



THE UNIVERSITY *of* EDINBURGH

Edinburgh Research Explorer

## Economic and psychological perspectives on CEO compensation

**Citation for published version:**

Main, B & O'Reilly, IJICA 2010, 'Economic and psychological perspectives on CEO compensation: a review and synthesis', *Industrial and Corporate Change*, vol. 19, no. 3, pp. 675-712.  
<https://doi.org/10.1093/icc/dtp050>

**Digital Object Identifier (DOI):**

[10.1093/icc/dtp050](https://doi.org/10.1093/icc/dtp050)

**Link:**

[Link to publication record in Edinburgh Research Explorer](#)

**Document Version:**

Peer reviewed version

**Published In:**

Industrial and Corporate Change

**Publisher Rights Statement:**

This is a pre-copy-editing, author-produced PDF of an article accepted for publication in *Industrial and Corporate Change* following peer review. The definitive publisher-authenticated version, Main, B. & O'Reilly, I. I. C. A. (2010), "Economic and Psychological Perspectives on CEO Pay: A Review and Synthesis", in *Industrial and Corporate Change*, 19, p. 675-712, is available online at: <http://icc.oxfordjournals.org/content/19/3/675.abstract>

**General rights**

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

**Take down policy**

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact [openaccess@ed.ac.uk](mailto:openaccess@ed.ac.uk) providing details, and we will remove access to the work immediately and investigate your claim.



**ECONOMIC AND PSYCHOLOGICAL PERSPECTIVES ON CEO  
COMPENSATION: A REVIEW AND SYNTHESIS**

Charles A. O'Reilly III

Graduate School of Business

Stanford University

(650) 725-2110

[oreilly\\_charles@gsb.stanford.edu](mailto:oreilly_charles@gsb.stanford.edu)

Brian G.M. Main

University of Edinburgh Management School

The University of Edinburgh

[Brian.Main@ed.ac.uk](mailto:Brian.Main@ed.ac.uk)

October, 2009

We would like to thank Tim Ranzetta and Nora McCord of Equilar Inc. for providing the data used for this study.

### **Abstract**

To many, the principal-agent model is the obvious lens through which executive pay should be viewed. Such a sentiment sits uncomfortably with a large number of empirical studies suggesting that the process of determining executive pay seems to be more readily explained by recourse to arguments of managerial power and influence. This paper investigates the micro-underpinnings of boardroom behavior in order to explain this departure from principal-agency theory's argument that executive compensation serves to align interests between the owners of the company and its senior managers. We find that there are strong interaction effects among social influence variables and the social setting of boardroom activity. Generous pay awards, bearing only a weak connection to corporate performance, are explained in the context of the social psychology of the boardroom. These results, and a review of the empirical research, suggest the need for a more comprehensive model of executive compensation that incorporates both economic and psychological determinants.

In the past decade, CEO compensation has attracted the attention of economists, accountants, finance professors, lawyers, organizational researchers, regulators, governance experts, consultants, journalists, and the general public. Annual issues of business magazines and newspapers are devoted to the topic. Academic journals sponsor special issues on the subject. Yet, in spite of this widespread interest and voluminous research, there is a general pessimism about our understanding of the topic. Bebchuk and Fried (2003) note that over the past decade the increase in papers on executive compensation may have exceeded even the remarkable increases in executive compensation itself.

The dominant theoretical perspective for the majority of studies of executive compensation has been principal-agent theory (e.g., Fama, 1980; Fama & Jensen, 1983; Jensen & Meckling, 1976). In his review of the field, Murphy noted that “Most research on executive compensation has been firmly (if not always explicitly) rooted in agency theory: compensation plans are designed to align the interests of risk averse, self-interested executives with those of shareholders (Murphy, 1999: 38).” Unfortunately, the results of all this scholarly effort are not reassuring. A topic of both practical and academic interest has spawned a significant body of both theoretical and empirical research with modest results and little practical application. Even the staunchest of its supporters acknowledge that the results are under-whelming: “In spite of the fact that principal agent models yield few insights useful in understanding the structure and design of actual contracts, agency theory remains a powerful paradigm for both analyzing and designing executive compensation contracts (Murphy, 1999: 5).”

For instance, in a meta-analytic review of more than 150 studies of governance and executive compensation, the authors concluded, “We are not optimistic that further research in the general area of board compensation/financial performance and board leadership

structure/financial performance would be fruitful (Dalton, Daily, Ellstrand & Johnson, 1998).” In another meta-analytic review with 69 samples and more than 30,000 observations, Deutsch (2005: 424) concluded that “The results provide little support to agency theory’s predictions on the impact of board composition on critical decisions that involve a potential conflict of interest between managers and shareholders.” In their summary to a special issue of the *Academy of Management Journal* dedicated to executive compensation and firm performance, Barkema and Gomez-Mejia (1998: 143) concluded that: “Adding more empirical studies on the statistical relationship between executive pay and firm performance to the vast literature that already exists on this issue leads researchers into a blind alley.”

In light of this lack of definitive support for an agency perspective, a number of authors have proposed that rather than the board serving the shareholders’ interests it may be that boards can be “captured” by the CEO and made to serve his or her interests and that, “The pervasive role of managerial power has played a key role in shaping managers’ pay arrangements” (Bebchuk & Fried, 2004: 2).” Although this alternative view has provided some convincing illustrations for how the executive compensation wage setting process may reflect managerial influence, it typically does this without documenting how this influence process works. What is lacking is a better understanding of the “mechanisms of action” by which these effects occur.

In this paper we seek to understand how boards and compensation committees determine CEO compensation. We draw on research in social psychology to offer a more psychologically-based interpretation of the mechanism of action that underlies how boards of directors may operate. We use these insights to enrich both principal-agent theory and managerial influence perspectives on CEO compensation. We agree with Murphy (1999) that principal-agent theory remains a useful lens through which to view governance and incentive

alignment, but add to this more detail on the social dynamics that characterize the functioning of boards of directors.

Consistent with much prior research, our empirical results show that while principal agent predictions of executive compensation are statistically significant, they explain little important variance. Further, and also consistent with recent research, conventional measures of “good governance” add very little to the explained variance in executive compensation and, as noted by Larcker, Richardson and Tuna (2004: 4), “the signs of the estimated coefficients are frequently unexpected.” Finally, we show how two fundamental mechanisms of action, social influence and reciprocity, affect the dynamics of CEO-board interactions and the executive wage setting process. These effects explain significant increments in variance in CEO pay beyond that accounted for by economic and governance determinants.

In section I we briefly review the voluminous research on executive compensation from a principal-agent perspective. We summarize the findings that are consistent with agency theory and note areas of inconsistency. In section II we show how principal agent thinking has been reflected in notions of good corporate governance and consider how these practical implications have affected CEO pay. In section III we review the primary alternative theory to agency theory, the management power or influence approach, and illustrate how this approach expands our understanding of the functioning of the board of directors. In section IV, drawing upon a long tradition of research in social psychology, we propose that two fundamental psychological processes underlie much of this research and offer hypotheses for how these may affect board dynamics and CEO compensation decisions. Section V describes our data and results for tests of principal-agent theory, good governance, managerial influence and the psychological determinants of CEO compensation. Section VI discusses the implications of these for future theory building and research on executive compensation and corporate governance.

### **I. Principal Agent Theory and CEO Compensation: What Do We Know?**

It is not our intent to review principal agent theory here; the theory is well known to readers (e.g., Fama, 1980; Fama & Jensen, 1983; Jensen & Meckling, 1976) and a number of comprehensive treatments are available (Garen, 1994; Jensen & Murphy, 2004; Shleifer & Vishny, 1997). In brief, principal agent theory recognizes the fundamental problem created by the separation of ownership and control in which managers, whose interests in being paid more and working less, may diverge from that of the shareholders desire for maximization of the value of their equity investments. Shleifer and Vishny (1997: 738) characterize principal agent theory pungently as answering the following question: “We want to know how investors get the managers to give them back their money.”

In this scheme, the power to run the company is vested in the board of directors under whose direction the affairs of the corporation are to be managed. In agency theory, the board is assumed to craft an optimal pay mechanism to align the interests of the CEO and those of the shareholders. In Jensen and Murphy’s terms, “Agency theory predicts that an optimal contract will tie the agent’s expected utility to the principal’s wealth; therefore agency theory predicts that CEO compensation policies will depend on changes in shareholder wealth (1990: 242).” The strong presumption is that directors are to make decisions to serve the shareholders’ interests. In this view, efficient compensation contracts should link executive pay with performance and thereby reduce the agency costs associated with the misaligned interests between owners and managers. The board’s role in representing the shareholders’ interest is to cost-effectively align managers’ incentives. Any loss of board independence, such as managerial influence over board decisions, is seen as an agency problem.

The agency theory literature emphasizes the *ex ante* bargaining over compensation that is presumed to occur between the board of directors and the CEO. In this view, the board assumes a crucial role in both designing a contract that aligns the interests of the shareholders

and management and monitoring and enforcing the terms of the contract. In this story, the board is always assumed to represent the principals' interests and never to be captured by management. Directors are assumed to be kept vigilant out of concern for their own reputations (Yermack, 2004) or fear of legal sanction (Holmstrom and Kaplan, 2004: 21). Thus, two central testable propositions arising from agency theory concern the design of optimal compensation contracts and the monitoring function of the board (e.g., Bertrand & Mullainathan, 2001; Yermack, 1997).

#### The Empirical Evidence .

Much empirical evidence has accumulated in support of a number of agency theory predictions. For instance, studies have shown that increased board control is associated with lower CEO compensation packages (e.g., Agarwal & Knoeber, 1996; Boyd, 1994; Byrd & Hickman, 1992; Conyon & Peck, 1998; Core, Holthausen & Larcker, 1999; Gompers, Ishii & Metrick, 2003; Tosi & Gomez-Mejia, 1994), while increased outside ownership is associated with better firm performance (Barnhart, Marr & Rosenstein, 1994; Bertrand & Mullainathan, 2001; Core, et al., 1999; Cyert, Kang & Kumar, 2002; Goldberg & Idson, 1995; He & Conyon, 2003; Werner, Tosi & Gomez-Mejia, 2005). Further, executive compensation has been linked to variability in CEO effort and market variability (Abowd, 1990; Aggarwal & Samwick, 2003; Bryan, Hwang & Lilien, 2000; Garen, 1994; Hall & Liebman, 1998; Kaplan, 2008; Leonard, 1990; Mengistae & Xu, 2004; Mishra, McConaughy & Gobeli, 2000). Hartzell and Starks (2002) find that increased institutional ownership concentration is also associated with higher pay-for-performance sensitivity and is negatively related to CEO pay. Klein (2002) reported that independent boards are also less likely to manage earnings.

Other research has demonstrated that when boards are less independent, indexed by the CEO also holding the title of chairman of the board, CEO compensation is higher (e.g., Boyd, 1995; Core, et al., 1999; Cyert, et al., 2002; Finkelstein & D'Aveni, 1994; Rechner &



Dalton, 1991). Goyal and Park (2002), for example, found that when there was CEO duality the sensitivity of CEO turnover to performance was lower than when the two roles were split. Other research has found that the market value of firms is higher when the roles are split (Brown & Caylor, 2004; Yermack, 1996). In this vein, Borokhovich, Brunarski and Parrino (1997) find that boards that are less independent, as indexed by anti-takeover provisions, pay CEOs more.

While impressive on the face of it, there are an equally large number of studies that either find no effects for agency theory predictions, or find effects that run counter to the theory (e.g., Fligstein & Choo, 2004; Kerr & Bettis, 1987; Sanders, Davis-Blake & Frederickson, 1995). For example, in a meta-analysis of board composition using 159 samples (N=40,160) and board leadership (54 samples, N=12,915), Dalton, Daily, Ellstrand and Johnson (1998: 278) find no support for agency theory and conclude that “The evidence suggests, then, that board composition has virtually no effect on firm performance.” In another meta-analytic review, Tosi, Werner, Katz and Gomez-Mejia (2000) identified 137 studies that analyzed CEO compensation and firm performance and concluded that “Changes in firm performance account for only four percent of the variance in CEO pay,” an amount less than what agency theory would suggest, although it has been argued that with a sufficient sensitivity to pay variation even modest levels of pay for performance can produce an incentive effect (Garen 1994; Hall & Liebman, 1998; Haubrich, 1994).

Other studies have found not only no link between independent directors and executive compensation (Anderson & Bizjak, 2002; Daily, Johnson, Ellstrand & Dalton, 1998; Newman & Mozes, 1999), but some evidence that more inside directors may provide value-enhancing information (Klein, 1998). Other studies fail to find that CEO duality has the negative effects on compensation and performance predicted by agency theory (Baglia, Moyer & Rao, 1996; Boyd, 1995; Daily & Dalton, 1992; Rechner & Dalton, 1989) while

others find that boards with more serving CEOs as directors have lower levels of CEO pay (Anderson & Bizjak, 2003; Westphal & Zajac, 1997). Callahan, Millar and Schulman (2003) find that increased CEO involvement on the board is associated with increased corporate performance. Westphal (1999) showed that CEO-Board social ties, rather than subverting the independence of the board, can have positive effects by increasing the frequency of advice and counsel between board members and the CEO.

Thus, the evidence for the usefulness of agency theory as a way of characterizing CEO-board relationships is mixed at best. Advocates can point to individual studies confirming agency theory predictions (e.g., Abowd & Kaplan, 1999; Devers, Cannella, Reilly & Yoder, 2007; Murphy, 2002; Vafeas, 1999) while critics can point to studies that either fail to confirm predictions or provide contradictory evidence (e.g., Bebchuk & Fried, 2004). This ambivalence is reflected in Kevin Murphy's (1999: 5) acknowledgement that, on the one hand, that "principal agent models yield few insights useful in understanding the structure and design of actual contracts" while on the other hand that "agency theory remains a powerful paradigm for both analyzing and designing compensation contracts." Thus, principal agent theory is well-supported by the empirical evidence, but the results are typically neither strong nor always consistent.

## **II. Board Governance**

One manifestation of Murphy's argument can be seen in the influence of principal agent theory on practical attempts to improve corporate governance by regulatory agencies and shareholder groups. The high-profile failures of firms such as Adelphia, Enron, Tyco and WorldCom were attributed to a failure in corporate governance and led directly to the passage of the Sarbanes-Oxley Act of 2002, considered to be the most sweeping corporate governance regulation change in the past 70 years. Underlying this change was the

expectation that better governed firms should perform better than those that are worse governed (Bender & Moir, 2005).

Although not spelled out in detail, many of the assumptions made in the attempt to improve governance come directly from agency theory and are intended to reduce the “control rights” of managers (Bhagat & Black, 2001; Brown & Caylor, 2004; Shleifer & Vishny, 1997). In this view, corporate governance refers to the set of mechanisms that influence decisions made by managers when there is a separation of ownership and control (Larcker, et al, 2004). Among the suggestions for good governance included in Sarbanes-Oxley and guidelines adopted by groups like the Council of Institutional Investors and the National Association of Corporate Directors are strictures on insiders serving on board committees, the promotion of boards with more independence from CEO influence, the reduction in mechanisms that may protect CEOs from external influence (like staggered boards), increased board diversity, and more monitoring of corporate decisions. Consistent with agency theory, the primary intent of these recommendations is to promote more independence of the board and to increase transparency of board decision making.

For example, many of the guidelines emphasize the importance of increased board independence. The straightforward argument is that firms with stronger shareholder rights will be better governed and, therefore, perform better (e.g., Bebchuk & Cohen, 2004; Brown & Caylor, 2004; Gompers, et al., 2003). Thus, guidelines encourage the appointment of more non-executive directors, especially on the audit and compensation committees. Similarly, the presence of a staggered board where a limited number of directors are elected at one time is seen as a mechanism of management entrenchment that cannot be easily dismantled by a hostile bidder and is not considered good governance. Bebchuk, Coates and Subramanian (2002) examined the effects of staggered boards and found that having one doubles the odds of a takeover target remaining independent which, in turn, leaves the shareholders worse off

than if the firm had been acquired by a white knight. Unfortunately, as with much of the empirical literature, there is also countervailing evidence indicating that firms with staggered boards had higher net profit margins and higher dividend yields (Brown & Caylor, 2004).

Another suggestion made for better corporate governance is for increased diversity on the board (Catalyst, 2004; Daily & Schwenk, 1996; Pearce & Zahra, 1991; Westphal & Milton, 2000), and there is some evidence of a significant increase in women serving on corporate boards over the past decade (Daily, Certo & Dalton, 1999; Farrell & Hersch, 2005). The argument for more women is based on the larger talent pool, the power of women as consumers, and the infusion of new ideas that these directors can bring (Useem, 1993). But the evidence for having more women on the board is mixed (Carter, Simkins & Simpson, 2002; Erhardt, Werbel & Shrader, 2003; Adams & Ferreira, 2009).

Unfortunately, the evidence for the efficacy of good governance in promoting firm performance is decidedly mixed. Nelson (2005), in a cross-national study of regulatory changes in corporate governance, found no relationships between CEO tenure or compensation and changes in governance. And, while Anderson and Bizjak (2003) did find that after changes in the regulations, the percentage of outsiders on compensation committees increased from 59 percent to 75 percent, they also found no evidence that insiders on the compensation committee acted opportunistically, a finding also confirmed by others (e.g., Conyon & Peck, 1998; Daily, et al., 1998; Newman & Mozes, 1999). In reviewing the evidence for the impact of governance changes on firm performance, Larcker, Richardson and Tuna (2004: 38) examined 38 structural measures of corporate governance in a sample of 2,126 firms and noted both the lack of corroborating evidence supporting the idea that better governance matters: “Assumptions and strongly held beliefs about the importance of governance are shaping the current regulatory climate for the design of governance structures.” They concluded that “our corporate governance constructs have limited

explanatory power for explaining managerial choices or firm valuation...(2004: 4).” Thus, in spite of the reasonable claim that increased board monitoring and incentive alignment will benefit shareholders, the practical application of these recommendations appears to be largely ineffectual.

### **III. Management Influence**

In light of the lack of definitive support for an agency perspective, a number of authors have proposed that rather than the board serving the shareholders’ interests it may be that boards can be “captured” by the CEO and made to serve his or her interests (e.g., Bertrand & Mullianathan, 2001; Finkelstein & Boyd, 1998; Lambert, Larcker & Weigelt, 1993; Wade, O’Reilly & Chandratat, 1990; Westphal & Zajac, 1995); that is, CEOs may be able to influence the remuneration decisions made by the board or the compensation committee. Recently, Bebchuk and Fried (2004: 2) have summarized this literature and concluded that “The pervasive role of managerial power has played a key role in shaping managers’ pay arrangements.” In this view, the design of executive compensation is seen as a part of the agency problem itself, in that managers may have an interest in reducing pay-for-performance sensitivity and some of the risks associated with this. Noting that compensation arrangements often deviated from the optimal contracting proposed by principal agent theory, Bebchuk and Fried (2004) observed that “financial economists have often labored to come up with clever explanations for how such practices might be considered arm’s-length contracting after all (p. 3).”

Like agency theory, the premise underlying “managerialism” began with Berle and Means almost 70 years ago and their observation that “The separation of ownership from control produces a condition where the interests of owner and of the ultimate manager may, and often do, diverge, and where many of the checks which formerly operated to limit the use of power disappear (1932: 25).” A number of researchers have applied this logic to CEO

compensation and argued that, unencumbered by external constraints, executives may extract rents from the owners (shareholders) because of informational asymmetries and misaligned goals (e.g., Allen, 1981; Fama & Jensen, 1983; O'Reilly, Main & Crystal, 1988). From the managerialist influence perspective, the prediction is that executives who have more power vis-à-vis their boards should receive higher pay and should be less sensitive to performance. Murphy (2002: 3) acknowledged that Bebchuk and Fried presented “a compelling case that optimal contracting concerns do not explain the level and structure of executive compensation in U.S. corporations.”

The straightforward prediction from an influence perspective is that CEO pay will be higher and pay-for-performance sensitivity lower in firms where CEOs have more power. This condition may exist when, for example, directors who have been appointed by a standing CEO feel a sense of obligation to repay the favor, when the CEO serves as the chairman, or the board is protected by anti-takeover agreements. The empirical research in this tradition is largely consistent with this prediction and has shown that a variety of political and institutional factors, beyond economic determinants, are related to executive compensation, including the CEO's ability to appoint or co-opt supposedly independent directors and control the board's agenda and information flow (Belliveau, O'Reilly & Wade, 1996; Combs, Ketchen, Perryman & Donahue, 2007; Core, et al., 1999; Hallock, 1997; Lambert, et al., 1993; Main, O'Reilly & Wade, 1993; Shen, Gentry & Tosi, 2004;). Bebchuk and Fried (2003) noted that, from an agency theory perspective, just as managers cannot be automatically presumed to seek to maximize shareholder value neither can directors. Just as a CEO may have his or her self-interest in mind, so too do directors who, aside from the significant fees and status derived from their service on the board, also typically have only nominal equity interests in the firm (Core, et al., 1999; Yermack, 2004).

In their comprehensive review of the managerial power perspective, Bebchuk and Fried (2003, 2004) made clear that this alternative is not proposed as a replacement for principal agent theory but simply that compensation practices cannot be explained by optimal contracting alone. There is ample evidence that multiple models are operating, including agency theory, managerial power, repeated games, and tournament models (e.g., Baker, Gibbons & Murphy, 2002; Core, et al., 1999; Gibbons, 1998; Lambert, et al., 1993; O'Reilly, et al., 1988; Shen et al., 2004; Stevenson & Radin, 2009). What is called for is a more nuanced understanding of the underlying psychological processes that characterize board dynamics and the executive compensation process.

For example, a strong assumption of an agency view of governance is that the board's role is to act as a monitor and evaluator of CEO performance, not as an ally or advisor. However, this may be an overly restrictive view of the board's role. The CEO's job is inherently ambiguous and uncertain (March, 1984). As such, if boards are also to help the CEO as a source of expert advice, the rigid solution suggested by arm's-length optimal contracting may reduce agency costs but hinder the ability of the board to provide counsel (Carpenter & Westphal, 2001; Judge & Zeithaml, 1992). In a study using survey data from 243 CEOs and 564 outside directors, Westphal (1998) found that board-CEO social interactions were positively related to firm performance. Agarwal and Knoeber (2001) found that outside directors can serve a valuable political role in helping firms adapt to regulatory changes. For these positive interactions to occur, the CEO-board relationship needs to be more than arm's-length and directors themselves may need a sense of psychological ownership and identification with the firm (Wade, Porac & Pollock, 1997). Firstenberg and Malkiel (1994: 29) argue for this potential: "The board's shared experience with management in working through problems...builds an innate loyalty."

Thus, while board members have a fiduciary obligation to the shareholders, they also have a strong, tacit obligation to “help” the CEO make the firm successful. The latter is more proximal than the former. In this way, while managerial influence may impose costs by violating the independence valued by agency theory, it may also offer benefits for shareholders if the board is able to help the firm be more successful. Further, rather than observing contingent CEO contracts based on verifiable measures as proposed by agency theory, we more often observe highly incomplete contracts without explicit incentives. Indeed, Fehr and Gaechter (2000) showed experimentally that such implicit contracts are far more preferred than explicit ones. What this suggests is the need for a more sophisticated understanding of the psychological dynamics that underpin CEO-board dynamics; a more process perspective that opens up the normative “black box” that existing theories, both agency and managerial influence, currently contain (e.g., Davis & Greve, 1997; Main, et al., 1995; Stevenson & Radin, 2009; Tosi & Gomez-Mejia, 1989). Drawing on research in social psychology, the next section posits two pervasive underlying psychological processes that shape CEO-board interactions in ways that can affect CEO compensation.

#### **IV. A Psychological Perspective on CEO Compensation**

A psychological approach to executive compensation begins with the premise that the compensation-setting process in firms relies on the deliberations of a small group of responsible individuals (e.g., the board and the compensation committee) and, as such, this process is subject to the same social psychological processes that affect group decision making everywhere. This is especially true when making ambiguous decisions, such as setting CEO compensation, where the use of social information is highlighted (March, 1984). In this context, social capital can provide important cues—such as the credibility and attractiveness of a source—that people may use in place of hard facts when the judgment task is ambiguous (Belliveau et al., 1996; O’Reilly, et al., 1988). These conditions enhance the



operation of two fundamental social psychological processes: reciprocity and social influence. We describe how these processes operate and their likely effects on CEO wage setting by the board and the compensation committee.

#### A. Reciprocity

Reciprocity is a fundamental norm in all societies and pervasive in economic as well as social life (e.g., Cialdini, 1993; Elster, 1989). Norms are social expectations about how people ought to behave in a given social context. These shared expectations provide both information (how we should behave) and sanctions (what happens if one does or doesn't conform). As a norm, reciprocity dictates that "when one party benefits another, an obligation is generated (Gouldner, 1960: 174)." The expectation that another group member will feel obligated when helped can trigger a host of beneficial continuing exchanges. The failure to reciprocate may engender sanctions (e.g., Fehr & Gaechter, 2000; Sethi & Somanathan, 2003). Reciprocity is so pervasive and fundamental to human interaction that it forms the basis for a number of psychological theories such as social exchange (Blau, 1994) and fairness and equity (Adams, 1963). Some have argued that it has evolutionary advantages (Ridley, 1997).

As an example of reciprocity, Whately, Webster, Smith and Rhodes (1999) demonstrated that when subjects in an experiment were given a small unexpected favor (a soft drink), they were subsequently more likely to comply with a request—even when they believed that the giver would not know if they had reciprocated. Kunz and Woolcott (1976) sent Christmas cards to a list of strangers and received a large number of responses. There is convincing evidence that servers can increase tips through reciprocity (Rind & Strohmetz, 2001; Tidd & Lochard, 1978). There is similar evidence from studies of reciprocity in work settings (e.g., Uhl-Bien & Maslyn, 2003). For example, Dabos and Rousseau (2004) found

that reciprocity in the employment relationship was positively related to subsequent performance and negatively associated with turnover.

In spite of the long-standing tradition in economics that characterizes people as solely self-interested, there is a growing literature on the importance of reciprocity (e.g., Akerlof & Yellen, 1990; Fehr & Gächter, 2000; Rabin, 1993). In a recent review, Sethi and Somanathan (2003, p.1) claimed that “Reciprocity is a pervasive and economically significant phenomenon in human interaction.” While cooperation occurs because of expected future material benefits, reciprocity occurs when an individual is responding to actions even if no material gain is anticipated. Evidence from repeated game experiments and gift exchange suggests that people are willing to incur material costs to either sanction those who are perceived of as opportunistic or reward others for their generosity (e.g., Berg, Dickhaut & McCabe, 1995; Fehr & Gächter, 2000; Gibbons, 1998). Many people deviate from self-interested behavior in a reciprocal manner. For example, in a laboratory experiment, Fehr, Gächter and Kirchsteiger (1997) demonstrated that in the face of generosity by the employer, workers expended far more effort than required or expected by classical economic assumptions of shirking. Field studies corroborate these findings (Bewley, 1995). In another set of experiments, Fehr and his colleagues (Fehr, Kirchler, Weichbold & Gächter, 1998) studied the effects of reciprocity on wage setting and demonstrated that, consistent with Akerlof’s (1982) notion of employment as gift exchange, reciprocity gives rise to wages that are persistently above the competitive level.

In the context of corporate governance, there are clearly material benefits, both financial and status-related, from serving on a board. Insofar as the CEO is seen as at least partly responsible for aspects of their appointment, for example by serving on the nominating committee or paying generous fees, a board member can expect to feel some reciprocal obligation (Lorsch & MacIver, 1989; Westphal, 1998). Further, reciprocity is found to be

more likely to occur when transaction costs are high, the group continues to interact over time, the period between interactions is relatively short, and the group itself is small and homogeneous (Borcherding & Filson, 2002), all characteristics that describe boards of directors. This may account for Crystal's observation that (1991: 40) "Whenever you find highly paid CEOs, you will find highly paid directors. It's no accident," a finding confirmed by Brick, Palmon, and Wald (2002).

From an agency theory perspective, the presence of reciprocity imposes a cost: given its pervasive nature, boards are unlikely to ever be truly independent (Shivdasani & Yermack, 1999). However, if the role of the board is construed more broadly, reciprocity may help explain why Callahan, Millar and Schulman (2003) find a positive relationship between management participation in the director selection process and corporate performance, or why Klein (1998) finds a positive relation between the percentage of insider directors on some committees and financial returns. In a positive sense, reciprocity may underpin the social relations that permit boards to act as experts and advisors to the CEO. Of course, in a negative sense it may also be partly responsible for the self-protective justifications for poor performance (Porac, Wade & Pollock, 1999; Wade, Porac & Pollock, 1997) and even the suppression of bad news and misreporting of data (Abrahamson & Park, 1994; Bar-Gill & Bebchuk, 2002). Given its pervasive nature, it seems unlikely that reciprocity will ever not be factor in board-CEO relations. However, whether it serves a positive or negative function will depend critically on the circumstances.

### B. Social Influence

A second fundamental and pervasive psychological process that characterizes group dynamics is social influence. Almost as ubiquitous as reciprocity, deference to authority and to those seen as more expert also characterizes many groups and most organizations. Milgram (1974, p. 175), in his famous obedience studies, noted how

“relationship overwhelms content.” Social influence occurs when the group signals, tacitly or explicitly, which attitudes and actions are appropriate and acceptable and which are not. Lorsch and MacIver (1989) reported that over 99 percent of the directors they surveyed reported that the CEO had considerable informal power over the board. They also quoted one director as saying “...despite the appearance of openness and candor, the reality is quite different. A subtle set of unspoken norms, in fact, dictates the actual course of behavior in the boardroom.” This is not to say that norms cannot be overridden or changed, but they are powerful and pervasive in shaping the board’s behavior.

In groups, as on boards, individuals often look to others in a process of social comparison to determine what attitudes and actions are appropriate (Festinger, 1954). People pay particular attention to those who are similar, those of higher status, those with social capital, and those who appear to have expertise. Early studies showed, for example, that shared economic status was a basis for increased liking (Byrne, Clore & Worchel, 1966) and that attitudinal similarity increased the amount of money subjects were willing to lend others (Golightly, Huffman & Byrne, 1972). Drawing on these processes, O’Reilly, et al. (1988), illustrated how, after controlling for economic determinants of compensation, CEOs made more money the better paid were their compensation committee members in their own jobs. Their argument was that in the face of an ambiguous decision (how much to pay the CEO), the compensation committee chair used his own pay as a benchmark. Belliveau, et al. (1996) showed that CEOs with higher relative status than the chair of the compensation committee earned on average \$138,000 more. Westphal and Zajac (1995) showed that existing board members favored new appointments that were demographically more similar and that similarity increased the CEO’s cash compensation. Young and Buchholtz (2002) also found that age dissimilarity between the CEO and the compensation committee chair was associated with weaker pay-for-performance. Based on research showing that demographic similarity

may increase social influence (Tsui & O'Reilly, 1989), Main, O'Reilly and Wade (1995) reported that the more similar board members were in age to the CEO, the higher the level of CEO compensation.

What are the implications of reciprocity and social influence for the functioning and effectiveness of boards of directors? First, given the pervasiveness of these processes, it seems highly unlikely that boards would not be affected. One possible outcome is that the board comes "to subconsciously (if not consciously) view the board through CEO eyes (Jensen & Murphy, 2004: 10)." Indeed, given the nature of their tasks, it may be argued that these processes are useful and necessary, albeit not without costs. In the following section we report a series of empirical tests contrasting the effects of economic and psychological determinants of executive compensation. Hypotheses derived from principal agent theory, governance, and managerial influence are examined through the lens of reciprocity and social influence.

## **V. Empirical Results**

Our data were obtained from an executive compensation firm and included all firms in their database for 2003 from two very different industries, retail and semiconductor manufacturing. The original data set consisted of 306 firms, 137 in the semiconductor segment and 129 in retail. Extensive data were provided on firm size (revenues, employees), performance (total shareholder return), the CEO (age, sex, tenure), the board (number of directors, insider-outsider status, number of meetings, number of committees), directors (sex, fees, status, age, tenure) and executive compensation (base, bonus, options granted, restricted stock grants, etc.).

Based on previous research, we use three measures of CEO compensation as dependent variables: base salary, total cash compensation (TCC) and total direct compensation (TDC). The latter comprises not only the base and bonus elements that enter

into TCC but also includes the Black-Scholes valuation of share option grants and restricted stock gains. We explicitly include restricted stock since, as Bebchuk and Fried (2004) have noted, boards are increasingly moving away from stock options and toward the use of restricted stock. However, restricted stock is an inefficient way of motivating CEOs to accept risky, value-increasing projects (Bryan, Hwang & Lilien, 2000). It has the incentive properties of a stock option with an exercise price of zero. As such, risk averse CEOs, or those with more social influence, should prefer restricted stock to options since they remain in the money even if the stock price falls (Main, et al., 1995). Means, standard deviations, and ranges for these variables are shown in Table 1.

-----  
Insert Table 1 about here  
-----

Previous research has shown that CEO compensation is related to a variety of industry, firm, and CEO characteristics (e.g., Baker, Jensen & Murphy, 1988; Deckop, 1988; Gabaix & Landier, 2008; Harris & Helfat, 1997; Lambert, et al., 1993; Leonard, 1990; Schaefer, 1998). Therefore, in order to examine the impact of reciprocity and social influence on the CEO wage setting process, we first entered controls for industry, firm size, performance, and CEO characteristics into the base model. Size was measured as revenues and number of employees (both in logs) and performance as the average shareholder return over the previous three years. The basic human capital control variables of tenure, age and sex are also entered at this stage. We then entered four variables commonly used to test principal agent predictions, the presence of large shareholders as measured by the number of block holders of at least 5%, whether the CEO served as chairman, the total size of the board in terms of the number of directors, and the number of independent directors on the board (e.g., Baglia, Moyer & Rao, 1996; Byrd & Hickman, 1992; Hermalin & Weisbach, 1998).

These are followed by four indicators of “governance quality”, the number of female directors, the presence of a staggered board, the annual number of board meetings, and the number of committees of the board (e.g., Core, et al., 1999; Farrell & Hersch, 2005; Shleifer & Vishny, 1997).

Only after controlling for these effects did we examine the effects of reciprocity and social influence on CEO compensation. Reciprocity was assessed by the presence of the CEO on the nominating committee, the fees paid to the head of the compensation committee, and the extent to which the CEO was on the board before the chair of the compensation committee (e.g., Callahan, et al., 2003; Linn & Park, 2005; Shivdasani & Yermack, 1999; Wade, et al., 1990). The social influence of the CEO over board members was assessed by whether the CEO also served as chairman, the total committees of the board on which the CEO served, whether the CEO was on the compensation committee (an increasingly rare event), and the extent to which the CEO was older than the chair of the compensation committee (e.g., Anderson & Bizjak, 2003; Daily, Johnson, Ellstrand & Dalton, 1998; Klein, 1998; Newman & Mozes, 1999; O’Reilly, et al., 1988).

#### A. Economic Determinants of CEO Compensation

Table 2 presents the regression results for the tests of the agency theory and good governance models of executive compensation: Model 1 reports the effects of control variables; Model 2 includes the principal agent tests; and Model 3 includes the good governance tests. Each model includes the results for CEO base salary, TCC and TDC.

-----  
 Insert Table 2 about here  
 -----

The results for Model 1 are consistent with much earlier research and show modest relationships between CEO compensation and industry and firm controls. For this sample,

executives in the retail industry earn more cash compensation. Larger firms in terms of revenues offer more cash compensation (base and TCC) and more total compensation (TDC) including share options and restricted stock. Prior firm performance, assessed as total shareholder return over the previous three years, shows a modest negative relationship with base salary and no significant relationship with the more performance related components of pay. The human capital controls in Model 1 also show modest and predictable associations with CEO compensation. While age is associated with higher levels of the cash based components of pay, tenure in the CEO role is revealed to have a modestly negative connection to pay. Sex of the CEO is unrelated to any compensation outcomes.

Overall, these findings are unsurprising and consistent with much earlier research, showing that organization size and industry have stronger effects on CEO compensation than firm performance (Baker & Hall, 2004; Schaefer, 1998). For this sample, we find that in terms of total current compensation, size accounts for approximately 29% of variance while performance, assessed as the average return to shareholders over the previous three years, accounts for 1%. Starting with a universe of 137 articles on CEO pay, Tosi, et al. (2000) summarize the relative importance of the size factor as explaining 40% of the variance, while firm performance accounted for only 5% of the variance. While this meta-analysis suggests a stronger relationship than we find, the relative standing in importance of size versus performance is consistent with our result.

Model 2 adds four variables often used as tests of principal-agent theory: the importance of blocks of stockholders—a positive measure of incentive alignment; whether the CEO also holds the position of chairman—a negative measure of alignment and monitoring; the total size of the board-- a positive indicator of monitoring; and the number of independent directors on the board—a positive measure of monitoring.



Consistent with much prior research, the results offer, at best, modest support for agency theory predictions. The presence of large shareholders does not result in lower levels of executive compensation nor in higher pay-for-performance sensitivity. This result may owe to the increasing preponderance of large block holdings, as the holding of stock has become increasingly institutionalized. In our sample there is an average of five such block holders per company and only two of the companies are completely free from such influence. Also at odds with agency theory predictions, there are no associations between the number of independent directors on the board and lower levels of CEO compensation, offering no support for the increased monitoring that might be provided by having more independent directors. The significant associations between the CEO-Chairman role and increased base salary compensation is ambiguous in that this could reflect less board independence and skimming by the CEO (e.g., Bertrand & Mullainathan, 2001), or reflect the additional compensation deserved by the added responsibility of serving in the dual role.

Finally, Model 3 in Table 2 includes a set of variables that reflect the practical implications of principal agent theory that are seen as characteristics of governance quality. These include having more female directors (a positive factor that reflects increased board diversity), a staggered board (a negative factor that is presumed to increase the ability of management to entrench themselves), and increased board meetings and committees (both of which are presumed to increase the ability of the board to monitor the CEO).

As suggested in earlier studies of governance (Core, et al., 1999; Dalton, et al., 1998), results of the tests in Model 3 are largely inconsistent with principal agent theory and do not appear to support the predicted effects of good governance. First, there is the surprising positive effect for female directors. These results show that having comparatively more females on the board of directors is positively associated with increases in base salary. This positive effect occurs after controls for industry, size, firm performance and other board

characteristics. Second, there is a positive association between the number of board committees and increased level of total cash compensation (TCC). This is contrary to the logic of principal agent theory that would suggest that more monitoring should result in greater incentive alignment. While these results are inconsistent with agency theory, they are consistent with CEO influence as shown in Table 3.

### B. Psychological Determinants of CEO Compensation

An alternative way to think about governance and executive compensation is to consider how CEOs might, consciously or unconsciously, exert influence over their boards; that is, to consider the social psychological mechanisms that might lead a board to be more or less independent and thereby affect the board's ability to monitor the CEO and align shareholder interests. We proposed that two pervasive psychological processes might operate in ways that could render a board less independent: norms for reciprocity between the board and the CEO, and CEO social influence. In the first instance, reciprocity between board members and the CEO was hypothesized to be more likely to occur under three conditions: the CEO serves on the nominating committee and can be seen as offering board members the gift of a seat; board members, including those on the compensation committee, receive comparatively higher remuneration for their service and feel obligated to return the favor of generous compensation; and the CEO has longer tenure on the board than the chair of the compensation committee such that the chair may feel some reciprocal obligation to the CEO for his or her role.

In addition to reciprocity, a CEO's social influence may also be increased insofar as s/he is able to shape the board's agenda and control information available to board members and is seen as central to the functioning of the board. Under these circumstances, board members may be comparatively more likely to acquiesce to a CEO's influence attempts. Four measures of CEO influence were proposed: CEO-Chair duality whereby the CEO largely sets

the agenda and manages board meetings; the total number of committees on which the CEO serves which enables him or her to monitor committee business and influence decisions; the CEO's presence on the compensation committee; and the extent to which the CEO is older and more experienced than the compensation committee chair and is more likely to be seen as effective. Table 3 reports these results. Model 1 reports the results of tests of the effects of reciprocity on CEO compensation. Model 2 reports the tests of social influence and Model 3 reports the aggregate findings. In each model, all of the descriptive variables introduced in Table 2 are entered as controls, but not reported here.

The continuing inclusion of the control variables from Table 2, covering company descriptors, CEO human capital attributes and governance aspects, is an important step in eliminating any simultaneity or quality bias from the estimates. It is necessary to recognize the possibility that in a corporation with an unusually high quality CEO there might also be an unusually high proportion of female directors, or an unusually large number of board meetings and so on. Were such things to be true then the coefficients estimated on these latter variables may, to some extent, merely be representing otherwise omitted quality measures of the CEO rather than their own independent impact on the pay process. While it is felt that the wide range of 'control' variables presented in Table 2 goes a long way towards confronting such issues, it is necessary to alert the reader to the possibility of such a bias arising through any endogeneity of those variables included to describe reciprocity and social influence.

-----  
Insert Table 3 about here  
-----

Results in Model 1 offer some support for the hypothesis that reciprocity may affect CEO compensation. After controlling for all variables in the previous models, the amount that the compensation committee chair receives in director's fees is strongly related to CEO base, TCC and TDC. Compared to the adjusted  $R^2$  levels in Model 3 of Table 2, adding the measures of reciprocity increases the  $R^2$  by an average of seven percent. This is a significant amount both statistically and practically.

Model 2 shows the results for the test of CEO social influence on compensation. First, as reported previously, when the CEO also fills the Chairman's role, s/he receives more base salary. As before, this may reflect either social influence or compensation for additional duties. Although there is little evidence that social influence has much direct impact on compensation, there is a significant effect on base pay for the age difference between the CEO and the compensation committee chair, with larger differences reducing the level of pay.

Model 3 reports the aggregate results for CEO influence and corroborates the independence of the effects of reciprocity (fees paid) on all three measures of compensation and social influence, with the number of board committees the CEO serves on being positively related to base pay and CEO age difference being negatively linked to base pay. Additionally, in Model 3 there is a significant negative effect of the number of committees the CEO serves on the level of base pay.

Given that these effects occur after controlling for numerous alternative economic and governance factors and explain significant increments in the adjusted  $R^2$ , we see this as strong evidence for the operation of non-economic factors on the pay setting process for CEOs. Specifically, drawing upon well-developed theories of influence from social psychology, we find evidence consistent with the likelihood that, consciously or

unconsciously, CEOs and boards may be biased in ways that affect the amount and type of pay the CEO receives.

To further illustrate these effects, we hypothesized that social influence processes may be more or less likely to occur under certain circumstances. We proposed that if social influence is occurring, the more opportunities the CEO had to exercise it, the more evident it should be. Three such instances seem likely. First, the more meetings of the board that are held, the more opportunities CEOs have to exert their influence. Second, the more committees the board has, the more opportunities for CEOs to influence decisions. Finally, contrary to agency theory but consistent with the operation of social influence, the larger the number of independent directors there are, the more opportunities for the CEO to use influence. Therefore, we hypothesized that there would be an interaction between social influence and CEO compensation such that the larger the number of committees, the more meetings of the board and the larger the number of independent directors, the more enhanced would be any effect of social influence on the likelihood of the CEO receiving positive treatment in his or her compensation. Table 4 reports the results of these tests.

-----  
Insert Table 4 about here  
-----

To test these interaction effects, we first entered all the variables used in Table 2 as controls, including industry, firm size and performance, CEO human capital measures, and measures of the test of principal agent theory (e.g., block shareholding, percentage of independent directors on the board) and good governance (e.g., board diversity, staggered meetings). We then entered the main effects from Table 3 for reciprocity and social influence (e.g., fees paid to director, total committees on which the CEO serves, and CEO duality) including the number of board meetings, committees, and the number of independent

directors. Given that we are seeking to examine the extent to which opportunity (as measured by the number of board meetings, the number of committees of the board, and the number of independent directors) can be seen to moderate the extent of the CEO's boardroom influence, there are many interactions we could examine. We focus here on three influence variables (CEO duality, number of committees of the board, and fees paid to the head of the compensation committee) and the three mediators (number of board meetings, total number of committees on which the CEO serves, and number of independent directors). Using the results presented in Table 4, Figures 1 through 3 show the graphical results of some of these interactions on compensation.

The first Model illustrates the multiplicative effects of reciprocity on CEO TCC. The main effects were discussed earlier: the more fees paid to the head of the compensation committee, the higher is the CEO's base pay, while the number of meetings of the board has a generally insignificant influence on the CEO's compensation. Beyond these main effects, however, there is a significant negative interaction between these two variables. The form of this interaction is shown in Figure 1 for the case of TCC and shows that when the head of the compensation committee receives higher fees and there are fewer committee meetings, the CEO receives significantly more total cash compensation. The slopes of all three lines in Figure 1 are significantly different from zero (Aiken & West, 1991: 16). The influence effects of higher fees are enhanced in the presence of fewer board meetings. For an increase in fees paid to the Compensation Committee Chair of one standard deviation (\$148,000) the impact on TCC is an increase of \$97,000 when there are 11 board meetings per year but \$324,000 when there are four meetings per year. The impact of board meetings on any restraining effect on pay is moderated in the presence of generous fees to directors. This suggests that reciprocity occurs when directors are well paid and do not have to work hard.

---

-----  
Insert Figures 1-3 about here.  
-----

Model 2 shows significant positive interactions between the number of board committees the board has (a measure of the opportunities the CEO has to exert general influence) and the number of the board committees on which the CEO participates (a measure of social influence). As shown in Figure 2, the form of this interaction suggests that the combination of more CEO social influence and the more situations in which this can be exercised, the higher the cash compensation received. Increasing board participation when there are few board committees can actually reduce pay, but when there are more board committees the interaction with CEO service on committees can produce higher levels of pay. In terms of the impact on base pay, going from zero committee participation to participating on two committees leads to an increase of \$104,000 in the presence of six board committees, rather than a reduction of \$154,000 in TCC when there are only three board committees in operation. Model 3 suggests that the impact of the CEO also serving as the Chairman of the board is more effective in the presence of larger numbers of independent directors. In the absence of duality a larger number of independent directors seems to be more effective in holding down base pay. But with duality in the CEO and Chairman role, the disciplining effect of outside directors all but disappears (Figure 3).

The results for TDC for Model 3 in Table 4, suggest a more conventional effect of increased numbers of independent directors. In this case duality has a greater impact on TDC in the presence of a smaller number of independent directors (TDC in Figure 3). So combining the roles of CEO and Chair has little impact on total CEO pay outcomes on boards that have large numbers of independent directors (seven in Figure 3). But when the number of independent directors is smaller (three in Figure 3) this duality can outweigh the effect of

independent directors on CEO pay. These findings clarify earlier research that found mixed results for the effects of independent directors on CEO compensation (e.g., Baglia, et al., 1996; Rechner & Dalton, 1991). Moreover, the interaction shows that the effect of independent directors is contingent on CEO influence.

## **VI. Discussion and Implications**

There is an extensive body of empirical research across multiple academic disciplines using principal agent theory to explain corporate governance and executive compensation. The results here confirm a number of these findings, help clarify and extend some of the contradictory results from earlier research, and suggest further directions for research and theory on CEO compensation. Consistent with previous research, we show principal agent theory to be a useful lens through which to view governance and incentive alignment. However, we also illustrate how a more fine-grained approach to understanding the psychological dynamics that characterize how the board of directors and compensation committee operate can help to better understand the executive compensation setting process. In this regard, norms of reciprocity and social influence can help explain how and why boards may not design optimal compensation contracts. What is important about this is not that it runs counter to predictions of agency theory, but that these processes are fundamental to group dynamics everywhere, including boards of directors.

First, and consistent with much previous research, we find that CEO compensation is more strongly related to organization size, measured as revenues, than firm performance (Baker & Hall, 2004; Baker, Jensen & Murphy, 1988; Gabaix & Landier, 2008; Schaefer, 1998). Also consistent with agency theory predictions of governance, we find that when the CEO also serves as chairman of the board, CEO base pay is increased. We find no effect for the proportion of independent directors on the



board or for the board size itself – although there is support from other studies suggesting that larger boards may be less effective at monitoring (Cheng, 2008; Coles, Daniel & Naveen, 2004; Eisenberg, Sundgren & Wells, 1998; Yermack, 1996).

Contrary to some recommendations for “good governance”, we find that having more committees of the board and more female directors results in higher CEO compensation. As shown in Figure 2, a likely reason for the anomalous finding for committees can be seen in its interaction with social influence; having more committees can enable an active CEO to influence decisions. The results for female directors are surprising. Rather than increased diversity resulting in better monitoring, our results suggest that CEOs receive more base pay when the board has more females. Three explanations seem possible. First, it may be that women directors are simply more generous. Second, it may be that female directors are less expert such that CEOs are able to convince them to award more compensation. However, subsequent analyses of interactions between the number of women directors and social influence revealed no significant effects, suggesting that this explanation is unlikely. Third, it may be that the boards of highly paid CEOs appoint more women, perhaps as a way of signaling that they are progressive—a form of window-dressing (Adams & Ferreira, 2009; Farrell & Hersch, 2005; Hillman, Shropshire & Cannella, 2007). Since our data are cross-sectional, we are unable to definitively answer this question.

The findings here also replicate and extend prior research showing that CEO influence over the board can increase compensation beyond what economic determinants might justify. We find strong evidence consistent with the effects of reciprocity and social influence. When the chairman of the compensation committee receives

comparatively higher fees, CEO cash compensation is significantly higher. The magnitude of this relationship indicates that, when evaluated at the mean, every \$1,000 the board member receives is associated with an increase of \$1,258 in CEO TCC. We show in Table 4 that the influence effect of higher fees to the compensation committee chair is more marked when accompanied by a lower number of board meetings (Figure 1) and that the more opportunities the CEO has to exert influence, as indexed by more board committees and meetings, the higher the CEO compensation (Figure 2). Interestingly, this influence effect also operates to counteract the impact of independent directors such that when the CEO has more influence (such as also being Chair, as in Figure 3) having more independent directors is not associated with lower pay. When CEO influence is low, the effect of having more independent directors is to lower CEO cash compensation, consistent with agency theory predictions.

While these findings confirm and extend previous studies on the effects of CEO influence, they also help to clarify some contradictory findings in earlier research. For example, large sample meta-analytic studies of the relationship between board characteristics, CEO compensation, and firm performance indicate no meaningful relationships exist (Dalton, Daily, Ellstrand & Johnson, 1998; Dalton, Daily, Johnson & Ellstrand, 1999; Deutsch, 2005; Tosi, et al., 2000), reflecting the fact that findings from previous studies have been mixed. However, agency theory makes a strong prediction that the more independent the board, the more effective it should be in mechanism design and monitoring. Although some studies confirm this prediction (Boyd, 1994; Gompers, et al., 2003; Core et al., 1999; Pearce & Zahra, 1998), others either find no effects for board independence (Anderson & Bizjak, 2003; Daily et al., 1998) or sometimes find positive

effects from less independent directors (Callahan, et al., 2003; Klein, 1998). Our findings suggest that these results may depend on the nature of relationship between the CEO and the board; reciprocity and social influence may have positive effects on board functioning and help the board provide expert advice and counsel to the CEO and improve organizational performance (Daily & Schwenk, 1996; Judge & Zeithaml, 1992; Pearce & Zahra, 1991; Westphal, 1999).

### Implications

Much recent research and public policy has argued the need for boards of directors to increase their control over top managers, usually in the form of increased monitoring and better incentive alignment. However, from a psychological viewpoint, if not an economic one, there may be diminishing returns to these efforts (Zajac & Westphal, 1994). In an interesting study, Westphal (1998) has shown that when institutional pressures make boards structurally more independent, CEOs are likely to expend more effort at ingratiation and persuasion. Note that this does not necessarily imply that CEOs are behaving opportunistically but only that the board represents a critical institution with which they must operate if they are to be effective in accomplishing their organizational objectives. Similarly, it may also be that rather than the CEO influencing the board, it may be that the board, in the face of reciprocity and liking, may be trying to please the CEO.

Several compensation scholars have recently noted that while managerial influence may impose some costs on shareholders, even larger costs may occur if strong incentives distort managers' incentives and hurt corporate performance (Bebchuk & Fried, 2003; Jensen & Murphy, 2004). For example, studies have shown that too much ownership may entrench managers rather than align them with shareholder interests

(Morck, Shleifer & Vishny, 1988; Mishra, McConaughy & Gobeli, 2000). Other studies have shown how, in the face of strong incentives, there may be pressures to misrepresent corporate performance or suppress bad news (Abrahamson & Park, 1994; Bar-Gill & Bebchuk, 2002; Porac, et al., 1999). It may be that the principal agent view of incentive alignment and monitoring is too narrow. While optimal contracting may reduce agency costs, it may also hinder the ability of the board to offer expert advice to the CEO. Nevertheless, influence costs themselves can be substantial.

To illustrate this point, we used the full regression model in Table 3 and the mean values for the standard economic variables in the model (see Table 1) to illustrate the potential impact of variations in the social influence variables on expected compensation outcomes. Consider a company where the CEO serves on the Nominating Committee, where the fees paid to the compensation committee chair are \$50,000 above the average, and where the CEO is also the Chairman of the Board and sits on two as opposed to one board subcommittee. Under these conditions, the expected level of base pay will increase by 23% (from \$547,000 to \$697,000), the expected level of TCC will increase by 60% (from \$1,100,000 to \$1,848,000) and TDC will increase by 53% (from \$5,975,000 to \$8,435,000).

We draw two general conclusions from these estimated results. First, although the addition of social influence variables increases the explained variability in CEO pay by a relatively modest (albeit statistically significant) amount, there remains a potential for these variables to have a large impact on realized reward. This is seen as evidence that the standard model is not capturing important additional influences on CEO pay. Clearly, managerial influence matters in the CEO wage setting process. Further, previous research

has shown that over- and under-payment at the CEO level have cascading effects and filter down to lower levels of managers (Wade, O'Reilly & Pollock, 2006). In this sense, CEOs who are overpaid may understate the total cost to the firm.

However, a second and opposite conclusion can also be drawn in that the extra CEO compensation of roughly \$150,000 in base pay, \$748,000 in TCC, or \$2,460,000 in TDC illustrated in the above stylized example may be trivial insofar as the average firm in the sample has approximately \$5 billion in annual revenue. Furthermore, whatever the "cost" of this over-payment is, it needs to be balanced by the benefits of having a cooperative CEO-Board relationship. For firms where the board can provide valuable strategic expertise to the CEO, it may be argued that the value of this relationship may easily exceed the cost.

Consistent with our findings, Fehr and Gaechter (2000) have argued for the importance of incorporating reciprocity into our models of executive compensation. Without reciprocity, it is difficult for incomplete contracts of the type required between CEOs and boards to flourish. Cooperative relationships are important for labor contracts to operate. This applies importantly to boards where reciprocity between the board and the CEO are critical. Interestingly, while reciprocity is becoming recognized as an important fact of economic life, principal agent theory has yet to incorporate these effects.

Much of the current pressure for more independent boards misses the fact that while independent directors may be important, they are not immune to the psychological pressures we describe here. The interaction effects shown in Figure 1 offer strong evidence for the psychological micro-underpinnings of board operation. When CEOs

have more influence, having more board committees or independent directors can result in higher, not lower, levels of cash compensation. Simply calling for more independent directors or more monitoring by the board is unlikely to produce the effects predicted by agency theory unless the social psychology of the board is acknowledged. Jensen and Murphy (2004: 9) acknowledge the importance of understanding these psychological pressures and explicitly recommend the need to “change the structural, social and psychological environment of the board so that the directors (even those who fulfill the requirements of independence) no longer see themselves as effectively employees of the CEO.” Simplistic prescriptions are likely to produce unintended effects (e.g., Westphal, 1998; Zajac & Westphal, 1994).

Overall, we believe that agency theory is undoubtedly correct in noting the potential problems that the separation of ownership and control can create in firm governance and in underscoring the importance of the board’s role in incentive alignment and monitoring. However, we also believe that the common normative prescriptions of optimal contracting are too narrow and does not adequately reflect the psychological underpinnings that characterize actual board dynamics. Boards need to be concerned not only about opportunism on the part of the CEO but also designed in ways that promote the effective use of the directors’ expertise. To use the board’s expertise, reduce informational asymmetries between principals and agents, and increase goal alignment, the board-CEO relationship requires a level of trust and reciprocity that is unlikely to be achievable without social ties. This means that social influence processes are inevitable and need to be incorporated into theories and research on board design. The alternative, which is to structurally keep the CEO and the board independent of each other and to

charge the board with careful monitoring of the CEO, while feasible, is also likely to reduce trust and create incentives to further increase informational asymmetry, not favorable characteristics for incomplete contracts.

If the goal of the board is to both monitor and assist the CEO, the inevitable psychological dynamics need to be incorporated into board design, acknowledging the agency costs that this may incur for CEO pay, but compensating through the added value of applying the board's expertise to strategic issues confronting the firm. For example, at a minimum, this might include ensuring that the CEO is not the chair, thereby reducing influence, but also selecting directors who have the time and expertise required based on the challenges facing the firm (e.g., Beatty & Zajac, 1994; Kor & Sundaramurthy, 2009; Stevenson & Radin, 2009; Tosi, Shen & Gentry, 2003; Westphal, 1999). Similarly, the issue of incentive alignment posited by agency theory with regard to the board also needs to be applied to board members themselves.

## References

---

- Abowd, John M. 1990. Does performance-based managerial compensation affect corporate performance? *Industrial and Labor Relations Review*, 43: S52-73.
- Abowd, John M. and David S. Kaplan, 1999. Executive compensation: Six questions that need answering. *Journal of Economic Perspectives*, 13: 145-168.
- Abrahamson, Eric and Choelsoon Park, 1994. Concealment of negative organizational outcomes: An agency theory perspective. *Academy of Management Journal*, 37: 1301-1334.
- Adams, J.S. 1963. "Toward an understanding of inequity. *Journal of Abnormal and Social Psychology*, 67: 422-436.
- Adams, Renee B. and Daniel Ferreira, 2009. Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, in press.
- Aiken, Leona S. and West, Stephen G. 1991. *Multiple Regression: Testing and interpreting interactions*. Newbury Park, California: SAGE publications.
- Akerlof, George, 1982. Labor contracts as partial gift exchange. *Quarterly Journal of Economics*, 97: 543-569.
- Akerlof, George A. and Janet L. Yellen, 1990. The fair-wage effort hypothesis and unemployment, *Quarterly Journal of Economics*, 105: 255-283.
- Agarwal, Anup and Charles R. Knoeber, 1996. Firm performance and mechanisms to control agency problems between managers and shareholders. *Journal of Financial and Quantitative Analysis*, 31: 377-397.
- Agarwal, Anup and Charles R. Knoeber, 2001. Do outside directors play a political role? *Journal of Law and Economics*, 44: 179-198.
- Aggarwal, Rakesh J. and Andrew Samwick, 2003. Performance incentives within firms: The effect of managerial responsibility. *Journal of Finance*, 57: 1613-1649.
- Allen, Michael P. 1981. Power and privilege in the large corporation: Corporate control and managerial compensation. *American Journal of Sociology*, 86: 1112-1123.
- Anderson, Ronald C. and John M. Bizjak, 2003. An empirical examination of the role of the CEO and the compensation committee in structuring executive pay. *Journal of Banking and Finance*, 27:
- Baglia, B. Ram, Charles Moyer and Ramesh S. Rao, 1996. CEO Duality and firm performance: What's the fuss? *Strategic Management Journal*, 17: 41-43.
- Baker, George, Robert Gibbons and Kevin J. Murphy, 2002. Relational contracts and the theory of the firm. *Quarterly Journal of Economics*, 117: 39-84
-



- Baker, George P. and Brian J. Hall, 2004. CEO incentives and firm size. *Journal of Labor Economics*, 22: 767-798.
- Baker, George P., Michael Jensen and Kevin J. Murphy, 1988. Compensation and incentives: Practice vs. theory. *Journal of Finance*, 43: 593-616.
- Bar-Gill, Oren and Lucian Bebchuk, 2002. Misreporting corporate performance. Working Paper #400. Harvard Olin Center for Law, Economics, and Business. Harvard University.
- Barkema, Harry G. and Luis Gomez-Mejia, 1998. Managerial compensation and firm performance: A general research framework. *Academy of Management Journal*, 41: 135-145.
- Barnhart, Scott W., M. Wayne Marr and Stuart Rosenstein, 1994. Firm performance and board composition: Some new evidence. *Managerial and Decision Economics*, 15: 329-340.
- Beatty, Randolph P. and Edward J. Zajac, 1994. Managerial incentives, monitoring, and risk bearing: A study of executive compensation, ownership, and board structure in initial public offerings. *Administrative Science Quarterly*, 39: 313-335.
- Bebchuk, Lucian A., John C. Coates and Guhan Subramanian, 2002. The powerful anti-takeover force of staggered boards: Theory, evidence, policy. *Stanford Law Review*, 54: 887-951.
- Bebchuk, Lucian A and A. Cohen, 2004. The costs of entrenched boards. NBER Working Paper 10587.
- Bebchuk, Lucian A. and Jesse M. Fried 2003. Executive compensation as an agency problem. *Journal of Economic Perspectives*, 17: 71-92.
- Bebchuk, Lucian A. and Jesse M. Fried 2004. *Pay Without Performance: The Unfulfilled Promise of Executive Compensation*. Cambridge, MA: Harvard University Press.
- Belliveau, Maura A., Charles A. O'Reilly and James B. Wade, 1996. Social capital at the top: The effects of social similarity and status on CEO compensation. *Academy of Management Journal*, 39: 1568-1593.
- Bender, Ruth and Lance Moir, 2005. Does 'best practice' in setting executive pay in the UK encourage 'good' behavior? Cranfield School of Management. Paper presented at the 27<sup>th</sup> Annual Conference of the European Accounting Association, Gothenburg, May 2005.
- Berg, J., J. Dickhaut and K. McCabe. 1995. Trust, reciprocity and social history. *Games and Economic Behavior*, 10: 122-142.
- Berle, Adolf A. and Gardiner C. Means. 1932. *The Modern Corporation and Private Property*. NY: Macmillan Company.
-

- Bertrand, Marianne and Sendhil Mullainathan, 2001. Are CEOs rewarded for luck? The ones without principals are. *Quarterly Journal of Economics*, 116: 901-932.
- Bewley, Truman, 1995. A depressed labor market as explained by participants. *American Economic Review, Papers and Proceedings*, 85: 250-254.
- Bhagat, Sanjai and Bernard S. Black, 2001. Board independence and long-term performance. *Journal of Corporation Law*, 27: 231-273.
- Blau, Peter. 1964. *Exchange and Power in Social Life*. New York: Wiley.
- Borcherding, Thomas E. and Darren Filson, 2002. Group consumption, free-riding, and informal reciprocity agreements. *Journal of Economic Behavior & Organization*, 237-257.
- Borokhovich, Kenneth A., Kelly R. Brunarski and Robert Parrino, 1997. CEO contracting and anti-takeover amendments. *Journal of Finance*, 52: 1495-1517.
- Boyd, Brian K. 1994. Board control and CEO compensation. *Strategic Management Journal*, 15: 335-344.
- Boyd, Brian K. 1995. CEO duality and firm performance: A contingency model. *Strategic Management Journal*, 16: 301-312.
- Brick, Ivan E., Oded Palmon and John K. Wald, 2002. "CEO compensation, director compensation, and firm performance: Evidence of cronyism. Working Paper, Rutgers University Business School.
- Brown, Lawrence D. and Marcus L. Caylor, 2004. Corporate governance and firm performance. Working Paper, December 7, 2004.
- Bryan, Stephen, LeeSeok Hwang and Steven Lilien, 2000. CEO stock-based compensation: An analysis of incentive-intensity, relative mix, and economic determinants. *Journal of Business*, 73: 661-693.
- Byrd, John W. and Kent A. Hickman, 1992. Do outside directors monitor managers? Evidence from tender offer bids. *Journal of Financial Economics*, 32: 195-221.
- Byrne, Donn, Gerald L. Clore and Philip Worchel, 1966. The effect of economic similarity-dissimilarity as determinants of attraction. *Journal of Personality and Social Psychology*, 4: 220-224.
- Callahan, William T., James A. Millar and Craig Schulman, 2003. An analysis of the effect of management participation in director selection on the long-term performance of the firm. *Journal of Corporate Finance*, 41: 146-157.
-

- Carpenter, Mason A. and James D. Westphal, 2001. The strategic context of social network ties: Examining the impact of director appointments on board involvement in strategic decision making. *Academy of Management Journal*, 44: 639-660.
- Carter, D.A., Simkins, B.J. and Simpson, W.G., 2003. Corporate governance, board diversity, and firm value. *Financial Review*, 38: 33-53.
- Catalyst Report. 2004. The bottom line: Connecting performance and gender diversity.
- Cheng, Shijun, 2008. Board size and the variability of corporate performance. *Journal of Financial Economics*, 87: 157-176.
- Cialdini, Robert B. 1993. *Influence: The New Psychology of Modern Persuasion*. NY: Quill.
- Coles, Jeffrey L., Naveen D. Daniel and Lalitha Naveen, 2004. Boards: Does one size fit all? Working Paper, April 1, 2003.
- Combs, James G., David J. Ketchen, Alexa A. Perryman and Maura S. Donahue (2007). The moderating effect of CEO power on the board composition-firm performance relationship. *Journal of Management Studies*, 44: 1299-1323.
- Conyon, Martin J. and Simon I. Peck, 1998. Board control, remuneration committees and top management compensation. *Academy of Management Journal*, 41: 146-157.
- Core, John E., Robert W. Holthausen and David F. Larcker, 1999. Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics*, 51: 371-406.
- Crystal, Graef S. 1991. *In Search of Excess: The Overcompensation of American Executives*. New York: Norton.
- Cyert, Richard, Sok-Hyon Kang and Praveen Kumar, 2002. Corporate governance, takeovers, and top-management compensation: Theory and evidence. *Management Science*, 48: 453-469.
- Dabos, Guillermo E. and Denise Rousseau, 2004. Mutuality and reciprocity in psychological contracts of employees and employers. *Journal of Applied Psychology*, 89: 52-72.
- Daily, Catherine M., S. Trevis Certo and Dan R. Dalton, 1999. A decade of corporate women: Some progress in the boardroom, none in the executive suite. *Strategic Management Journal*, 20: 93-99.
- Daily, Catherine M. and Dan R. Dalton, 1992. The relationship between governance structure and corporate performance in entrepreneurial firms. *Journal of Business Venturing*, 7: 375-396.
-

- Daily, Catherine M., Jonathan L. Johnson, Alan E. Ellstrand and Dalton, Dan A., 1998. Compensation committee composition as a determinant of CEO compensation. *Academy of Management Journal*, 41: 209-220.
- Daily, Catherine M., Jonathan L. Johnson, Alan E. Ellstrand and Dan R. Dalton, 2001. Institutional investor activism: Follow the leaders? SSRN Working Paper.
- Daily, Catherine and Charles R. Schwenk, 1996. Chief executive officers, top management teams, and boards of directors: Congruent or countervailing forces? *Journal of Management*, 22: 185-208.
- Dalton, Dan R., Catherine M. Daily, Alan E. Ellstrand and Jonathan L. Johnson, 1998. Meta-analytic reviews of board composition, leadership structure, and financial performance. *Strategic Management Journal*, 19: 269-290.
- Dalton, Dan A., Catherine M. Daily, Jonathan L. Johnson and Alan E. Ellstrand, 1999. Number of directors and financial performance: A meta-analysis. *Academy of Management Journal*, 42: 674-686.
- Davis, Gerald F. and Henrich R. Greve, 1997. Corporate elite networks and governance changes in the 1980s. *American Journal of Sociology*, 103: 1-37.
- Deckop, J.R. 1988. Determinants of chief executive officer compensation. *Industrial and Labor Relations Review*, 41: 215-226.
- Deutsch, Yuaval, 2005. The impact of board composition on firms' critical decisions: A meta-analytic review." *Journal of Management*, 31: 424-444.
- Devers, Cynthia E., Albert A. Cannella, Gregory P. Reilly and Michele E. Yoder, 2007. Executive compensation: A multidisciplinary review of recent developments. *Journal of Management*, 33: 1016-1072.
- Eisenberg, Theodore., Stefan. Sundgren and T. Martin Wells, 1998. Larger board size and decreasing firm value in smaller firms. *Journal of Financial Economics*, 48: 35-54.
- Elster, John, 1989. Social norms and economic theory. *Journal of Economic Perspectives*. 3: 99-117.
- Erhardt, N.L., Werbel, J.D. and Shrader, C.B., 2003. Board of director diversity and firm financial performance. *Corporate Governance: An International Review* 11: 102-111.
- Fama, Eugene, 1980. Agency problems and the theory of the firm. *Journal of Political Economy*, 88: 288-307.
-

- Fama, Eugene and Michael Jensen, 1983. Separation of ownership and control. *Journal of Law and Economics*, 26: 327-349.
- Farrell, Kathleen A. and Philip L. Hersch 2005. Additions to corporate boards: The effect of gender. *Journal of Corporate Finance*, 11: 85-106.
- Fehr, Ernst and Simon Gaechter, 2000. Fairness and retaliation: The economics of reciprocity. *Journal of Economic Perspectives*, 14: 159-181.
- Fehr, Ernst, Simon Gaechter and George Kirchsteiger, 1997. Reciprocity as a contract enforcement device. *Econometrica*, 65: 833-860.
- Fehr, Ernst, Erich Kirchler, Andreas Weichbold and Simon Gaechter, 1998. When social norms overpower competition: Gift exchange in experimental labor markets. *Journal of Labor Economics*, 16: 324-351.
- Festinger, Leon, 1954. A theory of social comparison processes. *Human Relations*, 7: 117-140.
- Finkelstein, Sydney and Brian K. Boyd, 1998. How much does the CEO matter? Managerial discretion in the setting of CEO compensation. *Academy of Management Journal*, 41: 179-199.
- Finkelstein, Sydney and Richard A. D'Aveni, 1994. CEO duality as a double-edged sword: How boards of directors balance entrenchment avoidance and unity of command. *Academy of Management Journal*, 37: 1079-1108.
- Firstenberg, P.B. and B.G. Malkiel, 1994. The twenty-first century boardroom: Who will be in charge? *Sloan Management Review*, Fall: 27-35.
- Fligstein, Neil and Jennifer Choo, 2005. Law and corporate governance. Paper presented at the Annual Review of Law and Social Science. March, 2005.
- Gabaix, Xavier and Augustin Landier, 2008. Why has CEO pay increased so much? *Quarterly Journal of Economics*, 123: 49-100.
- Garen, John E. 1994. Executive compensation and principal-agent theory. *Journal of Political Economy*, 102: 1175-1199.
- Gibbons, Robert, 1998. Incentives in organizations. *Journal of Economic Perspectives*, 12: 115-132.
- Goldberg, Lawrence G. and Todd L. Idson, 1995. Executive compensation and agency effects. *The Financial Review*, 30: 313-335.
-

- Golightly, Carole, Devereaux M. Huffman and Donn Byrne, 1972. Liking and loaning. *Journal of Applied Psychology*, 56: 521-523.
- Gompers, Paul, Joy Ishii and Andrew Metrick, 2003. Corporate governance and equity prices. *Quarterly Journal of Economics*, 118: 107-155.
- Gouldner, A.W. 1960. The norm of reciprocity. *American Sociological Review*, 25: 161-178.
- Goyal, Vidhan K. and Chul W. Park, 2002. Board leadership structure and CEO turnover. *Journal of Corporate Finance*, 8: 49-66.
- Hall, Brian J. and Jeffrey B. Liebman, 1998. Are CEOs really paid like bureaucrats? *Quarterly Journal of Economics*, 118: 653-691.
- Hallock, Kevin F. 1997. Reciprocally interlocking boards of directors and executive compensation. *Journal of Financial and Quantitative Analysis*, 32: 331-344.
- Harris, Dawn and Constance Helfat, 1997. Specificity of CEO human capital and compensation. *Strategic Management Journal*, 18: 895-920.
- Hartzell, Jay C. and Laura T. Starks, 2002. Institutional investors and executive compensation. Paper presented at the American Finance Association Meetings, Washington, D.C.
- Haubrich, Joseph G. 1994. Risk aversion, performance pay, and the principal-agent problem. *Journal of Political Economy*, 102: 258-276.
- He, Lerong and Martin J. Conyon, 2003. Compensation committees and CEO compensation in U.S. high technology firms. Working Paper, Wharton School, July, 2002.
- Hermalin, Benjamin E. and Michael S. Weisbach, 1998. Endogenously chosen boards of directors and the monitoring of the CEO. *American Economic Review*, 88: 96-118.
- Hillman, Amy J., Christine Shropshire and Albert A. Cannella, 2007. Organizational predictors of women on corporate boards. *Academy of Management Journal*, 50: 941-952.
- Holmstrom, Bengt and Kaplan, Steven N. 2004. The state of US corporate governance 2004, Graduate School of Business, University of Chicago, Working Paper (January).
- Jensen, Michael C. and William Meckling, 1976. Theory of the firm: managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics*, 3: 305-360.
-

Jensen, Michael C. and Kevin J. Murphy, 1990. Performance pay and top management incentives. *Journal of Political Economy*, 98: 225-263.

Jensen, Michael C. and Kevin J. Murphy, 2004. Remuneration: Where we've been, how we got to here, what the problems are, and how to fix them. Negotiation, Organizations and Markets Research Paper Series, Harvard Business School Paper No. 04-28, July 12, 2004.

Judge, William Q. and Carl P. Zeithaml, 1992. Institutional and strategic choice perspectives on board involvement in the strategic decision process. *Academy of Management Journal*, 35: 766-794.

Kaplan, Steven N. Are CEOs overpaid? *Academy of Management Perspectives*, 22, 28-34.

Kerr, Jeffrey and Richard A. Bettis, 1987. Boards of directors, top management compensation, and shareholder returns. *Academy of Management Journal*, 30: 645-664.

Klein, April, 2002. Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics*, 33: 375-400.

Klein, April, 1998. Firm performance and board committee structure. *Journal of Law and Economics*, 41: 275-303.

Kor, Yasemin Y. and Chamu Sundaramurthy (2009). Experience-based human capital and social capital of outside directors. *Journal of Management*, 35: 981-1006.

Kunz, P.C. and M. Woolcott, 1976. Seasons greetings: From my status to yours. *Social Science Research*, 5: 269-278.

Lambert, Richard A., David F. Larcker and Keith Weigelt, 1993. The structure of organizational incentives. *Administrative Science Quarterly*, 38: 438-461.

Larcker, David F., Scott A. Richardson and Irem Tuna, 2004. Does corporate governance really matter? Working Paper. June 9, 2004.

Leonard, Jonathan S. 1990. Executive pay and firm performance. *Industrial and Labor Relations Review*, 43: S13-29.

Linn, Scott C. and Daniel Park, 2005. Outside director compensation and the investment opportunity set. *Journal of Finance*, 55: 1367-1384.

Lorsch, Jay W. and Elizabeth MacIver, 1989. *Pawns or Potentates: The Reality of America's Corporate Boards*. Boston: Harvard Business School Press.

---

- Main, Brian G.M., Charles A. O'Reilly and James B. Wade, 1995. The CEO, the board of directors and executive compensation: Economic and psychological perspectives. *Industrial and Corporate Change*, 4: 293-332.
- March, James G. 1984. Notes on the ambiguity of executive compensation. *Scandinavian Journal of Management Studies*, August: 53-64.
- Mengistae, Taye and Lixin Colin Xu, 2004. Agency theory and executive compensation: The case of Chinese state-owned enterprises. *Journal of Labor Economics*, 22: 615-637.
- Milgram, Stanley, 1974. *Obedience to Authority*. New York: Harper & Row.
- Mishra, Chandra S., Daniel L. McConaughy and David H. Gobeli, 2000. Effectiveness of CEO pay-for-performance. *Review of Financial Economics*, 9: 1-13.
- Morck, Randall, Shleifer, Andrei and Vishny, Robert W. 1988. Management ownership and market valuation. An empirical analysis, *Journal of Financial Economics*, 20: 293-315.
- Murphy, Kevin J. 2002. Explaining executive compensation: Managerial power vs. the perceived cost of stock options. *University of Chicago Law Review*, 69: 847-8869.
- Murphy, Kevin J. 1999. Executive compensation, In Orley Ashenfelter and David Card (eds.) *Handbook of Labor Economics*, Vol. 3B, Elsevier, Chapter 38: 2485-2557.
- Nelson, James. 2005. Corporate governance practices, CEO characteristics and firm performance. *Journal of Corporate Finance*, 11: 197-228.
- Newman, Harry A. and Haim A. Mozes, 1999. Does the composition of the compensation committee influence CEO compensation practices? *Financial Management*, 28: 41-53.
- O'Reilly, Charles A., Brian G.M. Main, and Graef S. Crystal, 1988. CEO compensation as tournament and social comparison: A tale of two theories. *Administrative Science Quarterly*, 33: 257-274.
- Pearce, J.A. and S.A. Zahra, 1991. The relative power of CEOs and boards of directors: Associations with corporate performance. *Strategic management Journal*, 12: 135-153.
- Porac, Joseph F., James B. Wade, and Timothy G. Pollock, 1999. Industry categories and the politics of the comparable firm in CEO compensation. *Administrative Science Quarterly*, 44: 112-144.
- Rabin, Matthew. 1993. Incorporating fairness into game theory economics. *American Economic Review*, XX: 1281-1302.
-



- Rechner, P.L. and Dan R. Dalton, 1989. The impact of CEO as board chairperson on corporate performance: Evidence vs. rhetoric. *Academy of Management Executive*, 3: 141-144.
- Rechner, P.L. and Dan R. Dalton, 1991. CEO duality and firm performance: A longitudinal analysis. *Strategic Management Journal*, 12: 155-160.
- Ridley, M. 1997. *The Origin of Virtue: Human Instincts and the Evolution of Cooperation*. London: Penguin Books.
- Rind, Bruce and David Strohmetz, 2001. Effect on restaurant tipping of presenting customers with an interesting task and of reciprocity, *Journal of Applied Social Psychology*, 31: 1379-1385.
- Sanders, William G., Allison Davis-Blake and James W. Frederickson, 1995. Prizes with strings attached: Determinants of the structure of CEO compensation. *Academy of Management Best Paper Proceedings*, 266-270.
- Schaefer, Scott. 1998. The dependence of pay-for-performance sensitivity on the size of the firm. *Review of Economics and Statistics*, 80: 436-443.
- Sethi, Rajiv and E. Somanatham, 2003. Understanding reciprocity. *Journal of Economic Behavior & Organization*, 50: 1-27.
- Shleifer, Andrei and Robert W. Vishny, 1997. A survey of corporate governance. *Journal of Finance*, 52: 737-783.
- 
- Shen, Wei, Richard J. Gentry and Henry L. Tosi, 2004. The CEO as sandbagger: CEO pay as the tournament prize or a reflection of managerial power? Working Paper.
- Shivdasani, Anil and David Yermack, 1999. CEO involvement in the selection of new board members: An empirical analysis. *Journal of Finance*, 54: 1829-1853.
- Stevenson, William B. and Robert F. Radin, 2009. Social capital and social influence on the board of directors. *Journal of Management Studies*, 46: 17-44.
- Tidd, K.L. and J.S. Lochard, 1978. Monetary significance of the affiliative smile: A case for reciprocal altruism. *Bulletin of the Psychonomic Society*, 11: 344-346.
- Tosi, Henry L. and Luis Gomez-Mejia, 1989. The decoupling of CEO pay and performance: An agency theory perspective. *Administrative Science Quarterly*, 34: 169-189.
- Tosi, Henry L. and Luis Gomez-Mejia, 1994. CEO compensation monitoring and firm performance. *Academy of Management Journal*, 37: 1002-1016.
- Tosi, Henry L., Wei Shen, and Richard J. Gentry, 2003. Why outsiders on boards can't solve the corporate governance problem. *Organizational Dynamics*, 32: 180-192.

Tosi, Henry L., Steve Werner, Jeffrey P. Katz and Luis R. Gomez-Mejia, 2000. How much does performance matter? A meta-analysis of CEO pay studies. *Journal of Management*, 26: 301-340.

Tsui, Anne S. and Charles A. O'Reilly, 1989. Beyond simple demographic effects: The importance of relational demography in superior-subordinate dyads. *Academy of Management Journal*, 32: 402-423.

Uhl-Bien, Mary and John M. Maslyn, 2003. Reciprocity in manager-subordinate relationships: Components, configurations, and outcomes. *Journal of Management*, 29: 511-532.

Useem, Michael 1993. *Executive Defense: Shareholder Power and Corporate Reorganization*. Cambridge, MA: Harvard University Press.

Vafeas, Nikos, 1999. Board meeting frequency and firm performance. *Journal of Financial Economics*, 53: 113-142.

Wade, James B., Charles A. O'Reilly and Ike Chandratat, 1990. Golden parachutes: CEOs and the exercise of social influence. *Administrative Science Quarterly*, 35: 587-603.

Wade, James B., Charles A. O'Reilly, and Timothy G. Pollock, 2006. Overpaid CEOs and underpaid managers: Fairness and executive compensation. *Organization Science*, 17: 527-544.

Wade, James B., Joseph F. Porac and Timothy G. Pollock, 1997. Worth, words, and the justification of executive pay. *Journal of Organizational Behavior*, 18: 641-664.

Werner, Steve, Henry Tosi and Luis Gomez-Mejia, 2005. Organizational governance and employee pay: How ownership structure affects the firm's compensation strategy. *Strategic Management Journal*, 26: 377-384.

Westphal, James D. 1998. Board games: How CEOs adapt to increases in structural board independence from management. *Administrative Science Quarterly*, 43: 511-537.

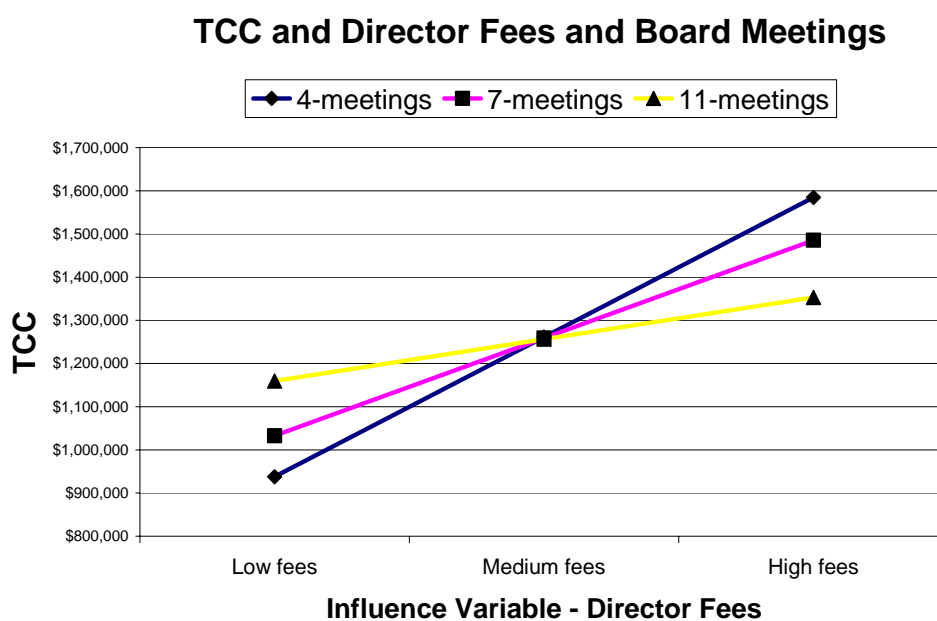
Westphal, James D. 1999. Collaboration in the boardroom: Behavioral and performance consequences of CEO-board social ties. *Academy of Management Journal*, 42: 7-24.

Westphal, James D. and Laurie P. Milton. 2000. Avoiding social barriers: How experience and social network ties affect the influence of demographic minorities on corporate boards. *Administrative Science Quarterly*, 45: 366-398.

Westphal, James D. and Edward J. Zajac, 1995. Who shall govern? CEO-board power, demographic similarity, and new director selection. *Administrative Science Quarterly*, 40: 60-83.

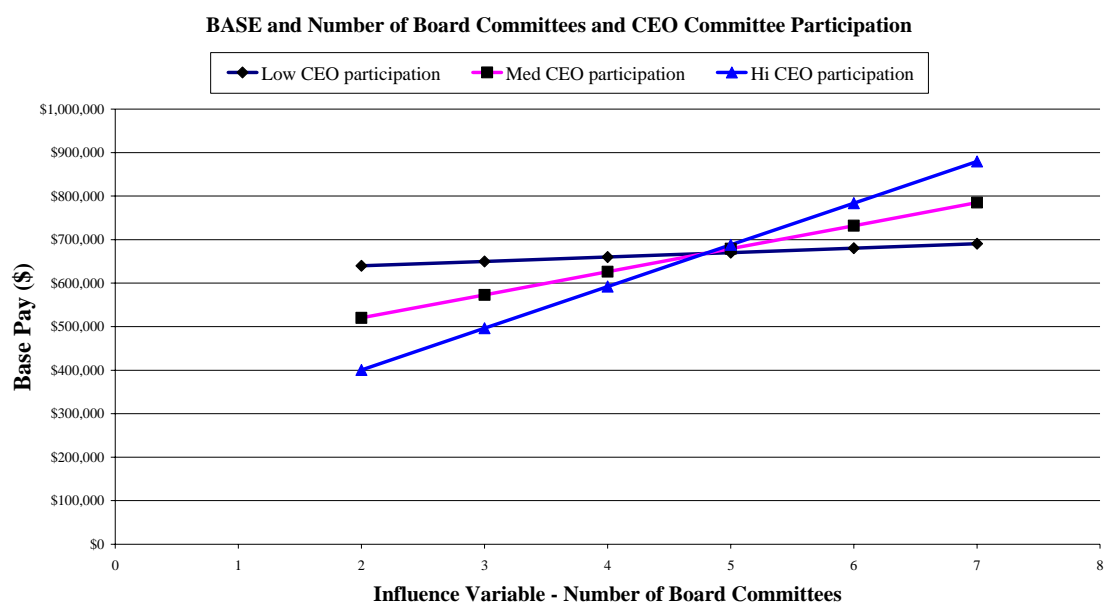
- Westphal, James D. and Edward J. Zajac, 1997. Defections from the inner circle: Social exchange, reciprocity, and the diffusion of board independence in U.S. corporations. *Administrative Science Quarterly*, 42: 161-183.
- Westphal, James D. and Edward J. Zajac, 1998. The symbolic management of stockholders: Corporate governance reforms and shareholder reactions. *Administrative Science Quarterly*, 43: 127-XXX
- Whatley, Mark A., J. Matthew Webster, Richard H. Smith and Adele Rhodes, 1999. The effects of a favor on public and private compliance: How internalized is the norm of reciprocity? *Basic and Applied Social Psychology*, 21: 251-259.
- Yermack, David, 1996. Higher market valuation of companies with a small board of directors. *Journal of Financial Economics*, 40: 185-211.
- Yermack, David. 1997. Good timing: CEO stock option awards and company news announcements. *Journal of Finance*, 52: 449-476.
- Yermack, David, 2004. Remuneration, retention, and reputation incentives for outside directors. *Journal of Finance*, 59: 2281-2308.
- Young, Michael N. and Ann K. Buchholtz, 2002. Firm performance and CEO pay: Relational demography as a moderator. *Journal of Managerial Issues*, 14: 296-313.
- Zajac, Edward J. and James D. Westphal, 1994. The costs and benefits of managerial incentives and monitoring in large U.S. corporations: When is more not better? *Strategic Management Journal*, 15: 121-142.

**Figure 1**  
**TCC Interaction Effects between Fees paid to the head of compensation committee and Board Meetings**



Low fees = \$17,112; Medium fees = \$165,277; High fees = \$313,441

**Figure 2**  
**Base Pay and Interaction Effects between**  
**Number of Board Committees and CEO**  
**Committee Participation**



Low Committee Participation = 0 committees; Medium = 1 committees; and High = 2 committees.

**Figure 3**  
**Base Pay and Interaction Effects between**  
**Duality and Independent Directors**

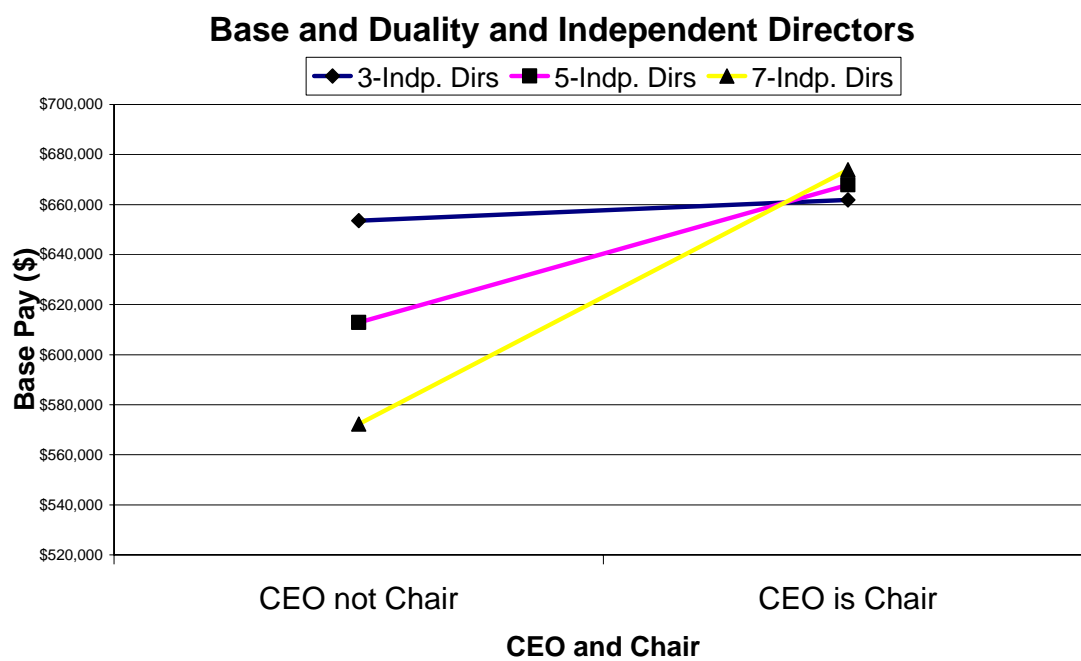


Table 1

**Descriptive Statistics**

	Mean	Standard Deviation	Range (min)	(max)
<b>Controls</b>				
Industry (1=Retail, 0=Semiconductor)	0.65	0.48	0	1
Revenues (log\$)	20.69	1.80	14.45	26.28
Employees (log)	8.30	1.78	4.03	14.22
3 Year Average TSR(%)	9.26	32.01	-68.81	163.55
<b>Human Capital</b>				
CEO Tenure (years)	10.19	8.15	0.50	41.40
Age (years)	53.94	7.57	31.00	79.00
Sex (1=male, 0=female)	0.95	0.22	0.00	1.00
<b>Principal Agent</b>				
# Block Holders of over 5%	5.43	2.62	0	13
CEO Chairman (1=yes, 0=no)	0.59	0.49	0	1
# Directors	8.13	2.09	4	14
# Independent Directors	5.27	1.95	1	13
<b>Governance</b>				
# Female Directors	0.89	1.05	0	5
Staggered Board (1=yes, 0=no)	0.52	0.50	0	1
# Meetings	7.27	3.36	2	29
# Committees	3.49	0.91	2	7
<b>Reciprocity</b>				
CEO on Nom Cmte (1=yes, 0=no)	0.04	0.21	0	1
Director's Fees (\$)	165,277	148,165	0	926,814
Tenure difference between CEO and Chair of the Compensation Committee (years)	1.42	8.96	-28.70	39.00
<b>Social Influence</b>				
CEO Chairman	0.59	0.49	0	1
Total Committees	0.27	0.49	0	2
CEO on Compensation Committee (1=yes, 0=no)	0.02	0.14	0	1
Age difference between the CEO and chairman of the Compensation Committee (years)	-6.29	10.79	-37	31
<b>Dependent Variables</b>				
Base Salary (\$)	645,280	320,251	81,840	2,000,000
Total Cash Compensation (\$)	1,245,241	1,119,411	81,840	7,055,125
Total Direct Compensation (\$)	4,603,257	8,582,853	81,840	101,000,000

Number of Observations N = 247

Table 2

	Model 1			Model 2			Model 3		
	Base	TCC	TDC	Base	TCC	TDC	Base	TCC	TDC
Controls									
Industry	0.142***	-0.022	-0.223***	0.144***	-0.001	-0.178**	0.095	-0.048	-0.210***
Revenues	0.386***	0.284*	0.450***	0.328**	0.23	0.404***	0.343**	0.228*	0.399***
Employees	0.274*	0.347**	-0.115	0.257*	0.343*	-0.106	0.208	0.293*	-0.126
TSR 3 Years	-0.122***	0.052	0.116	-0.107**	0.061	0.117	-0.109***	0.072	0.108
Human Capital									
CEO Tenure	-0.101*	-0.077	-0.118*	-0.111	-0.093	-0.136	-0.104	-0.073	-0.123
Age	0.161***	0.101**	0.04	0.143***	0.091**	0.039	0.144***	0.079*	0.047
Sex	0.008	0.028	-0.04	-0.002	0.019	-0.047	0.018	0.044	-0.009
Principal Agent									
# Block Holders of over 5%				-0.009	-0.067	-0.132	-0.014	-0.054	-0.124
CEO Chairman				0.097**	0.077	0.048	0.084*	0.063	0.025
# Directors				0.056	0.026	-0.038	0.04	-0.005	-0.056
# Independent Directors				0.039	0.028	0.045	-0.004	-0.019	0.007
Governance									
# Female							0.131*	0.124	0.172
Staggered							0.093**	0.013	-0.025
# Meetings							-0.056	-0.018	-0.01
# Committees							0.043	0.179**	-0.049
F-Ratio	41.88	19.59	7.51	29.36	14.46	5.88	28.44	12.84	5.16
Adjusted R2	0.57	0.40	0.09	0.57	0.40	0.09	0.59	0.43	0.10
df	7, 240	7, 240	7, 240	11,236	11,236	11,236	15,231	15,231	15,231

Entries are standardized regression coefficients; Huber-White robust standard errors used.

\*\*\*p<.01

\*\*p<.05

\*p<.10



Table 3

	Model 1			Model 2			Model 3		
	Base	TCC	TDC	Base	TCC	TDC	Base	TCC	TDC
<b>Reciprocity</b>									
CEO on Nom Cmte	0.054	0.098	0.002				0.097*	0.102	-0.064
CCC Director's Fees	0.159***	0.157**	0.389***				0.170***	0.167***	0.398***
CEO and CCC ten diffs	0.003	0.051	0.088				0.074	0.088	0.049
<b>Social Influence</b>									
CEO Chairman				0.091*	0.069	0.021	0.092*	0.069	0.063
# Committees CEO serves on				-0.053	0.047	0.086	-0.111*	-0.015	0.144
CEO on Comp Cmte				0.036	-0.005	-0.048	0.056*	0.017	-0.056
CEO Age Diff				-0.108**	-0.056	0.065	-0.136**	-0.088	0.024
F-Ratio	26.515***	12.006***	5.252***	24.024***	11.238***	4.659***	23.245***	10.857***	4.915***
Adjusted R2	0.61	0.45	0.21	0.60	0.43	0.09	0.62	0.45	0.21
df	17,230	17,230	17,230	18,229	18,229	18,229	21, 226	21, 226	21, 226
R-square change	0.04	0.05	0.12	0.02	0.03	0.00	0.03	0.02	0.11
F-Ratio	4.17***	2.53*	4.03***	2.66**	0.55	0.73	3.26***	1.38	2.05**
df	3,230	3,230	3,230	4,229	4,229	4,229	7,226	7,226	7,226

Entries are standardized regression coefficients; Huber-White robust standard errors used.

Also included in the regressions as control variables, but not reported here, are the variables listed in Table 2.

\*\*\*p<.01

\*\*p<.05

\*p<.10

Table 4

	Base	TCC	TDC
<b>Model 1</b>			
CCC Director's Fees	0.222**	0.405***	0.765***
# of Board Meetings	-0.048	0.106*	0.151***
Interaction	-0.069	-0.315***	-0.487**
F-Ratio(22,225)	22.17***	10.83***	5.24***
Adjusted R2	0.62	0.47	0.24
F-Ratio( 3,225)	4.55***	3.71**	5.82***
<b>Model 2</b>			
# Committees of the Board	0.029	0.129*	-0.059
# Committees CEO serves on	-0.314***	-0.169	0.227
Interaction	0.280***	0.214	-0.115
F-Ratio(22,225)	22.38***	10.73***	4.59***
Adjusted R2	0.63	0.46	0.21
F-Ratio( 3,225)	4.00***	2.06*	0.80
<b>Model 3</b>			
CEO Chairman	-0.095	-0.089	0.281
# Independent Directors	-0.124	-0.115	0.033
Interaction	0.224*	0.189	-0.261*
F-Ratio(22,225)	22.03***	10.58***	4.67***
Adjusted R2	0.63	0.45	0.21
F-Ratio( 3,225)	2.27*	0.47	1.02

Entries are standardized regression coefficients; Huber-White robust standard errors used.

Also included in the regressions as control variables, but not reported here, are the variables listed in Tables 2 and 3.

\*\*\*p<.01

\*\*p<.05

\*p<.10

