class						
Mean	0.80	0.79	0.80	0.77	0.77	0.80
Insider Percentage of Cash Flow Rights: Inferior classes						
Mean	0.27	0.25	0.26	0.26	0.26	0.25
Insider Percentage of Voting Rights: Superior class						
Mean	0.80	0.79	0.80	0.76	0.77	0.79
Insider Percentage of Voting Rights: Inferior classes						
Mean	0.24	0.22	0.23	0.23	0.24	0.23
Panel C: Insider Percentage of Rights in Superior or Inferior Classes						
Percentage of Insider Cash Flow Rights from Superior class						
Mean	0.23	0.24	0.24	0.24	0.24	0.24
Percentage of Insider Clash Flow Rights from Inferior class						
Mean	0.17	0.16	0.15	0.15	0.16	0.16
Percentage of Insider Voting Rights from Superior class						
Mean	0.53	0.52	0.52	0.52	0.53	0.54
Percentage of Insider Voting Rights from Inferior class						
Mean	0.07	0.07	0.07	0.07	0.07	0.07

Table 4: Blockholder's Effect on CEO Dominance - OLS

Model [1]: Includes Outside–Blockholders. Model [2]: Includes Officer–Blockholders. Model [3]: Includes Director–Blockholders. Model [4]: Includes Outside, Officer, & Director–Blockholders. Model [5]: Includes All–Blockholders. All models have firm & year fixed effects. The t statistics are in parentheses. *,**,*** represent significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)
	CEO Pay Slice	CEO Pay Slice	CEO Pay Slice	CEO Pay Slice	CEO Pay Slice
All Blockholders					-0.000626
					(-0.27)
Blockholder: Outside	0.00361			0.00296	
	(1.62)			(1.26)	
Blockholder: Officer		-0.00439		-0.00286	
		(-0.55)		(-0.35)	
Blockholder: Director			-0.0540**	-0.0522**	
			(-2.34)	(-2.27)	
CEO Age	0.947***	1.020***	0.956***	0.938***	1.001***
	(2.86)	(3.23)	(2.95)	(2.85)	(3.06)
Acquisitions	-0.000110	-0.000112	-0.000137	-0.000134	-0.000114
	(-0.87)	(-0.90)	(-1.08)	(-1.06)	(-0.90)
Dividends	0.00000977	-0.00000908	-0.0000150	-0.0000284	0.00000762
	(0.03)	(-0.03)	(-0.05)	(-0.10)	(0.03)
EBITDA	-0.000235***	-0.000238***	-0.000242***	-0.000233***	-0.000243***
	(-5.40)	(-5.28)	(-5.48)	(-5.24)	(-5.45)
Deferred Taxes	-0.00000243	0.000122	0.000153	0.000104	0.000102
	(-0.00)	(0.16)	(0.20)	(0.14)	(0.13)
Market-to-Book Ratio	0.0157*	0.0160*	0.0161*	0.0163*	0.0156*
	(1.77)	(1.79)	(1.84)	(1.86)	(1.76)
Leverage	0.0000339**	0.0000357**	0.0000364**	0.0000353**	0.0000358**
	(2.41)	(2.46)	(2.54)	(2.51)	(2.45)
Firm Size	0.0192	0.00390	0.00385	0.0113	0.00400
	(0.47)	(0.09)	(0.09)	(0.26)	(0.10)
ROA	-0.00588	-0.00464	-0.00674	-0.00598	-0.00563
	(-0.42)	(-0.32)	(-0.46)	(-0.43)	(-0.38)
Research & Development	-0.386	-0.545	-0.439	-0.395	-0.525
	(-0.46)	(-0.66)	(-0.54)	(-0.48)	(-0.63)
Capital Expenditures	1.181*	1.014*	0.902	1.019*	0.998*
	(1.91)	(1.71)	(1.50)	(1.71)	(1.69)
CEO Ownership 0—5%	-0.150	-0.131	-0.140	-0.155	-0.127
	(-1.29)	(-1.16)	(-1.27)	(-1.35)	(-1.10)
CEO Ownership 5—25%	-0.369**	-0.354**	-0.400***	-0.358**	-0.389**
	(-2.32)	(-1.99)	(-2.60)	(-1.99)	(-2.51)
CEO Ownership ¿25%	-0.515*	-0.460	-0.497*	-0.392	-0.549*
	(-1.79)	(-1.56)	(-1.91)	(-1.44)	(-1.83)
N	309	309	309	309	309
rmse	0.457	0.458	0.453	0.453	0.458
r2	0.320	0.316	0.331	0.336	0.315
r2_a	0.175	0.170	0.189	0.188	0.169

Table 5: Blockholder's Effect on CEO Dominance - Endogeneity Test: Arellano-Bond

Model [1]: Includes Outside–Blockholders. Model [2]: Includes Officer–Blockholders. Model [3]: Includes Director–Blockholders. Model [4]: Includes Outside, Officer, & Director–Blockholders. Model [5]: Includes All–Blockholders. All models have firm & year fixed effects. The t statistics are in parentheses. *,**,*** represent significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)	(4)	(5)
	CEO Pay Slice	CEO Pay Slice	CEO Pay Slice	CEO Pay Slice	CEO Pay Slice
All Blockholders					-0.00222
					(-0.59)
Blockholder: Outside	-0.00276			-0.00309	
	(-0.58)			(-0.60)	
Blockholder: Officer		0.00220		0.00369	
		(0.09)		(0.15)	
Blockholder: Director			-0.560***	-0.591***	
			(-5.49)	(-4.86)	
CEO Age	4.278	4.116	4.179	4.305	4.212
	(1.64)	(1.56)	(1.60)	(1.62)	(1.61)
Acquisitions	-0.000194***	-0.000190***	-0.000190***	-0.000192***	-0.000197***
	(-2.82)	(-2.80)	(-2.78)	(-2.85)	(-2.81)
Dividends	0.00277	0.00260	0.00297	0.00244	0.00286
	(0.75)	(0.67)	(0.81)	(0.61)	(0.79)
EBITDA	-0.0000354	-0.0000336	-0.0000328	-0.0000281	-0.0000388
	(-0.19)	(-0.17)	(-0.17)	(-0.15)	(-0.20)
Deferred Taxes	0.00185***	0.00185***	0.00183***	0.00186***	0.00184***
	(3.17)	(3.11)	(3.15)	(3.11)	(3.17)
Market-to-Book Ratio	0.0527*	0.0517*	0.0526*	0.0525*	0.0525*
	(1.90)	(1.82)	(1.91)	(1.86)	(1.88)
Leverage	-0.00000544	-0.00000588	-0.00000623	-0.00000656	-0.00000500
	(-0.19)	(-0.20)	(-0.21)	(-0.22)	(-0.17)
Firm Size	0.324	0.337	0.325	0.322	0.327
	(1.42)	(1.48)	(1.40)	(1.41)	(1.43)
ROA	0.180	0.123	0.136	0.201	0.170
	(0.33)	(0.24)	(0.26)	(0.38)	(0.31)
Research & Development	0.140	0.145	0.0309	0.252	0.0367
	(0.05)	(0.05)	(0.01)	(0.09)	(0.01)
Capital Expenditures	-1.261	-1.050	-1.009	-1.498	-1.224
	(-0.90)	(-0.80)	(-0.78)	(-0.99)	(-0.90)
CEO Ownership 0—5%	0.0344	-0.000128	0.00257	0.0293	0.0275
	(0.20)	(-0.00)	(0.01)	(0.17)	(0.16)
CEO Ownership 5—25%	-0.405	-0.405	-0.402	-0.409	-0.407
	(-1.50)	(-1.50)	(-1.50)	(-1.51)	(-1.50)
N	101	101	101	101	101
rmse					
r2					
r2_a					

Table 6: Insider's Rights Effect on CEO Dominance - OLS/FE

Model [1]: OLS–Voting Rights Effect on CPS. Model [2]: OLS–Cash Flow Rights Effect on CPS. Model [3]: OLS–Voting & Cash Flow Rights Effect on CPS. Models include both firm & year dummies. The t statistics are in parentheses. *,**,*** represent significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)
	CEO Pay Slice	CEO Pay Slice	CEO Pay Slice
Insider Voting Rights	-0.285		-4.102
	(-0.16)		(-0.99)
Insider Voting Rights^2	-0.767		0.944
	(-0.42)		(0.24)
Insider Cash Flow Rights		-1.763	-3.722
		(-0.30)	(-0.49)
Insider Cash Flow Rights^2		2.830	8.771
		(0.34)	(0.85)
CEO Age	2.349	-12.28	2.039
	(0.98)	(-0.78)	(0.10)
CEO Tenure	-0.0114	0.0870	-0.00918
	(-0.24)	(0.56)	(-0.03)
CEO from Outside	-0.589	-1.643	-1.063
	(-0.72)	(-1.09)	(-0.44)
Market-to-Book Ratio	-0.0155	0.0209	0.000457
	(-0.90)	(0.65)	(0.01)
Leverage	-0.0000708	-0.000324*	-0.000149**
	(-1.68)	(-2.00)	(-2.21)
Firm Size	0.140	0.613	0.640
	(0.61)	(1.44)	(1.64)
ROA	1.268**	2.865**	2.644*
	(2.43)	(2.59)	(2.08)
Research & Development	-2.022	0.866	3.503
	(-0.65)	(0.25)	(1.22)
Capital Expenditures	3.434	2.166	0.262
	(1.33)	(0.89)	(0.11)
N	43	43	43
rmse	0.349	0.297	0.280
r2	0.820	0.907	0.923
r2_a	0.640	0.739	0.768

Table 7: Insider's Rights Effect on CEO Dominance - Endogeneity Test: Arellano-Bond

Model [1]: OLS–Voting Rights Effect on CPS. Model [2]: OLS–Cash Flow Rights Effect on CPS. Model [3]: OLS–Voting & Cash Flow Rights Effect on CPS. Models include both firm & year dummies. The t statistics are in parentheses. *,**,*** represent significance at the 10%, 5%, and 1% level, respectively.

	(1)	(2)	(3)
	CEO Pay Slice	CEO Pay Slice	CEO Pay Slice
Insider Voting Rights	-36.17***		-70.41***
	(-8.88)		(-9.82)
Insider Voting Rights^2	21.96***		34.64***
	(3.71)		(4.67)
Insider Cash Flow Rights		-8.623	62.51***
		(-0.47)	(5.05)
Insider Cash Flow Rights^2		6.620	-54.97***
		(0.38)	(-5.33)
CEO Age	7.435	7.449	10.46***
	(1.62)	(1.40)	(2.88)
CEO Tenure	-1.417	-2.317	-2.381
	(-0.80)	(-1.10)	(-1.46)
Market-to-Book Ratio	-0.0262**	-0.0536*	0.0388**
	(-2.47)	(-1.92)	(2.26)
Leverage	0.00000407	-0.0000400	-0.0000145
	(0.19)	(-1.13)	(-0.95)
Firm Size	-0.675**	-0.691*	-0.650***
	(-2.12)	(-1.84)	(-3.81)
ROA	1.872***	1.955***	1.344***
	(2.96)	(2.77)	(3.78)
Research & Development	0.678	-0.906	-1.720
	(0.36)	(-0.39)	(-1.09)
Capital Expenditures	5.005	2.599	7.083***
	(1.61)	(1.32)	(2.83)
N	20	20	20
rmse			
r2			
r2_a			

6 REFERENCES

Adams, Renee B., Heitor Almeida, and Daniel Ferreira. "Powerful CEOs and their impact on corporate performance." Review of Financial Studies 18.4 (2005): 1403-1432.

Agrawal, A., & Nasser, T. (2011, November). Corporate Financial and Investment Policies in the Presence of a Blockholder on the Board. In 5th Annual Conference on Empirical Legal Studies Paper.

Agrawal, A., & Nasser, T. (2012, May). Blockholders on boards and CEO compensation, turnover and firm valuation. In CELS 2009 4th Annual Conference on Empirical Legal Studies Paper.

Anderson, Ronald, and D. Scott Lee, 1997, Ownership studies: The data source does matter, Journal of Financial and Quantitative Analysis 32, 311–330.

Barclay, M. J., Holderness, C. G., & Sheehan, D. P. (2009). Dividends and corporate shareholders. Review of Financial Studies, 22(6), 2423–2455.

Bebchuk, L. A., Cremers, M., & Peyer, U. (2007). CEO centrality (No. w13701). National Bureau of Economic Research.

Bebchuk, L. A., Cremers, K. J., & Peyer, U. C. (2011). The CEO pay slice. Journal of Financial Economics, 102(1), 199–221.

Bebchuk, Lucian, and Jesse Fried. "Pay without performance." (2004).

Becker, B., Cronqvist, H., & Fahlenbrach, R. (2011). Estimating the effects of large shareholders using a geographic instrument (No. w17393). National Bureau of Economic Research.

Bertrand, Marianne, and Sendhil Mullainathan. Do CEOs set their own pay? The ones without principals do. No. w7604. National Bureau of Economic Research, 2000.

Bertrand, M., & Mullainathan, S. (2001). Are CEOs rewarded for luck? The ones without principals are. The Quarterly Journal of Economics, 116(3), 901–932.

Boone, A., L. Field, J. Karpoff, and R. Charu. (2007). The determinants of corporate board size and composition: An empirical analysis, Journal of Financial Economics 85, 66–101.

Borokhovich, Kenneth A., Kelly R. Brunarski, and Robert Parrino. "CEO contracting and antitakeover amendments." Journal of Finance (1997): 1495–1517.

Brass, Daniel J. "Being in the right place: A structural analysis of individual influence in an organization." Administrative science quarterly (1984): 518–539.

Brennan, Michael J., and Julian Franks. "Underpricing, ownership and control in initial public offerings of equity securities in the UK." Journal of Financial Economics 45.3 (1997): 391–413.

Burns, N., Minnick, K., & Starks, L. (2012). CEO Tournaments: Ceo Tournaments: A Cross-Country Analysis of Causes, Cultural Influences and Consequences. Cultural Influences and Consequences (February 23, 2012).

Chan, Louis KC, Josef Lakonishok, and Bhaskaran Swaminathan. "Industry classifications and return comovement." Financial Analysts Journal 63.6 (2007): 56–70.

Chen, Xia, Jarrad Harford, and Kai Li. "Monitoring: Which institutions matter?." Journal of Financial Economics 86.2 (2007): 279–305.

Chen, Z., Huang, Y., & Wei, K. C. (2012). Executive Pay Disparity and the Cost of Equity Capital. Journal of Financial and Quantitative Analysis (JFQA), Forthcoming.

Chung, K. H., Wright, P., & Charoenwong, C. (1998). Investment opportunities and market reaction to capital expenditure decisions. Journal of Banking & Finance, 22(1), 41–60.

Cohen, D. A., Dey, A., & Lys, T. (2005). The Sarbanes Oxley Act of 2002: Implications for compensation structure and risk-taking incentives of CEOs. New York University, New York, NY.

Core, John E., Robert W. Holthausen, and David F. Larcker. "Corporate governance, chief executive officer compensation, and firm performance." Journal of financial economics 51.3 (1999): 371–406.

Cremers, M, & Palia, D. (2011). Tenure and CEO pay. Unpublished working paper. Yale University and Rutgers University.

Cronqvist, H., & Fahlenbrach, R. (2009). Large shareholders and corporate policies. Review of Financial Studies, 22(10), 3941–3976.

Cyert, Richard M., Sok-Hyon Kang, and Praveen Kumar. "Corporate governance, takeovers, and top-management compensation: Theory and evidence." Management Science 48.4 (2002): 453–469.

Dlugosz, J., Fahlenbrach, R., Gompers, P., & Metrick, A. (2006). Large blocks of stock: Prevalence, size, and measurement. Journal of Corporate Finance, 12(3), 594–618.

Dou, Y., Hope, O. K., Thomas, W. B., & Zou, Y. (2013). Blockholder Heterogeneity and Financial Reporting Quality. Available at SSRN 2283839.

Edmans, Alex, and Xavier Gabaix. "Is CEO pay really inefficient? A survey of new optimal contracting theories." European Financial Management 15.3 (2009): 486–496.

Finkelstein, Sydney. "Power in top management teams: Dimensions, measurement, and validation." Academy of Management journal 35.3 (1992): 505-538.

Gao, H., Harford, J., & Li, K. (2009). Incentive effects of extreme CEO pay cuts. Unpublished working paper, University of British Columbia.

Gompers, Paul A., Joy Ishii, and Andrew Metrick. "Extreme governance: An analysis of dual-class firms in the United States." Review of Financial Studies 23.3 (2010): 1051-1088.

Guthrie, K., Sokolowsky, J., & WAN, K. M. (2012). CEO compensation and board structure revisited. The Journal of Finance, 67(3), 1149–1168.

Hambrick, Donald C. "Environment, strategy, and power within top management teams." Administrative Science Quarterly (1981): 253–275.

Hambrick, Donald C., and Sydney Finkelstein. "The effects of ownership structure on conditions at the top: The case of CEO pay raises." Strategic Management Journal 16.3 (1995): 175–193.

Hills, F. S. & Mahoney, T. A. 1978. University budgets and organization decision making. Administrative Science Quarterly, 23, pp. 454–465.

Hinings C, Dickson D J, Pennings J M, Schneck R E, 1974, "Structural conditions of intraorganizational power" Administrative Science Quarterly 19 22-24.

Holderness, Clifford G. "A survey of blockholders and corporate control." Economic policy review 9.1 (2003).

Holmstrom, Bengt, and Steven N. Kaplan. "The state of US corporate governance: What's right and what's wrong?." Journal of Applied Corporate Finance 15.3 (2003): 8–20.

Huang, W., & Sharma, Z. (2010). When do Pay Spreads Influence Firm Performance?. Available at SSRN 1572719.

Jeng, Leslie A., Andrew Metrick, and Richard Zeckhauser. "Estimating the returns to insider trading: A performance-evaluation perspective." Review of Economics and Statistics 85.2 (2003): 453–471.

Jiraporn, P., Chintrakarn, P., & Liu, Y. (2012). Capital structure, CEO dominance, and corporate performance. Journal of Financial Services Research, 42(3), 139–158.

Jiraporn, P., Liu, Y., & Kim, Y. S. (2012). How do powerful CEOs affect analyst coverage?. European Financial Management.

Li, Z. (2011). Pay Gap, Corporate Governance, and Firm Performance.

Liu, Yixin, and Pornsit Jiraporn. "The effect of CEO power on bond ratings and yields." Journal of Empirical Finance 17.4 (2010): 744–762.

March, James G. "Continuity and change in theories of organizational action." Administrative Science Quarterly (1996): 278–287.

Masulis, R. W., Wang, C., & Xie, F. (2009). Agency problems at dual–class companies. The Journal of Finance, 64(4), 1697–1727.

Masulis, R. W., & Zhang, S. (2012). Compensation Gaps among Top Executives: Evidence of Tournament Incentives or Productivity Differentials?. Available at SSRN 2021584.

Mehran, Hamid. "Executive compensation structure, ownership, and firm performance." Journal of financial economics 38.2 (1995): 163–184.

Morck, Randall, Andrei Shleifer, and Robert W. Vishny. "Management ownership and market valuation: An empirical analysis." Journal of financial economics 20 (1988): 293–315.

Morse, Adair, Vikram Nanda, and Amit Seru. "Are incentive contracts rigged by powerful CEOs?." The Journal of Finance 66.5 (2011): 1779–1821.

Perrow, Charles. "Departmental power and perspectives in industrial firms." Power in organizations (1970): 59–89.

Peyer, U. C., Cremers, K. J., & Bebchuk, L. A. (2007, April). Pay Distribution in the Top Executive Team. In American Law & Economics Association Annual Meetings (p. 10). bepress.

Pfeffer, Jeffrey. (1981). Power in Organizations. Cambridge, MA: Ballinger.

Pfeffer, J. & Moore, W. L. 1980b. Power in university budgeting: a replication and extension. Administrative Science Quarterly, 25, pp. 637–653.

Pfeffer, J and G. R. Salancik. 1974. Organizational decision making as a political process: The case of a university budget. Administrative Science Quarterly 19: 135–151.

Pfeffer, J., Salancik, G.R. and Leblebici, H. (1976), "The effect of uncertainty on the use of social influence in organizational decision making", Administrative Science Quarterly, Vol. 2, June, pp. 227–44.

Provan, K.G. (1980). Recognizing, measuring, and interpreting the potential enacted power distinction in organizational research. Academy of Management Review, 5, 549–559.

Romanelli, Elaine, and Michael Tushman. Executive leadership and organizational outcomes: An evolutionary perspective. New York, NY: Graduate School of Business, Columbia University, 1983.

Ryan Jr, H. E., & Wiggins III, R. A. (2004). Who is in whose pocket? Director compensation, board independence, and barriers to effective monitoring. Journal of Financial Economics, 73(3), 497–524.

Shleifer, Andrei, and Robert W. Vishny. "Large shareholders and corporate control." The Journal of Political Economy (1986): 461–488.

Titman, S., Wei, K. J., & Xie, F. (2004). Capital investments and stock returns. Journal of Financial and Quantitative Analysis, 39(4), 677–700.

Tosi Jr, Henry L., and Luis R. Gomez-Mejia. "The decoupling of CEO pay and performance: An agency theory perspective." Administrative Science Quarterly (1989): 169–189.

Chapter 2: The Slice of CEO Inside-Debt

1 Introduction

The use of deferred compensation for top managers is not a novel compensation mechanism. However, due to limited disclosure requirements prior to 2006 researchers and investors have largely remained silent. This paper seeks to fill a gap in the literature by examining the association between the ratio of CEO inside debt holdings relative to the inside debt holdings of the top five managers and a comprehensive set of measures which capture the riskiness of firm investment and financial policies (e.g., the extent of R&D expenditures and financial leverage). I find that the SCID (Slice of CEO Inside-Debt, is constructed as the ratio of the CEO's deferred compensation relative to the aggregate deferred compensation of the top 5 executives) from executive contributions (SCID-EC) is a significant factor in relation to a firm's performance. In particular, higher SCID-EC is associated with lower firm value as measured by Tobin's Q. My finding unveils a systematic relationship between SCID-EC and the value of firms. Taken as a whole, my results indicate that SCID can provide a useful tool for research on firm performance, and that its relationship with firm value is a relevant issue to study for financial regulators and economists.

This paper seeks to answer the following questions:

1. Does the gap between CEO deferred compensation and the aggregate deferred compensation of the top 5 executives relate to firm value?

2. Does the Slice of CEO Inside-Debt (SCID), align executive management incentives with debtholders as measured by correlation to firm leverage?

3. What, if any, is the relation between firm risk taking (e.g. acquisitions, capital expenditures, and/or research) and the Slice of CEO Inside-Debt (SCID)?

4. Is the Slice of CEO Inside-Debt (SCID) correlated with risk taking as measured by distance-to-default Altman's Z?

U.S. banks, securities firms, and corporations were required to increase their com-

pensation disclosures following rule 33-8732A established by the U.S. Securities and Exchange Commission (SEC). The compensation disclosures should be made explicit in the new Compensation Discussion and Analysis section of a corporation's Form 8-K, 10-k, and 10-KSB after 2006. The policy implications could have widespread effect on the use of inside debt. While companies in many industries use restricted stock and options to help compensate employees, financial firms are essentially the only ones that rely so heavily on deferrals as a key part of employee pay. So, I separate my sample to exclude financial institutions to determine the need for all firms to have more transparent disclosures. The Fed's proposal ultimately could give investors access to important new data on how and when companies pay their employees—including infrequent statistics on how much compensation has been promised but not yet paid out.

For decades executives have received significant amounts of pay in the form of defined benefit pension plans, and many also participate in both mandatory and voluntary schemes under which they delay the receipt of current-year salary and bonus income, leaving it invested with their firms at a certain rate of return until retirement. These forms of deferred compensation are known to economists as "inside debt," since they represent fixed obligations for the company to make future payments to corporate insiders, and in this paper I use these terms interchangeably. Executives are usually able to vest their pension money after their retirement except for some special cases. The special occasions include the change in firm control, specific board approval, fulfilling a requirement for minimum years of service, and if the employee is disabled. Alternatively, executives are given more flexibility to vest their deferred compensation plans before their retirement. Deferred compensation is normally distributed upon a termination of employment or at the time of a pre-retirement scheduled distribution date selected by the participating executive.

Some practitioners argue that the consequence of increasing deferral rates is a one-time earnings bounce that comes at the cost of reduced year-to-year expense flexibility. Jensen and Meckling (1976) theorize that inside debt holdings encourage

CEOs to seek investment and financing opportunities that reduce the agency costs of debt.

The question that I consider in this paper is how effective is a firm in reducing the agency costs of debt if a CEO and the top executive team are not both "golden handcuffed" (i.e., the top four executives, excluding the CEO, hold an insignificant amount of inside-debt in relation to the CEO's significant amount of inside-debt holdings). Golden Handcuffs, were first introduced in 1976, are financial incentives and benefits established to induce highly compensated employees to maintain their continued service to the company. Another motivation for the creation of inside debt, through the use of unsecured compensation deferrals, is that it reinforces responsible risk management. However, deferred compensation has a downside in the projected expense it creates from one year to the next.

Additionally, a number of models suggest that bonuses for avoiding bankruptcy, salaries or managerial reputation are sufficient solutions to the agency costs of debt, thereby mitigating the need for inside debt in efficient compensation contracts (see, e.g., Hirshleifer and Thakor, 1992; Brander and Poitevin, 1992; John and John, 1993). In addition, because inside debt obligations are unsecured, unfunded, and payable at a future date, the top five executives (like outside creditors) face asymmetric payoffs with respect to firm performance. Following this logic, Edmans and Liu (2010) show that the value of CEO inside debt holdings is sensitive to both the probability of bankruptcy and the liquidation value of the firm in the form of bankruptcy risk or reorganization risk. And apart from the annual liability of "kicking the bucket (of expenses) down the road," some contend the one-time stimulus provided by deferred compensation to earnings is an accounting game that will only last for a finite period. The substantial bondholder losses during the latest financial crisis offer evidence that the agency costs of debt remain.

Alternatively, proponents suggest that inside debt holdings could help improve the alignment of CEO and debt holder incentives by encouraging managers to make decisions that reduce the overall risk of the firm. However, previous research has not

attempted to capture the effect of the inside debt of the other top executives and its interaction with the CEO's slice of the firm's inside-debt. I propose, in this paper, that the deferment rate differential of the top 5 executive's compensation is important to understanding the impact and effect of inside debt on the agency cost of debt.

Prior research suggests that CEO's, with compensation packages similar to debt, are more inclined to lower firm risk (Bolton, Mehran, and Shapiro (2011)). Managerial contracts, which include deferred compensation, stipulate that firms must pay executives fixed amounts at or after retirement. However, there is risk associated with these debt claims since the contractual future payments are generally unfunded or unsecured. Consequentially, deferred compensation exhibits sensitivity to the risk of firm bankruptcy and the liquidation value in bankruptcy. Also, previous work has shown that the higher an executive's inside leverage relative to firm leverage, the more closely their incentives are aligned with debtholders resulting in reduced risk-taking (Anantharaman, Fang, and Gong (2013)).

Lazear (1989) suggested the theory of wage compression (pay equity theory) to eliminate the wealth-reducing consequences of non-cooperative and destructive behaviors caused by the tournament pay structure. Lesser wage dispersion has been associated with higher satisfaction which may lead to higher productivity as well (Festinger, 1954; Tversky and Kahneman, 1973) Previous research on the "CEO Pay Slice" (the CEO's pay divided by the total pay for the top five executives of the firm, including the CEO) shows that a high CEO pay slice suggests corporate governance issues and decreased profitability.

"Golden Handcuffs" is one of several ways to prevent your top employees from leaving, making it essentially financially unprofitable for them to depart from the company. This paper proposes that a higher "Slice of CEO Inside-Debt" results in decreased firm value and financial performance. Thus, I expect that as CEO inside-debt increases in relation to the other top executives, incentive alignment with debt holders will increase. Inside debt is a widespread phenomenon made more visible by the Fed's proposal. Most of the existing literature regarding deferred compensation

focuses on the debate regarding the use of debt versus equity-like compensation. There is a theoretical framework for my results when one considers executive compensation theory and, more specifically, the CEO pay slice (Bebchuk, Cremers, & Peyer (2011)).

Lee and Tang (2011) find that CEOs are more likely to obtain higher compensation through the use of inside debt. Their finding is important when one considers that inside debt holdings are prevalent and often substantial (Sundaram and Yermack, 2007). Bebchuk and Jackson (2005) document that pension and deferred compensation can comprise a major portion of executive pay. Wei and Yermack (2011) show in their sample that nearly 85 percent of CEOs hold some type of inside debt and that average inside debt holdings are approximately $10 million for sample CEOs. Despite its widespread use, limited disclosure requirements have hindered researchers' ability to investigate the implications of debt-like CEO holdings. However, recent empirical research provides preliminary evidence on the implications of CEO inside debt holdings. In this paper, I am able to utilize data that partitions the top 5 executives inside debt holdings by their source of contribution (i.e. firm contributions, executive contributions, and earnings on account balance).

My paper makes several important contributions. This paper is the first, to my knowledge, to study relative difference between the amount of deferments between the CEO and the top 5 executives. The importance of this new line of inquiry is well justified as incremental bondholder wealth may be created from an optimal compensation package. In addition, pay differentials between the CEO and other top executives has been shown to be associated with CEO entrenchment, firm value, and stock returns (Bebchuk, Cremers, and Peyer(2011); Cremers and Palia (2011)).

If agency costs can be reduced through compensation structures in which a CEO's relative level of deferred compensation causes management to be more aligned with bondholders, then this research would be an important tool for effective corporate governance.

There are several explanations why a study of top executives deferred compensation pay structure may be of interest:

(i.) Study the differential amounts of deferred compensation among senior executives is a natural extension of CEO deferred compensation studies.

(ii.) Senior executives, other than CEOs, may in the aggregate, contribute to a firm's success as much if not more than CEOs, leading to a firm's desire to "golden handcuff" all of the top executives.

(iii.) A badly constructed deferred compensation pay structure may have undesirable value reducing consequences, e.g. diverting senior executives time to engaging in office politics (deferred compensation is often used to retain the best talent), or losing the best CEO candidates to other firms.

(iv.) There is a need to verify certain potential theoretical explanations for top executives pay structures, as well as developing some new explanations.

This research complements and extends the literature stream that investigates the incentive effects of various components of CEO wealth. Previous work has focused primarily on the implications of CEO debt versus equity holdings and finds that equity compensation provides increased risk-taking incentives on average (see, e.g., Guay, 1999; Rajgopal and Shevlin, 2002; Coles, Daniel, and Naveen, 2006). On the other hand, some studies find that specific types of CEO equity holdings (e.g., in-the-money options) could lead to higher levels of CEO risk aversion (see, e.g., Lambert, Larcker, and Verrechia, 1991; Lewellen, 2006). Recent studies provide evidence that CEOs with large inside debt holdings prefer investment and financial policies that are less risky (see, e.g., Lee and Tang (2011)).

Secondly, I depart from this previous line of research in that I focus on several different measures of CEO inside-debt and find that when CEOs voluntarily defer

more compensation relative to the other top manager's personal deferments then firm value decreases. More research should be done to determine the stimulus for these results. However, voluntary deferrals can be a result of a CEO's desire to lesson their tax burden and foreshadow overconfidence in the firm relative to the other senior executives. While my study differs from those investigating the implications of CEO inside-debt relative to equity holdings, I believe that my study provides evidence on the importance of investigating individual components of CEO inside debt and their effects on CEO risk-taking incentives. Anantharaman, Fang, and Gong (2010) try to proxy for my main measure of interest, the Slice of CEO Inside-Debt attributable to executive contributions, using state personal income tax rates as an instrument for CEOs' willingness to defer compensation through pension or other deferred compensation plans. Also, my results show that when CEOs hold a larger slice of total inside debt relative to the other top executives then working capital is reduced. This result does not agree with previous predictions regarding increasing CEO inside debt by Cassell, Huang, Sanchez, and Stuart (2012).

My sample consists of 2,230 firm-year observations from 2006 through 2012. As an alternative to the theoretical predictions of Jensen and Meckling (1976) and Edmans and Liu (2010) as well as recent empirical applications (Sundaram and Yermack, 2007; Wei and Yermack, 2011), that construct their main variable of interest as the relative (to the firm) CEO debt-to-equity ratio, I focus on the differential compensation deferment slice between CEOs and executives. Prior work, to my knowledge, has not employed empirical proxies to capture this construct.

I perform tests using four measures of the "Slice of CEO Inside-Debt" (SCID): (1) the aggregate CEO deferred compensation account balance relative to the aggregate deferred compensation account balance of the top 5 executives; (2) the firm's annual contributions to the CEO's deferred account relative to the firm's annual contributions to the top 5 executive's deferred accounts; (3) the annual contributions of the CEO to his/her deferred account relative to the annual contributions of the top 5 executives to their deferred accounts; and (4) the annual earnings on the CEO's deferred account

relative to the annual earnings on the top 5 executive's deferred accounts. These measures test the significance of executives' relative amount of inside-debt. I expect that larger relative CEO inside debt-to-Top5 executives inside debt ratios imply less incentive alignment with debt holders, and hence I predict that risk-seeking behavior will be higher.

Additionally, I contribute to the literature that examines the factors (e.g., corporate governance, ownership structures, investor protection, etc.) that affect the riskiness of corporate policy choices (see, e.g., Agrawal and Mandelker, 1987; John, Litov, Yeung, 2008; Laeven and Levine, 2009). My result, which suggests that greater contributions from CEOs relative to the other top executive's deferred compensation accounts (larger SCID) can increase risk- seeking behavior, is particularly relevant in light of the role that risky policy choices allegedly played in the recent financial crisis. Thus, I expect that my results will be of interest to regulators who are interested in the effects that CEO and executive compensation packages can have on managerial behavior.

The remainder of the paper is organized as follows: Section 2 reviews the prior literature and develops my hypotheses. Section 3 describes the sample, the measurement of my variables, and the empirical design. Section 4 reports the results of my primary tests. The final section concludes the paper.

2 Prior Literature and Hypothesis Development

2.1. Prior Literature

My work is related to several streams of literature. To begin, some recent studies have shown that the fraction of the top-five compensation received by CEOs has been trending up over time (Bebchuk and Grinstein (2005), Frydman (2005), Murphy and Zabojnik (2007), Frydman and Saks (2010)). In contrast, I focus on the portion of this fraction that is considered as deferred compensation relative to the performance and behavior of firms at any given point in time.

My paper also relates to studies that examine whether firm value as measured by Tobin's Q is associated with corporate governance. For example, prior research has shown that Tobin's Q is negatively correlated with classified boards (e.g., Bebchuk and Cohen (2005)), weak shareholder rights (see e.g., Gompers, Ishii, and Metrick (2003), Bebchuk, Cohen, and Ferrell (2009), Cremers and Nair (2005)), large corporate boards (Yermack (1996)), and higher CEO pay slices (CPS) (Bebchuk, Cremers, and Peyer, (2011). I contribute to this literature by identifying an alternative factor of the firm's governance arrangements — the SCID level — that is associated with Tobin's Q.

Executive compensation contracts are structured to align the interests of managers with those of owners (e.g., Berle and Means, 1932; Jensen and Meckling, 1976; Bebchuk and Jolls, 1999). Recent studies investigating the incentive effects of various compensation components primarily emphasize the role of debt vs. equity-based compensation in incentivizing managers to undertake actions that maximize shareholder value (e.g., Edmans and Liu (2010); Sundaram and Yermack, 2007; Anatharaman, Fang, and Gong, 2010; Wei and Yermack, 2011). While this stream of literature improves our understanding of the effect of managerial compensation on the alignment between CEOs' and debt holders' interests, an important element, the alignment between the interests of CEOs and other top executive managers, has been largely overlooked by prior research. Consistent with the idea that the compensation of the total team of executives is significant to understanding firm value and accounting performance, Kale et al. (2009); Bebchuk, Cremers, and Peyer (2011) present their research on executive pay disparity.

A common thread among the previously discussed studies is that the authors do not test the association between CEO inside debt holdings and the top executives inside debt holdings. A large body of research has investigated compensation mechanisms designed to mitigate the costs associated with these agency conflicts. In general, the results suggest that equity holdings (e.g., stock and stock options) encourage risk-averse CEOs to manage their firms in ways that benefit shareholders (see, e.g., Guay, 1999; Coles, Daniel, and Naveen, 2006; Low, 2009). And by deferring more bonus

pay, usually with restricted stock units that are charged over several years as they vest, firms may be locking in compensation expense that isn't matched by future performance. That is a concern since firms have been accused of withholding, not reinvesting in the economy, government funds disseminated to "pump" money into the economy. These expenses from deferred compensation could be limiting companies' ability to maneuver.

2.2. Hypothesis Development

The inside debt compensation for executives is typically regarded as consisting of two distinct pieces: defined benefit pensions and deferred compensation. Pension benefits may sometimes be negotiated, but they usually accrue to managers under company-wide formulas established by each company, often based upon years of service with the firm and each executive's average level of cash compensation. Executive can draw the pension in the form of a life annuity or as a single lump sum at retirement. Deferred compensation, in contrast, accrues if the executive voluntarily (in some cases mandatorily) invests or lends money back to their firm by refraining from monetary compensation that they would normally receive in the current period. Deferred compensation is generally invested either at a fixed rate of return, in the firm's stock, or in a variety of stock or bond mutual funds selected by the firm. Companies may permit executives to make various adjustments to deferred compensation investment plan. Unfortunately, these investment decisions are not transparent due to current disclosure rules. Executives are, generally, restricted from withdrawing from their deferred compensation account until retirement. Although, some companies allow for contingencies in which earlier withdrawals are permitted. The possible voluntary and restricted nature of deferred compensation provides the impetus for the following scenario.

Consider a case in which there are no agency problems and firms therefore generally set SCID at the optimal level according to the relative importance of the CEO in the

top executive team. The board would set the compensation of the top executive team without any undue influence by the CEO in the absence of agency costs. In this optimal selection scenario, by definition, no firm would be able to increase its value by changing its SCID level. Nevertheless, SCID levels could relate to firm value to the extent that the optimal SCID level differs across firms.

Optimal SCID levels, for each of my four measures, can be expected to vary among firms, depending on several considerations. First, the optimal SCID level for any given firm depends on the pool of candidates from which the members of the top executive team are drawn, and the quality and outside opportunities of these candidates clearly differ from firm to firm. Second, the optimal SCID level depends on the extent to which it is desirable to provide incentive compensation camouflage to top executives other than the CEO. Third, the optimal SCID level depends on the extent to which it is desirable for the firm to have a dominant player incentive alignment model based on one especially important player rather than a management incentive alignment model based on a team of top executives. Fourth and related, the optimal SCID level reflects whether it is desirable to create an overhang of inside debt expenses through deferred compensation on just the CEO rather than on other top executives which would further reduce the firm's future financial flexibility.

Existing theory does not provide one with an unambiguous prediction as to how the above considerations relate to firm value, which allows for the following three different "optimal selection" hypotheses:

Hypothesis 1: SCID is positively correlated with firm performance. It might be argued that compensation camouflage and incentive alignment contracts are more important for CEOs than the other top executives for high-value firms to manage the risk of their high growth opportunities that need to be decisively and efficiently pursued. It might also be that high-value firms are especially likely to attract "star" CEOs whom require compensation camouflage. Thus, CEOs can effectively use information asymmetry to reduce the potential fallout from having their remuneration in

the public spotlight.

Hypothesis 2: SCID is negatively correlated with firm performance. Compensation camouflage and incentive alignment contracts might be especially needed for CEOs of low-value firms in distress that need to be turned around. Conversely, entrenched CEOs may engage in compensation camouflage and rent extracting thereby using their power to obtain a higher level of pay through deferred compensation plans. It might also be that low-value firms are unable to attract a good executive team.

Hypothesis 3: SCID is uncorrelated with firm performance. It might be that the factors making high or low SCID optimal vary in ways that are distributed independently of firm value. Thus, to the extent that the association between SCID and firm performance is determined by optimal selection, an empirical investigation is necessary to choose among these competing hypotheses 1-3. Hypotheses 4a-4d follow from the hypotheses 1-3.

Hypothesis 4a: There is a positive (*negative*) association between the CEO's deferred compensation account balance scaled by the top 5 executive's deferred compensation account balance ($SCID_{AccountBalance}$) and the firm value if the CEO is powerful (*weak*).

Hypothesis 4b: There is a positive (*negative*) association between the firm's contributions to the CEO's deferred compensation account scaled by the firm's contributions to the top 5 executive's deferred compensation accounts ($SCID_{FirmContributions}$) and the firm value if the CEO is powerful (*weak*).

Hypothesis 4c: There is a negative (*positive*) association between the CEO's contributions to deferred compensation scaled by the top 5 executive's contributions to deferred compensation ($SCID_{ExecutiveContributions}$) and the firm value if the CEO is

powerful (*weak*).

Hypothesis 4d: There is a no association between the earnings of the CEO's deferred compensation account scaled by the earnings on the top 5 executive's deferred compensation accounts($SCID_{Earnings}$) and the firm value.

3 Variable Measurement, Sample Selection, and Empirical Design

3.1. Variable Measurement

3.1.1. Measurement of CEO Inside Debt Slice

Jensen and Meckling (1976) theorize that CEO inside debt holdings could encourage CEOs to manage the firm in ways that mitigate the agency cost of debt. More specifically, they suggest that when the CEO's debt-to-equity ratio mirrors that of the firm, the CEO would have no incentives to reallocate wealth between debt and equity holders because the reallocation would have no effect on the value of his/her holdings in the firm. Edmans and Liu (2010) further elaborate on these arguments and show analytically that increases in the value of the CEO's inside debt lead to conservative investment choices, which in turn lead to increases (decreases) in the value of the firm's debt (equity). Following the theoretical predictions of Jensen and Meckling (1976) and Edmans and Liu (2010), and recent empirical applications (e.g., Sundaram and Yermack, 2007; Anatharaman, Fang, and Gong, 2010; Wei and Yermack, 2011; Bebchuk, Cremers, and Peyer, 2011), my variable of interest is the relative (to the top 5 executives) CEO inside-debt ratio. Previous studies have developed empirical proxies to capture the relative CEO debt-to-equity ratio. This paper seeks to extend prior research by examining whether or not the incentives of the CEO and the management team are aligned in relation to inside debt. I perform tests using four alternative measures.

My first measure, Slice of CEO Inside-Debt$_{Account\ Balance}$, is constructed as the ratio of the CEO's deferred compensation account balance relative to the aggregate

deferred compensation account balance of the top 5 executives:

$SCID_{Account\ Balance} = (CEO_{DEF-AB}/TOP5_{DEF-AB})$

CEO_{DEF-AB} is the CEOs annual deferred compensation account balance. $TOP5_{DEF-AB}$ is the sum of the top 5 executive's deferred compensation account balances. My second measure, Slice of CEO Inside-Debt$_{Firm\ Contributions}$, is the ratio of the firm's annual contributions to the CEO's deferred account relative to the sum of the firm's annual contributions to the top 5 executive's deferred compensation accounts:

$SCID_{Firm\ Contributions} = (CEO_{DEF-FC}/TOP5_{DEF-FC})$

CEO_{DEF-FC} is the firm's annual contributions to the CEO's deferred compensation account. $TOP5_{DEF-FC}$ is the sum of the firm's annual contributions to the top 5 executive's deferred compensation accounts. My third measure, Slice of CEO Inside-Debt $_{Executive\ Contributions}$, is constructed as the ratio of the CEO's annual contributions to the their own deferred compensation account relative to the sum of the top 5 executive's annual contributions to their deferred compensation accounts:

$SCID_{Executive\ Contributions} = (CEO_{DEF-EC}/TOP5_{DEF-EC})$

CEO_{DEF-EC} is the annual contributions of the CEO to his/her deferred compensation account. $TOP5_{DEF-EC}$ is the annual contributions of the top 5 executives to their deferred compensation accounts. My fourth measure, Slice of CEO Inside-Debt$_{Earnings}$ is constructed as the ratio of the CEO's earnings on his deferred compensation account relative to the sum of the annual earnings of the top 5 executive's deferred compensation accounts:

$SCID_{Earnings} = (CEO_{DEF-E}/TOP5_{DEF-E})$

CEO_{DEF-E} is the annual earnings on the CEO's deferred account. $TOP5_{DEF-E}$ is the sum of the top 5 executive's earnings on their deferred compensation accounts.

3.1.2. Measurement of the Riskiness of Firm Investment and Financial Policies

I endorse one proxy for the uncertainty due to firm investment policies: R&D ex-

penditures. My measure of R&D expenditures (R&D Expend/Sales Ratio) is defined as the ratio of R&D expenditures to total sales, measured at the end of the fiscal-year (Clinch, 1991; Denis, 1994; Opler and Titman, 1994; Mehran, 1995; Bebchuk and Cohen, 2005; Cassell, Huang, Sanchez, and Stuart, 2012). I examine the riskiness of firm financial policies by focusing on the liquidity of the firm's assets and the degree of debt burden in the firm's capital structure. My measure of the liquidity of the firm's assets, Working Capital, is defined as current assets minus current liabilities divided by total assets. My measure of the degree of debt burden in the firm's capital structure, Leverage, is defined as the ratio of total debt to total assets. Inputs are examined at the end of the fiscal year for each measure. A variation of each variable is constructed (R&D Expend/Sales Ratio, Working Capital, and Leverage) in which the inputs are measured at the end of fiscal-year t+1.

3.2. Sample Selection

I start by collecting different components of CEO compensation (including salary, bonus, stock options, stock ownership, deferred compensation) from the ExecuComp Database. ExecuComp started reporting complete information on inside debt holdings (I restrict my sample to deferred compensation at the exclusion of pension benefits) in 2006 onward, my sample period contains the fiscal years 2006 through 2012. In addition, I remove firms in the financial (firms with SIC code between 6000 and 6999) industries. As part of my empirical analysis is to evaluate how firms may react to the Fed's proposed law regarding more transparent reporting of executive deferred compensation contracts, I also add the financial firms back to my sample to compare these results to the sub-sample with no financial institutions.

Because the SEC's expanded executive compensation disclosure requirements became effective for 2006 fiscal year-ends, my sample period begins in 2006. I identify all firms with complete compensation data necessary to calculate the relative SCID measures (from Execucomp database) and with sufficient data in the Compustat and

CRSP databases to estimate the dependent and control variables in my models (defined below). With the above procedures, my primary sample consists of 3,042 firm-year observations. Due to additional data requirements, the final sample for tests using Working Capital, R&D Expenditures/Sales Ratio, and Leverage is comprised of 1,217 firm-year observations. Table 1 outlines the sample statistics.

3.3. Empirical Models

In this section, my primary empirical proxy for firm performance is the industry-adjusted Tobin's Q. This follows a substantial literature on the association between firm value and various corporate arrangements, which extensively used Tobin's Q as a measure of firm value (e.g., Demsetz and Lehn (1985); Morck, Shleifer, and Vishny (1988); Lang and Stulz (1994); Yermack (1996); and Gompers, Ishii, and Metrick (2003); (Bebchuk, Cremers, and Peyer, (2011)).

To test my hypotheses, I developed the equation to examine the impact of inside debt holdings on firm value and the riskiness of firm investment and financial policies:

- Industry-Adjusted Q or Riskiness of Firm Investment/Financial Policies = f(Slice of CEO Inside-Debt Ratios (SCID Ratio), Controls, Industry Fixed Effects, Firm Fixed Effects, Year Fixed Effects)
- Model (1): The SCID Ratio = $SCID_{AccountBalance}$
- Model (2): The SCID Ratio = $SCID_{FirmContributions}$
- Model (3): The SCID Ratio = $SCID_{ExecutiveContributions}$
- Model (4): The SCID Ratio = $SCID_{Earnings}$

Controls = a vector of control variables;

Industry Fixed Effects = a vector of dummy variables for each two-digit SIC code represented in the sample;

Firm Fixed Effects = a vector of dummy variables for each firm represented in the sample;

and

Year Fixed Effects = a vector of dummy variables for each year represented in the sample.

In studying the empirical association between SCID and Tobin's Q, it is critical to recognize that SCID is an endogenously determined variable which itself may be determined by factors that are also related to firm value. I try to account for this in several different ways when relating SCID to Tobin's Q, as described in the summary below:

- First, I use lagged rather than contemporaneous SCID (Table 3).
- Second, I control for lagged Tobin's Q (Table 3).
- Third, I add firm, year, and industry fixed-effects, effectively considering how changes in SCID are associated with changes in firm value, time, and industry (Table 3).
- Fourth, Arellano-Bond model is used as a test for endogeneity:

My variable of interest is the Slice of CEO Inside-Debt. To the extent that CEOs are handcuffed with large shares of the inside debt holdings they may prefer investment and financial policies that are less risky, I expect a negative association between the SCID and Working Capital and R&D Expenditures/Sales Ratio.

Pastor and Veronesi (2003) find that larger firms are less likely to make risky investments. So, I use the natural logarithm of total assets (Log of Total Assets) to control for firm size. Consistent with Bebchuk, Cohen and Ferrell (2004), Graham, Lang, and Shackleford (2004), and Khanna and Tice (2005) I control for leverage as (long term debt and current debt) divided by total assets. According to tax hypotheses, firm value is negatively related to dividends and debt. Thus, I control for dividends and debt utilizing leverage (Fama and French, 1998). Taxes are potentially

relevant to a firm's financing options and firm value. However, focusing on current tax avoidance ignores current actions by firms to reduce their future tax liability. Thus, deferred taxes are included in my model to control for changes in future tax liabilities (Desai and Dharmapala, 2005). The valuation of tax avoidance may depend on the quality of firm governance. The entrenchment index (eindex) is used as a measure of firm governance has been shown to be negatively associated with firm value (Bebchuk, Cohen, and Ferrell, 2008).

I use Altman's Z-score (1967) matched to manufacturing firms by sic codes and Altman's Z-score Plus matched to non-manufacturing firms by sic codes. This measure is a proxy for firm financial distress and lower Z-scores imply a greater probability of bankruptcy. I expect this variable to be positively correlated with leverage (Bhagat and Bolton, 2008). Return on assets (ROA) gauges how efficiently a company can extract profits from its assets, irrespective of firm size. I calculate ROA as earnings before interest and taxation divided over total assets. This is a pure measure of firm efficiency in generating returns from assets, excluding the effects of managerial financing decisions. Thus, I expect ROA to be uncorrelated with measures of SCID. Following Kalcheva & Lins (2007), I control for a firm's potential investment opportunity set with the ratio of capital expenditures to assets (Capex/Assets or Capital Expenditures) and cash flow, which is earnings before interest and taxes plus depreciation and amortization (EBITDA).

Additionally, I control for retained earnings following Myers' (1984) "pecking order theory" that firms prefer internal to external financing (Titman and Wessels, 2012). Thomsen (2004) finds that concentrated ownership leads to a preference for retained earnings. I control for CEO ownership following Tong (2008) that shows that suboptimal deviations from optimal percentage of CEO ownership reduces firm value. Khan, Dharwadkar, & Brandes (2005) find that higher levels of CEO ownership lead to a significant reduction in the level of options compensation and higher ratios of salary to total compensation. Goodwill is included as scholars argue that it has no affect on firm value and rational investors are always able to correctly value reported

compensation (Bolton, Scheinkman, & Xiong, 2006). Finally, I include industry, firm, and year fixed effects to control for industry and firm characteristics, and overall macroeconomic factors over time. I winsorise all variables at the 1% and 99% levels to mitigate any outlier effect.

I use ordinary least squares (OLS) estimate my initial model for each dependent variable. To generate the t-statistics for my regressions, I use "robust" standard errors adjusted for heteroskedasticity (White, 1980) and cluster by year and firm to control for serial dependence (Petersen, 2009).

4 Empirical Results

4.1. Descriptive Statistics

Univariate statistics for the average SCID and the main variables used in this paper are shown in Table 1. The statistics are computed based on a panel dataset of 2,230 firm-year observations between 2006 and 2012. In this time period, the average $SCID_{AccountBalance}$ was 34% and its standard deviation equaled 24.5%. $SCID_{FirmContributions}$ was 23% and its standard deviation equaled 22.3%;
$SCID_{ExecutiveContributions}$ was 20% and its standard deviation equaled 25.6%;
$SCID_{Earnings}$ was 34% and its standard deviation equaled 34.8%. Although, the mean of SCID from executive contributions is the smallest statistic of interest, this research finds it to be a relevant factor to consider if researchers are to understand the relationship between manager's incentive alignment with bondholders, proxied by firm leverage, as it relates to inside debt. For the relevant firm characteristics, I use various Compustat, CRSP, and ExecuComp variables: Tobin's Q is defined as the market value of equity plus the book value of assets minus the sum of book value of common equity and deferred taxes, all divided by the book value of assets. Industry adjustments are made at the four-digit SIC level, by subtracting the industry median Tobin's Q. My definition of Tobin's Q is the one used by Kaplan and Zingales (1997) and subsequently also by Gompers, Ishii, and Metrick (2003).

Insider ownership is the fraction of shares held by insiders as reported by ExecuComp. To deal with nonlinearities from the effect of insider ownership, many previous papers have estimated piecewise regressions. I avoid having to choose specific piecewise thresholds by including squared terms. The average amount of shares controlled by insiders is less than 1% at (0.635%). Capital Expenditures is the ratio of capital expenditures to assets. Research & Development (R&D) is the ratio of research and development to sales. Capital expenditures and research & development are included to control for the value of growth options. Since my measure of Q may b sensitive to capital structure, I include a measure of leverage which is defined as the ratio of long-term debt to assets. Firm size is the log of total assets plus 1. CEO Ownership $\geq 20\%'$ is a dummy equal to one if the CEO owns a stake of at least 20%. There are no CEOs in my sample who control more than 20% of a firm's shares.

In Table 2, I evaluate the SCID data on an annual basis. The number of observations increases from 203, in the year 2006, to 333 observations in 2012. There are no noticeable patterns related to the mean of $SCID_{AccountBalance}$. The lowest $SCID_{AccountBalance}$ occurs in 2007 with a mean of (.328). The "Great Recession" officially began in 2007 according to the National Bureau of Economic Research. The highest $SCID_{AccountBalance}$ occurs in 2012 with a mean of (.342). On August 2, 2012, the Dow Index hits a new a new high of 15,658. There are no noticeable patterns related to the mean of $SCID_{FirmContributions}$. The lowest $SCID_{FirmContributions}$ occurs in 2009 with a mean of (.209). There were several events in 2009 that may have contributed to this result. On January 16, 2009, the government unveiled a large aid package for Bank of America, which included $20 billion in bailout money and $100 billion in guarantees. Next, on February 17, 2009, President Obama signed into law a $787 billion stimulus package. On March 9, 2009, the Dow hit the low of the recession , closing at 6,547—down nearly 54 percent from its October 9, 2007 high. General Motors filed for bankruptcy on June 1, 2009 and announced the closure of 14 US plants. On October 2, 2009, the unemployment rate peaked at 10 percent, hitting double digits for the first time in 26 years. The highest $SCID_{FirmContributions}$ occurs

in 2006 with a mean of (.262). Firms contributed more to the deferred compensation accounts of CEOS relative to their total contributions to the top five executives before the recession.

There are no noticeable patterns related to the mean of $SCID_{ExecutiveContributions}$. The lowest $SCID_{ExecutiveContributions}$ occurs in 2012 with a mean of (.186). The Dow Index hit a new high of 15,658 on August 2, 2012. Additionally, the unemployment rate fell below 8 percent, on September 7, 2012, which was the lowest point since January 2009. The highest $SCID_{ExecutiveContributions}$ occurs in 2006 with a mean of (.227). CEOs relative to the top five executives deferred more of their compensation before the recession. There are no noticeable patterns related to the mean of $SCID_{Earnings}$. The lowest $SCID_{Earnings}$ occurs in 2011 with a mean of (.077). On August 5, 2011, the Standard & Poor's took the unprecedented step of downgrading the US government's credit rating from AAA to AA+. The highest $SCID_{Earnings}$ occurs in 2009 with a mean of (.426). On December 16, 2008, for the first time in history, the Federal Reserve lowered its benchmark interest rate to zero. This measure helped to encourage stock market investments in the following year of 2009.

4.2. The Effect of Firm Performance (Tobin's Q) on Measures of SCID

In Table 3, I report SCID regressions using a pooled panel with firm and year fixed-effects and standard errors clustered by firm and year. The dependent variable, in each model, is a measure of SCID. SCID is the ratio of CEO deferred compensation to the sum of all top executives' deferred compensation. This table reports the SCID for the deferred compensation account balance Model [1], from firm contributions Model [2], from executive contributions Model [3], and from earnings on the account Model [4]. Model [2] implies that increasing the previous year's firm performance decreases

the current year's differential in firm contributions to the deferred compensation accounts of CEOs versus the aggregate top five executives. Model [2] implies that as capital expenditures increase then firms decrease their contributions to the deferred compensation accounts of CEOs relative to the top five executives' deferred compensation accounts. Models [3] implies that as capital expenditures increase then CEOs decrease their contributions to their deferred compensation accounts relative to the top five executives' contributions to their deferred compensation accounts.

To deal with nonlinearities in the effect of inside ownership, I estimate piecewise regressions. I find that the coefficient on inside ownership squared is negatively correlated with $SCID_{AccountBalance}$ (-0.565), which is significant at the 5% level (t-statistic $= -2.29$) and $SCID_{FirmContributions}$ (-0.561), which is significant at the 5% level (t-statistic $= -2.33$). Thus, as inside ownership increases past a sub-optimal point then the deferred compensation spread decreases for these two measures for SCID. Capital expenditures is negatively correlated with $SCID_{FirmContributions}$ (-1.873) and $SCID_{ExecutiveContributions}$ (-3.803), which is significant, respectively, at the 5% level (t-statistic $= -2.40$) and the 5% level (t-statistic $= -2.05$). This result implies that as a firm takes on more risk by investing in capital expenditures then firms contribute (1.873%) less to the deferred compensation accounts of CEOs relative to the top five executives. Additionally, CEOs contribute (3.803%) less to their deferred compensation accounts relative to the top five executives' personal contributions.

The entrenchment index is negatively correlated with $SCID_{Earnings}$ (-0.148), which is significant at the 10% level (t-statistic $= -1.84$). Thus, as CEOs become more entrenched (1 unit increase in entrenchment index) CEOs earnings on their deferred compensation accounts decrease (-14.8%) relative to the earnings on the deferred compensation accounts of the top five executives. Altman's Z is negatively correlated with $SCID_{Earnings}$ (-0.169), which is significant at the 5% level (t-statistic $= -2.34$). Thus, as a firm becomes less financially distressed (1 unit increase in Altman's z-score) CEOs earnings on their deferred compensation accounts decrease (-16.9%) relative to the earnings on the deferred compensation accounts of the top five executives. Over-

all, firm performance as measured by industry-adjusted Q appears to be uncorrelated with the SCID measures.

In Table 4, Arellano-Bond regressions are presented to account for possible endogeniety between the different measures of SCID and Industry-adjusted Tobin's Q (Firm Performance). The dependent variable is SCID-Account Balance$_{(t-1)}$ in Column (1), SCID-Firm Contributions$_{(t-1)}$ in Column (2), SCID-Executive Contributions$_{(t-1)}$ in Column (3), and SCID-Earnings on Account$_{(t-1)}$ in Column (4) is . SCID is the ratio of CEO deferred compensation to the sum of all top five executives' deferred compensation. This table reports the natural log of SCID for the deferred compensation account balance Model [1], from firm contributions Model [2], from executive contributions Model [3], and from earnings on the account Model [4].

To deal with nonlinearities in the effect of inside ownership, I estimate piecewise regressions. I find that the coefficient on inside ownership squared is negatively correlated with $SCID_{AccountBalance}$ (-0.536), which is significant at the 5% level (t-statistic $= -2.25$) and $SCID_{FirmContributions}$ (-0.461), which is significant at the 10% level (t-statistic $= -1.88$). Thus, as inside ownership increases past a sub-optimal point then the deferred compensation spread decreases for these two measures for SCID. Additionally, I find that the coefficient on inside ownership is negatively correlated with $SCID_{Earnings}$ (0.426), which is significant at the 10% level (t-statistic = 1.86). Conversely, I find that the coefficient on inside ownership squared is negatively correlated with $SCID_{Earnings}$ (-0.904), which is significant at the 10% level (t-statistic $=$ -2.50).

Leverage is negatively correlated with $SCID_{FirmContributions}$ ($= -1.165$), which is significant at the 10% level (t-statistic $= -1.98$). This result implies that as a firm takes on more leverage (1% increase in leverage) then firms contribute (1.165%) less to CEOs deferred compensation accounts relative to the firm's contributions to the top five executives. Firm size is negatively correlated with $SCID_{AccountBalance}$ ($= -0.522$), which is significant at the 10% level (t-statistic $= -1.98$). This result implies that as a firm size increases (1% increase in the log of total assets) then CEOs deferred

account balance slice is (0.522%) less relative to the deferred compensation account balance of the top five executives.

Firm age is positively correlated with $SCID_{AccountBalance}$ (2.107), $SCID_{FirmContributions}$ (1.681), and $SCID_{ExecutiveContributions}$ (1.704), which is significant, respectively at the 1% level (t-statistic = 3.38), 5% level (t-statistic = 2.46), and 5% level (t-statistic = 2.26). Therefore, a 1-year increase in firm age (log of firm age) results in a 2.107% increase in $SCID_{AccountBalance}$, 1.681% increase in $SCID_{FirmContributions}$, and 1.704% increase in $SCID_{ExecutiveContributions}$.

Altman's Z is negatively correlated with $SCID_{AccountBalance}$ (-0.0985) and $SCID_{Earnings}$ (-0.248), which is significant, respectively, at the 5% level (t-statistic = -2.22) and 5% level (t-statistic =-2.36). Thus, as a firm becomes less financially distressed (1 unit increase in Altman's z-score) CEOs account balance decreases (9.85%) relative to the deferred compensation accounts balance of the top five executives. Also, as a firm becomes less financially distressed (1 unit increase in Altman's z-score) the earnings on CEOs' deferred accounts decreases (24.8%) relative to the earnings on the deferred compensation accounts of the top five executives. Overall, firm performance as measured by industry-adjusted Q appears to be uncorrelated with the SCID measures as suggested in Table 3.

4.3. The Effect of SCID on Firm Performance (Tobin's Q)

In Table 5, I report firm and year fixed-effects regressions with time clusters. The dependent variable is Industry-adjusted Tobin's $Q_{(t-1)}$. In column (1), Industry-adjusted Tobin's $Q_{(t-1)}$ is regressed on SCID-Account Balance$_{(t-1)}$. Column (2) regresses Industry-adjusted Tobin's $Q_{(t-1)}$ on SCID-Firm Contributions$_{(t-1)}$. Column (3) regresses Industry-adjusted Tobin's $Q_{(t-1)}$ on SCID-Executive Contributions$_{(t-1)}$. Column (4) regresses Industry-adjusted Tobin's $Q_{(t-1)}$ on SCID-Earnings on Account$_{(t-1)}$. The model in column (5) regresses Industry-adjusted Tobin's $Q_{(t-1)}$ on SCID-Firm Contributions$_{(t-1)}$, SCID-Executive Contributions$_{(t-1)}$ and SCID-Earnings on Account$_{(t-1)}$.

Each model contains standard control variables used within the literature.

Model [1] implies that as the total account balance of a CEO's deferred compensation account increases (1%) relative to the other top four executive's total deferred compensation then firm performance, which is proxied by Industry-adjusted Tobin's $Q_{(t-1)}$, increases in the following year (0.0957%). Model [4] implies that as the earnings on CEO's deferred compensation accounts increase (1%) relative to the other top four executive's earnings in their deferred compensation accounts then firm performance, which is proxied by Industry-adjusted Tobin's $Q_{(t-1)}$, increases in the following year (0.0494%). In Table 5, I ignore the effect of the control variables on firm performance since that is not the focus of this study.

Table 6 for robustness, reports Arellano-Bond regressions to account for possible endogeneity between Industry-adjusted Tobin's Q (Firm Performance) and measures of SCID. The dependent variable is Industry-adjusted Tobin's $Q_{(t-1)}$. In column (1), Industry-adjusted Tobin's $Q_{(t-1)}$ is regressed on SCID-Account Balance$_{(t-1)}$. Column (2) regresses Industry-adjusted Tobin's $Q_{(t-1)}$ on SCID-Firm Contributions$_{(t-1)}$. Column (3) regresses Industry-adjusted Tobin's $Q_{(t-1)}$ on SCID-Executive Contributions$_{(t-1)}$. Column (4) regresses Industry-adjusted Tobin's $Q_{(t-1)}$ on SCID-Earnings on Account$_{(t-1)}$. The model in column (5) regresses Industry-adjusted Tobin's $Q_{(t-1)}$ on SCID-Firm Contributions$_{(t-1)}$, SCID-Executive Contributions$_{(t-1)}$ and SCID-Earnings on Account$_{(t-1)}$. Each model contains standard control variables used within the literature. Models [1-5] show no significant effect of the measures of SCID on firm performance. In Table 6, I ignore the effect of the control variables on firm performance since that is not the focus of this study.

4.4. SCID Effect on CEO Tenure

In Table 7, I report firm and year fixed-effects regressions with clustered time. The dependent variable is the natural log of CEO (Tenure +1). In column (1), CEO Tenure is regressed on SCID-Account Balance and a set of standard control variables used in

the literature. Column (2) regresses CEO Tenure on SCID-Firm Contributions and the standard control variables. Column (3) regresses CEO Tenure on SCID-Executive Contributions and the standard control variables. Column (4) regresses CEO Tenure on SCID-Earnings on Account and the standard control variables. The model in column (5) regresses CEO Tenure on SCID-Firm Contributions, SCID-Executive Contributions, and SCID-Earnings on Account. Each model contains standard control variables used within the literature. Models [1-5] show no significant effect of the measures of SCID on CEO tenure. Models [1] — [5] imply that an increase in inside ownership is correlated with shorter CEO tenure.

In Table 8 for robustness, I report Arellano-Bond regressions to account for possible endogeneity between CEO tenure and various measures of SCID. The dependent variable is the natural log of CEO (Tenure +1). In column (1), CEO Tenure is regressed on SCID-Account Balance. Column (2) regresses CEO Tenure on SCID-Firm Contributions. Column (3) regresses CEO Tenure on SCID-Executive Contributions. Column (4) regresses CEO Tenure on SCID-Earnings on Account. The model in column (5) regresses CEO Tenure on SCID-Firm Contributions, SCID-Executive Contributions, and SCID-Earnings on Account. Each model contains standard control variables used within the literature. The results in Models [1] — [5] for insider ownership do not remain significant. Model [5], implies that as the earnings on deferred compensation accounts of CEOs increase relative to the earnings on the deferred compensation accounts of the top five executives then CEO tenure increases.

4.5. SCID Effect on Working Capital

In Table 9, I report firm and year fixed-effects regressions with clustered time. The dependent variable is Working Capital$_{(t+1)}$ (e.g. current assets minus current liabilities). In column (1), Working Capital$_{(t+1)}$ is regressed on SCID-Account Balance$_{(t-1)}$. Column (2) regresses Working Capital$_{(t+1)}$ on SCID-Firm Contributions$_{(t-1)}$. Column (3) regresses Working Capital$_{(t+1)}$ on SCID-Executive Contributions$_{(t-1)}$. Column

(4) regresses Working Capital$_{(t+1)}$ on SCID-Earnings$_{(t-1)}$ on Account. The model in column (5) regresses Working Capital$_{(t+1)}$ on SCID-Firm Contributions$_{(t-1)}$, SCID-Executive Contributions$_{(t-1)}$, and SCID-Earnings$_{(t-1)}$ on Account. Each model contains standard control variables used within the literature. Model [1] implies that, in the previous year, as the CEO's slice of deferred compensation increases relative to the top five executive's deferred compensation then Working Capital$_{(t+1)}$ increases. Model [2] suggests that as firms, in the previous year, increase contributions to CEO's deferred compensation accounts relative to firm contributions to the top five executive's deferred compensation accounts then working capital decreases in the following year. For example, Model [2] reveals firms that increase their contribution to CEOs deferred compensation accounts (1% increase) relative to the firm's contributions to the top five executives' deferred compensation accounts experience a decrease in working capital$_{(t+1)}$ of (-4.32%). Models [3] and [5] imply that as CEOs, in the previous year, increase contributions their to deferred compensation accounts relative to the other top four executive's own contributions to their deferred compensation accounts then Working Capital decreases in the following year. For example, Model [3] suggests that CEOs who contribute more to their deferred compensation account (1%) relative to the self contributions of the other top executives experience a decrease in working capital$_{(t+1)}$ of (-3.98%).

4.6. SCID Effect on Firm Leverage

Table 10 presents firm and year fixed-effects regressions clustered by firm and year. The dependent variable is firm leverage (e.g. total debt divided by total assets. In column (1), Leverage is regressed on SCID-Account Balance. Column (2) regresses Leverage on SCID-Firm Contributions. Column (3) regresses Leverage on SCID-Executive Contributions. Column (4) regresses Leverage on SCID-Earnings on Account. The model in column (5) regresses Leverage on SCID-Firm Contributions, SCID-Executive Contributions, and SCID-Earnings on Account. Each model contains

standard control variables used within the literature. Models [1-5] show no significant effect of the measures of SCID on firm leverage. Models [1] — [5] imply that increased firm performance (1%) results in increased firm leverage (approximately .011%). Models [1] — [5] imply that an increase in research & development results in an decrease firm leverage. Models [1] — [5] imply that increasing (1 unit increase) Altman's Z, a firm is less likely to default, results in decreased firm leverage (approximately -1.50%).

4.7. SCID Effect on Acquistions

In Table 11, I present firm and year fixed-effects regressions with clustered time. The dependent variable is the natural log of firm acquisitions (acquisitions +1). In column (1), Acquisitions is regressed on SCID-Account Balance. Column (2) regresses Acquisitions on SCID-Firm Contributions. Column (3) regresses Acquisitions on SCID-Executive Contributions. Column (4) regresses Acquisitions on SCID-Earnings on Account. The model in column (5) regresses Acquisitions on SCID-Firm Contributions, SCID-Executive Contributions, and SCID-Earnings on Account. Each model contains standard control variables used within the literature. Model [5] suggests that as CEOs increase contributions to their deferred compensation accounts relative to the top five executive's increased contributions to their deferred compensation accounts then the number of firm acquisitions decreases.

In Table 12 for robustness, Arellano-Bond regressions are presented to account for possible endogeneity between firm acquisitions and measures of SCID. The dependent variable is the natural log of firm acquisitions (acquisitions +1). In column (1), Acquisitions is regressed on SCID-Account Balance. Column (2) regresses Acquisitions on SCID-Firm Contributions. Column (3) regresses Acquisitions on SCID-Executive Contributions. Column (4) regresses Acquisitions on SCID-Earnings on Account. The model in column (5) regresses Acquisitions on SCID-Firm Contributions, SCID-Executive Contributions, and SCID-Earnings on Account. Each model contains standard control variables used within the literature. Models [1]—[5] show

no correlation between acquisitions and measures of SCID. Inside ownership is positively correlated with acquisitions in Models [1]—[5]. Conversely, the coefficient on inside ownership squared is negatively correlated with acquisitions which implies that increasing insider ownership increases acquisitions up to an optimal point and further increases in insider ownership the rate of firm acquisitions decreases. Models [1]—[5] suggest that higher R&D firms decrease their number of acquisitions. Models [1]—[5] reveal that increasing capital expenditures decreases acquisitions.

4.8. SCID Effect on Default Risk (Altman's Z)

Table 13, presents firm and year fixed-effects regressions with clustered time. The dependent variable is the likelihood of a firm declaring bankruptcy (Altman's Z). In column (1), Altman's Z is regressed on SCID-Account Balance$_{(t-1)}$. Column (2) regresses Altman's Z on SCID-Firm Contributions$_{(t-1)}$. Column (3) regresses Altman's Z on SCID-Executive Contributions$_{(t-1)}$. Column (4) regresses Altman's Z on SCID-Earnings$_{(t-1)}$ on Account. The model in column (5) regresses Altman's Z on SCID-Firm Contributions$_{(t-1)}$, SCID-Executive Contributions$_{(t-1)}$, and SCID-Earnings on Account$_{(t-1)}$. Each model contains standard control variables used within the literature. Model [5] implies that as firms increase their contributions to CEO's deferred compensation accounts relative to the firm's contributions to the top five executive's deferred compensation accounts then the probability of defaulting increases (i.e. Altman's Z decreases). Models [3] and [5] imply that as CEOs increase contributions to their deferred compensation accounts relative to the top five executive's increased contributions to their deferred compensation accounts then probability of the firm defaulting decreases (i.e. Altman's Z increases).

In Table 14 for robustness, Arellano-Bond regressions are presented to account for possible endogeneity between Altman's Z and measures of SCID. The dependent variable is the likelihood of a firm declaring bankruptcy (Altman's Z). In column (1), Altman's Z is regressed on SCID-Account Balance$_{(t-1)}$. Column (2) re-

gresses Altman's Z on SCID-Firm Contributions$_{(t-1)}$. Column (3) regresses Altman's Z on SCID-Executive Contributions$_{(t-1)}$. Column (4) regresses Altman's Z on SCID-Earnings$_{(t-1)}$ on Account. The model in column (5) regresses Altman's Z on SCID-Firm Contributions$_{(t-1)}$, SCID-Executive Contributions$_{(t-1)}$, and SCID-Earnings on Account$_{(t-1)}$. Each model contains standard control variables used within the literature. Models [3] and [5] imply that as CEOs increase contributions to their deferred compensation accounts relative to the top five executive's increased contributions to their deferred compensation accounts then probability of the firm defaulting decreases. For example, Model [5] implies that as CEOs increase contributions to their deferred compensation accounts (1%) relative to the top five executive's contributions to their deferred compensation accounts then probability of the firm defaulting decreases (i.e. Altman's Z increases 15.7%).

4.9. SCID Effect on Capital Expenditures

Table 15, presents a GLM fractional logit model. The dependent variable is the Capital Expenditures (capital expenditures divided by total assets). In column (1), Capital Expenditures is regressed on SCID-Account Balance$_{(t-1)}$. Column (2) regresses Capital Expenditures on SCID-Firm Contributions$_{(t-1)}$. Column (3) regresses Capital Expenditures on SCID-Executive Contributions$_{(t-1)}$. Column (4) regresses Capital Expenditures on SCID-Earnings$_{(t-1)}$ on Account. The model in column (5) regresses Capital Expenditures on SCID-Firm Contributions$_{(t-1)}$, SCID-Executive Contributions$_{(t-1)}$, and SCID-Earnings on Account$_{(t-1)}$. Each model contains standard control variables used within the literature. Model [3] implies that as CEOs increase contributions to their deferred compensation accounts (1%) relative to the top five executives' contributions to their deferred compensation accounts then the firm will increase its capital expenditures (.22%). Model [5] implies that as CEOs increase contributions to their deferred compensation accounts (1%) relative to the top five executives' contributions to their deferred compensation accounts then the

firm will increase its capital expenditures (.23%).

4.10. SCID Effect on Research & Development

Table 16, presents firm and year fixed-effects regressions double clustered by firm and year. The dependent variable is the Research & Development (research & development divided by total sales). In column (1), Research & Development is regressed on SCID-Account Balance$_{(t-1)}$. Column (2) regresses Research & Development on SCID-Firm Contributions$_{(t-1)}$. Column (3) regresses Research & Development on SCID-Executive Contributions$_{(t-1)}$. Column (4) regresses Research & Development on SCID-Earnings$_{(t-1)}$ on Account. The model in column (5) regresses Research & Development on SCID-Firm Contributions$_{(t-1)}$, SCID-Executive Contributions$_{(t-1)}$, and SCID-Earnings on Account$_{(t-1)}$. Each model contains standard control variables used within the literature. Model [4] implies that as the earnings on CEO deferred compensation accounts increase (1%) relative to the top five executives' earnings on their deferred compensation accounts then research & development decreases(0.14%). Model [5] implies that as the earnings on CEO deferred compensation accounts increase (1%) relative to the top five executives' earnings on their deferred compensation accounts then research & development decreases(0.13%).

5 Conclusions

In this paper, I conduct an empirical investigation of the Slice of CEO Inside-Debt (SCID), the fraction of inside debt of the top-five executives held by the CEO. I examine specific measures of SCID in relation to firm performance, risk, and behavior of firms. I first document whether firm performance, as measured by Industry-Adjusted Tobin's Q, has an effect on my four measures of Slice of CEO Inside-Debt (SCID). The results reveal that firm performance is not a significant factor in relation to SCID. My results reveal that CEO tenure is lower when SCID-Earnings is increased. A firm's short-term flexibility, working capital, decreases as SCID-Account Balance, SCID-Firm Contributions, and SCID-Executive Contributions increases. Thus, firm's with CEO's that have a larger slice of deferred compensation relative to the other top four executives are less efficient and have lower short-term financial health. The results show that increasing measures of SCID reduces firm liquidity.

Companies with CEOs who contribute more to their deferred compensation accounts relative to the top five executives' contributions to their own deferred compensation accounts have a lower probability of defaulting. These results are robust to controlling for numerous firm characteristics utilizing Arellano-Bond regressions to account for potential endogeneity. Furthermore, my research shows that companies with CEOs who contribute more to their deferred compensation accounts relative to the top five executives' contributions to their own deferred compensation accounts increase their capital expenditures. Additionally, a firm's R&D expenditures are found to decrease when CEO earnings on their deferred compensation accounts increase relative to the top five executives.

While prior research has studied the effects of deferred compensation, this paper sheds light on deferred compensation contribution differential between the CEO and the other top four executives. I am left with the conclusion that SCID is an important factor to consider when structuring executive compensation contracts. SCID-Executive Contributions appears to be a significant in relation to multiple fac-

tors of firm risk and health. My findings suggest that corporate governance which ignores measures of SCID disregard an important component of effective governance.

My general conclusion is that SCID is an aspect of corporate governance and effective management that justifies the consideration of future research. Subsequent studies on the effects of governance arrangements and management processes in addition to research ranging from risk management to firm behavior could consider using SCID as a relevant control or the research focus. My goal is for this study to provide a framework and act as a catalyst for this type of research.

Table 1: Summary Statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
Year	—	—	2006	2012	2230
SCID-Account Balance	0.335	0.244	0.003	0.958	2230
SCID-Firm Contributions	0.231	0.223	0	1	2230
SCID-Executive Contributions	0.204	0.256	0	1	2230
SCID-Earnings on Account	0.341	0.348	-0.558	1.752	2230
Industry-adjusted Tobin's Q	0.057	0.736	-2.606	4.707	2057
Inside Ownership	0.635	1.578	0.000	11.467	2230
Inside Ownership^2	0.518	0.606	0.000	3.386	2230
CEO Ownership	0.182	0.914	0	7.129	2230
Research & Development	0.022	0.044	0	0.226	2230
Working Capital	0.209	0.273	-0.382	0.823	2177
Capital Expenditures	0.053	0.051	0.004	0.283	2229
Return on Assets (ROA)	0.115	0.068	-0.072	0.319	2230
Leverage	0.226	0.142	0	0.624	2226
Firm Size	8.461	1.467	5.492	12.206	2230
CEO from Outside — Dummy	0.142	0.350	0.000	1.000	310.000
Tenure	8.103	7.906	0.000	39.000	659
Acquisitions	229.085	683.856	0	4654.415	2230
Firm Age	36.83	17.434	6	62	2230
Entrenchment Index	2.731	1.241	0	5	2230
Deferred Taxes	888.465	3044.491	0	21793.34	2057
Altman's Z	3.872	2.045	-0.064	11.314	2177
CEO Ownership $\geq$ 20	0	0	0	0	2230
Property, Plant, & Equipment (PPE)	0.586	0.366	0.062	1.645	2224
Market-to-Book Ratio	3.016	2.85	-5.487	17.985	2230
Dividends	356.497	955.25	0	6150.900	2229
Net Income	997.99	2286.675	-1097.829	14497.15	2230
High Technology Firm — Dummy	0.053	0.224	0	1	2230
Goodwill	2145.77	4837.414	0	30022	2219
Retained Earnings	4757.587	10250.332	-2900.04	67037.2	2230
EBIT	1660.164	3454.351	-281.709	21103.56	2230

Table 2: Descriptive Statistics: Slice of CEO Inside Debt

year	stats	SCID Account Balance	SCID Firm Contributions	SCID Executive Contributions	SCID Earnings on Account
2006	N	203	203	203	203
	mean	.3378022	.2627138	.2274191	.3384995
	sd	.2227495	.2058847	.2532404	.3296616
	min	.0030756	0	0	-2.017567
	max	.9583162	.9488203	1	2.487796
	p25	.15883	.0871737	0	.1526291
	p50	.3189912	.2483162	.1268205	.3154667
	p75	.4941686	.4272299	.4074749	.5130315
2007	N	325	325	325	325
	mean	.3287721	.2346444	.2090791	.3959012
	sd	.2323995	.2256868	.2547737	.6935052
	min	.0030756	0	0	-2.887792
	max	.9583162	1	1	10.13411
	p25	.1428505	0	0	.1226864
	p50	.2948754	.1974122	.1199031	.2979015
	p75	.4897835	.3973413	.3434084	.5534324
2008	N	331	331	331	331
	mean	.3302084	.2313773	.2156498	.3167911
	sd	.2339884	.2240796	.262829	.6081426
	min	.0030756	0	0	-4.730183
	max	.9583162	1	1	5.03515
	p25	.1351497	0	0	.0611972
	p50	.2968101	.1976495	.1132756	.2694167
	p75	.4760252	.3922575	.3581602	.4987095
2009	N	345	345	345	345
	mean	.3378043	.2096891	.2140631	.4264585
	sd	.2399721	.2232126	.2645528	1.722729
	min	.0030756	0	0	-1.908279
	max	.9583162	1	1	31.43388
	p25	.1350809	0	0	.0840762
	p50	.3110089	.1638181	.0995639	.2809706
	p75	.4890725	.3615633	.3647308	.5229006

Table 2: Descriptive Statistics: Slice of CEO Inside Debt —Continued

year	stats	SCID Account Balance	SCID Firm Contributions	SCID Executive Contributions	SCID Earnings on Account
2010	N	344	344	344	344
	mean	.3373893	.2180691	.1945625	.3629932
	sd	.2475807	.2174646	.2587928	.6320911
	min	.0030756	0	0	-.3180077
	max	.9583162	1	1	10.85006
	p25	.12565	0	0	.0942002
	p50	.3091668	.1872056	.0782658	.2884638
	p75	.493954	.3610006	.3177328	.512448
2011	N	349	349	349	349
	mean	.3345368	.2422596	.1930928	.0777508
	sd	.2565977	.2315598	.2526237	3.308011
	min	.0030756	0	0	-48.94291
	max	.9583162	1	1	2.976721
	p25	.1157952	0	0	.0206103
	p50	.2921997	.2	.0910515	.2294316
	p75	.480199	.3954445	.2910846	.6022623
2012	N	333	333	333	333
	mean	.3425919	.2343034	.1866083	.3633883
	sd	.2669731	.225649	.2399234	.5181244
	min	.0030756	0	0	-1.148884
	max	.9583162	1	1	7.384376
	p25	.1030807	0	0	.0843242
	p50	.2874566	.1962193	.0519908	.2842367
	p75	.5335568	.4063268	.330866	.5584649
Total	N	2230	2230	2230	2230
	mean	.3354998	.2314378	.2043983	.3239382
	sd	.244312	.2231849	.2555101	1.553968
	min	.0030756	0	0	-48.94291
	max	.9583162	1	1	31.43388
	p25	.1287282	0	0	.0821037
	p50	.3004827	.1956677	.1038724	.2822931
	p75	.4913873	.3904477	.3369778	.5324525

Table 3: SCID and Tobin's Q - Fixed Effects

Firm and year fixed-effects regressions with t-statistics are based on robust standard errors clustered at the year and firm level. The dependent variable, in each model, is a measure of SCID. SCID is the ratio of CEO deferred compenstion to the sum of all top executives' deferred compensation. This table reports the logit of SCID for the deferred compensation account balance Model [1], from firm contributions Model [2], from executive contributions Model [3], and from earnings on the account Model [4]. The model in Column (2) implies that increasing the previous year's firm performance decreases the current year's differential in firm contributions to the deferred compensation accounts of CEOs and the other top four executives. Model [2] implies that as capital expenditures increase then firms decrease their contributions to the deferred compensation accounts of CEOs relative to the other top four executive's deferred compensation accounts. Model [3] implies that as capital expenditures increase then CEOs decrease their contributions to their deferred compensation accounts relative to the other top four executive's contributions to their deferred compensation accounts. t statistics in parentheses. *,**,*** represent significance at the 10%, 5%, and 1% level, respectively.

	(1) SCID Account Balance	(2) SCID Firm Contributions	(3) SCID Executive Contributions	(4) SCID Earnings on Account
Industry-adjusted Tobin's Q	-0.00859	0.00612	0.132	0.0331
	(-0.09)	(0.06)	(0.90)	(0.19)
Industry-adjusted Tobin's Q $(t-1)$	0.0145	-0.0933*	-0.108	-0.0391
	(0.15)	(-1.76)	(-0.67)	(-0.22)
Inside Ownership	0.0683	0.0972	0.0286	-0.0996
	(0.67)	(1.45)	(0.26)	(-0.74)
Inside Ownership^2	-0.565**	-0.561**	-0.363	0.249
	(-2.29)	(-2.33)	(-1.32)	(0.73)
Research & Development	-4.663	-0.323	-4.546	-3.510
	(-1.37)	(-0.16)	(-0.73)	(-0.89)
Capital Expenditures	-0.0716	-1.873**	-3.803**	-1.838
	(-0.03)	(-2.40)	(-2.05)	(-0.82)
ROA	-0.305	0.566	-0.286	-0.624
	(-0.46)	(0.63)	(-0.31)	(-0.63)
Leverage	-0.850	-0.510	-0.473	-1.457
	(-0.77)	(-0.72)	(-0.33)	(-1.32)
Firm Size	-0.0210	-0.440	0.0249	0.229
	(-0.09)	(-1.45)	(0.14)	(0.61)
Acquisitions	0.000101**	0.0000246	-0.0000688	0.0000408
	(2.14)	(0.52)	(-0.84)	(0.76)
Firm Age	0.597	0.413	-0.145	0.761
	(0.73)	(0.50)	(-0.15)	(0.70)
Entrenchment Index	-0.0401	-0.00431	-0.0556	-0.148*
	(-0.65)	(-0.09)	(-1.02)	(-1.84)
Deferred Taxes	0.0000151	-0.0000144	-0.000160***	0.0000215
	(0.23)	(-0.70)	(-2.70)	(0.36)
Altman's Z	-0.0858	-0.0478	0.0764	-0.169**
	(-1.16)	(-0.94)	(1.03)	(-2.34)
PPE/Assets	0.234	0.141	0.0464	0.176
	(0.45)	(0.32)	(0.07)	(0.17)
Market-to-Book Ratio	0.00967	-0.000385	-0.00416	-0.0118
	(0.92)	(-0.06)	(-0.23)	(-0.89)
Dividends	-0.000555**	0.000153	-0.000179	-0.000183
	(-2.02)	(0.85)	(-0.34)	(-0.59)
Net Income	-0.0000174	0.0000172	-0.000103***	0.00000226
	(-0.62)	(0.56)	(-3.23)	(0.06)
Hightech Dummy	1.005	1.352	-0.0374	0.183
	(0.49)	(0.74)	(-0.04)	(0.07)
Goodwill	-0.0000436	-0.0000123	0.0000845*	-0.0000331
	(-0.81)	(-0.91)	(1.75)	(-1.16)
Retained Earnings	0.0000543	-0.00000963	-0.00000511	0.0000235
	(1.27)	(-0.58)	(-0.27)	(0.95)
EBIT	0.0000204	0.0000166	-0.0000310	0.0000637
	(0.34)	(0.46)	(-0.73)	(1.27)
N	1590	1108	945	1403
rmse	0.915	0.644	0.867	1.103
r2	0.750	0.703	0.728	0.788
r2_a	0.677	0.601	0.616	0.716

Table 4: Arellano-Bond: Endogeniety-SCID Regressions

Arellano-Bond regressions are presented below to account for possible endogeniety between measures of SCID and Industry-adjusted Tobin's Q (Firm Performance). The dependent variable is SCID-Account Balance in Column (1), SCID-Firm Contributions in Column (2), SCID-Executive Contributions in Column (3), and SCID-Earnings on Account in Column (4). SCID is the ratio of CEO deferred compensation to the sum of all top five executives' deferred compensation. This table reports the logit of SCID for the deferred compensation account balance Model [1], from firm contributions Model [2], from executive contributions Model [3], and from earnings on the account Model [4]. t statistics in parentheses. *,**,*** represent significance at the 10%, 5%, and 1% level, respectively.

	(1) SCID Account Balance	(2) SCID Firm Contributions	(3) SCID Executive Contributions	(4) SCID Earnings on Account
Industry-adjusted Tobin's Q	0.00693	0.0569	0.114	0.146
	(0.06)	(0.70)	(0.81)	(0.83)
Industry-adjusted Tobin's Q $(t-1)$	0.155	-0.0679	-0.173	-0.0512
	(1.58)	(-0.93)	(-1.14)	(-0.21)
Inside Ownership	0.0107	0.0652	-0.000870	0.426*
	(0.15)	(0.91)	(-0.01)	(1.86)
Inside Ownership^2	-0.536**	-0.461*	-0.303	-0.904**
	(-2.25)	(-1.88)	(-0.76)	(-2.50)
Research & Development	1.336	-0.0472	5.441	-4.614
	(0.56)	(-0.03)	(0.61)	(-0.74)
Capital Expenditures	-0.540	0.00535	-2.050	-0.973
	(-0.36)	(0.00)	(-0.92)	(-0.37)
ROA	0.266	-0.329	0.687	0.253
	(0.26)	(-0.36)	(0.36)	(0.14)
Leverage	-1.042	-1.165**	-0.776	-1.853
	(-1.60)	(-1.98)	(-0.69)	(-1.49)
Firm Size	-0.522**	-0.599	-0.479	-0.682
	(-1.98)	(-1.54)	(-1.18)	(-1.25)
Acquisitions	0.0000838	0.0000400	0.0000314	0.0000710
	(1.46)	(1.00)	(0.32)	(0.62)
Firm Age	2.107***	1.681**	1.704**	1.307
	(3.38)	(2.46)	(2.26)	(1.02)
Entrenchment Index	0.0177	-0.00590	-0.0498	0.0215
	(0.50)	(-0.19)	(-0.92)	(0.49)
Deferred Taxes	0.00000609	0.0000192	-0.0000187	-0.0000961
	(0.11)	(0.82)	(-0.33)	(-1.39)
Altman's Z	-0.0985**	-0.00705	0.0488	-0.248**
	(-2.22)	(-0.14)	(0.62)	(-2.36)
PPE/Assets	-0.242	-0.258	-1.703	-0.687
	(-0.47)	(-0.42)	(-1.54)	(-0.63)
Market-to-Book Ratio	-0.0118	-0.00974	-0.0180	0.0261
	(-1.59)	(-1.09)	(-0.90)	(1.50)
Dividends	0.0000246	0.000379*	0.000703**	-0.000539
	(0.11)	(1.82)	(2.06)	(-0.97)
Net Income	-0.0000493	0.0000155	-0.000189*	-0.000176*
	(-1.21)	(0.47)	(-1.75)	(-1.91)
Goodwill	-0.0000495	-0.0000224	-0.0000315	-0.0000225
	(-1.50)	(-1.07)	(-0.60)	(-0.51)
Retained Earnings	0.0000773**	0.00000437	-0.00000152	0.000131**
	(2.44)	(0.23)	(-0.03)	(2.36)
EBIT	0.0000147	-0.00000799	-0.0000375	0.000162***
	(0.31)	(-0.36)	(-0.33)	(2.65)
N	1212	756	619	860
rmse				
r2				
r2_a				

Table 5: Firm Performance: Tobin's Q (Fixed Effects)

This table presents firm and year fixed-effects regressions with clustered time. The dependent variable is Industry-adjusted Tobin's Q. In column (1), Industry-adjusted Tobin's Q is regressed on SCID-Account Balance$_{(t-1)}$ and a set of standard control variables used in the literature. Column (2) regresses Industry-adjusted Tobin's Q on SCID-Firm Contributions$_{(t-1)}$ and the standard control variables. Column (3) regresses Industry-adjusted Tobin's Q on SCID-Executive Contributions$_{(t-1)}$ and the standard control variables. Column (4) regresses Industry-adjusted Tobin's Q on SCID-Earnings on Account$_{(t-1)}$ and the standard control variables. The model in column (5) regresses Industry-adjusted Tobin's Q on SCID-Firm Contributions$_{(t-1)}$, SCID-Executive Contributions$_{(t-1)}$ and SCID-Earnings on Account$_{(t-1)}$ including the standard control variables. Model [1] implies that as the total account balance of a CEO's deferred compensation account increases relative to the other top four executive's total account balance on their deferred compensation accounts then firm performance, which is proxied by Industry-adjusted Tobin's Q, increases in the following year. Model [4] implies that as the earnings on CEO's deferred compensation accounts increase relative to the other top four executive's earnings in their deferred compensation accounts then firm performance, which is proxied by Industry-adjusted Tobin's Q, increases in the following year. t statistics are in parentheses and based on robust standard errors clustered at the year and firm level. *,**,*** represent significance at the 10%, 5%, and 1% level, respectively.

	(1) Industry Adjusted Tobin's Q	(2) Industry Adjusted Tobin's Q	(3) Industry Adjusted Tobin's Q	(4) Industry Adjusted Tobin's Q	(5) Industry Adjusted Tobin's Q
SCID–Account Balance$_{(t-1)}$	0.0957*				
	(1.82)				
SCID–Firm Contributions$_{(t-1)}$		0.0510			0.0427
		(0.81)			(0.65)
SCID–Executive Contributions$_{(t-1)}$			0.00123		-0.0198
			(0.03)		(-0.53)
SCID–Earnings on Account$_{(t-1)}$				0.0494*	0.0479
				(1.79)	(1.63)
Industry–adjusted Tobin's Q (t-1)	0.226***	0.225***	0.224***	0.224***	0.224***
	(2.96)	(2.93)	(2.90)	(2.95)	(2.97)
Inside Ownership	0.0177	0.0159	0.0162	0.0162	0.0158
	(0.59)	(0.52)	(0.54)	(0.54)	(0.52)
Inside Ownership^2	-0.102*	-0.0965*	-0.0976*	-0.0951*	-0.0940
	(-1.80)	(-1.68)	(-1.73)	(-1.69)	(-1.63)
Research & Development	1.635	1.567	1.556	1.698	1.672
	(0.98)	(0.94)	(0.93)	(0.99)	(0.98)
Capital Expenditures	0.0955	0.0970	0.0878	0.100	0.0964
	(0.13)	(0.14)	(0.12)	(0.14)	(0.13)
ROA	1.025	0.990	0.999	1.027	1.016
	(1.55)	(1.48)	(1.51)	(1.57)	(1.53)
Leverage	0.512**	0.513**	0.516**	0.506**	0.508**
	(2.00)	(2.04)	(2.05)	(2.03)	(2.08)
Firm Size	-0.0927	-0.0930	-0.0914	-0.0904	-0.0906
	(-1.26)	(-1.28)	(-1.27)	(-1.23)	(-1.26)
Acquisitions	0.00000165	0.00000179	0.00000204	0.00000173	0.00000176
	(0.21)	(0.23)	(0.27)	(0.22)	(0.22)
Firm Age	0.265	0.298	0.285	0.262	0.269
	(0.71)	(0.76)	(0.73)	(0.69)	(0.69)
Entrenchment Index	0.0266	0.0271	0.0270	0.0270	0.0268
	(1.55)	(1.55)	(1.54)	(1.57)	(1.56)
Deferred Taxes	-0.00000942	-0.0000102	-0.00000991	-0.00000930	-0.00000964
	(-0.61)	(-0.65)	(-0.64)	(-0.61)	(-0.63)
Altman's Z	0.108***	0.109***	0.109***	0.108***	0.109***
	(3.78)	(3.76)	(3.85)	(3.79)	(3.79)
PPE	0.105	0.1000	0.100	0.104	0.107
	(0.54)	(0.51)	(0.52)	(0.53)	(0.55)
Market-to-Book Ratio	0.0329***	0.0331***	0.0331***	0.0330***	0.0331***
	(2.84)	(2.85)	(2.85)	(2.86)	(2.86)
Dividends	0.000171*	0.000167*	0.000165*	0.000167*	0.000169*
	(1.76)	(1.73)	(1.74)	(1.76)	(1.74)
Net Income	0.00000295	0.00000377	0.00000347	0.00000273	0.00000298
	(0.33)	(0.39)	(0.37)	(0.28)	(0.30)
Hightech Dummy	0.864	0.947	0.922	0.893	0.901
	(1.19)	(1.23)	.	(1.22)	(1.18)
Goodwill	-0.00000380	-0.00000415	-0.00000437	-0.00000413	-0.00000379
	(-0.44)	(-0.48)	(-0.51)	(-0.47)	(-0.45)
Retained Earnings	-0.0000154**	-0.0000156**	-0.0000154**	-0.0000153**	-0.0000155**
	(-2.56)	(-2.50)	(-2.57)	(-2.50)	(-2.47)
EBIT	-0.0000126	-0.0000118	-0.0000120	-0.0000125	-0.0000125
	(-0.67)	(-0.65)	(-0.67)	(-0.68)	(-0.69)
N	1590	1590	1590	1590	1590
rmse	0.270	0.270	0.270	0.270	0.270
r2	0.895	0.895	0.895	0.895	0.895
r2_a	0.864	0.864	0.864	0.864	0.864

Table 6: Firm Performance: Tobin's Q (Endogeneity Test: Arellano-Bond)

	(1) Industry Adjusted Tobin's Q	(2) Industry Adjusted Tobin's Q	(3) Industry Adjusted Tobin's Q	(4) Industry Adjusted Tobin's Q	(5) Industry Adjusted Tobin's Q
SCID–Account Balance$_{(t-1)}$	0.0592				
	(1.08)				
SCID–Firm Contributions$_{(t-1)}$		0.0390			0.0386
		(0.83)			(0.81)
SCID–Executive Contributions$_{(t-1)}$			0.00358		-0.00508
			(0.10)		(-0.13)
SCID–Earnings on Account$_{(t-1)}$				0.00961	0.00766
				(0.44)	(0.34)
Inside Ownership	-0.0110	-0.0109	-0.0109	-0.0112	-0.0111
	(-0.78)	(-0.77)	(-0.78)	(-0.79)	(-0.79)
Inside Ownership^2	-0.00502	-0.00196	-0.00353	-0.00249	-0.00124
	(-0.12)	(-0.04)	(-0.08)	(-0.06)	(-0.03)
Research & Development	1.938	1.910	1.912	1.927	1.914
	(1.47)	(1.45)	(1.45)	(1.46)	(1.46)
Capital Expenditures	-0.262	-0.255	-0.264	-0.259	-0.253
	(-0.64)	(-0.63)	(-0.64)	(-0.64)	(-0.62)
ROA	0.923**	0.902**	0.911**	0.912**	0.901**
	(2.35)	(2.31)	(2.33)	(2.33)	(2.32)
Leverage	0.317	0.312	0.310	0.307	0.309
	(1.53)	(1.50)	(1.48)	(1.47)	(1.49)
Firm Size	-0.221**	-0.221**	-0.218**	-0.219**	-0.222**
	(-2.06)	(-2.08)	(-2.03)	(-2.06)	(-2.10)
Acquisitions	0.00000533	0.00000512	0.00000529	0.00000533	0.00000523
	(0.66)	(0.63)	(0.65)	(0.66)	(0.64)
Firm Age	0.974***	0.972***	0.965***	0.965***	0.972***
	(3.51)	(3.53)	(3.45)	(3.46)	(3.52)
Entrenchment Index	0.00393	0.00341	0.00373	0.00390	0.00354
	(0.51)	(0.45)	(0.49)	(0.52)	(0.47)
Deferred Taxes	0.00000357	0.00000312	0.00000295	0.00000298	0.00000309
	(0.25)	(0.22)	(0.20)	(0.21)	(0.22)
Altman's Z	0.0991***	0.1000***	0.0997***	0.0997***	0.1000***
	(4.77)	(4.79)	(4.79)	(4.81)	(4.79)
PPE	0.144	0.141	0.145	0.144	0.140
	(0.86)	(0.85)	(0.87)	(0.86)	(0.85)
Market-to-Book Ratio	0.0293**	0.0294**	0.0295**	0.0295**	0.0295**
	(2.07)	(2.08)	(2.07)	(2.07)	(2.07)
Dividends	0.000206*	0.000205*	0.000204*	0.000204*	0.000204*
	(1.82)	(1.81)	(1.80)	(1.81)	(1.81)
Net Income	0.00000198	0.00000245	0.00000218	0.00000201	0.00000237
	(0.22)	(0.27)	(0.24)	(0.22)	(0.26)
Goodwill	0.00000970	0.00000975	0.00000967	0.00000972	0.00000981
	(1.49)	(1.47)	(1.46)	(1.47)	(1.48)
Retained Earnings	-0.0000191***	-0.0000194***	-0.0000193***	-0.0000192***	-0.0000194***
	(-2.83)	(-2.87)	(-2.84)	(-2.84)	(-2.87)
EBIT	-0.0000257**	-0.0000256**	-0.0000258**	-0.0000258**	-0.0000257**
	(-2.50)	(-2.48)	(-2.48)	(-2.48)	(-2.48)
N	1212	1212	1212	1212	1212
rmse					
r2					
r2_a					

Table 7: SCID Effect on CEO Tenure - Fixed Effects

This table presents firm and year fixed-effects regressions with clustered time. The dependent variable is the natural log of CEO (Tenure +1). In column (1), CEO Tenure is regressed on SCID-Account Balance and a set of standard control variables used in the literature. Column (2) regresses CEO Tenure on SCID-Firm Contributions and the standard control variables. Column (3) regresses CEO Tenure on SCID-Executive Contributions and the standard control variables. Column (4) regresses CEO Tenure on SCID-Earnings on Account and the standard control variables. The model in column (5) regresses CEO Tenure on SCID-Firm Contributions, SCID-Executive Contributions, and SCID-Earnings on Account including the standard control variables. Models [1] — [5] imply that entrenched CEOs are correlated with shorter tenure. t statistics are in parentheses and based on robust standard errors clustered at the year and firm level. *,**,*** represent significance at the 10%, 5%, and 1% level, respectively.

	(1) CEO Tenure	(2) CEO Tenure	(3) CEO Tenure	(4) CEO Tenure	(5) CEO Tenure
SCID–Account Balance	0.293				
	(0.65)				
SCID–Firm Contributions		-0.0707			-0.124
		(-0.20)			(-0.31)
SCID–Executive Contributions			0.0692		0.104
			(0.18)		(0.25)
SCID–Earnings on Account				0.0450	0.0437
				(0.29)	(0.27)
Industry-adjusted Tobin's $Q_{(t-1)}$	0.186	0.185	0.184	0.185	0.186
	(1.22)	(1.21)	(1.20)	(1.21)	(1.21)
Inside Ownership	-0.266**	-0.265**	-0.278**	-0.270**	-0.271**
	(-2.36)	(-2.05)	(-2.18)	(-2.24)	(-2.06)
Inside Ownership^2	1.004**	0.984**	1.010**	1.000**	1.004**
	(2.41)	(2.20)	(2.30)	(2.33)	(2.19)
Research & Development	2.490	2.025	2.145	2.218	2.097
	(0.52)	(0.45)	(0.46)	(0.49)	(0.46)
Capital Expenditures	-0.956	-0.826	-0.851	-0.905	-0.821
	(-0.35)	(-0.32)	(-0.34)	(-0.35)	(-0.32)
ROA	-3.425	-3.569	-3.606*	-3.497	-3.541
	(-1.49)	(-1.60)	(-1.66)	(-1.54)	(-1.64)
Leverage	2.323	2.322	2.356	2.363	2.331
	(1.49)	(1.45)	(1.48)	(1.49)	(1.45)
Firm Size	0.599	0.568	0.566	0.568	0.578
	(1.07)	(1.01)	(1.00)	(1.01)	(1.03)
Acquisitions	-0.0000447	-0.0000409	-0.0000420	-0.0000420	-0.0000431
	(-0.52)	(-0.49)	(-0.48)	(-0.50)	(-0.51)
Firm Age	-2.143	-2.088	-2.006	-2.100	-2.093
	(-1.21)	(-1.25)	(-1.25)	(-1.22)	(-1.32)
Entrenchment Index	0.0483	0.0409	0.0452	0.0423	0.0445
	(0.48)	(0.42)	(0.44)	(0.43)	(0.43)
Deferred Taxes	0.0000223	0.0000214	0.0000222	0.0000226	0.0000207
	(0.52)	(0.55)	(0.53)	(0.55)	(0.50)
Altman's Z	0.170	0.172	0.178	0.177	0.174
	(1.36)	(1.42)	(1.48)	(1.40)	(1.41)
PPE/Assets	0.930	0.866	0.882	0.875	0.904
	(0.83)	(0.79)	(0.78)	(0.79)	(0.78)
Market-to-Book Ratio	0.0324	0.0320	0.0325	0.0322	0.0320
	(1.13)	(1.12)	(1.12)	(1.12)	(1.09)
Dividends	0.000239	0.000208	0.000217	0.000221	0.000205
	(0.65)	(0.59)	(0.59)	(0.60)	(0.58)
Net Income	-0.0000804	-0.0000850	-0.0000822	-0.0000827	-0.0000830
	(-1.16)	(-1.24)	(-1.20)	(-1.20)	(-1.21)
Hightech Dummy	-0.610	-0.842	-0.763	-0.710	-0.835
	(-0.23)	(-0.33)	(-0.29)	(-0.26)	(-0.32)
Goodwill	-0.0000114	-0.00000759	-0.00000834	-0.00000875	-0.00000547
	(-0.20)	(-0.14)	(-0.15)	(-0.16)	(-0.10)
Retained Earnings	-0.0000197	-0.0000149	-0.0000165	-0.0000166	-0.0000153
	(-0.34)	(-0.26)	(-0.28)	(-0.29)	(-0.27)
EBIT	0.0000255	0.0000243	0.0000245	0.0000238	0.0000234
	(0.27)	(0.26)	(0.26)	(0.25)	(0.24)
N	487	487	487	487	487
rmse	0.597	0.599	0.599	0.599	0.601
r2	0.772	0.771	0.771	0.771	0.771
r2_a	0.513	0.510	0.510	0.510	0.506

Table 8: SCID Effect on CEO Tenure - (Endogeneity Test: Arellano-Bond)

Arellano-Bond regressions are presented below to account for possible endogeneity between CEO tenure and measures of SCID. The dependent variable is the natural log of CEO (Tenure +1). In column (1), CEO Tenure is regressed on SCID-Account Balance and a set of standard control variables used in the literature. Column (2) regresses CEO Tenure on SCID-Firm Contributions and the standard control variables. Column (3) regresses CEO Tenure on SCID-Executive Contributions and the standard control variables. Column (4) regresses CEO Tenure on SCID-Earnings on Account and the standard control variables. The model in column (5) regresses CEO Tenure on SCID-Firm Contributions, SCID-Executive Contributions, and SCID-Earnings on Account including the standard control variables. Models [1] — [5] imply that entrenched CEOs are correlated with shorter tenure. Model [5] implies that as the earnings on CEO's deferred compensation accounts increase relative to the earnings on the top five executive's deferred compensation accounts then CEO tenure increases.t statistics in parentheses and are based on robust standard errors clustered at the year and firm level. *,**,*** represent significance at the 10%, 5%, and 1% level, respectively.

	(1) CEO Tenure	(2) CEO Tenure	(3) CEO Tenure	(4) CEO Tenure	(5) CEO Tenure
SCID–Account Balance	0.0805				
	(0.18)				
SCID–Firm Contributions		0.132			0.467
		(0.36)			(0.99)
SCID–Executive Contributions			0.320		0.0302
			(0.51)		(0.06)
SCID–Earnings on Account				0.484	0.669*
				(1.51)	(1.84)
Industry–adjusted Tobin's $Q_{(t-1)}$	0.617***	0.632***	0.336**	0.501***	0.496***
	(3.17)	(3.65)	(2.34)	(3.20)	(3.56)
Inside Ownership	0.236	0.234	0.678**	0.347	0.411
	(0.43)	(0.43)	(2.53)	(0.89)	(1.16)
Inside Ownership^2	0.519	0.520	-0.213	0.385	0.284
	(0.64)	(0.65)	(-0.57)	(0.69)	(0.56)
Research & Development	36.37	33.89	18.96	13.59	13.49
	(1.58)	(1.61)	(0.94)	(0.57)	(0.56)
Capital Expenditures	-5.006	-4.926	-6.559**	-3.684	-4.158
	(-1.29)	(-1.31)	(-2.16)	(-0.98)	(-1.13)
ROA	4.387	4.394	4.905	1.027	0.327
	(1.54)	(1.55)	(1.49)	(0.32)	(0.10)
Leverage	3.223	3.344*	1.941	4.606**	5.048**
	(1.64)	(1.66)	(0.69)	(2.21)	(2.27)
Firm Size	-0.883	-0.928	-0.0961	-1.399	-1.399
	(-0.70)	(-0.75)	(-0.10)	(-1.40)	(-1.37)
Acquisitions	0.000170**	0.000181***		0.0000944	0.0000880
	(2.27)	(2.69)		(1.13)	(1.06)
Firm Age	0.458	0.359	2.222	1.872	2.259
	(0.26)	(0.21)	(1.60)	(1.34)	(1.53)
Entrenchment Index	-0.124**	-0.129***	-0.147***	-0.115**	-0.124**
	(-2.35)	(-2.82)	(-2.90)	(-2.29)	(-2.13)
Deferred Taxes	0.000177***	0.000174***			
	(3.63)	(3.46)			
Altman's Z	0.0445	0.0491	-0.224	0.169	0.203
	(0.24)	(0.26)	(-1.00)	(0.84)	(1.06)
PPE/Assets	1.635	1.682			
	(1.07)	(1.12)			
Market-to-Book Ratio	-0.00570	-0.00372	0.0346	0.0249	0.0297
	(-0.24)	(-0.15)	(1.52)	(1.12)	(1.29)
Dividends	0.00130***	0.00132***	0.000321	0.000513	0.000532
	(2.70)	(2.82)	(0.77)	(1.15)	(1.24)
Net Income	0.0000616	0.0000587		0.0000388	0.0000431
	(0.98)	(0.97)		(0.73)	(0.77)
Goodwill	0.0000211	0.0000291	0.0000447	0.000158	0.000167
	(0.20)	(0.27)	(0.39)	(1.19)	(1.29)
Retained Earnings	-0.0000356	-0.0000293	0.00000537	-0.0000127	-0.000000203
	(-0.52)	(-0.43)	(0.10)	(-0.21)	(-0.00)
EBIT	-0.000150**	-0.000156**	-0.000144**	-0.000171***	-0.000185***
	(-2.21)	(-2.22)	(-2.42)	(-2.59)	(-2.69)
N	67	67	68	68	68
rmse					
r2					
r2_a					

Table 9: Working Capital and SCID

This table presents firm and year fixed-effects regressions with clustered time. The dependent variable is Working Capital$_{(t+1)}$ (e.g. current assets minus current liabilities). In column (1), Working Capital$_{(t+1)}$ is regressed on SCID-Account Balance$_{(t-1)}$ and a set of standard control variables used in the literature. Column (2) regresses Working Capital$_{(t+1)}$ on SCID-Firm Contributions$_{(t-1)}$ and the standard control variables. Column (3) regresses Working Capital$_{(t+1)}$ on SCID-Executive Contributions$_{(t-1)}$ and the standard control variables. Column (4) regresses Working Capital$_{(t+1)}$ on SCID-Earnings$_{(t-1)}$ on Account and the standard control variables. The model in column (5) regresses Working Capital$_{(t+1)}$ on SCID-Firm Contributions$_{(t-1)}$, SCID-Executive Contributions$_{(t-1)}$, and SCID-Earnings$_{(t-1)}$ on Account including the standard control variables. Model [1] implies that, in the previous year, as the balance of a CEO's total deferred compensation account increases relative to the top five executive's total deferred compensation account balances then Working Capital$_{(t+1)}$ increases. Model [2] implies that as firms, in the previous year, increase contributions to CEO's deferred compensation accounts relative to firm contributions to the top five executive's deferred compensation accounts then Working Capital decreases in the following year. Models [3] and [5] imply that as CEOs, in the previous year, increase contributions their to deferred compensation accounts relative to the top five executive's own contributions to their deferred compensation accounts then Working Capital decreases in the following year. t statistics in parentheses and are based on robust standard errors clustered at the year and firm level. *,**,*** represent significance at the 10%, 5%, and 1% level, respectively.

	(1) Working Capital$_{(t+1)}$	(2) Working Capital$_{(t+1)}$	(3) Working Capital$_{(t+1)}$	(4) Working Capital$_{(t+1)}$	(5) Working Capital$_{(t+1)}$
SCID–Account Balance$_{(t-1)}$	-0.0476***				
	(-2.59)				
SCID–Firm Contributions$_{(t-1)}$		-0.0432***			-0.0321
		(-2.69)			(-1.62)
SCID–Executive Contributions$_{(t-1)}$			-0.0398***		-0.0342***
			(-3.52)		(-2.89)
SCID–Earnings on Account$_{(t-1)}$				-0.00693	0.00115
				(-0.78)	(0.13)
Industry–adjusted Tobin's Q	-0.00291	-0.00314	-0.00330	-0.00393	-0.00275
	(-0.31)	(-0.36)	(-0.37)	(-0.43)	(-0.32)
Inside Ownership	-0.00214	-0.000928	-0.00171	-0.00116	-0.00148
	(-0.40)	(-0.16)	(-0.32)	(-0.20)	(-0.27)
Inside Ownership^2	-0.000662	-0.00447	-0.00209	-0.00332	-0.00323
	(-0.04)	(-0.27)	(-0.13)	(-0.20)	(-0.20)
Research & Development	0.593	0.635	0.573	0.646	0.567
	(1.08)	(1.16)	(1.08)	(1.21)	(1.07)
Capital Expenditures	-0.399***	-0.402***	-0.414***	-0.407***	-0.412***
	(-2.71)	(-2.85)	(-3.02)	(-2.86)	(-3.03)
ROA	-0.0481	-0.0201	-0.0297	-0.0249	-0.0278
	(-0.31)	(-0.12)	(-0.18)	(-0.15)	(-0.16)
Leverage	-0.358***	-0.355***	-0.346***	-0.353***	-0.348***
	(-2.80)	(-2.78)	(-2.63)	(-2.76)	(-2.66)
Firm Size	-0.0657**	-0.0615**	-0.0609**	-0.0644**	-0.0595**
	(-2.35)	(-2.05)	(-2.10)	(-2.23)	(-1.97)
Acquisitions	-0.00000431	-0.00000421	-0.00000412	-0.00000456	-0.00000395
	(-0.81)	(-0.73)	(-0.78)	(-0.87)	(-0.70)
Firm Age	-0.0426	-0.0667	-0.0621	-0.0471	-0.0728
	(-0.47)	(-0.75)	(-0.67)	(-0.51)	(-0.80)
Entrenchment Index	-0.000429	-0.000739	-0.00109	-0.000744	-0.00105
	(-0.08)	(-0.15)	(-0.23)	(-0.15)	(-0.22)
Deferred Taxes	0.00000258	0.00000296	0.00000257	0.00000285	0.00000267
	(0.62)	(0.66)	(0.57)	(0.63)	(0.58)
Altman's Z	0.000176	-0.000374	0.000741	0.0000786	0.000311
	(0.01)	(-0.03)	(0.05)	(0.01)	(0.02)
PPE	-0.0711	-0.0648	-0.0571	-0.0681	-0.0565
	(-1.30)	(-1.21)	(-1.04)	(-1.22)	(-1.06)
Market-to-Book Ratio	0.00142	0.00143	0.00152	0.00143	0.00150
	(0.92)	(0.89)	(0.91)	(0.88)	(0.91)
Dividends	0.0000385**	0.0000410**	0.0000401*	0.0000428**	0.0000389**
	(1.98)	(2.13)	(1.96)	(2.12)	(2.04)
Net Income	0.00000324*	0.00000244	0.00000285**	0.00000301*	0.00000247*
	(1.93)	(1.63)	(2.01)	(1.92)	(1.84)
Hightech Dummy	-0.272	-0.315*	-0.301	-0.292*	-0.315
	(-1.53)	(-1.71)	(-1.60)	(-1.65)	(-1.62)
Goodwill	-0.00000190	-0.00000185	-0.00000130	-0.00000167	-0.00000150
	(-1.37)	(-1.35)	(-0.97)	(-1.22)	(-1.13)
Retained Earnings	-0.00000147	-0.00000126	-0.00000156	-0.00000153	-0.00000136
	(-1.08)	(-0.90)	(-1.10)	(-1.07)	(-0.99)
EBIT	-0.00000294	-0.00000335	-0.00000372	-0.00000321	-0.00000369
	(-0.64)	(-0.70)	(-0.80)	(-0.67)	(-0.78)
N	1250	1250	1250	1250	1250
rmse	0.0680	0.0681	0.0679	0.0683	0.0679
r2	0.955	0.955	0.955	0.954	0.955
r2_a	0.937	0.937	0.937	0.936	0.937

Table 10: SCID Effect on Firm Leverage - Fixed Effects

This table presents firm and year fixed-effects regressions clustered by firm and year. The dependent variable is the firm leverage (e.g. total debt divided by total assets. In column (1), Leverage is regressed on SCID-Account Balance and a set of standard control variables used in the literature. Column (2) regresses Leverage on SCID-Firm Contributions and the standard control variables. Column (3) regresses Leverage on SCID-Executive Contributions and the standard control variables. Column (4) regresses Leverage on SCID-Earnings on Account and the standard control variables. The model in column (5) regresses Leverage on SCID-Firm Contributions, SCID-Executive Contributions, and SCID-Earnings on Account including the standard control variables. Model [5] implies that as the earnings on CEO deferred compensation accounts increase relative to the top five executives' earnings on their deferred compensation accounts then firm leverage decreases. t statistics in parentheses and are based on robust standard errors clustered at the year and firm level. *,**,*** represent significance at the 10%, 5%, and 1% level, respectively.

	(1) Leverage	(2) Leverage	(3) Leverage	(4) Leverage	(5) Leverage
SCID–Account Balance	-0.00344				
	(-0.45)				
SCID–Firm Contributions		-0.00775			-0.00799
		(-1.21)			(-1.02)
SCID–Executive Contributions			-0.000137		0.00204
			(-0.02)		(0.32)
SCID–Earnings on Account					-0.00187
					(-0.67)
Industry-adjusted Tobin's Q	0.0129***	0.0129***	0.0130***	0.0122***	0.0129***
	(5.11)	(5.16)	(5.21)	(4.74)	(5.14)
Inside Ownership	-0.000302	-0.000178	-0.000385	-0.00136	-0.000191
	(-0.15)	(-0.09)	(-0.19)	(-0.44)	(-0.10)
Inside Ownership^2	0.00217	0.00185	0.00247	0.00610	0.00178
	(0.35)	(0.29)	(0.40)	(0.86)	(0.28)
Research & Development	-0.406*	-0.403*	-0.404*	-0.303*	-0.406*
	(-1.85)	(-1.84)	(-1.86)	(-1.83)	(-1.83)
Capital Expenditures	-0.0839*	-0.0832*	-0.0839*	-0.0921	-0.0839*
	(-1.65)	(-1.65)	(-1.65)	(-1.55)	(-1.67)
ROA	0.0319	0.0328	0.0322	0.0317	0.0321
	(0.70)	(0.73)	(0.72)	(0.58)	(0.70)
Firm Size	0.0967***	0.0965***	0.0970***	0.0809**	0.0964***
	(2.98)	(2.94)	(2.96)	(2.29)	(2.93)
Entrenchment Index	0.00112	0.00111	0.00114	0.00118	0.00114
	(0.73)	(0.72)	(0.74)	(0.68)	(0.76)
Deferred Taxes	-0.00000213*	-0.00000213*	-0.00000217*	-0.00000176	-0.00000211*
	(-1.72)	(-1.72)	(-1.74)	(-1.56)	(-1.70)
Acquisitions	0.00000159	0.00000161	0.00000155	0.00000133	0.00000164
	(0.80)	(0.80)	(0.79)	(0.63)	(0.82)
Firm Age	0.0495	0.0480	0.0487	0.0682	0.0490
	(1.36)	(1.33)	(1.32)	(1.59)	(1.36)
Altman's Z	-0.0149***	-0.0150***	-0.0149***	-0.0152***	-0.0150***
	(-5.63)	(-5.59)	(-5.62)	(-5.38)	(-5.63)
PPE	-0.0653***	-0.0652***	-0.0650***	-0.0763**	-0.0655***
	(-3.29)	(-3.30)	(-3.27)	(-2.20)	(-3.31)
Market-to-Book Ratio	-0.00443***	-0.00446***	-0.00446***	-0.00464***	-0.00446***
	(-3.15)	(-3.11)	(-3.10)	(-3.20)	(-3.09)
Dividends	0.00000964	0.00000966	0.00000967	0.00000863	0.00000971
	(1.26)	(1.29)	(1.27)	(0.93)	(1.29)
Net Income	-0.00000202	-0.00000206	-0.00000204	-0.00000153	-0.00000204
	(-1.57)	(-1.58)	(-1.56)	(-0.91)	(-1.55)
Hightech Dummy	-0.259***	-0.259***	-0.258***	-0.194**	-0.259***
	(-2.88)	(-2.92)	(-2.88)	(-2.11)	(-2.91)
Goodwill	-0.00000261***	-0.00000260***	-0.00000257***	-0.00000232***	-0.00000262***
	(-3.60)	(-3.51)	(-3.55)	(-2.82)	(-3.58)
Retained Earnings	0.00000195**	0.00000194**	0.00000193**	0.00000218***	0.00000195**
	(2.38)	(2.37)	(2.35)	(2.61)	(2.38)
EBIT	0.00000105	0.00000103	0.00000105	0.000000322	0.00000102
	(0.79)	(0.78)	(0.79)	(0.21)	(0.77)
N	1986	1986	1986	1594	1986
rmse	0.0333	0.0333	0.0333	0.0316	0.0333
r2	0.953	0.953	0.953	0.960	0.953
r2_a	0.942	0.942	0.942	0.948	0.942

Table 11: SCID Effect on Acquisitions - Fixed Effects

This table presents firm and year fixed-effects regressions with clustered time. The dependent variable is the natural log of firm acquisitions (acquisitions +1). In column (1), Acquisitions is regressed on SCID-Account Balance and a set of standard control variables used in the literature. Column (2) regresses Acquisitions on SCID-Firm Contributions and the standard control variables. Column (3) regresses Acquisitions on SCID-Executive Contributions and the standard control variables. Column (4) regresses Acquisitions on SCID-Earnings on Account and the standard control variables. The model in column (5) regresses Acquisitions on SCID-Firm Contributions, SCID-Executive Contributions, and SCID-Earnings on Account including the standard control variables. Model [5] implies that as CEOs increase contributions to their deferred compensation accounts relative to the top five executive's increased contributions to their deferred compensation accounts then number of acquisitions decreases. t statistics in parentheses and are based on robust standard errors clustered at the year and firm level. *,**,*** represent significance at the 10%, 5%, and 1% level, respectively.

	(1) Acquisitions	(2) Acquisitions	(3) Acquisitions	(4) Acquisitions	(5) Acquisitions
SCID–Account Balance	0.190				
	(0.69)				
SCID–Firm Contributions		-0.107			0.189
		(-0.46)			(0.76)
SCID–Executive Contributions			-0.269		-0.380*
			(-1.43)		(-1.78)
SCID–Earnings on Account				-0.0350	0.0542
				(-0.22)	(0.25)
Industry–adjusted Tobin's Q	0.144	0.0813	0.0823	0.0817	0.143
	(1.08)	(0.66)	(0.67)	(0.66)	(1.05)
Inside Ownership	0.222*	0.169**	0.175**	0.167**	0.232*
	(1.69)	(2.19)	(2.20)	(2.24)	(1.71)
Inside Ownership^2	-0.553**	-0.407**	-0.418**	-0.402**	-0.576**
	(-2.07)	(-2.05)	(-2.17)	(-2.18)	(-2.06)
Research & Development	22.27***	7.683**	7.720**	7.619**	22.29***
	(3.83)	(2.18)	(2.23)	(2.12)	(3.85)
Capital Expenditures	-5.119**	-2.880	-2.875	-2.897	-5.094**
	(-2.34)	(-1.65)	(-1.64)	(-1.65)	(-2.28)
ROA	1.384	1.328	1.319	1.302	1.371
	(0.81)	(1.08)	(1.06)	(1.05)	(0.79)
Leverage	-0.101	-0.900	-0.891	-0.890	-0.0884
	(-0.11)	(-1.10)	(-1.08)	(-1.08)	(-0.09)
Firm Size	1.247***	0.628*	0.631*	0.630*	1.243***
	(2.68)	(1.85)	(1.87)	(1.89)	(2.64)
Entrenchment Index	0.0537	0.0646	0.0609	0.0652	0.0473
	(0.75)	(0.96)	(0.88)	(0.96)	(0.65)
Firm Age	-0.409	0.209	0.200	0.234	-0.396
	(-0.35)	(0.22)	(0.21)	(0.26)	(-0.35)
Deferred Taxes	-0.0000420	-0.0000174	-0.0000201	-0.0000177	-0.0000440
	(-0.57)	(-0.40)	(-0.46)	(-0.40)	(-0.62)
Altman's Z	-0.134	-0.101	-0.101	-0.100	-0.134
	(-1.19)	(-1.12)	(-1.12)	(-1.10)	(-1.17)
PPE	-1.359**	-1.609***	-1.599***	-1.610***	-1.351*
	(-1.99)	(-2.98)	(-2.93)	(-2.96)	(-1.91)
Market-to-Book Ratio	-0.0149	-0.0118	-0.0111	-0.0115	-0.0134
	(-0.93)	(-0.57)	(-0.53)	(-0.57)	(-0.82)
Dividends	-0.0000834	0.0000809	0.0000780	0.0000813	-0.0000895
	(-0.15)	(0.31)	(0.30)	(0.31)	(-0.16)
Net Income	0.0000378	-0.0000404	-0.0000421	-0.0000399	0.0000362
	(0.47)	(-0.59)	(-0.61)	(-0.58)	(0.44)
Hightech Dummy	-10.15**	-4.809***	-4.812***	-4.793***	-10.18**
	(-2.16)	(-4.52)	(-4.81)	(-4.60)	(-2.17)
Goodwill	-0.0000126	-0.000101***	-0.0001000***	-0.000100***	-0.0000130
	(-0.28)	(-2.72)	(-2.74)	(-2.75)	(-0.30)
Retained Earnings	-0.0000378	0.0000598*	0.0000604*	0.0000599*	-0.0000365
	(-0.82)	(1.94)	(1.94)	(1.93)	(-0.80)
EBIT	0.000127	0.0000265	0.0000275	0.0000267	0.000129
	(1.09)	(0.34)	(0.35)	(0.35)	(1.10)
N	2007	2007	2007	2007	2007
rmse	1.864	1.594	1.594	1.594	1.864
r2	0.586	0.697	0.698	0.697	0.587
r2_a	0.493	0.629	0.630	0.629	0.493

Table 12: SCID Effect on Acquisitions (Endogeneity Test: Arellano-Bond)

Arellano-Bond regressions are presented below to account for possible endogeneity between firm acquisitions and measures of SCID. The dependent variable is the natural log of firm acquisitions (acquisitions +1). In column (1), Acquisitions is regressed on SCID-Account Balance and a set of standard control variables used in the literature. Column (2) regresses Acquisitions on SCID-Firm Contributions and the standard control variables. Column (3) regresses Acquisitions on SCID-Executive Contributions and the standard control variables. Column (4) regresses Acquisitions on SCID-Earnings on Account and the standard control variables. The model in column (5) regresses Acquisitions on SCID-Firm Contributions, SCID-Executive Contributions and SCID-Earnings on Account including the standard control variables. Models [1]—[5] show no correlation between acquisitions and measures of SCID. t statistics in parentheses and are based on robust standard errors clustered at the year and firm level. *,**,*** represent significance at the 10%, 5%, and 1% level, respectively.

	(1) Acquisitions	(2) Acquisitions	(3) Acquisitions	(4) Acquisitions	(5) Acquisitions
SCID–Account Balance	-0.406				
	(-0.81)				
SCID–Firm Contributions		-0.244			-0.0434
		(-0.60)			(-0.11)
SCID–Executive Contributions			-0.495		-0.485
			(-1.38)		(-1.33)
SCID–Earnings on Account				-0.0310	0.00794
				(-0.13)	(0.03)
Industry-adjusted Tobin's Q	-0.0903	-0.0884	-0.0811	-0.0877	-0.0815
	(-0.42)	(-0.41)	(-0.38)	(-0.40)	(-0.38)
Inside Ownership	0.666***	0.662***	0.666***	0.661***	0.664***
	(4.58)	(4.52)	(4.57)	(4.54)	(4.55)
Inside Ownership^2	-1.306***	-1.290***	-1.292***	-1.275***	-1.294***
	(-3.20)	(-3.14)	(-3.18)	(-3.14)	(-3.16)
Research & Development	24.39***	24.38***	24.64***	24.34***	24.60***
	(2.81)	(2.80)	(2.83)	(2.79)	(2.82)
Capital Expenditures	-7.871**	-7.728**	-7.587**	-7.788**	-7.594**
	(-2.54)	(-2.48)	(-2.44)	(-2.51)	(-2.44)
ROA	4.704*	4.690*	4.604*	4.667*	4.610*
	(1.73)	(1.72)	(1.69)	(1.72)	(1.69)
Leverage	0.545	0.571	0.602	0.589	0.608
	(0.26)	(0.27)	(0.29)	(0.28)	(0.29)
Firm Size	3.466***	3.461***	3.458***	3.481***	3.450***
	(4.86)	(4.86)	(4.86)	(4.87)	(4.86)
Entrenchment Index	-0.185***	-0.186***	-0.184***	-0.186***	-0.184***
	(-2.96)	(-2.99)	(-2.95)	(-2.98)	(-2.95)
Firm Age	-3.168**	-3.232**	-3.258**	-3.261**	-3.252**
	(-2.03)	(-2.07)	(-2.09)	(-2.09)	(-2.09)
Deferred Taxes	-0.0000836	-0.0000842	-0.0000897	-0.0000841	-0.0000890
	(-0.94)	(-0.94)	(-1.01)	(-0.94)	(-1.00)
Altman's Z	-0.447***	-0.447***	-0.445***	-0.445***	-0.446***
	(-2.84)	(-2.81)	(-2.81)	(-2.82)	(-2.81)
PPE	0.408	0.361	0.339	0.406	0.325
	(0.28)	(0.25)	(0.23)	(0.28)	(0.22)
Market-to-Book Ratio	-0.0262	-0.0266	-0.0261	-0.0261	-0.0261
	(-0.74)	(-0.75)	(-0.73)	(-0.74)	(-0.73)
Dividends	-0.000439	-0.000416	-0.000414	-0.000430	-0.000410
	(-0.62)	(-0.59)	(-0.59)	(-0.61)	(-0.58)
Net Income	-0.0000601	-0.0000560	-0.0000534	-0.0000566	-0.0000526
	(-0.58)	(-0.55)	(-0.53)	(-0.55)	(-0.51)
Goodwill	0.0000417	0.0000424	0.0000410	0.0000435	0.0000403
	(0.63)	(0.64)	(0.64)	(0.66)	(0.63)
Retained Earnings	-0.0000261	-0.0000294	-0.0000296	-0.0000298	-0.0000296
	(-0.48)	(-0.55)	(-0.56)	(-0.56)	(-0.55)
EBIT	0.0000326	0.0000322	0.0000298	0.0000331	0.0000297
	(0.44)	(0.44)	(0.41)	(0.45)	(0.41)
N	1230	1230	1230	1230	1230
rmse					
r2					
r2_a					

Table 13: SCID Effect on Default Risk (Altman's Z) - Fixed Effects

This table presents firm and year fixed-effects regressions with clustered time. The dependent variable is the likelihood of a firm declaring bankruptcy (Altman's Z). In column (1), Altman's Z is regressed on SCID-Account Balance$_{(t-1)}$ and a set of standard control variables used in the literature. Column (2) regresses Altman's Z on SCID-Firm Contributions$_{(t-1)}$ and the standard control variables. Column (3) regresses Altman's Z on SCID-Executive Contributions$_{(t-1)}$ and the standard control variables. Column (4) regresses Altman's Z on SCID-Earnings$_{(t-1)}$ on Account and the standard control variables. The model in column (5) regresses Altman's Z on SCID-Firm Contributions$_{(t-1)}$, SCID-Executive Contributions$_{(t-1)}$, and SCID-Earnings on Account$_{(t-1)}$ including the standard control variables. Model [5] implies that as firms increase their contributions to CEO's deferred compensation accounts relative to the firm's contributions to the top five executive's deferred compensation accounts then the probability of defaulting increases (i.e. Altman's Z decreases). Models [3] and [5] imply that as CEOs increase contributions to their deferred compensation accounts relative to the top five executives' increased contributions to their deferred compensation accounts then probability of the firm defaulting decreases (i.e. Altman's Z increases). t statistics in parentheses and are based on robust standard errors clustered at the year and firm level. *,**,*** represent significance at the 10%, 5%, and 1% level, respectively.

	(1) Altman's Z	(2) Altman's Z	(3) Altman's Z	(4) Altman's Z	(5) Altman's Z
SCID–Account Balance$_{(t-1)}$	0.0601				
	(0.53)				
SCID–Firm Contributions$_{(t-1)}$		-0.144			-0.206*
		(-1.12)			(-1.72)
SCID–Executive Contributions$_{(t-1)}$			0.103*		0.140***
			(1.68)		(2.80)
SCID–Earnings on Account$_{(t-1)}$				0.0271	0.0286
				(0.47)	(0.49)
Industry–adjusted Tobin's Q	0.444***	0.446***	0.443***	0.443***	0.442***
	(4.66)	(4.64)	(4.65)	(4.70)	(4.70)
Inside Ownership	-0.0272	-0.0270	-0.0278	-0.0281	-0.0260
	(-0.66)	(-0.67)	(-0.67)	(-0.69)	(-0.63)
Inside Ownership^2	0.121	0.120	0.123	0.125	0.119
	(1.06)	(1.05)	(1.08)	(1.10)	(1.03)
Research & Development	-1.926	-2.004	-1.831	-1.919	-1.715
	(-0.40)	(-0.41)	(-0.37)	(-0.39)	(-0.35)
Capital Expenditures	-1.469	-1.507	-1.422	-1.472	-1.434
	(-1.25)	(-1.31)	(-1.20)	(-1.27)	(-1.23)
ROA	8.080***	8.065***	8.066***	8.076***	8.093***
	(7.30)	(7.26)	(7.28)	(7.32)	(7.34)
Leverage	-4.999***	-5.002***	-5.009***	-5.013***	-4.995***
	(-7.32)	(-7.27)	(-7.29)	(-7.28)	(-7.26)
Firm Size	-0.177	-0.174	-0.184	-0.178	-0.180
	(-0.95)	(-0.94)	(-0.98)	(-0.95)	(-0.95)
Entrenchment Index	0.00256	0.00220	0.00417	0.00278	0.00396
	(0.09)	(0.07)	(0.14)	(0.09)	(0.13)
Deferred Taxes	0.000000748	0.00000117	0.00000106	0.000000714	0.00000271
	(0.03)	(0.05)	(0.04)	(0.03)	(0.11)
Firm Age	0.670	0.651	0.706	0.672	0.653
	(1.15)	(1.14)	(1.20)	(1.15)	(1.12)
Acquisitions	-0.0000246	0	0	0	-0.0000247
	(-0.64)	.	.	.	(-0.63)
PPE	-0.308	-0.313	-0.332	-0.310	-0.336
	(-0.71)	(-0.71)	(-0.75)	(-0.71)	(-0.77)
Market-to-Book Ratio	0.0117	0.0116	0.0115	0.0118	0.0113
	(1.42)	(1.41)	(1.41)	(1.44)	(1.36)
Dividends	-0.000411**	-0.000417**	-0.000408**	-0.000412**	-0.000410**
	(-2.44)	(-2.49)	(-2.40)	(-2.44)	(-2.44)
Net Income	-0.0000577***	-0.0000581***	-0.0000571**	-0.0000577***	-0.0000586**
	(-2.62)	(-2.63)	(-2.57)	(-2.61)	(-2.57)
Hightech Dummy	-2.900***	-2.946***	-2.912***	-2.905***	-2.922***
	(-3.25)	(-3.22)	(-3.26)	(-3.29)	(-3.28)
Goodwill	-0.0000160	-0.0000171	-0.0000173	-0.0000163	-0.0000184
	(-0.95)	(-1.01)	(-1.03)	(-0.97)	(-1.10)
Retained Earnings	0.0000713***	0.0000718***	0.0000714***	0.0000713***	0.0000721***
	(4.74)	(4.79)	(4.74)	(4.75)	(4.78)
EBIT	-0.0000135	-0.0000139	-0.0000120	-0.0000134	-0.0000130
	(-0.34)	(-0.34)	(-0.30)	(-0.34)	(-0.32)
Working Capital	1.453***	1.431***	1.444***	1.440***	1.437***
	(2.71)	(2.63)	(2.69)	(2.71)	(2.68)
N	1615	1615	1615	1615	1615
rmse	0.529	0.529	0.529	0.529	0.529
r2	0.947	0.947	0.947	0.947	0.947
r2_a	0.931	0.931	0.931	0.931	0.931

Table 14: SCID Effect on Default Risk (Altman's Z) - (Endogeneity Test: Arellano-Bond)

Arellano-Bond regressions are presented below to account for possible endogeneity between Altman's Z and measures of SCID. The dependent variable is the likelihood of a firm declaring bankruptcy (Altman's Z). In column (1), Altman's Z is regressed on SCID-Account Balance$_{(t-1)}$ and a set of standard control variables used in the literature. Column (2) regresses Altman's Z on SCID-Firm Contributions$_{(t-1)}$ and the standard control variables. Column (3) regresses Altman's Z on SCID-Executive Contributions$_{(t-1)}$ and the standard control variables. Column (4) regresses Altman's Z on SCID-Earnings$_{(t-1)}$ on Account and the standard control variables. The model in column (5) regresses Altman's Z on SCID-Firm Contributions$_{(t-1)}$, SCID-Executive Contributions$_{(t-1)}$, and SCID-Earnings on Account$_{(t-1)}$ including the standard control variables. Models [3] and [5] imply that as CEOs increase contributions to their deferred compensation accounts relative to the top five executives' increased contributions to their deferred compensation accounts then probability of the firm defaulting decreases (i.e. Altman's Z increases). t statistics in parentheses and are based on robust standard errors clustered at the year and firm level. *,**,*** represent significance at the 10%, 5%, and 1% level, respectively.

	(1) Altman's Z	(2) Altman's Z	(3) Altman's Z	(4) Altman's Z	(5) Altman's Z
SCID–Account Balance$_{(t-1)}$	0.180				
	(1.53)				
SCID–Firm Contributions$_{(t-1)}$		-0.105			-0.171
		(-0.62)			(-0.94)
SCID–Executive Contributions$_{(t-1)}$			0.130*		0.157*
			(1.86)		(1.94)
SCID–Earnings on Account$_{(t-1)}$				0.0333	0.0300
				(0.61)	(0.57)
Industry–adjusted Tobin's Q	0.364***	0.368***	0.366***	0.367***	0.366***
	(3.91)	(3.94)	(3.93)	(3.93)	(3.94)
Inside Ownership	-0.0827*	-0.0835*	-0.0817	-0.0843*	-0.0814
	(-1.65)	(-1.66)	(-1.63)	(-1.68)	(-1.63)
Inside Ownership^2	0.221**	0.225**	0.227**	0.232**	0.222**
	(2.03)	(2.10)	(2.10)	(2.16)	(2.08)
Research & Development	-1.753	-1.840	-1.780	-1.819	-1.635
	(-0.58)	(-0.61)	(-0.59)	(-0.60)	(-0.55)
Capital Expenditures	-2.415**	-2.465**	-2.383**	-2.417**	-2.367**
	(-2.35)	(-2.40)	(-2.30)	(-2.36)	(-2.32)
ROA	7.169***	7.150***	7.135***	7.139***	7.159***
	(6.73)	(6.84)	(6.71)	(6.74)	(6.84)
Leverage	-6.064***	-6.092***	-6.091***	-6.110***	-6.079***
	(-7.87)	(-8.03)	(-7.93)	(-7.96)	(-8.06)
Firm Size	-0.430	-0.407	-0.431	-0.424	-0.412
	(-1.58)	(-1.51)	(-1.58)	(-1.56)	(-1.52)
Entrenchment Index	0.00145	0.00126	0.000837	0.00128	0.00243
	(0.09)	(0.08)	(0.05)	(0.08)	(0.16)
Deferred Taxes	-0.0000408	-0.0000429	-0.0000414	-0.0000424	-0.0000418
	(-1.30)	(-1.33)	(-1.27)	(-1.32)	(-1.28)
Firm Age	0.627	0.567	0.650	0.602	0.619
	(1.40)	(1.27)	(1.46)	(1.35)	(1.39)
Acquisitions	-0.000109***	-0.000109***	-0.000112***	-0.000110***	-0.000110***
	(-3.12)	(-3.11)	(-3.16)	(-3.15)	(-3.12)
PPE	-0.457	-0.426	-0.465	-0.454	-0.445
	(-1.02)	(-0.95)	(-1.04)	(-1.01)	(-0.99)
Market-to-Book Ratio	0.00968	0.00979	0.00956	0.0100	0.00949
	(1.51)	(1.53)	(1.53)	(1.55)	(1.50)
Dividends	-0.000631***	-0.000639***	-0.000627***	-0.000637***	-0.000627***
	(-3.22)	(-3.28)	(-3.20)	(-3.25)	(-3.21)
Net Income	-0.0000604**	-0.0000605**	-0.0000589*	-0.0000601*	-0.0000604*
	(-1.96)	(-1.98)	(-1.89)	(-1.95)	(-1.95)
Goodwill	-0.0000109	-0.0000111	-0.0000117	-0.0000108	-0.0000121
	(-0.65)	(-0.68)	(-0.71)	(-0.66)	(-0.74)
Retained Earnings	0.0000578***	0.0000576***	0.0000574***	0.0000576***	0.0000585***
	(3.75)	(3.73)	(3.75)	(3.72)	(3.80)
EBIT	0.0000290	0.0000289	0.0000298	0.0000290	0.0000295
	(1.08)	(1.10)	(1.11)	(1.09)	(1.10)
Working Capital	0.693*	0.695*	0.685	0.686	0.702*
	(1.66)	(1.66)	(1.63)	(1.63)	(1.68)
N	1227	1227	1227	1227	1227
rmse					
r2					
r2_a					

Table 15: SCID Effect on Capital Expenditures

This table presents a GLM fractional logit model. The dependent variable is the Capital Expenditures (capital expenditures divided by total assets). In column (1), Capital Expenditures is regressed on SCID-Account Balance$_{(t-1)}$ and a set of standard control variables used in the literature. Column (2) regresses Capital Expenditures on SCID-Firm Contributions$_{(t-1)}$ and the standard control variables. Column (3) regresses Capital Expenditures on SCID-Executive Contributions$_{(t-1)}$ and the standard control variables. Column (4) regresses Capital Expenditures on SCID-Earnings$_{(t-1)}$ on Account and the standard control variables. The model in column (5) regresses Capital Expenditures on SCID-Firm Contributions$_{(t-1)}$, SCID-Executive Contributions$_{(t-1)}$, and SCID-Earnings on Account$_{(t-1)}$ including the standard control variables. Models [3] and [5] imply that as CEOs increase contributions to their deferred compensation accounts relative to the top five executives' increased contributions to their deferred compensation accounts then the firm will increase its capital expenditures. t statistics in parentheses and are based on robust standard errors clustered at the year and firm level. *,**,*** represent significance at the 10%, 5%, and 1% level, respectively.

	(1) Capital Expenditures	(2) Capital Expenditures	(3) Capital Expenditures	(4) Capital Expenditures	(5) Capital Expenditures
SCID–Account Balance$_{(t-1)}$	0.0798				
	(1.18)				
SCID–Firm Contributions$_{(t-1)}$		0.0948			0.0214
		(1.33)			(0.27)
SCID–Executive Contributions$_{(t-1)}$			0.219***		0.225***
			(3.55)		(3.29)
SCID–Earnings on Account$_{(t-1)}$				0.0135	-0.0350
				(0.25)	(-0.64)
Industry–adjusted Tobin's Q$_{(t-1)}$	0.147***	0.146***	0.144***	0.147***	0.145***
	(4.74)	(4.72)	(4.66)	(4.72)	(4.67)
Inside Ownership	0.0732***	0.0727***	0.0737***	0.0737***	0.0740***
	(2.89)	(2.86)	(2.96)	(2.90)	(2.98)
Inside Ownership^2	-0.263***	-0.262***	-0.258***	-0.267***	-0.260***
	(-3.60)	(-3.56)	(-3.56)	(-3.65)	(-3.56)
Research & Development	-1.212***	-1.185***	-1.149**	-1.203***	-1.140**
	(-2.69)	(-2.67)	(-2.48)	(-2.69)	(-2.46)
ROA	0.919**	0.892**	0.961**	0.898**	0.930**
	(2.20)	(2.15)	(2.34)	(2.16)	(2.24)
Leverage	-1.066***	-1.060***	-1.099***	-1.044***	
	(-5.06)	(-5.06)	(-5.18)	(-4.94)	
Firm Size	0.0394*	0.0362*	0.0382*	0.0374*	0.0366*
	(1.81)	(1.70)	(1.80)	(1.74)	(1.72)
Acquisitions	-0.0000328	-0.0000336	-0.0000340	-0.0000326	-0.0000340
	(-1.47)	(-1.53)	(-1.49)	(-1.46)	(-1.50)
Firm Age	-0.146***	-0.144***	-0.138***	-0.149***	-0.138***
	(-4.66)	(-4.61)	(-4.41)	(-4.76)	(-4.40)
Entrenchment Index	-0.0380***	-0.0394***	-0.0409***	-0.0382***	-0.0412***
	(-2.64)	(-2.74)	(-2.88)	(-2.65)	(-2.91)
Deferred Taxes	-0.00000949	-0.0000101	-0.00000903	-0.00000958	-0.00000878
	(-1.32)	(-1.41)	(-1.27)	(-1.32)	(-1.24)
Altman's Z	0.000227	0.000315	-0.00126	0.000545	0.000302
	(0.02)	(0.02)	(-0.09)	(0.04)	(0.02)
PPE	1.564***	1.571***	1.562***	1.568***	1.572***
	(30.44)	(30.55)	(30.61)	(30.61)	(29.21)
Market-to-Book Ratio	-0.0199***	-0.0195***	-0.0198***	-0.0196***	-0.0203***
	(-3.20)	(-3.12)	(-3.21)	(-3.16)	(-3.12)
Dividends	-0.0000680*	-0.0000650*	-0.0000701*	-0.0000655*	-0.0000698*
	(-1.72)	(-1.65)	(-1.75)	(-1.66)	(-1.74)
Net Income	0.00000496	0.00000673	0.00000430	0.00000649	0.00000568
	(0.19)	(0.26)	(0.17)	(0.25)	(0.22)
Hightech Dummy	-0.110	-0.110	-0.0912	-0.106	-0.0899
	(-1.48)	(-1.49)	(-1.19)	(-1.43)	(-1.17)
Goodwill	-0.00000988**	-0.00000991**	-0.0000111**	-0.00000985**	-0.0000111**
	(-2.27)	(-2.29)	(-2.53)	(-2.26)	(-2.52)
Retained Earnings	-0.00000185	-0.00000214	-0.00000228	-0.00000185	-0.00000251
	(-0.46)	(-0.54)	(-0.57)	(-0.46)	(-0.62)
EBIT	0.0000189	0.0000182	0.0000212	0.0000175	0.0000212
	(0.90)	(0.87)	(1.02)	(0.83)	(1.02)
Working Capital	-0.524***	-0.524***	-0.526***	-0.517***	-0.501***
	(-4.05)	(-4.05)	(-4.08)	(-3.97)	(-3.73)
N	1590	1590	1590	1590	1590
rmse					
r2					
r2_a					

Table 16: SCID Effect on Research & Development - Fixed Effects

This table presents firm and year fixed-effects regressions double clustered by firm and year. The dependent variable is the Research & Development (research & development divided by total sales). In column (1), Research & Development is regressed on SCID-Account Balance$_{(t-1)}$ and a set of standard control variables used in the literature. Column (2) regresses Research & Development on SCID-Firm Contributions$_{(t-1)}$ and the standard control variables. Column (3) regresses Research & Development on SCID-Executive Contributions$_{(t-1)}$ and the standard control variables. Column (4) regresses Research & Development on SCID-Earnings$_{(t-1)}$ on Account and the standard control variables. The model in column (5) regresses Research & Development on SCID-Firm Contributions$_{(t-1)}$, SCID-Executive Contributions$_{(t-1)}$, and SCID-Earnings on Account$_{(t-1)}$ including the standard control variables. Models [4] and [5] imply that as the earnings on CEO deferred compensation accounts increase relative to the top five executives' earnings on their deferred compensation accounts then research & development decreases. t statistics in parentheses and are based on robust standard errors clustered at the year and firm level. *,**,*** represent significance at the 10%, 5%, and 1% level, respectively.

	(1) R&D/Sales	(2) R&D/Sales	(3) R&D/Sales	(4) R&D/Sales	(5) R&D/Sales
SCID-Account Balance$_{(t-1)}$	-0.00151				
	(-1.09)				
SCID-Firm Contributions$_{(t-1)}$		-0.000474			0.000561
		(-0.25)			(0.31)
SCID-Executive Contributions$_{(t-1)}$			-0.00181		-0.00161
			(-1.46)		(-1.31)
SCID-Earnings on Account$_{(t-1)}$				-0.00141***	-0.00129***
				(-2.63)	(-3.07)
Industry-adjusted Tobin's Q$_{(t-1)}$	0.00167	0.00169	0.00169	0.00169	0.00170
	(1.39)	(1.40)	(1.40)	(1.42)	(1.42)
Inside Ownership	0.000213	0.000240	0.000224	0.000237	0.000222
	(0.65)	(0.71)	(0.68)	(0.71)	(0.67)
Inside Ownership^2	-0.000672	-0.000746	-0.000711	-0.000806	-0.000765
	(-0.72)	(-0.77)	(-0.76)	(-0.84)	(-0.81)
Capital Expenditures	-0.00378	-0.00374	-0.00470	-0.00401	-0.00481
	(-0.38)	(-0.37)	(-0.45)	(-0.40)	(-0.44)
ROA	-0.0247	-0.0243	-0.0247	-0.0251	-0.0254
	(-1.26)	(-1.23)	(-1.26)	(-1.28)	(-1.29)
Leverage	-0.00718	-0.00723	-0.00687	-0.00694	-0.00666
	(-0.89)	(-0.90)	(-0.87)	(-0.89)	(-0.87)
Firm Size	0.000814	0.000809	0.000906	0.000765	0.000849
	(0.41)	(0.40)	(0.44)	(0.39)	(0.41)
Acquisitions	0.00000101	0.00000101	0.00000103	0.00000101	0.00000103
	(1.10)	(1.11)	(1.12)	(1.11)	(1.12)
Firm Age	-0.00340	-0.00384	-0.00408	-0.00305	-0.00329
	(-0.60)	(-0.66)	(-0.69)	(-0.54)	(-0.57)
Entrenchment Index	-0.000513	-0.000520	-0.000542	-0.000518	-0.000537
	(-0.92)	(-0.91)	(-0.96)	(-0.92)	(-0.96)
Deferred Taxes	-0.00000142**	-0.00000141**	-0.00000142**	-0.00000143**	-0.00000143**
	(-2.00)	(-1.99)	(-2.00)	(-2.04)	(-2.06)
Altman's Z	-0.000288	-0.000301	-0.000262	-0.000274	-0.000240
	(-0.31)	(-0.32)	(-0.28)	(-0.30)	(-0.26)
PPE	0.00444	0.00451	0.00484	0.00439	0.00469
	(1.06)	(1.06)	(1.10)	(1.04)	(1.07)
Market-to-Book Ratio	0.000115	0.000112	0.000115	0.000112	0.000115
	(0.86)	(0.84)	(0.88)	(0.86)	(0.89)
Dividends	-0.000000919	-0.000000840	-0.000000869	-0.000000880	-0.000000894
	(-0.37)	(-0.35)	(-0.36)	(-0.36)	(-0.37)
Net Income	-0.000000803*	-0.000000815*	-0.000000811*	-0.000000787*	-0.000000786*
	(-1.82)	(-1.84)	(-1.82)	(-1.84)	(-1.83)
Hightech Dummy	-0.0106	-0.0118	-0.0129	-0.0107	-0.0117
	(-0.74)	(-0.79)	(-0.86)	(-0.73)	(-0.78)
Goodwill	0.000000273	0.000000280	0.000000297	0.000000275	0.000000291
	(1.00)	(1.02)	(1.04)	(1.01)	(1.05)
Retained Earnings	0.000000259	0.000000261	0.000000253	0.000000254	0.000000247
	(1.10)	(1.09)	(1.07)	(1.07)	(1.05)
EBIT	4.19e-08	3.07e-08	1.45e-08	4.64e-08	3.15e-08
	(0.16)	(0.11)	(0.05)	(0.18)	(0.12)
N	1590	1590	1590	1590	1590
rmse	0.00645	0.00645	0.00644	0.00644	0.00644
r2	0.981	0.981	0.981	0.981	0.981
r2_a	0.975	0.975	0.976	0.976	0.976

6 REFERENCES

Anantharaman, D., Fang, V. W., & Gong, G. (2010). Are executive pensions and deferred compensation inside debt? Evidence from corporate private loan contracts. SSRN Electronic Journal, Retrieved from http://www. ssrn. com/abstract, 1697855.

Anantharaman, D., Fang, V. W., & Gong, G. (2013). Inside debt and the design of corporate debt contracts. Management Science, 60(5), 1260–1280.

Agrawal, A., & Mandelker, G. N. (1987). Managerial incentives and corporate investment and financing decisions. The Journal of Finance, 42(4), 823–837.

Bebchuk, L. A., & Cohen, A. (2005). The costs of entrenched boards. Journal of Financial Economics, 78(2), 409–433.

Bebchuk, L., Cohen, A., & Ferrell, A. (2009). What matters in corporate governance?. Review of Financial Studies, 22(2), 783–827.

Bebchuk, L. A., Cremers, K. J., & Peyer, U. C. (2011). The CEO pay slice. Journal of Financial Economics, 102(1), 199–221.

Bebchuk, L., & Grinstein, Y. (2005). The growth of executive pay. Oxford review of economic policy, 21(2), 283–303.

Bebchuk, L. A., & Jackson Jr, R. J. (2005). Executive pensions (No. w11907). National Bureau of Economic Research.

Bebchuk, L. A., & Jolls, C. (1999). Managerial value diversion and shareholder wealth. Journal of Law, Economics, and Organization, 15(2), 487–502.

Berle, A. A., & Means, G. G. C. (1932). The modern corporation and private property. Transaction Books.

Bhagat, S., & Bolton, B. (2008). Corporate governance and firm performance. Journal of Corporate Finance, 14(3), 257–273.

Bolton, P., Scheinkman, J., & Xiong, W. (2006). Pay for short-term performance: executive compensation in speculative markets (No. w12107). National Bureau of Economic Research.

Brander, J. A., & Poitevin, M. (1992). Managerial compensation and the agency costs of debt finance. Managerial and Decision Economics, 13(1), 55–64.

Cassell, C. A., Huang, S. X., Manuel Sanchez, J., & Stuart, M. D. (2012). Seeking safety: The relation between CEO inside debt holdings and the riskiness of firm investment and financial policies. Journal of Financial Economics, 103(3), 588–610.

Coles, J. L., Daniel, N. D., & Naveen, L. (2006). Managerial incentives and risk-taking. Journal of Financial Economics, 79(2), 431–468.

Core, J., & Guay, W. (1999). The use of equity grants to manage optimal equity incentive levels. Journal of accounting and economics, 28(2), 151–184.

Cremers, K. J., & Nair, V. B. (2005). Governance mechanisms and equity prices. The Journal of Finance, 60(6), 2859-2894.

Desai, M. A., & Dharmapala, D. (2009). Corporate tax avoidance and firm value. The Review of Economics and Statistics, 91(3), 537–546.

Demsetz, H., & Lehn, K. (1985). The structure of corporate ownership: Causes and consequences. The Journal of Political Economy, 93(6), 1155–1177.

Edmans, Alex, and Qi Liu. "Inside debt." Review of Finance 15 (2011): 75–102.

Frydman, C. (2005). Rising through the ranks: The evolution of the market for corporate executives, 1936–2003. Unpublished working paper, Harvard University.

Frydman, C., & Saks, R. E. (2010). Executive compensation: A new view from a long-term perspective, 1936–2005. Review of Financial Studies, 23(5), 2099–2138.

Gompers, P., Ishii, J., & Metrick, A. (2003). Corporate governance and equity prices. The Quarterly Journal of Economics, 118(1), 107–156.

Halford, J., & Qiu, M. (2012). Inside debt and debt incentives: Evidence from the 2008 financial crisis.

Hirshleifer, D., & Thakor, A. V. (1992). Managerial conservatism, project choice, and debt. Review of Financial Studies, 5(3), 437–470.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of financial economics, 3(4), 305–360.

John, Kose, and Teresa John. "Top management compensation and capital structure." The Journal of Finance 48, no. 3 (1993): 949–974.

John, K., Litov, L., & Yeung, B. (2008). Corporate Governance and Risk-Taking. The Journal of Finance, 63(4), 1679–1728.

Kalcheva, I., & Lins, K. V. (2007). International evidence on cash holdings and expected managerial agency problems. Review of Financial Studies, 20(4), 1087–1112.

Kale, J. R., Reis, E., & Venkateswaran, A. (2009). Rank-Order Tournaments and Incentive Alignment: The Effect on Firm Performance. The Journal of Finance, 64(3), 1479–1512.

Khan, R., Dharwadkar, R., & Brandes, P. (2005). Institutional ownership and CEO compensation: a longitudinal examination. Journal of Business Research, 58(8), 1078–1088.

Laeven, L., & Levine, R. (2009). Bank governance, regulation and risk taking. Journal of Financial Economics, 93(2), 259–275.

Lambert, R. A., Larcker, D. F., & Verrecchia, R. E. (1991). Portfolio considerations in valuing executive compensation. Journal of Accounting Research, 29(1), 129–149.

Lang, Larry H.P. and Rene M. Stulz, 1994, "Tobin's q, Corporate Diversification, and Firm Performance," Journal of Political Economy, 102: 1248–1280.

Lee, G., & Tang, H. (2011). CEO pension and deferred compensation. Unpublished Working Paper. Seton Hall University.

Lewellen, K. (2006). Financing decisions when managers are risk averse. Journal of Financial Economics, 82(3), 551–589.

Low, A. (2009). Managerial risk-taking behavior and equity-based compensation. Journal of Financial Economics, 92(3), 470–490.

Morck, R., Shleifer, A., & Vishny, R. W. (1988). Management ownership and market valuation: An empirical analysis. Journal of financial economics, 20, 293–315.

Murphy, K. J., & Zabojnik, J. (2007). Managerial capital and the market for CEOs.

Myers, S. C. (1984). The capital structure puzzle. The journal of finance, 39(3), 574–592.

Rajgopal, S., & Shevlin, T. (2002). Empirical evidence on the relation between stock option compensation and risk taking. Journal of Accounting and Economics, 33(2), 145–171.

Sundaram, R. K., & Yermack, D. L. (2007). Pay me later: Inside debt and its role in managerial compensation. The Journal of Finance, 62(4), 1551–1588.

Thomsen, S. (2004). Blockholder Ownership, Dividends and Firm Value In Continental Europe. 12.

Titman, S., & Wessels, R. (1988). The determinants of capital structure choice. The Journal of finance, 43(1), 1–19.

Tong, Z. (2008). Deviations from optimal CEO ownership and firm value. Journal of Banking & Finance, 32(11), 2462–2470.

Wei, C., & Yermack, D. (2010). Deferred compensation, risk, and company value: Investor reactions to CEO incentives (No. 445). Staff Report, Federal Reserve Bank of New York.

Wei, C., & Yermack, D. (2011). Investor reactions to ceos' inside debt incentives. Review of Financial Studies, 24(11), 3813–3840.

Yermack, D. (1996). Higher market valuation of companies with a small board of directors. Journal of financial economics, 40(2), 185–211.

Chapter 3: Deferring Compensation, CEO Dominance, and Corporate Social Responsibility

1 Introduction

The Managerial Power Theory derives from the idea that CEOs hold unbalanced and significantly unchecked power in the corporate environment. In July 2006, the SEC voted to amend executive compensation disclosure requirements. The new requirements call for, in part, more understandable and comprehensive disclosure of CEO compensation. The SEC's clear desire is that enhanced disclosure will empower investors, and in this regard help suppress a continuing debate regarding the explanation (or absence thereof) for rising CEO pay.

In this article, I endeavor to discover what effect the SEC's rule changes in executive compensation might have on CEO pay. Following the pioneering research conducted by Jensen and Meckling (1976), several papers have studied the relationship between executive compensation contract design and corporate behavior but mostly focused on salary, bonus, stocks, and stock options as major forms of compensation. A recent growing stream of literature reports that debt-like compensation, in the forms of pension benefits and deferred compensation, accounts for a significant part of the total executive compensation package and, in some firms, managers even hold more debt-like compensation than equity-based compensation (e.g., Bebchuk and Jackson (2005), Sundaram and Yermack (2007), Gerakos (2010), and Wei and Yermack (2011)).

Deferred compensation is a significant function in the compensation of top U.S. managers. These incentive plans are referred to by economists as "inside debt," since they represent fixed obligations for firms to make future payments to corporate insiders. Inside debt obligations are unsecured and unfunded, in the large majority of U.S. companies, exposing managers to the same default risks and insolvency treatment as outside creditors. Large inside debt contracts might therefore cause CEOs to man-

age their firms conservatively by reducing CEO power and increasing corporate social responsibility to avoid risk. This proposition is well-timed as many firms attempt to diminish their managers' risk-taking incentives as a consequence of the international financial crisis. Inside debt is expected to alleviate managers' risk-taking incentive since inside debt is typically unsecured and unfunded, and if the firms go bankrupt, managers have equal claims as those of other unsecured creditors (Sundaram and Yermack (2007), Gerakos (2010), and Cassell, Huang, Sanchez, and Stuart (2012)).

In this research, I examine the link between executive management inside debt pay disparity and CEO power and its corporate policy implications regarding a firm's responsibility to society. Corporate social responsibility (CSR) is an issue of growing interest, and the reporting of socially responsible activity is becoming more prevalent as investors, customers, and other stakeholders demand greater transparency about all aspects of business. As the importance placed by stakeholders on socially responsible behavior has increased, the attitude toward CSR has changed dramatically over the last few decades. Thornton (2008) claims that CSR is a necessity for all businesses and is not exclusive to large corporations. Advocates of firms adhering to the principles of social responsibility propose that firms should engage in activities that benefit multiple stakeholders by acting socially responsible.

The use of deferred compensation for top managers is not a novel compensation mechanism. Lee and Tang (2011) find that CEOs are more likely to obtain higher compensation through the use of inside debt. Their finding is important when one considers that inside debt holdings are prevalent and often substantial (Sundaram and Yermack, 2007). Bebchuk and Jackson (2005) document that pension and deferred compensation can comprise a major portion of executive pay. Wei and Yermack (2011) show in their sample that nearly 85 percent of CEOs hold some type of inside debt and that average inside debt holdings are approximately $10 million for sample CEOs. Despite its widespread use, limited disclosure requirements have hindered researchers' ability to investigate the implications of debt-like CEO holdings. However, recent empirical research provides preliminary evidence on the implications of CEO inside

debt holdings. In this paper, I am able to utilize data that partitions the top 5 executives inside debt holdings by their source of contribution (i.e. firm contributions, executive contributions, and earnings on account balance). If deferred compensation can effect CEO power, firms may experience a reduction (increase) in risk and become more (less) socially responsible.

This paper seeks to fill a gap in the literature by examining the association between the ratio of CEO inside debt holdings relative to the inside debt holdings of the top five managers and CEO power and corporate social responsibility (e.g., the CEO pay slice and the CSR score). I find that an increase in the SCID (Slice of CEO Inside-Debt, constructed as the ratio of the CEO's deferred compensation relative to the aggregate deferred compensation of the top 5 executives) from executive contributions (SCID-EC) is positively correlated with an increase in CEO power in the following year. In particular, higher SCID-EC is associated with higher a ratio of CEO compensation relative to the aggregate compensation of the top five managers as measured by the CEO pay slice (CPS). In addition, my findings unveil a positive relationship between SCID-E and CSR. Thus, CEOs who experience higher earnings on their deferred compensation accounts relative to the top 5 executives' earnings then corporate social responsibility increases. Taken as a whole, my results indicate that SCID can provide a useful tool for research on firm governance, and that its relationship with social responsibility is a relevant issue to study for corporate directors, financial regulators, social investors, and social economists.

This paper seeks to answer the following questions:

1. Is the Slice of CEO Inside-Debt (SCID), associated with the power of the CEO?

2. Does the gap between CEO deferred compensation and the aggregate deferred compensation of the top 5 executives relate to corporate social responsibility?

U.S. banks, securities firms, and corporations were required to increase their compensation disclosures following rule 33-8732A established by the U.S. Securities and Exchange Commission (SEC). The compensation disclosures should be made explicit

in the new Compensation Discussion and Analysis section of a corporation's Form 8-K, 10-k, and 10-KSB after 2006. The policy implications could have widespread effect on the use of inside debt. While companies in many industries use restricted stock and options to help compensate employees, financial firms are essentially the only ones that rely so heavily on deferrals as a key part of employee pay. So, I separate my sample to exclude financial institutions to determine the need for all firms to have more transparent disclosures.

CEO pensions and deferred compensation are collectively referred to as inside debt. Pensions for CEOs invariably involve much larger payments than regular employee pensions and are classified as non-qualified compensation plans. In these plans, contributions are not taxed until they are received – retirement or separation from the firm – and the firm does not get an income tax deduction until the contributions are distributed and the employee pays tax. Deferred compensation plans for CEOs have the same characteristics, except the CEO elects to defer part of his/her compensation to a later date. To encourage executives to defer part of their salary, firms usually specify a rate at which they will match salary deferrals.

It is important to note that both CEO pensions and deferred compensation plans are unfunded and unsecured to preserve their tax-deferral benefits and to be exempt from the rules applicable to ordinary tax-qualified plans under ERISA (Employee Retirement Income Security Act). In particular, "unfunded" means that although pension and deferred compensation accounts accumulate and grow in accordance with the stated asset allocation, the firm never actually allocates money to the pension or the deferred compensation plan of the employee. The firm is obligated only to make payments at retirement. Furthermore, since these compensation plans are not secured; CEOs and other top executives as beneficiaries of these plans are classified by bankruptcy courts as just another unsecured creditor of the firm.

For decades executives have received significant amounts of pay in the form of defined benefit pension plans, and many also participate in both mandatory and voluntary schemes under which they delay the receipt of current-year salary and bonus

income, leaving it invested with their firms at a certain rate of return until retirement. These forms are known to economists as "inside debt," since they represent fixed obligations for the company to make future payments to corporate insiders, and in this paper deferred compensation is the only factor measured, to the exclusion of pensions, when referring to inside debt. Executives are usually able to vest their pension money after their retirement except for some special cases. The special occasions include the change in firm control, specific board approval, fulfilling a requirement for minimum years of service, and if the employee is disabled. Alternatively, executives are given more flexibility to vest their deferred compensation plans before their retirement. Deferred compensation is normally distributed upon a termination of employment or at the time of a pre-retirement scheduled distribution date selected by the participating executive.

This research seeks to extend the discussion on the effect of the inside debt of the top executives and its interaction with the CEO's slice of the firm's inside-debt, (see Washington, 2015), with respect to corporate governance. I propose, in this paper, that the deferment rate differential of the top 5 executive's compensation is important to understanding the impact and effect of inside debt on CEO power (CPS) and corporate social responsibility (CSR). Firms that encourage corporate social responsibility can mitigate their risk.

The question that I consider in this paper is how effective is a firm at utilizing measures of SCID as a governance mechanism to control CEO power. Another motivation for the study of the pay equity of inside debt within the top executive team and its influence corporate social responsibility is that it might reinforce responsible risk management. A firm's commitment to responsibly managing concerns about risk may be measured by their corporate social responsibility score.

Prior research suggests that CEO's, with compensation packages similar to debt, are more inclined to lower firm risk (Bolton, Mehran, and Shapiro (2011)). Managerial contracts, which include deferred compensation, stipulate that firms must pay

executives fixed amounts at or after retirement. However, there is risk associated with these debt claims since the contractual future payments are generally unfunded or unsecured. Consequentially, deferred compensation exhibits sensitivity to the risk of firm bankruptcy and the liquidation value in bankruptcy. Also, previous work has shown that the higher an executive's inside leverage relative to firm leverage, the more closely their incentives are aligned with debtholders resulting in reduced risk-taking (Anantharaman, Fang, and Gong (2013)). Thus, firms with higher levels of inside debt might be more susceptible to adhering to the principles of corporate social responsibility as a means of minimizing firm risk.

There are two alternative methods to constructing CEO contracts in the United States. In the contracting view, pay is used to solve an agency problem: the compensation committee optimally chooses pay contracts which give the CEO incentives to maximize shareholder wealth (see, e.g., Holmstrom and Kaplan (2003) and Edmans and Gabaix (2009)). There is a debate as to whether a firm acting socially responsible maximizes shareholder wealth. However, in the long term, shareholder wealth maximization must include considerations for corporate social responsibility if risk is to be minimized. In the alternative, "skimming," view pay is the result of an agency problem: CEOs have managed to capture the pay process so that they set their own pay, constrained somewhat by the availability of cash or by a fear of drawing shareholders' attention. (see, e.g., Bebchuk and Fried (2004) and Morse, Nanda and Seru (2011)). Thus, executives may use inside debt to camouflage their total compensation.

I propose two tests to examine the skimming view. In the first test, I examine whether measures of SCID decrease the power of dominant CEOs. I use Bebchuk, Cremers, and Peyer's (2011) approach to measure CEO dominance. Using this method, a CEO with a larger pay slice is regarded as more dominant or influential in regards to affecting corporate policy. The CEO pay slice (CPS) represents the fraction of the combined salaries of the top-five executives rewarded to the CEO. This variable is used to proxy for CEO dominance and relates to corporate results such as firm performance, Tobin's q, accounting profitability, credit ratings and the cost of debt

financing (Bebchuk, Cremers, and Peyer, 2011; Liu and Jiraporn, 2010). Since CPS is a continuous measure it is preferred relative to other indicators of CEO dominance such as CEO duality.

As a second test of CEOs skimming, I examine the effect of SCID on Corporate Social Responsibility (CSR) scores. The percentage of CEO'S inside debt slice is used as a mechanism for socially responsible corporate governance. Both firms and CEOs have an interest in the firm appearing socially responsible. My research aims to show that their interests are represented through the use of the differential compensation deferment rate known as "inside debt."

My paper makes several important contributions. This paper is the first, to my knowledge, to study relative difference between the amount of deferments between the CEO and the top 5 executives and its effect on CEO power and corporate social responsibility. The importance of this new line of inquiry is well justified as a reduction in agency costs and an increase in corporate social responsibility may be created from an optimal compensation package. In addition, pay differentials between the CEO and other top executives has been shown to be associated with CEO entrenchment, firm value, and stock returns (Bebchuk, Cremers, and Peyer(2011); Cremers and Palia (2011)). If agency costs can be reduced through compensation structures in which a CEO's relative level of deferred compensation causes management pay equity to be more aligned, then this research can be an important tool for effective corporate governance.

There are several explanations why a study of the relationship between top executives deferred compensation pay structure and CEO power and corporate social responsibility may be of interest:

(i.) Study the differential amounts of deferred compensation among senior executives with respect to corporate governance issues is a natural extension of CEO deferred compensation studies.

(ii.) Executive compensation packages influence the amount of power that a CEO maintains within the firm.

(iii.) A badly constructed deferred compensation pay structure may have undesirable consequences, e.g. diverting senior executives time from managing the firm with social responsibility as a factor of importance.

(iv.) There is a need to verify certain potential theoretical explanations for top executives deferred compensation pay structures, as well as developing some new explanations.

I perform tests using four measures of the "Slice of CEO Inside-Debt" (SCID): (1) the aggregate CEO deferred compensation account balance relative to the aggregate deferred compensation account balance of the top 5 executives; (2) the firm's annual contributions to the CEO's deferred account relative to the firm's annual contributions to the top 5 executive's deferred accounts; (3) the annual contributions of the CEO to his/her deferred account relative to the annual contributions of the top 5 executives to their deferred accounts; and (4) the annual earnings on the CEO's deferred account relative to the annual earnings on the top 5 executive's deferred accounts. These measures test the significance of executives' relative amount of inside-debt. I expect that larger relative CEO inside debt-to-Top 5 executives inside debt ratios imply less (greater) CEO power outcomes when the firm (executive) contributes to the deferred compensation account. I predict that corporate social responsibility will be higher when CEOs have a larger inside debt slice at risk.

Additionally, I contribute to the literature that examines the factors (e.g., corporate governance, ownership structures, investor protection, etc.) that affect the riskiness of corporate policy choices (see, e.g., Agrawal and Mandelker, 1987; John, Litov, Yeung, 2008; Laeven and Levine, 2009). My result, which suggests that greater contributions from CEOs relative to the top five executive's contributions to their deferred compensation accounts (larger SCID-EC) can increase CEO power, is particularly relevant in light of the role that risky policy choices allegedly played in the recent financial crisis. Thus, I expect that my results will be of interest to regulators who are interested in the effects that CEO and executive compensation packages can have on managerial behavior.

The remainder of the paper is organized as follows: Section 2 reviews the prior literature and develops my hypotheses. Section 3 describes the sample, the measurement of my variables, and the empirical design. Section 4 reports the results of my primary tests. The final section concludes the paper.

2 Prior Literature and Hypothesis Development

2.1. Prior Literature

My work is related to several streams of literature. To begin, some recent studies have shown that the fraction of the top-five compensation received by CEOs has been trending up over time (Bebchuk and Grinstein (2005), Frydman (2005), Murphy and Zabojnik (2007), Frydman and Saks (2010)). In contrast, I focus on the portion of this fraction that is considered as deferred compensation relative to the performance and behavior of firms at any given point in time.

This paper also relates to studies that examine the association of CEO power with corporate governance. For example, prior research has shown that inside debt and its components are a greater share of total CEO wealth in firms with weaker governance structures (e.g., Liu, Mauer, and Zhang (2014)). Tung and Wang (2010) conclude that bank CEOs with large amounts of inside debt compensation exposed their firms to less risk and as a result performed better during the recent financial crisis. I contribute to this literature by identifying an alternative factor of the firm's governance arrangements — the SCID level — that is associated with CEO power and corporate social responsibility.

Executive compensation contracts are structured to align the interests of managers with those of owners (e.g., Berle and Means, 1932; Jensen and Meckling, 1976; Bebchuk and Jolls, 1999). Recent studies investigating the incentive effects of various compensation components primarily emphasize the role of debt vs. equity-based compensation in incentivizing managers to undertake actions that maximize shareholder value (e.g., Edmans and Liu (2011); Sundaram and Yermack, 2007; Anatharaman,

Fang, and Gong, 2010; Wei and Yermack, 2011). While this stream of literature improves our understanding of the effect of managerial compensation on the alignment between CEOs' and debt holders' interests, an important element, the alignment between the interests of CEOs and other top executive managers, has been largely overlooked by prior research. Consistent with the idea that the compensation of the total team of executives is significant to understanding firm value and accounting performance, Kale et al. (2009); Bebchuk, Cremers, and Peyer (2011) present their research on executive pay disparity.

A common thread among the previously discussed studies is that the authors do not test the association between CEO inside debt holdings and the top executives inside debt holdings. A large body of research has investigated compensation mechanisms designed to mitigate the costs associated with these agency conflicts. In general, the results suggest that equity holdings (e.g., stock and stock options) encourage risk-averse CEOs to manage their firms in ways that benefit shareholders (see, e.g., Guay, 1999; Coles, Daniel, and Naveen, 2006; Low, 2009). And by deferring more bonus pay, usually with restricted stock units that are charged over several years as they vest, firms may be locking in compensation expense that isn't matched by future performance. That is a concern since firms have been accused of withholding, not reinvesting in the economy, government funds disseminated to "pump" money into the economy. These expenses from deferred compensation could be limiting companies' ability to act socially responsible.

Prior theoretical studies (e.g., Jensen and Meckling 1976; Carroll 1979) suggest that CSR can potentially be linked to the pursuit of managers' self-interest. From an agency cost perspective, McWilliams et al. (2006) argue that CSR is a managerial perquisite, in the sense that managers use CSR to advance their careers or other personal agendas. Focusing on managers' opportunistic behavior within an agency theoretic framework, Petrovits (2006) and Prior et al. (2008) find evidence consistent with this view. Friedman (1970) expressed that the mere existence of CSR was a signal of an agency problem within the firm. An agency theory perspective implies

that CSR is a misuse of corporate resources that would be better spent on valued-added internal projects or returned to shareholders. Empirical research indicates that corporate social performance (CSP) is positively related to corporate financial performance (Deckop, Merriman, and Gupta (2006)).

Hemingway and Maclagan (2004) argue that firms adopt CSR to cover up the impact of some corporate misconduct. Thus, firms may engage in CSR as a form of reputation insurance, which then gives them a "license to operate" with respect to earnings management. This motivation indicates that decisions to participate in CSR activities may be made to give stakeholders the impression that the firm is transparent, when, in fact, the firm "hides" behind the appearance of transparency while engaging in earnings management. This motive is somewhat consistent with evidence in Prior et al. (2008). Together, if managers' opportunistic incentives deriving from self-interest and/or reputation insurance prevail, then we would observe a positive relation between CSR and earnings management because managers of these firms are more likely to attempt to mislead stakeholders as to the value of the firm and financial performance. This discussion leads to a competing hypothesis on the relation between CSR and earnings management. CEOs with more power are better able to engage earnings management.

2.2. Hypothesis Development

Inside debt compensation for executives is typically regarded as consisting of two distinct pieces: defined benefit pensions and deferred compensation. Pension benefits may sometimes be negotiated, but they usually accrue to managers under company-wide formulas established by each company, often based upon years of service with the firm and each executive's average level of cash compensation. Executive can draw the pension in the form of a life annuity or as a single lump sum at retirement. Deferred compensation, in contrast, accrues if the executive voluntarily (in some cases mandatorily) invests or lends money back to their firm by refraining from monetary

compensation that they would normally receive in the current period. Deferred compensation is generally invested either at a fixed rate of return, in the firm's stock, or in a variety of stock or bond mutual funds selected by the firm. Companies may permit executives to make various adjustments to deferred compensation investment plan. Unfortunately, specific details regarding these investment decisions are not transparent due to current disclosure rules. Executives are, generally, restricted from withdrawing from their deferred compensation account until retirement. Although, some companies allow for contingencies in which earlier withdrawals are permitted. The possible voluntary and restricted nature of deferred compensation provides the impetus for the following scenario.

Consider a case in which there are no agency problems and firms therefore generally set SCID at the optimal level according to the relative importance of the CEO in the top executive team. The board would set the compensation of the top executive team without any undue influence by the CEO in the absence of agency costs. In this optimal selection scenario, by definition, no firm would be able to increase its value by changing its SCID level. Nevertheless, SCID levels could relate to CEO power or corporate social responsibility to the extent that the optimal SCID level differs across firms.

Optimal SCID levels, for each of my four measures, can be expected to vary among firms, depending on several considerations. First, the optimal SCID level for any given firm depends on the pool of candidates from which the members of the top executive team are drawn, and the quality and outside opportunities of these candidates clearly differ from firm to firm. Second, the optimal SCID level depends on the extent to which it is desirable to provide incentive compensation camouflage to top executives other than the CEO. Third, the optimal SCID level depends on the extent to which it is desirable for the firm to have a dominant player incentive alignment model based on one especially important player rather than a management incentive alignment model based on a team of top executives. Fourth and related, the optimal SCID level reflects whether it is desirable to create an overhang of inside debt expenses through

deferred compensation on just the CEO rather than on other top executives which would further reduce future flexibility.

Existing theory does not provide one with an unambiguous prediction as to how the above considerations relate to CEO power and corporate social responsibility, which allows for the following hypotheses:

Hypothesis 1: SCID is positively correlated with CEO power or (*CSR*). It might be argued that compensation camouflage and incentive alignment contracts are more important for CEOs than the other top executives for high-value firms (*corporations with strong name recognition*) to manage the risk of their social responsibilities that need to be decisively and efficiently addressed. It might also be that high-value firms are especially likely to attract "star" CEOs whom require compensation camouflage. Thus, CEOs can effectively use information asymmetry to reduce the potential fallout from having their remuneration in the public spotlight.

Hypothesis 2: SCID is negatively correlated with CEO power or (*CSR*). Compensation camouflage and incentive alignment contracts might be especially needed for CEOs of low-value firms (*corporations with low name recognition*) in distress that need to be turned around. Conversely, entrenched CEOs may engage in compensation camouflage and rent extracting thereby using their power to obtain a higher level of pay through deferred compensation plans. It might also be that low-value firms are unable to attract a good executive team.

Hypothesis 3: SCID is uncorrelated with CEO power or (*CSR*). It might be that the factors making high or low SCID optimal vary in ways that are distributed independently of CEO power or (*CSR*). Thus, to the extent that the association between SCID and CEO power, or (*CSR*), is determined by optimal selection, an empirical investigation is necessary to choose among these competing hypotheses 1-3. Hypotheses 4a-4d follow from the hypotheses 1-3.

Hypothesis 4a: There is a positive (*negative*) association between the CEO's deferred compensation account balance scaled by the top 5 executive's deferred compensation account balance ($SCID_{AccountBalance}$) and CEO power or (CSR).

Hypothesis 4b: There is a positive (*negative*) association between the firm's contributions to the CEO's deferred compensation account scaled by the firm's contributions to the top 5 executive's deferred compensation accounts ($SCID_{FirmContributions}$) and CEO power or (CSR).

Hypothesis 4c: There is a negative (*positive*) association between the CEO's contributions to deferred compensation scaled by the top 5 executive's contributions to deferred compensation ($SCID_{ExecutiveContributions}$) and CEO power or ($CSR$).

Hypothesis 4d: There is a no association between the earnings of the CEO's deferred compensation account scaled by the earnings on the top 5 executive's deferred compensation accounts($SCID_{Earnings}$) and CEO power or (CSR).

3 Variable Measurement, Sample Selection, and Empirical Design

3.1. Variable Measurement

3.1.1. Measurement of the CEO Inside Debt Slice or CEO Power (CPS)

Jensen and Meckling (1976) theorize that CEO inside debt holdings could encourage CEOs to manage the firm in ways that mitigate the agency cost of debt. More specifically, they suggest that when the CEO's debt-to-equity ratio mirrors that of the firm, the CEO would have no incentives to reallocate wealth between debt and equity holders because the reallocation would have no effect on the value of his/her holdings in the firm. Edmans and Liu (2011) further elaborate on these arguments and show

analytically that increases in the value of the CEO's inside debt lead to conservative investment choices, which in turn lead to increases (decreases) in the value of the firm's debt (equity). Following the theoretical predictions of Jensen and Meckling (1976) and Edmans and Liu (2011), and recent empirical applications (e.g., Sundaram and Yermack, 2007; Anatharaman, Fang, and Gong, 2010; Wei and Yermack, 2011; Bebchuk, Cremers, and Peyer, 2011), my variable of interest is the relative (to the top 5 executives) CEO inside-debt ratio. Previous studies have developed empirical proxies to capture the relative CEO debt-to-equity ratio. This paper seeks to extend prior research on the CEO Inside-Debt Slice (SCID) by examining its effect on CEO power (pay disparity within the executive management team) and corporate social responsibility. I perform tests using four alternative measures of SCID.

My first measure, Slice of CEO Inside-Debt$_{Account\ Balance}$, is constructed as the ratio of the CEO's deferred compensation account balance relative to the aggregate deferred compensation account balance of the top 5 executives:

$SCID_{Account\ Balance} = (CEO_{DEF-AB}/TOP5_{DEF-AB})$

CEO_{DEF-AB} is the CEOs annual deferred compensation account balance. $TOP5_{DEF-AB}$ is the sum of the top 5 executive's deferred compensation account balances. My second measure, Slice of CEO Inside-Debt$_{Firm\ Contributions}$, is the ratio of the firm's annual contributions to the CEO's deferred account relative to the sum of the firm's annual contributions to the top 5 executive's deferred compensation accounts:

$SCID_{Firm\ Contributions} = (CEO_{DEF-FC}/TOP5_{DEF-FC})$

CEO_{DEF-FC} is the firm's annual contributions to the CEO's deferred compensation account. $TOP5_{DEF-FC}$ is the sum of the firm's annual contributions to the top 5 executive's deferred compensation accounts. My third measure, Slice of CEO Inside-Debt $_{Executive\ Contributions}$, is constructed as the ratio of the CEO's annual contributions to the their own deferred compensation account relative to the sum of the top 5 executive's annual contributions to their deferred compensation accounts:

$SCID_{Executive\ Contributions} = (CEO_{DEF-EC}/TOP5_{DEF-EC})$

CEO_{DEF-EC} is the annual contributions of the CEO to his/her deferred compen-

sation account. $TOP5_{DEF-EC}$ is the annual contributions of the top 5 executives to their deferred compensation accounts. My fourth measure, Slice of CEO Inside-Debt$_{Earnings}$ is constructed as the ratio of the CEO's earnings on his deferred compensation account relative to the sum of the annual earnings of the top 5 executive's deferred compensation accounts:

$SCID_{Earnings} = (CEO_{DEF-E}/TOP5_{DEF-E})$

CEO_{DEF-E} is the annual earnings on the CEO's deferred account. $TOP5_{DEF-E}$ is the sum of the top 5 executive's earnings on their deferred compensation accounts.

3.1.2. Measurement of Corporate Social Responsibility (CSR)

KLD evaluates CSR on dimensions including corporate governance, community relations, diversity, employee relations, environment, product, alcohol, gambling, military contracting, nuclear power, and tobacco. The last five dimensions are exclusionary screen categories; companies involved beyond specific thresholds in these categories are not eligible for inclusion in the Domini 400 Social Index that KLD constructs for CSR firms. I did not consider these exclusionary categories in constructing CSR scores, as these dimensions do not pertain to firms' discretionary activities. The remaining six dimensions are qualitative evaluation categories.

Corporate governance is perceived as a distinct construct from CSR and its impact on financial reporting practice is widely examined in the prior literature (e.g., Klein 2002; Bergstresser and Philippon 2006). In order to disentangle the effect of CSR and corporate governance, I construct CSR scores based on the five remaining dimensions, excluding corporate governance. Corporate governance is a distinct construct from CSR, as both corporate governance and CSR can affect firms' financial reporting behaviors. I control for corporate governance in our regression models by including the Entrenchment Index.

Following prior studies (Waddock and Graves 1997; Johnson and Greening 1999; Chatterji et al. 2009), I construct a CSR Score, measured as total strengths minus

total concerns in KLD's five social rating categories: community, diversity, employee relations, environment, and product. I define CSR firms as those with positive net scores of CSR ratings. Firms with negative net scores are classified as non-CSR firms. Waddock and Graves (1997) find that CSR is positively associated with future financial performance, supporting the theory that good management and CSR are positively related. Johnson and Greening (1999) showed that top management equity was unrelated to the people (women and minorities, community, and employee relations) dimension of CSR.

3.2. Data

My study uses data from three main sources. Ratings of corporate social responsibility are from the Kinder, Lydenberg, Domini, & Co. (KLD) database. Equity compensation (CPS) and deferred compensation (SCID) data are from ExecuComp, and all accounting variables are from Compustat. KLD's coverage of S&P 500 firms starts in 1991; my analysis uses KLD information for S&P 500 firms from 2006 to 2012.

Based on a wide variety of sources, including company filings, government data, nongovernmental organization data, and more than 14 thousand global media sources, I evaluate firms' social performance along five major dimensions: community, diversity, employee relations, environment, and product quality and safety. Each dimension is associated with positive (i.e., strength) and negative (i.e., concern) indicators. If the firm conducts a good deed (a harm) listed as a strength (concern) indicator, it gains (loses) one point. The raw KLD CSR score is the sum of five major dimension scores based on strength and concern indicators, with a higher value indicating better social performance. My results may reflect the effect of corporate governance or agency cost components of CSR. To control for this possibility, I create the CSR score excluding corporate governance components when measuring CSR.

Next, I start collecting different components of CEO compensation (including

salary, bonus, stock options, stock ownership, deferred compensation) from the ExecuComp Database. I follow Bebchuk et al.'s (2011) approach and define CPS (i.e., the CEO's pay slice) as the CEO's total compensation as a fraction of the combined total compensation of the top five executives (including the CEO) in a given company. Total compensation includes salary, bonus, other annual pay, long-term incentive payouts, the total value of restricted stock granted that year, the Black-Scholes value of stock options granted that year, and all other total compensation (ExecuComp item TDC1).

ExecuComp started reporting complete information on inside debt holdings (I restrict my sample to deferred compensation at the exclusion of pension benefits) in 2006 onward, my sample period contains the fiscal years 2006 through 2012. In addition, I remove firms in the financial (firms with SIC code between 6000 and 6999) industries. As part of my empirical analysis is to evaluate how firms may react to the Fed's proposed law regarding more transparent reporting of executive deferred compensation contracts, I add the financial firms back to my sample to compare these results to the sub-sample with no financial institutions (in the appendix). Because the SEC's expanded executive compensation disclosure requirements became effective for 2006 fiscal year-ends, my sample period begins in 2006. I identify all firms with complete compensation data necessary to calculate the relative SCID measures (from Execucomp database) and with sufficient data in the Compustat and CRSP databases to estimate the dependent and control variables in my models. My CPS sample consists of 1,792 firm–year observations. Table 1 outlines the sample statistics. The CSR sample is comprised of 1,741 firm–year observations. Table 2 outlines the sample statistics.

3.3. Empirical Models

In this section, my primary empirical proxy for CEO power is the CEO Pay Slice (CPS) snd corporate social responsibility is the KLD CRS score. This follows a substantial literature on the association between firm value and various corporate arrangements, which extensively used Tobin's Q as a measure of firm value (e.g., Demsetz and Lehn (1985); Morck, Shleifer, and Vishny (1988); Lang and Stulz (1994); Yermack (1996); and Gompers, Ishii, and Metrick (2003); (Bebchuk, Cremers, and Peyer, (2011)).

To test my hypotheses, I developed equations to examine the impact of inside debt holdings on CEO power (CPS) and corporate social responsibility (CSR):

- CPS or CSR = f(Slice of CEO Inside-Debt Ratios (SCID Ratio), Controls, Industry Fixed Effects, Firm Fixed Effects, Year Fixed Effects)
- Model (1): The SCID Ratio = $SCID_{AccountBalance}$
- Model (2): The SCID Ratio = $SCID_{FirmContributions}$
- Model (3): The SCID Ratio = $SCID_{ExecutiveContributions}$
- Model (4): The SCID Ratio = $SCID_{Earnings}$

Controls = a vector of control variables;

Industry Fixed Effects = a vector of dummy variables for each two-digit SIC code represented in the sample;

Firm Fixed Effects = a vector of dummy variables for each firm represented in the sample;

and

Year Fixed Effects = a vector of dummy variables for each year represented in the sample.

In studying the empirical association between SCID and CPS, it is critical to recognize that SCID is an endogenously determined variable which itself may be de-

termined by factors that are also related to total executive compensation. I try to account for this in several different ways when relating SCID to CPS, as described in the summary below:

- First, I use lagged rather than contemporaneous SCID when measuring its effect on CPS (Table 3).
- Second, I control for firm performance usingTobin's Q (Table 3).
- Third, I add firm, year, and industry fixed-effects, effectively considering how changes in SCID are associated with changes in CPS when considering the firm, year, and industry (Table 3).
- Fourth, Arellano-Bond model is used as a test for endogeneity:

My variable of interest is the Slice of CEO Inside-Debt. To the extent that CEOs maintain large shares of the inside debt holdings their influence within the firm may increase, I expect a negative association between the SCID from firm contributions and CEO power, a positive correlation between the SCID from executive contributions and CEO power and corporate social responsibility.

Prior studies (e.g., Waddock and Graves 1997; McWilliams and Siegel 2000; Prior et al. 2008) show that firm size is correlated with CSR performance. Thus, I include proxies for growth opportunities and firm size (MB and SIZE, respectively). Pastor and Pietro (2003) find that larger firms are less likely to make risky investments. So, I use the natural logarithm of total assets (Log of Total Assets) to control for firm size. Consistent with Bebchuk, Cohen and Ferrell (2009), Graham, Lang, and Shackleford (2004), and Khanna and Tice (2005) I control for leverage as (long term debt and current debt) divided by total assets. According to tax hypotheses, firm value is negatively related to dividends and debt. Thus, I control for dividends and debt utilizing leverage (Fama and French, 1998). Taxes are potentially relevant to a firm's financing options and firm value. However, focusing on current tax avoidance ignores current actions by firms to reduce their future tax liability. Thus, deferred

taxes are included in my model to control for changes in future tax liabilities (Desai and Dharmapala, 2009). The valuation of tax avoidance may depend on the quality of firm governance. The entrenchment index (eindex) is used as a measure of firm governance has been shown to be negatively associated with firm value (Bebchuk, Cohen, and Ferrell, 2009).

I endorse one proxy for the uncertainty due to firm investment policies: R&D expenditures. My measure of R&D expenditures (R&D Expend/Sales Ratio) is defined as the ratio of R&D expenditures to total sales, measured at the end of the fiscal-year (Clinch, 1991; Denis, 1994; Opler and Titman, 1994; Mehran, 1995; Bebchuk and Cohen, 2005; Cassell, Huang, Sanchez, and Stuart, 2012). I examine the riskiness of firm financial policies by focusing on the liquidity of the firm's assets and the degree of debt burden in the firm's capital structure. My measure of the liquidity of the firm's assets, Working Capital, is defined as current assets minus current liabilities divided by total assets. My measure of the degree of debt burden in the firm's capital structure, Leverage, is defined as the ratio of total debt to total assets. Inputs are examined at the end of the fiscal year for each measure. A variation of each variable is constructed (R&D Expend/Sales Ratio, Working Capital, and Leverage) in which the inputs are measured at the end of fiscal-year t+1.

I use Altman's Z-score (1968) matched to manufacturing firms by sic codes and Altman's Z-score Plus matched to non-manufacturing firms by sic codes. This measure is a proxy for firm financial distress and lower Z-scores imply a greater probability of bankruptcy. I expect this variable to be positively correlated with leverage (Bhagat and Bolton, 2008). Return on assets (ROA) gauges how efficiently a company can extract profits from its assets, irrespective of firm size. I calculate ROA as earnings before interest and taxation divided over total assets. This is a pure measure of firm efficiency in generating returns from assets, excluding the effects of managerial financing decisions. Thus, I expect ROA to be uncorrelated with measures of SCID. Following Kalcheva & Lins (2007), I control for a firm's potential investment opportunity set with the ratio of capital expenditures to assets (Capex/Assets or

Capital Expenditures) and cash flow, which is earnings before interest and taxes plus depreciation and amortization (EBITDA).

Additionally, I control for retained earnings following Myers' (1984) "pecking order theory" that firms prefer internal to external financing (Titman and Wessels, 1988). Thomsen (2004) finds that concentrated ownership leads to a preference for retained earnings. I control for CEO ownership following Tong (2008) that shows that sub-optimal deviations from optimal percentage of CEO ownership reduces firm value. Khan, Dharwadkar, & Brandes (2005) find that higher levels of CEO ownership lead to a significant reduction in the level of options compensation and higher ratios of salary to total compensation.

Musteen et al. (2009) find that a firm's reputation is positively associated with its earnings performance. KLD's evaluation of CSR performance can also be potentially influenced by a firm's reputation. To control for this possibility, I include GOODWILL in the regressions as a proxy for firm reputation. Some scholars argue that goodwill has no affect on firm value and rational investors are always able to correctly value reported compensation (Bolton, Scheinkman, & Xiong, 2006). Finally, I include firm, and year fixed effects to control for firm characteristics, and overall macroeconomic factors over time. I winsorise all variables at the 1% and 99% levels to mitigate any outlier effect.

I use ordinary least squares (OLS) estimate my initial model for each dependent variable. To generate the t-statistics for my regressions, I use "robust" standard errors adjusted for heteroskedasticity (White, 1980) and include year and firm fixed effects.

4 Empirical Results

4.1. Summary statistics

Univariate statistics for the average ceo pay slice (CPS), measures of SCID and main control variables used in this paper are shown in Table 1. The statistics are computed based on a panel dataset of 1,792 firm-year observations between 2006 and

2012. In this time period, the average CPS was 38.5% with a standard deviation equaled 11.3%. The average $SCID_{AccountBalance}$ was 33.4% and its standard deviation equaled 24.2%. $SCID_{FirmContributions}$ was 23% and its standard deviation equaled 22%; $SCID_{ExecutiveContributions}$ was 20.4% and its standard deviation equaled 25.5%; $SCID_{Earnings}$ was 32% and its standard deviation equaled 171%. Although, the mean of SCID from executive contributions is the smallest statistic of interest, this research finds it to be a relevant factor to consider if researchers are to understand the relationship between inside debt and CEO power proxied by CPS. For the relevant firm characteristics, I use various Compustat, CRSP, and ExecuComp variables: Tobin's Q is defined as the market value of equity plus the book value of assets minus the sum of book value of common equity and deferred taxes, all divided by the book value of assets. Industry adjustments are made at the four-digit SIC level, by subtracting the industry median Tobin's Q. My definition of Tobin's Q is the one used by Kaplan and Zingales (1997) and subsequently also by Gompers, Ishii, and Metrick (2003).

Insider ownership is the fraction of shares held by insiders as reported by ExecuComp. To deal with nonlinearities from the effect of insider ownership, many previous papers have estimated piecewise regressions. I avoid having to choose specific piecewise thresholds by including squared terms. The average amount of shares controlled by insiders is less than 1% at (0.698%). However, the maximum amount of shares owned by a insider in this sample is 19.55%. Capital Expenditures is the ratio of capital expenditures to assets. Research & Development (R&D) is the ratio of research and development to sales. Capital expenditures and research & development are included to control for the value of growth options. Since my measure of Q may b sensitive to capital structure, I include a measure of leverage which is defined as the ratio of long-term debt to assets. Firm size is the log of total assets plus 1. CEO Ownership $\geq 20\%'$ is a dummy equal to one if the CEO owns a stake of at least 20%. There are no CEOs in my sample who control more than 20% of a firm's shares.

In Table 2, univariate statistics for the average corporate social responsibility (CSR) score, measures of SCID and main control variables used in this paper are

shown. The statistics are computed based on a panel dataset of 1,741 firm-year observations between 2006 and 2012. In this time period, the average CSR was 32.1%. The average $SCID_{AccountBalance}$ was 33.3% and its standard deviation equaled 24.2%. $SCID_{FirmContributions}$ was 22.9% and its standard deviation equaled 22%; $SCID_{ExecutiveContributions}$ was 20.3% and its standard deviation equaled 25.4%; $SCID_{Earnings}$ was 31.9% and its standard deviation equaled 173%. Although, the mean of SCID on account earnings is the third highest statistic of interest, this research finds it to be a relevant factor to consider if researchers are to understand the relationship between inside debt and corporate social responsibility proxied by the CSR score. For the relevant firm characteristics, I use various Compustat, CRSP, and ExecuComp variables: Tobin's Q is defined as the market value of equity plus the book value of assets minus the sum of book value of common equity and deferred taxes, all divided by the book value of assets. Industry adjustments are made at the four-digit SIC level, by subtracting the industry median Tobin's Q. My definition of Tobin's Q is the one used by Kaplan and Zingales (1997) and subsequently also by Gompers, Ishii, and Metrick (2003).

Insider ownership is the fraction of shares held by insiders as reported by ExecuComp. To deal with nonlinearities from the effect of insider ownership, many previous papers have estimated piecewise regressions. I avoid having to choose specific piecewise thresholds by including squared terms. The average amount of shares controlled by insiders is less than 1% at (0.710%). However, the maximum amount of shares owned by a insider in this sample is 20.73%. Capital Expenditures is the ratio of capital expenditures to assets. Research & Development (R&D) is the ratio of research and development to sales. Capital expenditures and research & development are included to control for the value of growth options. Since my measure of Q may b sensitive to capital structure, I include a measure of leverage which is defined as the ratio of long-term debt to assets. Firm size is the log of total assets plus 1. CEO Ownership $\geq 20\%'$ is a dummy equal to one if the CEO owns a stake of at least 20%. There are no CEOs in my sample who control more than 20% of a firm's shares.

4.2. The Effect of Measures of SCID on CEO Power

In Table 3, I report SCID regressions using a pooled panel with firm and year fixed-effects and standard errors clustered by firm and year. The dependent variable, in each model, is the CEO Pay Slice in following year ($CPS_{(t+1)}$). This table reports the SCID for the deferred compensation account balance Model [1], from firm contributions Model [2], from executive contributions Model [3], from earnings on the account Model [4], and from firm contributions, executive contributions, and earnings on the account Model [5]. In models [1, 2, & 4], the measures of SCID are negatively correlated with $CPS_{(t+1)}$. Model [1] suggests that CEOs who have a higher deferred compensation account balance relative to the account balance of the top five executives correlates with a decrease in CEO power in the following year. Model [2] implies that firms which contribute more to their CEO's deferred compensation account relative to the top five executives' deferred compensation accounts decreases CPS in the following year. Model [4] and Model [5] imply that firms with CEOs who earn more on their deferred compensation accounts relative to the top five executive's earnings on their deferred compensation cause CPS to decrease.

In Table 4 for robustness, Arellano-Bond regressions are presented to account for possible endogeniety between the different measures of SCID and CEO dominance (CPS). The dependent variable, in each model, is the CEO Pay Slice in following year ($CPS_{(t+1)}$). This table reports the SCID for the deferred compensation account balance Model [1], from firm contributions Model [2], from executive contributions Model [3], from earnings on the account Model [4], and from firm contributions, executive contributions, and earnings on the account Model [5]. Model [3] and Model [5] imply that firms CEOs who contribute more to their deferred compensation account relative to the top five executives' personal contributions to their deferred compensation accounts increases CPS in the following year. Research & Development is negatively correlated with CPS in Models [1–5]. This suggests that greater investment in R&D

results in decreased CEO power.

4.3. The Effect of Measures of SCID on Corporate Social Responsibility (CSR)

In Table 5, I report firm and year fixed-effects regressions. The dependent variable is the corporate social responsibility (CSR) score.This table reports the SCID for the deferred compensation account balance Model [1], from firm contributions Model [2], from executive contributions Model [3], from earnings on the account Model [4], and from firm contributions, executive contributions, and earnings on the account Model [5]. Each model contains standard control variables used within the literature.

Model [1] implies that as the total account balance of a CEO's deferred compensation account increases relative to the top five executive's deferred compensation accounts then the firm becomes less socially responsible. Models [2] and [5] imply that firms which contribute more to their CEO's deferred compensation account relative to the top five executives' deferred compensation accounts decreases corporate social responsibility. Models [3] and [4] are insignificant regarding the effects of SCID from executive contributions and account earnings.

Model [4] implies that as the earnings on CEO's deferred compensation accounts increase (1%) relative to the other top four executive's earnings in their deferred compensation accounts then firm performance, which is proxied by Industry-adjusted Tobin's $Q_{(t-1)}$, increases in the following year (0.0511%). In Table 5, I ignore the effect of the control variables on firm performance since that is not the focus of this study.

In Table 6 for robustness, Arellano-Bond regressions are presented to account for possible endogeniety between the different measures of SCID and corporate social responsibility (CSR). The dependent variable is the corporate social responsibility (CSR) score.This table reports the SCID for the deferred compensation account balance Model [1], from firm contributions Model [2], from executive contributions Model

[3], from earnings on the account Model [4], and from firm contributions, executive contributions, and earnings on the account Model [5]. Each model contains standard control variables used within the literature. The effect of SCID regarding the CEO's account balance, firm contributions, and executive contributions is insignificant. Model [4] and Model [5] imply that as the earnings on CEO's deferred compensation accounts increase relative to the other top four executive's earnings in their deferred compensation accounts then the firm's CSR score decreases.

5 Conclusions

In this paper, I conduct an empirical investigation of the Slice of CEO Inside-Debt (SCID), the fraction of inside debt of the top-five executives held by the CEO. I examine specific measures of SCID in relation to CEO power (CPS) and corporate social responsibility (CSR) . I first document whether my four measures of Slice of CEO Inside-Debt (SCID) have an effect on the CEO Pay Slice. The results reveal that SCID is significant factor in relation to CPS. I find robust evidence in which companies with CEOs who contribute more to their deferred compensation accounts relative to the other top four executives' contributions to their own deferred compensation accounts have more powerful CEOs. These results are robust to controlling for numerous firm characteristics utilizing Arellano-Bond regressions to account for potential endogeneity.

The regression analysis shows that increased earnings on CEO's deferred compensation account, as a measure of SCID, predicts greater CSR. Thus, companies with CEOs who earn more on their deferred compensation accounts relative to the top five executives' earnings on their deferred compensation accounts exhibit more corporate social responsibility traits.

While prior research has studied the effects of deferred compensation, this paper sheds light on deferred compensation contribution differential between the CEO and the top five executives. I am left with the conclusion that SCID is an important consideration when structuring executive compensation contracts. SCID-Executive Contributions appears to be a significant in relation to controlling CEO power. My findings suggest that corporate governance which ignores measures of SCID disregards an important component of effective governance if the firm is attempting to be socially responsible.

My general conclusion is that SCID is an aspect of firm governance and management that justifies consideration for future research. Subsequent studies on the effects of governance arrangements and management processes could consider research re-

garding corporate fraud and social responsibility in relation to the different measures of SCID.

Table 1: Summary Statistics: CPS Subsample

Variable	Mean	Std. Dev.	Min.	Max.	N
Year	—	—	2006	2012	1792
CPS	0.385	0.113	0.118	0.661	1792
SCID-Account Balance	0.334	0.242	0.003	0.958	1792
SCID-Firm Contributions	0.230	0.220	0.000	1.000	1792
SCID-Executive Contributions	0.204	0.255	0.000	1.000	1792
SCID-Earnings on Account	0.320	1.714	-48.943	31.434	1792
Industry-adjusted Tobin's Q	0.053	0.726	-2.606	4.707	1653
Inside Ownership	0.698	2.240	0.000	19.554	1792
Inside Ownership^2	0.503	0.667	0.000	4.421	1792
CEO Ownership	0.180	0.926	0.000	7.191	1792
Research & Development	0.022	0.046	0.000	0.426	1792
Capital Expenditures	0.053	0.050	0.005	0.285	1791
Return on Assets (ROA)	0.116	0.069	-0.082	0.323	1792
Leverage	0.223	0.142	0.000	0.626	1788
Firm Size	36.619	17.475	5.000	61.000	1792
Acquisitions	233.070	731.112	-0.007	5437.670	1792
Firm Age	36.619	17.475	5.000	61.000	1792.000
Entrenchment Index	2.824	1.281	0.000	5.000	1792
Deferred Taxes	892.833	3050.859	0.000	21793.34	1653
Altman's Z	3.877	2.100	-0.116	11.800	1755
Property, Plant, & Equipment (PPE)	0.591	0.366	0.063	1.620	1787
Market-to-Book Ratio	2.985	2.860	-6.380	17.866	1792
Dividends	350.610	938.686	0.000	6083.800	1791
Net Income	996.532	2241.561	-1097.829	14497.15	1792
Goodwill	2088.701	4721.255	0	30022	1781
Retained Earnings	4689.963	10250.332	-2900.04	67037.2	1792
EBIT	1679.236	3516.481	-298.781	21103.56	1792

Table 2: Summary Statistics: CSR Subsample

Variable	Mean	Std. Dev.	Min.	Max.	N
Year	—	—	2006	2012	1792
Corporate Social Responsibility Score (CSR)	0.321	3.755	-7.000	12.000	1741
SCID-Account Balance	0.333	0.242	0.003	0.960	1741
SCID-Firm Contributions	0.229	0.220	0.000	1.000	1741
SCID-Executive Contributions	0.203	0.254	0.000	1.000	1741
SCID-Earnings on Account	0.319	1.738	-48.943	31.434	1741
Industry-adjusted Tobin's Q	0.055	0.727	-2.606	4.707	1604
Inside Ownership	0.710	2.354	0.000	20.731	1741
Inside Ownership^2	0.503	0.676	0.000	4.551	1741
CEO Ownership	0.181	0.941	0.000	7.444	1741
Research & Development	0.022	0.047	0.000	0.426	1741
Capital Expenditures	0.052	0.049	0.005	0.278	1740
Return on Assets (ROA)	0.117	0.068	-0.070	0.326	1741
Leverage	0.220	0.139	0.000	0.615	1737
Firm Size	8.473	1.467	5.499	12.202	1741
Acquisitions	236.965	746.399	0.000	5529.980	1741
Firm Age	36.785	17.447	6.000	61.000	1741
Entrenchment Index	2.820	1.280	0.000	5.000	1741
Deferred Taxes	916.873	3128.674	0.000	21793.34	1604
Altman's Z	3.897	2.088	0.214	11.858	1704
Property, Plant, & Equipment (PPE)	0.588	0.363	0.063	1.593	1736
Market-to-Book Ratio	2.958	2.871	-7.530	17.624	1741
Dividends	355.472	949.603	0.000	6114.400	1740
Net Income	1012.219	2279.005	-1097.829	14497.15	1741
Goodwill	2128.615	4821.500	0.000	30022	1730
Retained Earnings	4743.483	10250.332	-2900.04	67037.2	1741
EBIT	1701.879	3553.696	-242.963	21103.56	1741

Table 3: SCID Effect on CEO Dominance - OLS: Fixed Effects

Firm and year fixed-effects regressions with t-statistics are based on robust standard errors clustered at the year and firm level. The dependent variable, in each model, is the CEO Pay Slice in following year ($CPS_{(t+1)}$). SCID is the ratio of CEO deferred compensation relative to the sum of the top five executive's deferred compensation. This table reports the SCID for the deferred compensation account balance in Model [1], from firm contributions in Model [2], from executive contributions in Model [3], from earnings on the account in Model [4], and from firm contributions, executive contributions, and earnings on the account in Model [5]. t statistics in parentheses. *,**,*** represent significance at the 10%, 5%, and 1% level, respectively.

	(1) CEO Pay Slice$_{(t+1)}$	(2) CEO Pay Slice$_{(t+1)}$	(3) CEO Pay Slice$_{(t+1)}$	(4) CEO Pay Slice$_{(t+1)}$	(5) CEO Pay Slice$_{(t+1)}$
SCID–Account Balance	-0.0359**				
	(-2.27)				
SCID–Firm Contributions		-0.0275*			-0.0349**
		(-1.65)			(-2.00)
SCID–Executive Contributions			0.0211*		0.0319**
			(1.73)		(2.50)
SCID–Earnings on Account				-0.0146*	-0.0154*
				(-1.70)	(-1.76)
Industry-adjusted Tobin's Q	-0.000898	-0.000451	-0.000413	-0.000645	-0.000154
	(-0.13)	(-0.06)	(-0.06)	(-0.09)	(-0.02)
Inside Ownership	0.00130	0.00158	0.000625	0.00111	0.00144
	(0.36)	(0.43)	(0.17)	(0.30)	(0.39)
Inside Ownership^2	-0.00510	-0.00566	-0.00214	-0.00414	-0.00588
	(-0.44)	(-0.48)	(-0.18)	(-0.35)	(-0.50)
Research & Development	0.0710	0.0794	0.0846	0.0536	0.0375
	(0.21)	(0.24)	(0.25)	(0.16)	(0.11)
Capital Expenditures	-0.115	-0.121	-0.135	-0.127	-0.138
	(-0.99)	(-1.04)	(-1.16)	(-1.09)	(-1.18)
ROA	-0.0332	-0.0162	-0.0255	-0.0368	-0.0323
	(-0.42)	(-0.22)	(-0.33)	(-0.47)	(-0.41)
Leverage	0.0313	0.0325	0.0328	0.0327	0.0276
	(0.57)	(0.59)	(0.59)	(0.59)	(0.50)
Firm Size	-0.0332*	-0.0307*	-0.0285	-0.0311*	-0.0320*
	(-1.82)	(-1.72)	(-1.57)	(-1.71)	(-1.77)
Acquisitions	0.000000343	0.00000110	3.02e-08	0.000000396	0.00000117
	(0.08)	(0.25)	(0.01)	(0.09)	(0.26)
Firm Age	0.0473	0.0337	0.0389	0.0480	0.0412
	(0.71)	(0.51)	(0.59)	(0.72)	(0.62)
Entrenchment Index	-0.00696*	-0.00699*	-0.00649*	-0.00660*	-0.00666*
	(-1.85)	(-1.86)	(-1.72)	(-1.75)	(-1.77)
Deferred Taxes	0.00000769*	0.00000752	0.00000754	0.00000724	0.00000769*
	(1.67)	(1.64)	(1.64)	(1.57)	(1.67)
Altman's Z	-0.00272	-0.00242	-0.00224	-0.00230	-0.00253
	(-0.67)	(-0.60)	(-0.55)	(-0.56)	(-0.62)
PPE	0.00700	0.00814	0.0115	0.00751	0.00497
	(0.18)	(0.21)	(0.30)	(0.20)	(0.13)
Market-to-Book Ratio	-0.000375	-0.000432	-0.000431	-0.000426	-0.000620
	(-0.33)	(-0.38)	(-0.38)	(-0.37)	(-0.54)
Dividends	-0.00000934	-0.00000963	-0.00000572	-0.00000731	-0.00000685
	(-0.42)	(-0.49)	(-0.25)	(-0.33)	(-0.31)
Net Income	0.00000203	0.00000184	0.00000226	0.00000210	0.00000188
	(0.48)	(0.51)	(0.53)	(0.49)	(0.44)
Goodwill	-0.00000336	-0.00000330	-0.00000304	-0.00000316	-0.00000336
	(-1.51)	(-1.55)	(-1.37)	(-1.42)	(-1.52)
Retained Earnings	-0.000000523		-0.000000981	-0.000000735	-0.000000681
	(-0.28)		(-0.52)	(-0.39)	(-0.36)
EBIT	0.000000960		0.000000881	0.000000985	0.000000886
	(0.26)		(0.24)	(0.26)	(0.24)
N	1231	1231	1231	1231	1231
rmse	0.0678	0.0679	0.0679	0.0679	0.0677
r2	0.711	0.710	0.710	0.710	0.712
r2_a	0.594	0.594	0.593	0.593	0.596

Table 4: SCID Effect on CEO Dominance - (Endogeneity Test: Arellano-Bond)

Arellano-Bond regressions are presented below to account for possible endogeniety between measures of SCID and CPS. The dependent variable, in each model, is the CEO Pay Slice in following year ($CPS_{(t+1)}$). SCID is the ratio of CEO deferred compensation relative to the sum of the top five executive's deferred compensation. This table reports the SCID for the deferred compensation account balance in Model [1], from firm contributions in Model [2], from executive contributions in Model [3], from earnings on the account in Model [4], and from firm contributions, executive contributions, and earnings on the account in Model [5]. Model [3] and Model [5] imply that firms CEOs who contribute more to their deferred compensation account relative to the top five executives' personal contributions to their deferred compensation accounts increases CPS in the following year. t statistics in parentheses. *,**,*** represent significance at the 10%, 5%, and 1% level, respectively.

	(1) CEO Pay Slice$_{(t+1)}$	(2) CEO Pay Slice$_{(t+1)}$	(3) CEO Pay Slice$_{(t+1)}$	(4) CEO Pay Slice$_{(t+1)}$	(5) CEO Pay Slice$_{(t+1)}$
SCID–Account Balance	0.00629				
	(0.22)				
SCID–Firm Contributions		0.00440			-0.00973
		(0.16)			(-0.33)
SCID–Executive Contributions			0.0293**		0.0315**
			(2.12)		(2.03)
SCID–Earnings on Account				0.00262	-0.00141
				(0.22)	(-0.11)
Industry-adjusted Tobin's Q	-0.00396	-0.00397	-0.00478	-0.00397	-0.00491
	(-0.43)	(-0.43)	(-0.53)	(-0.43)	(-0.53)
Inside Ownership	-0.00248	-0.00243	-0.00268	-0.00241	-0.00260
	(-0.68)	(-0.67)	(-0.74)	(-0.66)	(-0.72)
Inside Ownership^2	0.000392	0.000347	0.00130	0.0000544	0.00110
	(0.03)	(0.03)	(0.11)	(0.00)	(0.09)
Research & Development	-0.421*	-0.423*	-0.416*	-0.418*	-0.415*
	(-1.86)	(-1.88)	(-1.79)	(-1.84)	(-1.77)
Capital Expenditures	-0.0171	-0.0174	-0.0358	-0.0188	-0.0301
	(-0.11)	(-0.11)	(-0.26)	(-0.12)	(-0.21)
ROA	-0.112	-0.112	-0.102	-0.109	-0.105
	(-1.01)	(-0.98)	(-0.93)	(-0.97)	(-0.93)
Leverage	0.00162	0.00158	0.00320	0.00135	0.00248
	(0.03)	(0.03)	(0.05)	(0.02)	(0.04)
Firm Size	-0.0207	-0.0209	-0.0233	-0.0206	-0.0226
	(-0.61)	(-0.61)	(-0.70)	(-0.61)	(-0.67)
Acquisitions	-0.00000194	-0.00000197	-0.00000185	-0.00000196	-0.00000168
	(-0.31)	(-0.30)	(-0.29)	(-0.31)	(-0.26)
Firm Age	0.0734	0.0728	0.0833	0.0750	0.0778
	(0.66)	(0.64)	(0.75)	(0.67)	(0.68)
Entrenchment Index	-0.00199	-0.00196	-0.00219	-0.00197	-0.00218
	(-0.79)	(-0.77)	(-0.87)	(-0.78)	(-0.86)
Altman's Z	0.00425	0.00421	0.00359	0.00415	0.00378
	(0.89)	(0.87)	(0.76)	(0.87)	(0.78)
PPE	0.0429	0.0429	0.0388	0.0431	0.0403
	(0.77)	(0.76)	(0.70)	(0.77)	(0.73)
Market-to-Book Ratio	-0.000239	-0.000235	-0.000219	-0.000249	-0.000241
	(-0.24)	(-0.23)	(-0.22)	(-0.25)	(-0.24)
Dividends	0.0000566	0.0000565	0.0000563	0.0000570	0.0000574
	(1.12)	(1.11)	(1.13)	(1.13)	(1.14)
Net Income	-0.00000396	-0.00000409	-0.00000405	-0.00000399	-0.00000430
	(-0.76)	(-0.78)	(-0.78)	(-0.76)	(-0.80)
Goodwill	-0.00000123	-0.00000125	-0.00000144	-0.00000128	-0.00000141
	(-0.40)	(-0.41)	(-0.48)	(-0.43)	(-0.46)
Retained Earnings	0.00000245	0.00000253	0.00000253	0.00000249	0.00000262
	(1.05)	(1.09)	(1.10)	(1.07)	(1.09)
EBIT	0.000000334	0.000000357	0.000000466	0.000000284	0.000000446
	(0.08)	(0.09)	(0.12)	(0.07)	(0.11)
N	594	594	594	594	594
rmse					
r2					
r2_a					

Table 5: SCID Effect on Corporate Social Responsibility – OLS: Fixed Effects

This table presents firm and year fixed-effects regressions. The dependent variable is the corporate social responsibility (CSR) score.This table reports the SCID for the deferred compensation account balance Model [1], from firm contributions Model [2], from executive contributions Model [3], from earnings on the account Model [4], and from firm contributions, executive contributions, and earnings on the account Model [5]. Each model contains standard control variables used within the literature. t statistics are in parentheses and based on robust standard errors clustered at the year and firm level. *,**,*** represent significance at the 10%, 5%, and 1% level, respectively.

	(1) CSR Score	(2) CSR Score	(3) CSR Score	(4) CSR Score	(5) CSR Score
SCID–Account Balance	-0.766**				
	(-2.15)				
SCID–Firm Contributions		-0.723**			-0.812**
		(-1.99)			(-2.14)
SCID–Executive Contributions			0.101		0.275
			(0.36)		(0.94)
SCID–Earnings on Account				-0.0489	-0.0257
				(-0.28)	(-0.15)
Industry-adjusted Tobin's Q	-0.305*	-0.295*	-0.299*	-0.297*	-0.292*
	(-1.87)	(-1.80)	(-1.83)	(-1.81)	(-1.78)
Inside Ownership	0.0947	0.0958	0.0832	0.0855	0.0936
	(1.11)	(1.12)	(0.98)	(1.00)	(1.10)
Inside Ownership^2	-0.386	-0.368	-0.320	-0.330	-0.363
	(-1.38)	(-1.31)	(-1.15)	(-1.18)	(-1.30)
Research & Development	-3.674	-3.125	-3.368	-3.471	-3.191
	(-0.44)	(-0.38)	(-0.41)	(-0.42)	(-0.38)
Capital Expenditures	-3.707	-3.836	-3.995	-3.966	-3.920
	(-1.33)	(-1.38)	(-1.43)	(-1.42)	(-1.40)
ROA	3.039	3.135*	3.064	3.032	3.185*
	(1.61)	(1.66)	(1.62)	(1.60)	(1.68)
Leverage	0.628	0.647	0.672	0.649	0.667
	(0.52)	(0.54)	(0.56)	(0.54)	(0.55)
Firm Size	-0.731*	-0.695*	-0.682*	-0.689*	-0.694*
	(-1.91)	(-1.81)	(-1.78)	(-1.79)	(-1.81)
Acquisitions	0.000150*	0.000151*	0.000145	0.000145	0.000153*
	(1.65)	(1.66)	(1.59)	(1.59)	(1.69)
Firm Age	-7.038***	-7.403***	-7.211***	-7.198***	-7.381***
	(-5.28)	(-5.55)	(-5.41)	(-5.39)	(-5.52)
Entrenchment Index	-0.0917	-0.0918	-0.0868	-0.0883	-0.0884
	(-1.02)	(-1.02)	(-0.96)	(-0.98)	(-0.98)
Deferred Taxes	0.000174*	0.000167*	0.000164*	0.000164*	0.000169*
	(1.84)	(1.77)	(1.73)	(1.73)	(1.79)
Altman's Z	0.0463	0.0514	0.0544	0.0530	0.0508
	(0.50)	(0.56)	(0.59)	(0.57)	(0.55)
PPE	-0.0419	-0.0476	0.0308	0.0132	-0.0396
	(-0.05)	(-0.06)	(0.04)	(0.02)	(-0.05)
Market-to-Book Ratio	0.0568**	0.0547**	0.0570**	0.0570**	0.0542**
	(2.12)	(2.04)	(2.12)	(2.12)	(2.02)
Dividends	0.000974**	0.00100**	0.00101**	0.00101**	0.000998**
	(2.36)	(2.43)	(2.45)	(2.44)	(2.42)
Net Income	-0.000163*	-0.000170*	-0.000163*	-0.000164*	-0.000169*
	(-1.81)	(-1.89)	(-1.80)	(-1.81)	(-1.87)
Goodwill	-0.0000822*	-0.0000760*	-0.0000732*	-0.0000740*	-0.0000760*
	(-1.85)	(-1.72)	(-1.65)	(-1.67)	(-1.72)
Retained Earnings	0.000133***	0.000128***	0.000126***	0.000127***	0.000129***
	(3.32)	(3.21)	(3.16)	(3.18)	(3.22)
EBIT	-0.0000292	-0.0000296	-0.0000285	-0.0000283	-0.0000310
	(-0.32)	(-0.32)	(-0.31)	(-0.31)	(-0.34)
N	1567	1567	1567	1567	1567
rmse	1.853	1.853	1.856	1.856	1.854
r2	0.808	0.807	0.807	0.807	0.808
r2_a	0.750	0.750	0.749	0.749	0.750

Table 6: Arellano-Bond: Endogeniety–SCID and CSR Regressions

Arellano-Bond regressions are presented to account for possible endogeniety between the different measures of SCID and corporate social responsibility (CSR). The dependent variable is the corporate social responsibility (CSR) score.This table reports the SCID for the deferred compensation account balance Model [1], from firm contributions Model [2], from executive contributions Model [3], from earnings on the account Model [4], and from firm contributions, executive contributions, and earnings on the account Model [5]. t statistics in parentheses and are based on robust standard errors clustered at the year and firm level. Each model contains standard control variables used within the literature. *,**,*** represent significance at the 10%, 5%, and 1% level, respectively.

	(1) CSR Score	(2) CSR Score	(3) CSR Score	(4) CSR Score	(5) CSR Score
SCID–Account Balance	-0.503				
	(-0.97)				
SCID–Firm Contributions		-0.840			-0.797
		(-1.42)			(-1.27)
SCID–Executive Contributions			-0.385		-0.407
			(-1.16)		(-1.15)
SCID–Earnings on Account				0.366*	0.419**
				(1.79)	(2.08)
Industry–adjusted Tobin's Q	-0.424*	-0.416*	-0.414*	-0.442*	-0.424*
	(-1.80)	(-1.80)	(-1.76)	(-1.84)	(-1.78)
Inside Ownership	-0.0260	-0.0240	-0.0287	-0.0338	-0.0236
	(-0.21)	(-0.19)	(-0.23)	(-0.26)	(-0.19)
Inside Ownership^2	0.356	0.335	0.375	0.408	0.342
	(1.05)	(1.00)	(1.11)	(1.20)	(1.02)
Research & Development	7.322	7.512	7.390	8.797	9.045
	(0.99)	(1.01)	(1.03)	(1.21)	(1.26)
Capital Expenditures	-3.521	-3.273	-3.270	-3.063	-2.615
	(-1.09)	(-1.02)	(-1.00)	(-0.94)	(-0.80)
ROA	1.001	0.979	0.896	0.950	0.854
	(0.57)	(0.56)	(0.50)	(0.54)	(0.49)
Leverage	-1.751	-1.693	-1.738	-1.704	-1.759
	(-1.17)	(-1.14)	(-1.16)	(-1.15)	(-1.20)
Firm Size	-0.506	-0.547	-0.514	-0.894*	-0.901*
	(-0.92)	(-1.00)	(-0.95)	(-1.86)	(-1.92)
Acquisitions	-0.000168	-0.000159	-0.000172	-0.000191	-0.000178
	(-1.29)	(-1.24)	(-1.33)	(-1.49)	(-1.41)
Firm Age	-1.683	-1.549	-1.719	-1.269	-1.125
	(-0.86)	(-0.80)	(-0.88)	(-0.66)	(-0.59)
Entrenchment Index	-0.487***	-0.487***	-0.487***	-0.488***	-0.487***
	(-5.71)	(-5.74)	(-5.69)	(-5.70)	(-5.71)
Altman's Z	-0.124	-0.124	-0.120	-0.144	-0.139
	(-1.11)	(-1.12)	(-1.07)	(-1.24)	(-1.22)
PPE	1.580	1.421	1.499		
	(1.43)	(1.31)	(1.38)		
Market-to-Book Ratio	0.0846*	0.0824*	0.0841*	0.0840*	0.0806*
	(1.85)	(1.83)	(1.84)	(1.80)	(1.75)
Dividends	0.000904	0.00108	0.000934	0.000844	0.00107
	(0.90)	(1.10)	(0.93)	(0.83)	(1.09)
Net Income	0.000149*	0.000149*	0.000155*	0.000138*	0.000133*
	(1.77)	(1.80)	(1.88)	(1.65)	(1.65)
Goodwill	-0.0000671	-0.0000660	-0.0000645	-0.0000582	-0.0000637
	(-0.99)	(-0.99)	(-0.98)	(-1.04)	(-1.14)
Retained Earnings	0.0000412	0.0000399	0.0000351	0.0000411	0.0000431
	(0.79)	(0.80)	(0.69)	(0.86)	(0.95)
EBIT	0.000102*	0.0000985*	0.0000997*	0.000115**	0.000105*
	(1.87)	(1.78)	(1.82)	(2.01)	(1.86)
N	856	856	856	856	856
rmse					
r2					
r2_a					

6 REFERENCES

Altman, E., "Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy," Journal of Finance, September 1968.

Anantharaman, D., Fang, V. W., & Gong, G. (2010). Are executive pensions and deferred compensation inside debt? Evidence from corporate private loan contracts. SSRN Electronic Journal, Retrieved from http://www.ssrn.com/abstract, 1697855.

Anantharaman, D., Fang, V. W., & Gong, G. (2013). Inside debt and the design of corporate debt contracts. Management Science, 60(5), 1260–1280.

Agrawal, A., & Mandelker, G. N. (1987). Managerial incentives and corporate investment and financing decisions. The Journal of Finance, 42(4), 823–837.

Bebchuk, L. A., & Cohen, A. (2005). The costs of entrenched boards. Journal of Financial Economics, 78(2), 409–433.

Bebchuk, L., Cohen, A., & Ferrell, A. (2009). What matters in corporate governance?. Review of Financial Studies, 22(2), 783–827.

Bebchuk, Lucian, and Jesse Fried. "Pay without performance." (2004).

Bebchuk, L. A., Cremers, K. J., & Peyer, U. C. (2011). The CEO pay slice. Journal of Financial Economics, 102(1), 199–221.

Bebchuk, L., & Grinstein, Y. (2005). The growth of executive pay. Oxford review of economic policy, 21(2), 283–303.

Bebchuk, L. A., & Jackson Jr, R. J. (2005). Executive pensions (No. w11907). National Bureau of Economic Research.

Bebchuk, L. A., & Jolls, C. (1999). Managerial value diversion and shareholder wealth. Journal of Law, Economics, and Organization, 15(2), 487–502.

Bergstresser, D., & Philippon, T. (2006). CEO incentives and earnings management. Journal of financial economics, 80(3), 511–529.

Berle, A. A., & Means, G. G. C. (1932). The modern corporation and private property. Transaction Books.

Bhagat, S., & Bolton, B. (2008). Corporate governance and firm performance. Journal of Corporate Finance, 14(3), 257–273.

Bolton, P., Mehran, H., & Shapiro, J. D. (2011). Executive compensation and risk taking. FRB of New York Staff Report, (456).

Bolton, P., Scheinkman, J., & Xiong, W. (2006). Pay for short-term performance: executive compensation in speculative markets (No. w12107). National Bureau of Economic Research.

Carroll, A. B. (1979). A three-dimensional conceptual model of corporate performance. Academy of management review, 4(4), 497–505.

Cassell, C. A., Huang, S. X., Manuel Sanchez, J., & Stuart, M. D. (2012). Seeking safety: The relation between CEO inside debt holdings and the riskiness of firm investment and financial policies. Journal of Financial Economics, 103(3), 588–610.

Chatterji, A. K., Levine, D. I., & Toffel, M. W. (2009). How well do social ratings actually measure corporate social responsibility?. Journal of Economics & Management Strategy, 18(1), 125–169.

Clinch, G. (1991). Employee compensation and firms' research and development activity. Journal of Accounting Research, 59–78.

Coles, J. L., Daniel, N. D., & Naveen, L. (2006). Managerial incentives and risk-taking. Journal of Financial Economics, 79(2), 431–468.

Deckop, J. R., Merriman, K. K., & Gupta, S. (2006). The effects of CEO pay structure on corporate social performance. Journal of Management, 32(3), 329–342.

Denis, D. J. (1994). Organizational form and the consequences of highly leveraged transactions: Kroger's recapitalization and Safeway's LBO. Journal of Financial Economics, 36(2), 193–224.

Desai, M. A., & Dharmapala, D. (2009). Corporate tax avoidance and firm value. The Review of Economics and Statistics, 91(3), 537–546.

Demsetz, H., & Lehn, K. (1985). The structure of corporate ownership: Causes and consequences. The Journal of Political Economy, 93(6), 1155–1177.

Edmans, Alex, and Xavier Gabaix. "Is CEO pay really inefficient? A survey of new optimal contracting theories." European Financial Management 15.3 (2009): 486–496.

Edmans, Alex, and Qi Liu. "Inside debt." Review of Finance 15 (2011): 75–102.

Fama, E. F., & French, K. R. (1998). Taxes, financing decisions, and firm value. The Journal of Finance, 53(3), 819–843.

Friedman, M.: 1970, "The Social Responsibility of Business is to Increase its Profits", New York Times Magazine, September 13th, 32–33, 122, 126.

Frydman, C. (2005). Rising through the ranks: The evolution of the market for corporate executives, 1936–2003. Unpublished working paper, Harvard University.

Frydman, C., & Saks, R. E. (2010). Executive compensation: A new view from a long-term perspective, 1936–2005. Review of Financial Studies, 23(5), 2099–2138.

Gerakos, J. (2010). Chief executive officers and the pay–pension tradeoff. Journal of Pension Economics and Finance, 9(02), 303–319.

Gompers, P., Ishii, J., & Metrick, A. (2003). Corporate governance and equity prices. The Quarterly Journal of Economics, 118(1), 107–156.

Graham, J. R., Lang, M. H., & Shackelford, D. A. (2004). Employee stock options, corporate taxes, and debt policy. The Journal of Finance, 59(4), 1585–1618.

Guay, W. R. (1999). The sensitivity of CEO wealth to equity risk: an analysis of the magnitude and determinants. Journal of Financial Economics, 53(1), 43–71.

Hemingway, C. A., & Maclagan, P. W. (2004). Managers' personal values as drivers of corporate social responsibility. Journal of Business Ethics, 50(1), 33–44.

Holmstrom, Bengt, and Steven N. Kaplan. "The state of US corporate governance: What's right and what's wrong?." Journal of Applied Corporate Finance 15.3 (2003): 8–20.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. Journal of financial economics, 3(4), 305–360.

John, K., Litov, L., & Yeung, B. (2008). Corporate Governance and Risk-Taking. The Journal of Finance, 63(4), 1679–1728.

Johnson, R. A., & Greening, D. W. (1999). The effects of corporate governance and institutional ownership types on corporate social performance. Academy of Management Journal, 42(5), 564–576.

Kalcheva, I., & Lins, K. V. (2007). International evidence on cash holdings and expected managerial agency problems. Review of Financial Studies, 20(4), 1087–1112.

Kale, J. R., Reis, E., & Venkateswaran, A. (2009). Rank-Order Tournaments and Incentive Alignment: The Effect on Firm Performance. The Journal of Finance, 64(3), 1479–1512.

Kaplan, S. N., and L. Zingales. (1997). Do Investment-Cash Flow Sensitivities Provide Useful Measures of Financing Constraints? Quarterly Journal of Economics 112:169–216.

Khan, R., Dharwadkar, R., & Brandes, P. (2005). Institutional ownership and CEO compensation: a longitudinal examination. Journal of Business Research, 58(8), 1078–1088.

Khanna, N., & Tice, S. (2005). Pricing, exit, and location decisions of firms: Evidence on the role of debt and operating efficiency. Journal of Financial Economics, 75(2), 397–427.

Klein, A. (2002). Audit committee, board of director characteristics, and earnings management. Journal of accounting and economics, 33(3), 375–400.

Laeven, L., & Levine, R. (2009). Bank governance, regulation and risk taking. Journal of Financial Economics, 93(2), 259–275.

Lang, Larry H.P. and Rene M. Stulz, 1994, "Tobin's q, Corporate Diversification, and Firm Performance," Journal of Political Economy, 102: 1248–1280.

Lee, G., & Tang, H. (2011). CEO pension and deferred compensation. Unpublished Working Paper. Seton Hall University.

Liu, Y., D. Mauer, and Y. Zhang. 2014. Firm cash holdings and CEO inside debt. Journal of Banking and Finance 42, 83–100.

Low, A. (2009). Managerial risk-taking behavior and equity-based compensation. Journal of Financial Economics, 92(3), 470–490.

McWilliams, A., Siegel, D. S., & Wright, P. M. (2006). Corporate social responsibility: Strategic implications*. Journal of management studies, 43(1), 1–18.

Mehran, Hamid. "Executive compensation structure, ownership, and firm performance." Journal of financial economics 38.2 (1995): 163–184.

Morck, R., Shleifer, A., & Vishny, R. W. (1988). Management ownership and market valuation: An empirical analysis. Journal of financial economics, 20, 293-315.

Morse, Adair, Vikram Nanda, and Amit Seru. "Are incentive contracts rigged by powerful CEOs?." The Journal of Finance 66.5 (2011): 1779–1821.

Musteen, M., D. Datta, and B. Kemmerer. 2009. Corporate reputation: Do board characteristics matter? British Journal of Management 21 (4): 498–510.

Murphy, K. J., & Zabojnik, J. (2007). Managerial capital and the market for CEOs.

Myers, S. C. (1984). The capital structure puzzle. The journal of finance, 39(3), 574–592.

Opler, T. C., & Titman, S. (1994). Financial distress and corporate performance. The Journal of Finance, 49(3), 1015–1040.

Pastor, L'., & Pietro, V. (2003). Stock valuation and learning about profitability. The Journal of Finance, 58(5), 1749–1790.

Petrovits, C. M. (2006). Corporate-sponsored foundations and earnings management. Journal of Accounting and Economics, 41(3), 335-362.

Prior, D., Surroca, J., & Tribo, J. A. (2008). Are socially responsible managers really ethical? Exploring the relationship between earnings management and corporate social responsibility. Corporate Governance: An International Review, 16(3), 160–177.

Sundaram, R. K., & Yermack, D. L. (2007). Pay me later: Inside debt and its role in managerial compensation. The Journal of Finance, 62(4), 1551–1588.

Thomsen, S. (2004). Blockholder Ownership, Dividends and Firm Value In Continental Europe. 12.

Thornton, G. (2008). Corporate Social Responsibility: A necessity not a choice. International Business Report.

Titman, S., & Wessels, R. (1988). The determinants of capital structure choice. The Journal of finance, 43(1), 1–19.

Tong, Z. (2008). Deviations from optimal CEO ownership and firm value. Journal of Banking & Finance, 32(11), 2462–2470.

Wei, C., & Yermack, D. (2011). Investor reactions to ceos' inside debt incentives. Review of Financial Studies, 24(11), 3813-3840.

White, H. (1980). A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. Econometrica: Journal of the Econometric Society, 817–838.

Yermack, D. (1996). Higher market valuation of companies with a small board of directors. Journal of financial economics, 40(2), 185–211.