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WHO GETS THE LION'S SHARE? TOP MANAGEMENT GROUP PAY DISPARITIES AND POWERFUL CEOS

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Abstract

While the distribution of pay across the hierarchy of corporations has received considerable critical attention, the distribution of pay within top management groups has received comparatively little. This paper contributes to the established literature by moving the debate beyond tournament theory explanations to show that pay disparities within top management groups arise as a function of the distribution of power within them. Based on a sample of 604 publicly-traded firms drawn from the S&P 1500, a theoretical model linking sociopolitical factors in the top management group and top management group pay disparities was tested using hierarchical ordinary least squares (OLS) regression. The results indicate that CEO power plays an important role in the distribution of compensation within top management groups.

Key Words: Top Management Teams/Upper Echelon; Compensation, Bonuses and Benefits; Board of Directors

Introduction

The compensation of top executives, particularly CEOs, has garnered significant attention over the past several decades. While public interest in CEO pay has fueled policy changes at the Securities and Exchange Commission ('SEC') regarding the disclosure of executive compensation, relatively little attention has been given to pay inequity within firms, specifically the wide disparity of pay that exists between members of top management groups ('TMG'). The disparity between CEO pay and that of the highest ranking non-CEO members of TMGs has widened in recent decades (Frydman & Saks, 2010), and this gap has implications for the competitive behavior and performance of publicly-traded firms (Carpenter & Sanders, 2002; Gnyawali, Offstein & Lau, 2008). With respect to the trend in TMG pay disparities, Frydman & Saks (2010) found that the disparity in pay between the CEOs of publicly-traded firms and the next two highest-paid officers was fairly compressed during World War II, that it increased incrementally until the 1970s, and increased exponentially thereafter. As of 2003, the compensation of the average CEO of a large publicly-traded company as compared to the 3rd highest officer in the firm was 25% higher than it had been early in the 20th century, and 19% higher than it had been in the 9-year period from 1990-1999 (Frydman & Saks, 2010).

In recent years, tournament theorists, organizational sociologists, and strategists (e.g. Conyon, Peck, & Sadler, 2001; Lambert, Larcker, & Weigelt, 1993; Leonard, 1990; Main, O'Reilly, III, & Wade, 1993) have sought to identify the determinants of disparate pay within TMGs. Empirical work has documented the presence of corporate tournaments in large publicly-traded firms and the presence of disproportionately large pay differentials between CEOs and executives at the next highest organizational level (e.g. Bloom & Michel, 2002; Conyon et al., 2001; Eriksson, 1999; Henderson & Fredrickson, 2001; Lambert et al., 1993; Leonard, 1990;

Main et al., 1993). Drawing on theories of managerial power and managerial discretion, this paper does two things: first, it identifies sociopolitical antecedents of TMG pay disparities arising from CEO power; second, it associates disparate pay within the TMG with the discretion conveyed by the organizational context.

In evaluating the CEO power-TMG pay disparity relationship, this paper contributes to the growing body of knowledge regarding the causes of compensation at the TMG-level of publicly-traded firms: it moves the TMG pay disparity debate beyond extant economic explanations to include the relative power of the incumbent CEO as a determinant of the distribution of compensation resources while evaluating the extent to which the discretion contained within the organizational environment moderates this relationship.

This paper is structured as follows. In the first section, the extant TMG pay disparities literature is reviewed with a specific focus on the theoretical and empirical developments regarding the determinants of TMG pay disparities. The next section develops a theoretical model that draws from this review and the associated managerial power and managerial discretion literatures. The paper, then, describes the methodology that is used to test the theoretical model, followed by an analysis of the theoretical and practical implications, and the limitations and contributions of this study.

Literature Review

The standard economic theory of wages holds that employee wages are determined by the individual employee's marginal product (Mahoney, 2005); however, this theory does not seem adequate to explain TMG pay, which is characterized by extreme disparities among different levels in the hierarchy of TMG members. An established literature in neoclassical economics

explains that TMG pay structures, despite the high pay and extreme disparities between levels, represent the optimal arrangement that could be achieved between the board and the TMG taking into account contracting and monitoring costs (Lazear & Rosen, 1981). Because of the asymmetrical distribution of information within the TMG and the difficulty of monitoring the output of TMG members, the most efficient way to allocate TMG pay is not to link it to the TMG member's marginal output; instead, compensation is determined by the TMG member's position within the corporate hierarchy (Conyon et al., 2001). Under this 'tournament theory', TMG pay disparities exist in order to motivate TMG members to perform at high levels so that they may rise within the hierarchy and enjoy the higher pay that comes with the higher position (e.g. Green & Stokey, 1983; Lazear & Rosen, 1981; Malcolmson, 1984; Rosen, 1986).

A potential problem would emerge if each increase in pay between levels in the hierarchy were equal: anticipating comparatively fewer future promotions, TMG members would have less to gain through hard work than lower level members. According to tournament theory, this problem is avoided through the increasingly high pay disparities between ranks in the corporate hierarchy, and an extremely high pay disparity between the CEO and all other TMG members. Thus, even relatively highly placed TMG members are motivated to work hard to win the next round in the tournament, in order to achieve the significant pay increase associated with it, and to move one step closer to the ultimate prize: the CEO's disproportionately large compensation package (Lambert et al., 1993). The CEO has no further rounds in the tournament to win, and so cannot be motivated by the need to outperform other organizational competitors so as to win future tournament rounds (Rosen, 1986). However, according to tournament theory, the disproportionately higher pay received by the CEO motivates the CEO to work hard in order to resist attempts to usurp his/her position, which would result in the loss by the incumbent CEO of

that extremely profitable position within the hierarchy (Lambert et al., 1993). Essentially, tournament theory posits that CEO pay must be so high that it functions as the equivalent of an unending series of future tournament rounds to be won (Lazear & Rosen, 1981).

Although research regarding the use of sequential elimination tournaments and disproportionate pay at the top has systematically identified disparate pay as an increasing function of hierarchical level (e.g. Conyon et al., 2001; Lambert et al., 1993; Leonard, 1990; Main et al., 1993), there is increasing recognition that TMG pay disparities may not be adequately explained by tournament theory alone.

Theoretical Model and Hypotheses

Power has been defined in a variety of ways, including the "intentional and effective control by particular agents" (Wrong, 1968: 676); "the production of intended effects by some men over other men" (Russell, 1938: 25); the capacity to "realize one's own will even over the resistance of others" (Weber, 1946: 180), and as the "potential ability to influence behavior, to change the course of events, to overcome resistance, and to get people to do things that they would not otherwise do" (Pfeffer 1992: 30).

Pettigrew (1973) argues that an accurate perception of the power distribution is a necessary prerequisite for the man seeking powerful support for his demands. Because strategic decisions are inherently unstructured, and replete with ambiguity, they are inherently political because they involve decisions made by individuals with potentially conflicting views who may resolve such conflict through negotiation and the use of power (Eisenhardt & Bourgeois, 1988; Finkelstein, 1992; Mintzberg, Raisinghani, & Theoret, 1976). Consequently, the capacity to set the direction of the firm, and to make and implement strategic choices is the product of a

negotiated process achieved by those managers that possess the power to exert their will (Eisenhardt, 1989).

However, while centralized power is necessary to set the direction of the firm, it can also have negative consequences for the firm. Theoretically, centralized power in publicly-traded firms is synonymous with managerial control (e.g. Berle & Means, 1932; Fama & Jensen, 1983; Jensen & Meckling, 1976). In the modern business environment, the publicly-traded firm is characterized by dispersed ownership, which results in the capacity of corporate managers to centralize their power as traditional checks are eroded (Tosi & Gomez-Mejia, 1989). Consequently, centralized power results in the physical control over the methods of production as organizational control is increasingly ceded to powerful managers (Mahoney, 2005). One way that CEOs could use this centralized power to the detriment of the firm would be by extracting higher wages for themselves, and research indicates that greater CEO power is associated with greater CEO compensation (Bebchuck & Fried, 2003; Van Essen, Otten & Carberry, 2012).

Given the potentially self-serving manner in which power may be used, there is reason to theorize that TMG pay disparities result from CEO power. Many organizations have a triangular structure in which senior executives arrive at the apex of the organizations by competing up through the ranks in sequential elimination tournaments (Beckmann, 1978). While disparities in TMG pay may be partially a function of this process, what is not addressed in the tournament model is that ascension to the title of CEO can only occur if the office is vacated by the incumbent CEO. Yet, tournament theory also supplies a strong motivation for the CEO not to vacate the position, namely, the disproportionately high pay enjoyed by the CEO. Empirical research has confirmed that incumbent CEOs are often unwilling to leave their positions

voluntarily (e.g. Buccholtz & Ribbens, 1994; Eisenhardt & Bourgeois, 1988; Ocasio, 1994; Sonnenfeld, 1988; Ward, Sonnenfeld, & Kimberly, 1995; Zajac & Westphal, 1996). Since it is the CEO who typically hires the senior members of the TMG, it raises the question why a CEO would "set up a tournament in which the prize is his or her own job" (Finkelstein, Hambrick & Cannella, 2009).

It seems, therefore, that the disproportionately high pay received by CEOs serves two possibly incompatible purposes within tournament theory. It apparently motivates lower level members of the TMG to perform in order to become the CEO, while motivating the CEO to become entrenched; thereby making the motivation that drives the lower level members unrealistic, or the security that drives the CEO unfounded. The power theory explanation for CEO pay does not run into this problem. The CEO uses power both to extract high wages from the firm, and to entrench his/her position against competitors (e.g. Allen, 1981; Boeker, 1992; Buccholtz & Ribbens, 1994; Shen & Cannella, Jr., 2002).

INSERT FIGURE 1 HERE

Source of CEO Power

CEO power emanates from several different sources. For instance, structural power, which refers to the power that is based on formal position in the organizational system (e.g. Brass & Burkhardt, 1993; D'Aveni & Kessler, 1993; Daily & Johnson, 1997), emanates from the CEO's authority, and represents the institutionalized privilege of incumbency that is stored in the formal role associated with the position, resulting in the legitimate right to exert influence and to

enjoy power over other members of the organization (Astely & Sachdeva, 1984; Finkelstein, 1992).

*Duality***.** Duality refers to the dual leadership structure in which the CEO acts as CEO and as Board Chairperson simultaneously (Lorsch & MacIver, 1989; Rechner & Dalton, 1991). Supporters of this centralized leadership structure argue that it provides a single focal point of company leadership because there is never a question about who is in charge (e.g. Anderson & Anthony, 1986). Detractors counter that the dual leadership structure systematically reduces the board's independence and its ability to effectively monitor the CEO. Absent effective monitoring, dual CEOs are better able to pursue interests which serve them personally (Fama & Jensen, 1983). A CEO who is also Board Chairperson is thought to be more powerful and less easily dislodged than a CEO who does not chair the Board (Harrison, Torres, & Kukalis, 1988). This "governance structure deficiency" (Daily & Dalton, 1994: 649) has been associated with several dysfunctional outcomes, including the repricing of stock options (Pollock, & Fisher, 2002); the capacity to resist dismissal in the case of poor firm performance (Harrison et al., 1988); a greater capacity to mitigate board control (Boyd, 1994), and greater CEO compensation irrespective of firm performance (Core, Holthausen, & Larcker, 1999). Having theorized that incumbent CEOs are motivated to preserve and use their positions to consume disproportionate pay vis-a-vis their non-CEO TMG counterparts, the capacity to centralize power through acting in a dual leadership function would facilitate the consumption of a disproportionately large share of compensation.

Hypothesis 1: There will be a positive relationship between CEO duality and TMG pay disparities.

Interdependent Directors. The composition of the board of directors may also serve as an indicator of the CEO's structural power (Boeker, 1992; Daily & Johnson, 1997; Ocasio, 1994; Shen & Cannella, Jr., 2002); the extent to which the CEO is able to exert influence over the board of directors is an important indicator of CEO power. Powerful independent boards have been shown to correlate with lower CEO pay, and closer links between CEO pay and firm performance (Van Essen et. al, 2012). As the fiduciaries of the firm's owners, the primary responsibility of the board of directors is to hire the CEO, reward the CEO commensurate with performance, and to fire the CEO when performance falls below acceptable levels. Yet, as Fredrickson, Hambrick, & Baumrin (1988: 256) argue boards of directors often "act out of self-interest (e.g. concern for friendships, wealth, and reputation) when deciding to dismiss or retain a CEO."

Interdependent board members are more likely to be individuals with whom the CEO feels comfortable, approved of, and who feel loyalty to the CEO for their appointments. Consequently, they are more likely to be loyal to the CEO that appointed them and to, at least passively, allow the pursuit of self-interested agendas (Boeker, 1992). Although consensus has yet to be reached regarding the role that interdependent directors play, some studies show that the presence of higher proportions of interdependent directors is power-enhancing to the CEO. For instance, Lambert et al. (1993) document a positive relationship between CEO compensation and interdependent directors. Additionally, Core et al. (1999) conclude that CEO compensation is an increasing function of the proportion of outside directors appointed by the CEO. Interestingly, the authors also found that the proportion of insiders serving on the board is negatively related to CEO compensation. However, it is worth noting that Conyon (2006) found that US boards and, in particular, compensation committees are becoming more independent, and

that affiliated directors on compensation committees did not lead to higher CEO pay. Nonetheless, it is reasonable to postulate that having the capacity to appoint board members will facilitate the consumption of a disproportionately large share of the TMG's compensation resources.

Hypothesis 2: There will be a positive relationship between the interdependent directors on the board of directors and TMG pay disparities.

CEO Tenure. Once CEOs have been appointed, they are in a position to institutionalize their power (Hambrick & Fukutomi, 1991). Tenure is important because it allows exchange relationships that are beneficial to the CEO to be institutionalized over time, making them durable characteristics of the governance structure (Barkema & Pennings, 1998). Consequently, relatively long tenure is expected to result in entrenched power as the long-tenured CEO is better able to pursue a self-interested agenda. In this sense, power accrues to long-tenured CEOs for two reasons. First, they are increasingly likely to nominate board members over time. Second, they are more likely to be able to gain control over the firm's internal communication systems thereby enabling them to control the information that is made available both to members of the board and to other members of the TMG.

Several studies illustrate the dysfunctional implications of relatively long tenures. For example, Hill & Phan (1991) point out that as CEO tenure lengthens, the capacity to decouple compensation from shareholder preferences and to tie it to personal preferences increases. They argue that long-tenured CEOs are better able to circumvent monitoring and incentive alignment mechanisms. Additionally, long-tenured CEOs are better able to secure disproportionately large pay increases as their tenure increases (Finkelstein & Hambrick, 1989). And, in a study that examines the capacity of long-tenured CEOs to preserve their positions, Shen & Cannella (2002)

report that the shorter a CEO's tenure, the more likely the CEO is to be replaced by an insider – a result that indicates the vulnerability to internal challenges that accompanies relatively short tenures. Having the capacity to institutionalize structural power over time is hypothesized to result in the ability to consume a disproportionately large share of the *TMG's* compensation resources.

Hypothesis 3: There will be a positive relationship between a CEO's tenure in the position and TMG pay disparities.

Equity Ownership. Agency theorists (e.g. Fama & Jensen, 1983; Jensen & Meckling, 1976; Morck, Shleifer, & Vishny, 1988) have long-argued that CEOs who hold a substantial stake in the firm's ownership are more likely to pursue the profit-maximizing interests associated with ownership. Yet, managerialists (e.g. Daily & Johnson, 1997) argue that power is likely to accrue to CEOs who maintain substantial ownership positions in their firms in their capacity as agents acting on behalf of firm shareholders. In this sense, CEOs who have significant ownership power are more likely to enjoy greater influence over important decisions.

Power accrues in direct comparison to that of shareholders. And, the power that accrues to the CEO is partially determined by the proportion of shares owned by the CEO (Finkelstein, 1992; Finkelstein & Hambrick, 1989; Tosi & Gomez-Mejia, 1989). Empirical evidence indicates that CEO power increases as a function of equity ownership, and that increased power has economically and strategically relevant consequences. For example, in an early study in financial economics, McEachern (1975) shows that CEOs with substantial equity holdings have longer tenures in firms that performed poorly. Stulz (1988) explains that as CEO equity ownership increases, the capacity to resist takeovers increases, thereby extending the incumbent CEO's tenure. Dahya, Dimitrov, & McConnell (2008) identifies a negative relationship between

performance-related turnover and CEO equity ownership; moreover, high levels of equity ownership by CEOs has been associated with CEO control over their own compensation structure (e.g. Barkema & Pennings, 1998; Ungson & Steers, 1984) and their consumption of a greater portion of the firm's compensation resources (e.g. Barkema & Pennings, 1998; Finklestein & Hambrick, 1989).

Having the capacity to direct the affairs of the corporation as a result of relatively high levels of equity ownership is hypothesized to result in the capacity to limit contestations to position and power, and to facilitate the consumption of disproportionate TMG pay.

Hypothesis 4: There will be a positive relationship between the proportion of outstanding shares held by the CEO and TMG pay disparities.

Founder Status. Founders gain power through their long-term interaction with the board and in some cases translate their unique positions into virtual control over the board (Finkelstein, 1992). Founders also enjoy personal power because they have relatively higher levels of commitment, enhanced entrepreneurial and technical skills, and stronger personal ties with employees and board members (Carroll, 1984). Furthermore, when founders are able to stay with their firms for an extended period of time, they are better able to institutionalize power (Sarason, 1972) and to enjoy lower rates of succession due to the greater economic and political power relative to other members of the TMG (McEachern, 1975). The power associated with having status as founder is hypothesized to facilitate the consumption of a disproportionately large share of the TMG's compensation resources.

Hypothesis 5: There will be a positive relationship between the CEO's status as founder or member of the founding family and TMG pay disparities.

External Boards. The managerial elite consists of executives "who occupy formally defined positions of authority at the head of a social organization or institution" (Giddens, 1972: 348). Because institutional environments comprise social actors such as governments, financial institutions, and other external actors, the CEO's image among stakeholders affects perceptions of their power and influence (Dalton, Barnes, & Zaleznik, 1968). Additionally, a CEO's membership in the managerial elite conveys a relatively high level of importance to other TMG members (Finkelstein, 1992; Useem, 1979).

Acting as a director on the board of other high profile social organizations or institutions increases the capacity to form interorganizational linkages and interpersonal affiliations with corporate elites that serve to bolster the incumbent CEO's image among peers and potential rivals within his/her firm. The social power associated with board memberships also enhances the CEO's capacity to fend off unwanted competition because he/she may be able to use elite connections to resist the performance-related punishment that may otherwise result in a succession event. Empirically, external board memberships have been associated with the capacity to block punishment for poor performance in the market for corporate takeovers (Davis, 1991). Indeed, poison pills were more frequently adopted when CEOs sat on more external boards. Other studies confirm this finding in that the social power associated with board memberships leads to the adoption of takeover defenses by companies at risk of becoming takeover targets resulting in the capacity of the incumbent CEO to stave off threats to the position (e.g. Wade, O'Reilly & Chandratat., 1990).

Having theorized that incumbent CEOs are motivated to preserve their positions, links with other corporate elites may present potential rivals an image of high relative power, thereby

suppressing the competition that arises within corporate tournaments, leaving incumbent CEOs to consume disproportionately large shares of compensation.

Hypothesis 6: There will be a positive relationship between the External Boards the CEO sits on and TMG pay disparities.

Elite Education. Social power may be derived from the CEO's educational background (D'Aveni, 1990; Finkelstein, 1992). This argument presumes that attendance at certain elite schools (see Table 1) conveys an aura of prominence within the corporate elite (Finkelstein, 1992; Useem, 1979).

Just as membership on external corporate boards provides interorganizational linkages and interpersonal relationships for CEOs, membership in the education elite is theorized to provide similar linkages with executives at other important organizations, thereby conveying considerable prestige both in the institutional and organizational environments (Useem, 1979). Candidates for corporate governance positions often come from this pool of elites, so CEOs with elite educational backgrounds may be more powerful due to the perceived social power of their elite education networks (Finkelstein, 1992; Useem, 1979). Little empirical research has been done in this area. However, Daily & Johnson (1997) demonstrate that CEOs with prestigious educational backgrounds are granted relatively wide discretion within firms as a result of the image of control and competence conveyed by prestige (D'Aveni, 1990).

Having theorized that incumbent CEOs are motivated to preserve their positions and to consume disproportionate pay, linkages with other elites through educational institutions may present potential rivals in the TMG with an image of high relative power thereby suppressing the competition that arises within corporate tournaments, leaving incumbent CEOs better able to consume disproportionate shares of compensation.

Hypothesis 7: There will be a positive relationship between the CEO's elite education status (prestige power) and TMG pay disparities.

Moderating Role of Managerial Discretion

In certain situations, managers are provided with a greater capacity to shape the course of the organization than in others (Child, 1972; Hambrick & Finkelstein, 1987). Research on top managers often emphasizes that executives have the capacity to affect firm outcomes. Yet, it is accepted that even powerful CEOs do not have complete latitude of action (Finklestein & Hambrick, 1990).

Defined as the latitude of action conveyed to CEOs by their environmental contexts, discretion is theorized to be shaped by the degree to which the environment empowers the CEO to formulate and execute a variety of actions (Boyd & Gove, 2006; Hambrick & Finkelstein, 1987). Although never used in the context of TMG pay disparities, discretion has been used as a moderator to assess the extent to which executive characteristics affect both the framing of relevant outcomes and the outcomes themselves. For example, Carpenter & Golden (1997) report that perceived discretion was related to managerial power in a sample of practicing managers and advanced MBA students. And, in a test of managerial discretion as a determinant of CEO compensation, Finkelstein & Boyd (1998) conclude that CEO compensation was positively related to the degree of discretion enjoyed by the CEO.

Given that discretion has been found to moderate the relationship between CEO actions and strategically relevant firm outcomes, it is hypothesized that discretion will moderate the hypothesized relationship between sources of CEO power and TMG pay disparities.

Hypothesis 8a: Managerial discretion will strengthen the relationship between CEO duality and TMG pay disparities.

Hypothesis 8b: Managerial discretion will strengthen the relationship between the interdependent directors on the board of directors and TMG pay disparities.

Hypothesis 8c: Managerial discretion will strengthen the relationship between a CEO's tenure in the position and TMG pay disparities.

Hypothesis 8d: Managerial discretion will strengthen the relationship between the proportion of outstanding shares held by the CEO and TMG pay disparities.

Hypothesis 8e: Managerial discretion will strengthen the relationship between the CEO's status as founder or member of the founding family and TMG pay disparities.

Hypothesis 8f: Managerial discretion will strengthen the relationship between the External Boards the CEO sits on and TMG pay disparities.

Hypothesis 8g: Managerial discretion will strengthen the relationship between the CEO's elite education status and TMG pay disparities.

Methodology

As with other studies in pay disparities research (e.g. Carpenter & Sanders, 2004; Henderson & Fredrickson, 2001; Main et al., 1993), the TMG is operationalized as the CEO and the top four highest paid executives listed in the firm's proxy statements for two reasons. First, in accordance with tournament theory and previous work on the contestation of power, it is the members of the dominant coalition that occupy the hierarchical level just below the CEO (e.g. the COO) that are most likely to be rivals. Second, the SEC requires public companies to disclose the compensation of its CEO and the four other highest-paid executives in the firm.

Data

The primary source of power, managerial discretion, and TMG pay disparities data is company 10-Ks and proxy statements. When necessary, secondary data sources are used. They include *Who's Who in Finance and Industry,* and the *ExecuComp, SGA Executive Tracker, InfoUSA idEXEC, U.S. Exec Comp,* and *Executive Bios* databases. Lastly, *Compustat* is the primary source of firm performance data.

Data was collected from a cross-section of public companies randomly selected from the S&P 1500, which comprises large, publicly-traded firms that have disperse ownership structures. Random sampling from the S&P 1500 yielded an initial sample of 676 firms. After applying inclusion constraints regarding the presence of the CEO in both 2004 (year in which power is theorized to affect TMG Pay Disparities) and 2005 (year in which TMG Pay Disparities is theorized to reflect CEO Power in prior year) the sample size was reduced to 607 firms. Time precedence was operationalized using time lags in the exogenous and endogenous variables. Covariates were specified to mitigate the possibility that the theorized relationships disappear when they are, otherwise, absent from the model.

Independent Variables

Seven variables were constructed to operationalize CEO Power. CEO Duality is binary and was coded *'1'* if the CEO also occupied the position of Board Chairperson and *'0'* otherwise (Daily & Dalton, 1994; Daily & Johnson, 1997; Harrison et al., 1988; Pollock & Fisher, 2002). Interdependent Directors is a measure of the number of board members that were appointed during the incumbent CEO's tenure divided by the size of the board (Core et al., 1999; Daily & Dalton, 1994; Daily & Johnson, 1997; Lambert et al., 1993). CEO Tenure was measured as the number of years a CEO held the position. In order to identify only those contexts in which the CEO had a likely effect on the structure and distribution of the TMG's compensation, only firms run by CEOs that had > 1 year in the position were included in the sample. Equity Shares Held (CEO) is a measure of the number of shares held by the CEO divided by the total number of the company's outstanding shares (Barkema & Pennings, 1998; Daily & Johnson, 1997; Finkelstein & Hambrick, 1989). Founder Status is binary and was coded as *'1'* if the CEO is either the founder of the company or a member of the founding family, and *'0'* otherwise. External Boards is a continuous measure of the number of corporate boards on which the incumbent CEO sits. Elite Education is measured by examining the level of the CEO's education and attendance at a prestigious institution. Following Finkelstein (1992), this variable is polytomized, and was coded as *'1'* if the CEO had no college degree, *'2'* if no degree(s) was/were from an elite institution, *'3'* if one undergraduate or graduate degree - but not both - was from an elite institution, and *'4'* if both undergraduate and graduate degrees were from elite institutions (see Table 1 for a list of elite institutions). Data for these measures was collected from company proxy statements.

INSERT TABLE 1 HERE

Managerial Discretion was operationalized at the firm level of analyses. Data for several different measures commonly used in managerial discretion studies was collected. Capital Intensity was operationalized as the value of total property as well as plant and equipment divided by total revenues. Advertising Intensity was operationalized as the firm's advertising expenditures divided by total revenues. R&D Intensity was operationalized as the firm's investments in R&D divided by total revenues. And, Financial Slack was operationalized as the firm's ratio of cash and short-term securities divided by the book value of total assets. Data for the firm-level discretion was collected from the *Compustat* database for year t_{-1}.

In preliminary analyses, both R&D Intensity and Financial Slack were significant moderators of the CEO Power and TMG Pay Disparities relationship, while Capital Intensity and Advertising Intensity never rise to the level of statistical significance. Hence, they were left out of subsequent analyses. R&D Intensity and Financial Slack were highly correlated (.488 ($p < .01$) and combined into a composite Managerial Discretion score by standardizing each variable by its mean and then averaging the two in order to mitigate problems associated with collinearity.

Dependent Variables

Following other researchers (e.g. Bloom & Michel, 2002; Carpenter & Sanders, 2004; Henderson & Fredrickson, 2001; Lambert et al., 1993; Siegel & Hambrick, 2005), the measure for TMG Pay Disparities is based on total compensation, which includes both short-term and long-term components awarded. Short-term compensation includes salary and bonus. Long-term compensation includes the value of stock options, performance unit plans, and restricted stock (Henderson & Fredrickson, 2001; Lambert et al., 1993).

Following Lambert et al. (1993) and Henderson & Fredrickson (2001), the components of long-term pay are valued as follows: (1) stock options are valued at 25% of their exercise price (this procedure produces values in the same range as the Black-Scholes valuation method); (2) performance unit grants are valued by multiplying the number of performance units by their respective target values (prospective) or by the actual payout (retrospective); (3) restricted stock is valued by multiplying the number of shares by the share price on the date of the grant.

Following Siegel & Hambrick (2005), Henderson & Fredrickson (2001), and Carpenter & Sanders (2004), TMG Pay Disparities is calculated as the difference between total CEO compensation and the average of the total compensation paid to the other members of the TMG. Data is collected for year t_{-1} from company proxy statements and the *ExecuComp* database, where necessary.

Covariates

Several covariates were included in the analyses. Assuming that TMG Pay Disparities would be lower in smaller firms (Siegel & Hambrick, 2005), Firm Size was measured as the firm's sales (Carpenter & Sanders, 2004). It is likely that larger firms would be structured around multiple business units with firms more likely to motivate executives using pay-for-performance incentives designed around corporate tournaments. Financial Performance served as a measure of the firm's ex ante financial health and performance. The firm's market-to-book ('MTB') value was measured as the difference between firm MTB and industry MTB (Siegel & Hambrick, 2005). Industry-relative Pay Level was used to control for industry pay practices that shape the level of firm pay. This measure was calculated by taking the ratio of the CEO's pay to the median of all CEOs in the focal company's industry. Tournament Size was controlled for using the number of Vice Presidents in the firm. A larger number of tournament contestants is

indicative of a larger corporate tournament, and may result in a larger disproportionate pay increase between the level of CEO and the next level down (Conyon et al., 2001; Henderson & Fredrickson, 2001; Main et al., 1993).

Results

Hypotheses were tested using hierarchical ordinary least squares regression. Prior to hypotheses testing, primary data analysis was performed in three stages. Data were screened for accuracy, normality, and missingness. Nonlinear transformations were made to variables with distributions that diverged from normality. Missing data were imputed using multiple imputation.

Within the data set of 607 observations, there were several instances in which company-specific or executive-specific data was not available. Specifically, 7.2% of the data were missing at random. Although the traditional approach to addressing missingness is to use listwise deletion, listwise deletion results in both the loss of statistical power and biased parameter estimates. Using multiple imputation mitigates the econometric problems associated with listwise deletion as it both preserves important distributional characteristics of the data and uses them to inform missing values (e.g. Graham, Cumsille, & Elek-Fisk, 2002; Little & Rubin, 1987).

Data were screened through an examination of descriptive statistics, outliers, and graphical representations of variable distributions. Analyzing histograms of the variables in the data for extreme values and conducting a Cook's D test of multivariate outliers (values > 1.0) 3 multivariate outliers were identified and removed. The final data set comprised 604 firms. Further, an examination of histograms, normality plots, and measures of variable skewness identified several variables with distributions that diverged from normality. Specifically, Equity

Shares Held, CEO Tenure, Interdependent Directors, Firm Size, Industry-relative Pay, Tournament Size, Financial Slack, and Capital Intensity diverged from normality.

Nonlinear transformations were made in order to correct for nonnormality after adding a shift parameter (‘1’) and transforming the data. Specifically, natural log transformations were made to CEO Tenure, Interdependent Directors, Firm Size, Industry-relative Pay, and Tournament Size. Additionally, several linear transformations were made in order to aid with interpretation of the results. Specifically, TMG Pay Disparities was scaled by dividing by 1,000,000 while the nonlinear transformation of Firm Size was scaled by dividing by 10.

The model specifies the testing of relationships involving product terms. While mean-centering product terms are commonly practiced, mean-centered product terms can be collinear with their component variables when the component variables have distributions that diverge from normality (Lance, 1988). Orthogonalization, or centering the residuals of the component variables, is a more conservative approach to constructing product terms because it controls for correlation between component variables and their product terms, and mitigates collinearity (Lance, 1988). All product terms analyzed in this study have been orthogonalized.

Table 2 reports the descriptive statistics (means, standard deviations, and range) of all variables prior to the nonlinear transformations, but after having imputed missing data, and Table 3 reports bivariate correlations.

INSERT TABLE 2 HERE

INSERT TABLE 3 HERE

TMG Pay Disparities was regressed onto each of the indicators of CEO Power, and their interaction with Managerial Discretion (Hypotheses 1-8).

INSERT TABLE 4 HERE

Table 4 reports regression results. In Model 1, TMG Pay Disparities was regressed onto the control variables. Industry-relative Pay ($p < .001$), Firm Size ($p < .001$) and Tournament Size ($p < .001$) were positively associated with TMG Pay Disparities. However, Financial Performance had no statistically significant relationship with TMG Pay Disparities.

In Model 2, TMG Pay Disparities was regressed onto each of the individual measures of CEO Power. Hypothesis 1 predicted a positive association between CEO Duality and TMG Pay Disparities. The hypothesized relationship was statistically non-significant. Hypothesis 2 predicted a positive association between Interdependent Directors and TMG Pay Disparities. As was hypothesized, the coefficient was in the expected direction ($p < .10$). Hence, results indicate partial support for hypothesis 2. Hypothesis 3 predicted a positive association between CEO Tenure and TMG Pay Disparities. The hypothesized relationship was statistically non-significant. Hypothesis 4 predicted a positive relationship between Equity Shares Held and TMG Pay Disparities. This relationship was statistically significant ($p < .01$) and in the expected direction. Hence, Hypothesis 4 was supported. Hypothesis 5 predicted a positive association

between Founder Status and TMG Pay Disparities. The relationship was statistically significant ($p < .01$) and in the expected direction. Hypothesis 6 tested the hypothesized relationship between External Boards and TMG Pay Disparities. The hypothesized relationship was statistically non-significant. Hypothesis 7 predicted a positive association between Elite Education and TMG Pay Disparities. The hypothesized relationship was statistically non-significant.

In Model 3, TMG Pay Disparities was regressed onto each of the composite Managerial Discretion score. Of the hypothesized moderated relationships, two were statistically significant. Although rising to only the $p < .10$ level of significance, Managerial Discretion moderated the Equity Shares Held (CEO) and TMG Pay Disparities relationship (Hypothesis 8d) in the expected direction. Additionally, Managerial Discretion moderated the Founder Status and TMG Pay Disparities (Hypothesis 8e) relationship ($p < .05$). However, the beta coefficient was in the opposite direction (negative).

Discussion

The primary objective of this study was to evaluate the hypothesized CEO power- TMG pay disparities relationship. Drawing on the managerial power and managerial discretion literatures, this study investigated the role that CEO power plays in the distribution of pay at the top. By examining a theoretical model that was developed in order to link CEO power and managerial discretion to TMG pay disparities, this study makes significant contributions to the TMG pay disparities, managerial power, and compensation literatures.

First, this study extended the work of several scholars working in the evolving TMG pay disparities tradition (e.g. Bloom & Michel, 2002; Conyon et al., 2001; Henderson & Fredrickson, 2001; Lambert et al., 1993; Seigel & Hambrick, 2005) by addressing the sociopolitical factors that lead to the presence of disparate pay within TMGs. In doing so, it went beyond tournament theoretic explanations of the presence of disparate pay by shining a light on how the distribution of power affects the distribution of rewards at the top.

Not only do findings support the use of a sociopolitical perspective in the study of TMG pay disparities, they also suggest that TMG pay disparities exist, partially, as a function of elements in the corporate governance context. First, results indicate that multiple sources of CEO power affect the extent to which pay disparities exist within TMGs. In the context of sequential elimination tournaments and TMG pay disparities, it was argued that powerful CEOs both have the motivation and capacity to limit the extent to which their capacity to consume a disproportionate share of the TMG's compensation resources is constrained. In terms of the extent to which TMG pay disparities exist within TMGs as a function of the power held by the incumbent CEO, several sources of CEO power play an important an role. Although consistent with the managerialism and CEO compensation literature, CEO equity ownership has not been

evaluated in the context of TMG pay disparities. This study shows that the power associated with ownership (both the proportion of equity shares held by the CEO and status as founder) led to wider pay disparities within TMGs at levels beyond that which is explained by firm performance, industry pay practices, and tournament explanations. Additionally, the power stored in the capacity to shape the composition of the board of directors is associated with pay disparities beyond that which is explained by firm performance, industry pay practices, and tournament explanations. Except for its moderating effect on the founder status impact on TMG pay disparities, managerial discretion has little impact on CEO capacity to consume disparately large pay relative to other members of the firm's TMG.

The findings of this study have important theoretical implications for the study of TMG pay disparities. The results indicate that the extent to which pay is disparate within TMGs is more than a function of the presence of sequential elimination tournaments. Specifically, the distribution of both short-and long-term pay appears to be, at least, partially a function of the power held by the CEO because incumbent CEOs may use the power of ownership to consume a disproportionate share of the TMG's compensation resources. Results also indicate that powerful CEOs may be able to do so without constraint and irrespective of the amount of discretion conveyed by the firm environment.

The study's findings also have important implications for practice. The results indicate that powerful CEOs are able to consume disproportionate shares of the TMG's compensation resources irrespective of the incentive mechanisms associated with the internal competition of corporate tournaments. In this sense, it appears that such CEOs may act in ways that ensure that rewards are allocated on bases that are not entirely legitimate (e.g. marginal utility).

The following limitations should be taken into consideration in the interpretation of the findings presented. As the sample was drawn from S&P 1500, the context of the study was confined to relatively large, publicly-traded companies domiciled in the United States. Therefore, external validity is limited. Generalizing findings to relatively small, privately held firms, or firms domiciled in other countries should be done with extreme care and only in an effort to inform the development of research questions specific to those contexts. While the sample was constructed using time lags in order to allow for causal inference, the data is not purely longitudinal. Therefore, the relationships that have been explicated inform us as to how the constructs studied herein relate, but not whether they are stable over time. And, proxies are used to assess a number of sociopolitical processes. While the use of proxies is valid in the studies of top managers (e.g. Finkelstein, 1992), they do not allow for a direct test of the constructs in question.

This study points to several meaningful avenues for future research. It opens the study of TMG pay disparities to a theoretical approach that moves the field beyond tournament theory explanations. Specifically, it suggests that researchers may benefit from using a multi-theoretic approach. The use of theories of managerial power, managerialism, and behavioral agency may inform the literature of the determinants of TMG pay disparities in a more comprehensive and nuanced fashion.

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TABLES

Table 1

Elite Education Institutions (Reproduced and *Modified* from Finkelstein, 1992)

Amherst College	Pomona College
Brown University	Princeton University
Carleton College	Stanford University
Cambridge University	Swarthmore College
Columbia University	United States Military Academy
Cornell University	United States Naval Academy
Dartmouth College	University of California, Berkeley
Grinnell College	University of California, Los Angeles
Harvard University	University of Chicago
Haverford College	University of Michigan
Johns Hopkins University	University of Pennsylvania
Massachusetts Institute of Technology	Wellesley College
New York University	Wesleyan University
Northwestern University	Williams College
Oberlin College	Yale University
Oxford University	

Table 2

Descriptive Statistics of Variables (N=604)

	Minimum	Maximum	Mean	Std. Deviation
CEO Duality	.000	1.000	.654	.476
Interdependent Directors [a]	.000	3.000	.466	.292
CEO Tenure [a]	.000	53.040	7.423	7.651
CEO Equity Shares Held	.000	.5002	.0232	.063
Founder Status	-.021	1.000	.135	.341
Elite Education	1.000	4.000	2.242	.829
External Boards	-1.790	8.000	1.085	1.403
TMG Pay Disparities [b]	-5.051	38.023	3.213	4.617
Financial Slack	.000	.794	.151	.177
R&D Intensity	-.305	1.276	.048	.120
Capital Intensity	.004	3.200	.421	.581
Advertising Intensity	-.060	.284	.026	.035
Industry-relative Pay Level [a]	-.388	12.373	1.501	1.656
Firm Size [a b]	.000	3.133E5	7.112E3	2.229E4
Tournament Size [a]	.000	43.000	6.431	4.169
Financial Performance	-27.450	74.334	.168	5.379

[a] Values of variables prior to nonlinear transformation; [b] Millions of U.S. Dollars

Table 3

Bivariate Correlations (N=604)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. CEO Duality	-															
2. Interdependent Directors	.298**	-														
3. CEO Tenure	.274**	.491**	-													
4. Equity Shares Held	.127**	.129**	.378**	-												
5. Founder Status	.084*	.202**	.373**	.340**	-											
6. Elite Education	.046	.072	.114**	.032	-.001	-										
7. External Boards	.174**	.099*	.036	-.054	-.052	.209**	-									
8. TMG Pay Disparities	.153**	.087*	.049	.043	.074	.130**	.111**	-								
9. Financial Slack	-.066	.063	.081+	.059	.180**	.016	-.136**	-.051	-							
10. R&D Intensity	-.055	-.016	.023	.020	.151**	.115**	.052	-.016	.488**	-						
11. Capital Intensity	.020	-.087*	-.036	-.040	.005	.077	.140**	-.048	-.209**	.103+	-					
12. Advertising Intensity	.034	-.033	.013	-.006	-.052	.105**	.010	.003	.014	-.164**	-.111**					
13. Industry-relative Pay Level	.168**	.058	.045	.014	.003	.152**	.148**	.720**	.010	.015	-.046	-.079	-			
14. Firm Size	.058	-.023	-.086*	-.075	-.008	.052	.096*	.239**	-.098*	-.098*	-.040	-.056	.264**	-		
15. Tournament Size	.071	-.084*	-.080	-.060	-.066	.086*	.148**	.077	-.066	.036	.080*	-.014	.153**	.188**	-	
16. Financial Performance	.056	.106**	.025	.103+	.040	.114**	.000	.048	.171**	.074	-.044	-.034	.069	-.001	.033	-

+ p < .10
* p < .05
** p < .01
*** p < .001

Table 4

Results of OLS Regression - TMG Pay Disparities onto CEO Power and Managerial Discretion (N=604)

Variable	**Model 1**	**Model 2**	**Model 3**
Industry-relative Pay Level (CEO)	.859***		
Firm Size	.139***		
Tournament Size	-.113***		
Financial Performance	.020		
CEO Duality		-.019	
CEO Tenure		-.015	
Interdependent Directors		.053+	
Equity Share Held (CEO)		.072**	
Founder Status		.078**	
Elite Education		.022	
External Boards		-.026	
Managerial Discretion X CEO Duality			.031
Managerial Discretion X CEO Tenure			.008
Managerial Discretion X Interdependent Directors			.009
Managerial Discretion X Equity Share Held (CEO)			.054+
Managerial Discretion X Founder Status			-.063*
Managerial Discretion X External Boards			-.014
Managerial Discretion X Elite Education			-.003
Adjusted-R^2	.528	.541	.567

+ $p < .10$
* $p < .05$
** $p < .01$
*** $p < .001$

FIGURES

Figure 1

Theoretical Model