


**TOP MANAGEMENT GROUP PAY DISPARITIES AND SUBSEQUENT
FIRM PERFORMANCE: THE EFFECT OF POWERFUL CEOs**

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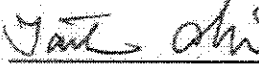
Patrick L. McClelland
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Committee members



Vincent L. Barker, Chairperson



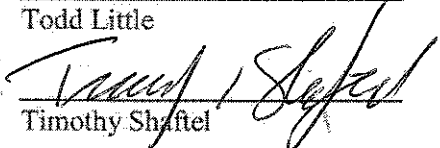
Tailin Chi



James P. Guthrie



Todd Little




Timothy Shaftel

Date defended: 5-12-2008


The Dissertation Committee for Patrick L. McClelland certifies
that this is the approved version of the following dissertation:

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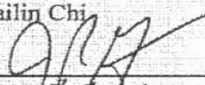
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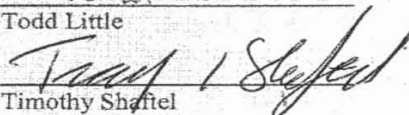
Tailin Chi



James P. Guthrie



Todd Little



Timothy Shafiq

Date approved: 5-12-08

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ABSTRACT

The issue of pay equity within publicly-traded companies has been a question of growing interest in recent years. Academics, policy-makers, and members of the popular press and general public have become increasingly focused on the extent to which pay at the highest levels of American business exceeds that received by other workers. In fact, according to a recent study by Anderson, Cavanagh, Collins, & Benjamin (2006) the ratio of CEO pay to that of the average worker grew 380% from 107:1 in 1990 to 411:1 in 2005.

While growing attention has been paid to the distribution of pay across the hierarchy of corporations, the question of the distribution in pay within top management groups has gone little-studied. Yet, a growing cadre of researchers across multiple disciplines has yielded interesting insights into the antecedents and consequences of pay disparities in top management teams. With this dissertation I seek to spur further investigation into this strategically relevant phenomenon and to move the current debate beyond tournament theoretic explanations by showing that pay disparities within top management groups arise as a function of the distribution of power within them.

This study is based on a sample of 604 publicly-traded firms drawn from the S&P 1500 that served as the context in which a theoretical model linking sociopolitical factors in the top management group, top management group pay disparities, and subsequent financial performance was tested using ordinary least squares (OLS) regression and structured equation modeling (SEM) techniques. Results indicate that CEO power plays an important role in the distribution of compensation within top management groups and

the extent to which pay is disparate. Further, results show that top management group pay disparities have an economically relevant effect on subsequent financial performance.

The dissertation and its findings make some important contributions to the top manager compensation, managerial power, and corporate governance literatures by providing new insights into both the antecedents and consequences of top management disparities.

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CHAPTER 1: INRODUCTION

1.1 Introduction

The compensation of top executives, particularly CEOs, has garnered significant attention over the past several decades. Scholars, policy-makers, and members of the popular press and general public have increasingly focused on the extent to which pay at the highest levels of American business exceeds that received by other workers. In fact, according to a recent report by Anderson et al. (2006) the ratio of CEO pay to that of the average worker grew 380% from 107:1 in 1990 to 411:1 in 2005.

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 paid to pay inequity within firms, specifically that which exists within the top management group ("*TMG*"). Yet, not unlike the disparities between CEO pay and that of the average worker, the disparity between CEO pay and that of the highest ranking non-CEO members of *TMGs* has widened in the past few decades (Frydman & Saks, 2006). As was reported in a historical analysis of trends in executive compensation from 1936-2003, Frydman & Saks (2006) found that the disparity in pay between the CEOs of publicly-traded firms domiciled in the United States of America and the next two highest paid officers was fairly compressed during WWII. It increased incrementally until the 1970s, and 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 was early in the 20th century, and 19% higher than it was in the 9-year period from 1990-1999 (Frydman & Saks, 2006). Citing the harmful effects of pay disparities in organizations, John

Mackey, the CEO of Whole Foods, offered that “fewer things harm an organization’s morale more than great disparities in compensation. When a workplace is perceived as unfair and greedy, it begins to destroy the social fabric of the organization” (Business 2.0, 2007: 1).

Defined as the *vertical* disparities that "exist when pay differs greatly between executive levels" (Siegel & Hambrick, 2005: 262), *TMG* pay disparities presents an interesting focus of investigation for strategic management researchers. Over the past few 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 both the antecedents and the performance implications of disparate pay within the *TMG*. What has emerged is an interesting, albeit somewhat puzzling, picture. On one hand, empirical work has documented both the presence of corporate tournaments in large publicly-traded firms and the use of disproportionately large pay differentials between CEO pay and that of the executives at the next highest level of the organization (Bloom & Michel, 2002; Conyon et al., 2001; Eriksson, 1999; Hendrickson & Fredrickson, 2001; Lambert et al., 1993; Leonard, 1990; Main et al., 1993).

Conversely, investigation into the performance-related consequences of disparate *TMG* pay has yielded equivocal results. Pointing to the performance-enhancing characteristics of sequential elimination tournaments and the motivating effects of disproportionately large pay differentials, some researchers have documented performance-related benefits of relatively disparate pay (e.g. Hendrickson & Fredrickson, 2001). And pointing to the negative consequences of relatively disparate pay, strategy

researchers and organization sociologists have shown that firm performance suffers (Bloom & Michel, 2002; Carpenter & Sanders, 2004; Conyon et al., 2001; Eriksson, 1999; Leonard, 1990; Main et al., 1993; Siegel & Hambrick, 2005).

The equivocal nature of empirical findings in this stream presents an opportunity to incorporate theoretical perspectives identified in related literatures. Hence, drawing on theories of managerial power and managerial discretion, this dissertation does two things. First, it explicates the sociopolitical antecedents of *TMG* pay disparities. Specifically, it is argued that the extent to which pay among the *TMG* is disparate is a function of the power of the incumbent CEO, the extent to which the firm environment conveys enough discretion to shape the distribution of compensation within the *TMG*, and the relative power of the non-CEO members of the *TMG*. This argument is based on two implicit assumptions: (1) compensation resources are finite in that they are theoretically bounded by the firm's capacity to capture value from customers in the form of revenues; and, (2) that, *ceterus paribus*, individual *TMG* members will wish to consume more compensation resources rather than less. Additionally, I attempt to facilitate understanding of *TMG* pay disparity performance implications by (1) testing competing hypotheses based on both the economic and behavioral perspectives of *TMG* pay disparities, and (2) integrating the two perspectives in a test of a nonlinear effect (inverted-U).

1.2. Research Questions and Expected Contributions

In as much, the primary objective of this dissertation is to develop and test a theoretical model that links CEO power to *TMG* pay disparities, and *TMG* pay disparities to subsequent financial performance. With this broad objective in mind, the following fundamental questions will be addressed:

- 1) What sociopolitical factors influence the distribution in compensation within the *TMG*?
- 2) Does the discretion conferred by the organization environment onto the incumbent CEO lead to wider distributions in compensation within the *TMG*?
- 3) What are the performance implications of disparate *TMG* pay?

In attempting to address these questions, I seek to contribute to the growing body of knowledge regarding the antecedents and performance implications of compensation at the *TMG*-level of publicly-traded firms. Further, I attempt to move the debate beyond extant economic explanations of disparate *TMG* pay to show that sociopolitical factors shape the distribution of compensation resources among *TMG* members in a way that has direct consequences for how the *TMG* functions and how the firm performs, as a result. I also attempt to show that, while powerful CEOs may have the capacity to shape the distribution of *TMG* compensation resources, the power to do so is not infinite. In as much, CEO power is argued to be mitigated by two factors: 1) the level of discretion conveyed by the firm; and, 2) the relative power of the non-CEO members of the *TMG*.

The dissertation introduces several novelties. Specifically, the relative power of non-CEO members of the *TMG* has never been formalized theoretically or tested empirically. In as much, the dissertation develops a relative power construct that is new to the strategic management literature. The dissertation also contributes to the debate regarding performance by moving past the economic/behavioral dichotomy of explanations of financial performance by integrating the two perspectives theoretically and testing the relationship empirically. I also attempt to show that the context in which

TMG pay disparities exist will be (at least, partially) deterministic of the effect such disparities have on subsequent financial performance.

1.3 Summary and Outline of the Study

The dissertation is organized as follows. In chapter 2 I review the extant *TMG* pay disparities literature with a focus on the theoretical and empirical developments centering on both the antecedents and performance implications of *TMG* pay disparities. In chapter 3 I develop a theoretical model that draws from this review and the associated managerial power and discretion literatures in order to develop a testable theoretical model. In chapter 4 I describe the methodology that is used to test the theoretical model that is developed in chapter 3. In chapter 5 I discuss the results of the study while in chapter 6 I discuss theoretical and practical implications and the contributions that are made to the extant body of work.

CHAPTER 2: LIERATURE REVIEW

In this chapter I establish a foundation upon which to develop and test a theoretical model that is used to predict *TMG* pay disparities and subsequent firm financial performance (in Chapter 3). Hence, this chapter will review and analyze the important theoretical and empirical developments in two streams of the *TMG* pay disparity literature. First, the review and analyses will focus on the theoretical foundations of *TMG* pay disparities and subsequent empirical developments. Next, the chapter will focus on performance-related consequences. The final section of this chapter will identify opportunities for potential contributions to this emerging literature. Upon completing a review of the relevant literature, chapter 3 introduces and develops the theoretical model and associated hypotheses.

2.1 *TMG* Pay Disparities Research

With a foundation in labor economics and organizational sociology, research on the pay disparities in *TMGs* emerged in strategic management in the 1990s. As is common in an emerging literature there has been considerable diversity in both approach and research questions without the emergence of a systematic research paradigm. For example, the extant body of literature is replete with studies that have focused on the antecedents and performance-related consequences of pay disparities in a variety of organizational contexts ranging from academic departments (Pfeffer & Langton, 1993) to professional sports teams (e.g. Frick, Prinz, & Winkelman, 2003; Jewell & Molina, 2004), hospitals (e.g. Brown, Sturman, & Simmering), and broad organizational contexts comprised of multiple hierarchical levels (e.g. Conyon & Peck, 2001). While theoretical development and empirical findings in these areas are instructive, they are not directly

applicable to the strategic context of the *TMG*, a group of executives that occupy the apex of economic organizations. As empirical work in organizational sociology demonstrates, organizations of different sizes, structures, technologies, missions, and environments are often radically different (Carroll, 1984; Scott, 1995). For example, research on pay disparities in relatively flat structural contexts (e.g. sports teams and academic departments) is conducted in organizational environments that lack the complexity in reporting, control, and monitoring often found in large publicly-traded corporations. In such environments the control mechanism is more likely to be direct supervision or personal control on the part of the manager where coordination is achieved by mutual adjustment rather than by the bureaucratic processes that are found in taller organizational hierarchies (Carroll, 1984). In this sense, sports teams and academic departments may be seen more as contexts in which work groups function rather than as work organizations because the team or the department does not comprise the organization's hierarchy as a whole but rather a small subset thereof.

TMGs occupy the apex of complex hierarchical economic organizations. As such the appropriate context for the study of *TMG* pay disparities is publicly-traded firms directed toward profit-maximization activities for the benefit of their owners. Irrespective of the specificity of the aforementioned context, existing studies serve as the impetus for investigation of the *TMG* pay disparity phenomena. That research in this stream is subsequently reviewed.

2.2 Antecedents of *TMG* Pay Disparities: Theoretical Foundations

Although empirical investigation of *TMG* pay disparities is embryonic in strategic management, an established literature in neoclassical economics argues that such

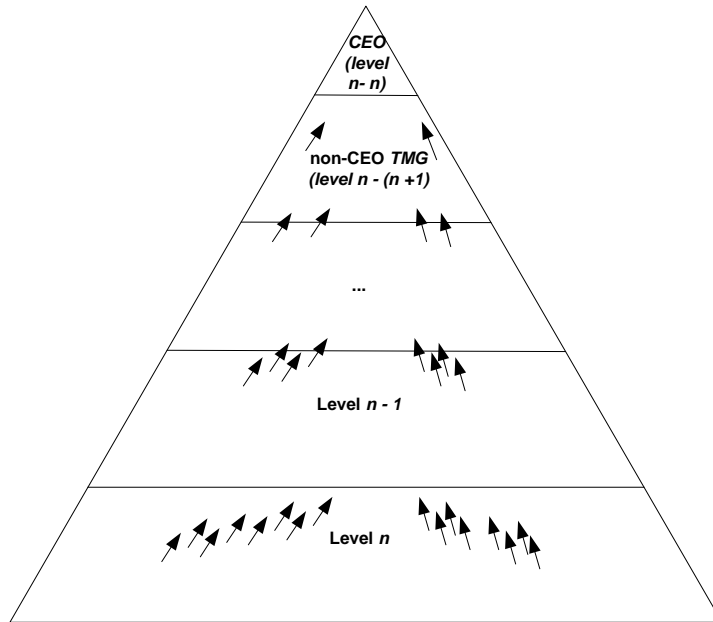
disparities are attributable to the use of sequential elimination tournaments (e.g. Green & Stokey, 1983; Lazear & Rosen, 1981; Malcolmson, 1984; Rosen, 1986). For several decades tournament theorists have sought to link sequential elimination tournaments with pay disparities while identifying their performance-related benefits.

As a reduced form of agency theory, tournament theory is concerned with limiting the extent to which executives may divert firm resources from the profit-maximization goals of firm owners to achieve their own personal interests (e.g. higher levels of compensation, lower likelihood of involuntary turnover, longer tenures, etc.). Relevant to the context of the principal-agent relationship (e.g. Berle & Means, 1932, Fama & Jensen, 1983; Jensen & Meckling, 1976) in publicly-traded firms, the normative prediction of tournament theory is that widely disparate pay resulting from the use of sequential elimination tournaments has performance-related benefits that accrue to the firm's owners. According to tournament theory, principals wish to place those individuals capable of high levels of performance in the upper echelons of the firm because it is there that such executives may best shape the firm's strategies and impact performance levels (Lambert et al., 1993). For this task, firm owners desire ambitious and competitive executives. To this end, it is argued that firm owners create incentives for talented and motivated executives to invest in, and to commit their human capital to the profit-maximization of the firm. Earning the right to do so is a function of the competition among tournament competitors that results in the winner securing the ultimate career prize-the title of CEO (Lambert et al., 1993; Leonard, 1990; Siegel & Hambrick, 2005).

Rosen (1986) theorized that organizational compensation schemes are modeled as sequential elimination tournaments where compensation rewards increase

nonmonotonically with survival from one level of competition to another (see Figure 2.2).

Figure 2.2: Corporate Tournaments and the Competition for the CEO Title



Theoretically, the tournament begins with 2^n players and proceeds sequentially through N stages until the final match is won. In this sense, executives compete with one another at the n th level of the organization in order to achieve the promotion necessary to reach the next organizational level ($n-1$). Winning at level n provides the winner with the option to continue in the tournament while progressing, sequentially, to higher levels of the organization. While winners survive to the next round ($n-1$), competitors who do not win in any given round at level n obtain the present compensation for future periods and experience truncated career horizons (Lambert et al., 1993). Hence, it is theorized that this zero-sum characteristic of sequential elimination tournaments serves to motivate executives to continually high levels of achievement and success.

Unlike standard economic theory, which argues that individuals are paid according to their marginal product (Mahoney, 2005), compensation schemes based on sequential elimination tournaments yield situations in which executives at firms are paid as an increasing function of their location in the firm's hierarchical structure. In this sense, the internal labor market is one that rewards individual competitors not only as a function of their marginal productivity, but rather as a function of an individual's capacity to outperform other organizational competitors at a given hierarchical level. Winning results in receiving disproportionate increases in pay. For instance, a Vice President recently promoted to the Office of President on January 1, 2007 may receive a disproportionate increase in pay equivalent to five times (for example) the pay received as a Vice President just one day earlier. It is doubtful, however, that this same individual will have observed a concomitant increase in marginal product equivalent to the same multiple in that same day.

Winning in any given round, n , is equivalent to a career progression option whose value shrinks over time with each successive win because each successive win results in fewer remaining rounds as the end of the tournament is approached (Lambert et al., 1993). Rosen (1986) argues that unless top-ranking pay prizes (e.g. pay at the CEO level) are given a *disproportionate* weight in the purse of winnings, competitors that win in the final round of the tournament and attain the ultimate position (e.g. the title of CEO) will rest on their laurels and shirk because no subsequent promotion opportunity exists. Hence, disproportionately large pay differentials offered to the tournament's winner will serve to motivate executives to continuously high levels of performance as if the tournament has no end (Lazear & Rosen, 1981). This argument is based on the explicit

assertion that because the value of the option associated with winning the tournament has a non-positive value that principals must find another mechanism that incorporates the "equivalence of the option" to continue-disproportionately large pay differentials to the CEO (Lambert et al., 1993: 440). In this sense, the potential to (continually) earn disproportionately large pay increases in the future motivates incumbent CEOs to compete and to achieve at relatively high levels over time. Because this feature offers continued incentives to executives who successfully reach and compete in the final stages of the tournament, theorists argue that compensation schemes based on rank-order tournaments are efficient in that they serve to promote the "quality of play" as they motivate capable executives to act in the best interests of the firm's owners (Rosen, 1986: 701).

2.3 Antecedents of *TMG* Pay Disparities: Empirical Developments

Much of the extant research has examined the normative performance-related implications of pay disparities among the *TMG* (a literature that will be reviewed later in this dissertation). A search of the literature on antecedents of *TMG* pay disparities identifies only a limited number of studies in *industrial relations* (e.g. Leonard, 1990), *labor economics* (Main et al., 1993), *administrative sciences* (e.g. Lambert et al., 1993), and *strategic management* (Conyon et al., 2001). While no systematic approach to analyzing this phenomenon is evident, several insightful and relevant findings have emerged (see table 2.1 for a summary). For example, empirical investigation has identified and documented the presence of tournaments that exhibit a convex relationship between hierarchical level in the organization and executive pay that is punctuated by a

disproportionately large pay differential between the CEO level and the next-lowest level in the corporate hierarchy.

Table 2.3: Empirical Studies: Antecedents of TMG Pay Disparities

<u>Empirical Studies</u>	<u>Sample</u>	<u>Hypothesized Relationships</u>	<u>Summary of Findings</u>
<i>Leonard (1990)</i>	Private survey data of executive and managerial pay conducted between 1981 and 1985 in 439 of the largest U.S. corporations	Hierarchical level executive pay; pay differentials an increasing function of hierarchical level	<i>Tournament theory supported:</i> (1) level in the corporate hierarchy is the most important predictor of executive pay; (2) pay differentials between hierarchical levels increase as a function of hierarchical level
<i>Lambert, Larcker, & Weigelt (1993)</i>	A private survey of 303 large publicly-traded U.S. corporations in the food, paper, chemical, machinery, electrical, transportation equipment, and instrumentation industries	Hierarchical level executive pay; pay differentials an increasing function of hierarchical level	<i>Tournament theory supported:</i> the relationship between the level of executive compensation and hierarchical level is convex (e.g. increasing); the difference in compensation level for the CEO relative to the next lower position is disproportionately large relative to compensation changes between other levels
<i>Main, O'Reilly, III, & Wade (1993)</i>	Archival executive pay data from 147 U.S. corporations from 1908 to 1984	Hierarchical level executive pay; pay differentials an increasing function of hierarchical level; number of contestants (V.P.s) predicts the size of pay differentials	<i>Tournament theory supported:</i> (1) pay dispersion is an increasing function of hierarchical level with pay differentials highest between the level of CEO and the next-lowest level; (2) size of the pay differential is associated with the number of contestants
<i>Conyon, Peck, & Sadler (2001)</i>	Sample of 100 of the 150 largest publicly-traded Companies in the U.K. covering 532	Hierarchical level executive pay; number of contestants predicts the	<i>Tournament theory supported:</i> executive pay is an increasing function of hierarchical level in the organization; the

	individual executives in 1997-1998	size of pay differentials	tournament prize varies with the number of contestants
<i>Hendrickson & Fredrickson (2001)</i>	Sample drawn from the high-tech equipment, natural resources, chemicals, and conglomerates industries from 1985 to 1990 produced a database of 189 firm years	Behavioral and tournament perspectives set up as competing hypotheses. Predictors included (1) relatedness of firm's businesses, (2) # of firm's businesses, (3) R&D intensity, (4) capital intensity, (5) firm size, and (6) # of V.P.s	Tournament theory supported: CEO pay gap is positively associated with (1) the number of businesses in the firm's portfolio, (2) a firm's R&D activity, (3) extent of capital investment, and (4) firm size. Behavioral hypotheses generally not supported although a negative relationship was observed between the # of the firm's V.P.s and the CEO pay gap
<i>Bloom & Michel (2002)</i>	Sample of 460 publicly-traded U.S. companies from 1992 to 1997	Investment opportunities, environmental instability, and environmental munificence lead to higher levels of executive pay dispersion	<i>Partially supported:</i> investment opportunities and environmental instability lead to higher levels of executive pay dispersion while environmental munificence influences pay dispersion in the opposite direction

In an early investigation, Leonard (1990) used private survey data to examine the compensation structure of executives and managers in a sample of 439 of the largest publicly-traded U.S. corporations. Citing tournament theory as an explanation, pay differentials between corporate ranks were found to be greater at higher levels in the corporate hierarchy. Similarly, in an investigation of 147 U.S. corporations from 1980 to 1984, Main et al. (1993) found that the ratio of pay between levels increases as executives move up the corporate hierarchy culminating with the CEO who enjoys a level of base pay (bonus and salary) some 141 % greater than that earned by executives in the next-lowest level of the corporate hierarchy. In addition to this main finding, the authors

found that the size of pay differentials increases with the number of contestants in the tournament (e.g. Vice Presidents). Examining private compensation data from the food, paper, chemical, machinery, electrical, transportation equipment, and instrumentation industries, Lambert et al. (1993) also found a convex relationship between the level of executive compensation and organizational level. They describe the difference in compensation level for the CEO relative to the next-lowest position in the hierarchy as "extraordinarily large relative to the changes in compensation levels observed at other points in the hierarchy" (Lambert et al., 1993: 453). And, in a recent investigation of 100 United Kingdom stock market companies that included 532 executives, Conyon et al. (2001) found a convex relationship between executive compensation and hierarchical level. Again, and of note, is that this relationship is characterized by a large differential pay increase between the CEO and the next-lowest level in the corporate hierarchy. In fact, winning the corporate tournament was rewarded with a 60% pay increase in their sample. Additionally, Conyon et al. (2001) found that as the size of the corporate tournament grows in terms of the number of competitors, the disproportionate increase in the size of the prize is also consistent with modeling executive pay as a sequential elimination tournament.

2.4 TMG Pay Disparities and Performance: Theoretical Foundations

As was stated earlier, standard economic theory holds that individuals are paid according to their marginal products. Yet, as has been discussed, empirical findings have identified characteristics of sequential elimination tournaments—a convex relationship between hierarchical level and compensation that is punctuated by disproportionately large pay differentials at higher levels of the firm (Conyon et al., 2001; Lambert et al.,

1993; Leonard, 1990; Main et al., 1993). According to tournament theory, the use of compensation schemes based on sequential elimination tournaments is efficiency-maximizing in contexts where individuals occupy positions that make measuring their productive output costly. While this is the case with top executives in general, it is the case with the CEO of modern economic organizations, in particular. In as much, sequential elimination tournaments that are punctuated by disproportionately large pay differentials at the final stage of the tournament are theorized to act as a potential complement to the direct monitoring of individual agents in contexts that are otherwise characterized by potential agency problems (Jensen & Meckling, 1976). These normative arguments ascribe performance-related benefits.

In another stream, with its foundations in the organizational sociology literature, the use of competitive sequential elimination tournaments punctuated by disproportionately large pay differentials is potentially dysfunctional. Arguments developed in this stream are generally steeped in equity (e.g. Adams, 1963; Adams, 1965; Adams & Jacobsen, 1964; Adams & Rosenblum, 1962) and relative deprivation theories, which are based on Festinger's (1954) concept of the social comparison of rewards.

Like the economic theorists who argue that individuals are paid according to their marginal product, equity theorists also argue that individuals in exchange relationships (e.g. principal and agent, manager and subordinate) must be rewarded according to the level of their individual contributions (Adams, 1965; Cowherd & Levine, 1992). However, equity theorists go on to assert that individuals in an organizational context will judge the fairness of their exchange relationships by comparing the balance of the

(perceived) ratio of their inputs (e.g. human capital, effort, etc.) to the intangible and tangible rewards they receive to that of their referent peers (Cowherd & Levine, 1992). Feelings of cognitive dissonance are theorized to obtain when individuals have cognitions about their input-reward ratios that stand "in obverse" to the input-rewards ratios of referent peers (Adams & Jacobsen, 1964: 19).

Like equity theory, relative deprivation theory is a reduced form of distributive justice theory that is based on social comparisons. Unlike equity theory however, relative deprivation theory argues that individuals experience deprivation when they compare the rewards they, or their referent peers, receive to the rewards received by other individuals or referent peers as a result of comparisons made (vertically) between hierarchical levels (Cowherd & Levine, 1992). In support of the predictions of relative deprivation theory, Martin (1981, 1982) showed that lower-strata (e.g. frontline workers) organization members compare their rewards to those received by upper-strata members (e.g. top executives), and that perceived interclass inequity results in feelings of deprivation-induced injustice.

Moving beyond equity theory to predict behavioral responses caused by relative deprivation, it is theorized that individuals who experience deprivation will exhibit behaviors that reflect either optimistically or pessimistically on the prospect of change-behaviors that can be directed externally to the social system to which the individual belongs. Empirical research that evaluates the responses that individuals have towards the external environment has shown that consequences are in fact dysfunctional. They include extreme behavior such as political protests, riots, and revolutions (e.g. Isaac, Mutran, & Stryker, 1980) in the broader social context. With the organizational context

consequences may include absenteeism, strikes, vandalism, and violence within the organizational context: all of which result in lower levels of organizational performance (e.g. Crosby, 1984; Staw, 1984).

2.5 *TMG* Pay Disparities and Performance: Empirical Developments

While a substantial body of work has accumulated regarding the effects of horizontal pay disparities in university settings, professional sports, and hospitals (e.g. Beaumont & Harris, 2003; Bloom, 1999; Ehrenberg & Bognanno, 1990; Frick, Prinz, & Winkelman, 2003; Jewell & Molina, 2004; Pfeffer & Langton, 1993), and across the hierarchical structure of economic organizations (e.g. Cowherd & Levine, 1992; Shaw, Gupta, & Delery, 2002), empirical investigation designed to explicate performance-related consequences of vertical pay disparities among the *TMG* has been sparse. What has emerged is a pattern of equivocal results (see Table 2.2 for a summary) whereas much of the evidence fails to support the normative predictions of either the economic or behavioral perspectives (e.g. Conyon et al., 2001; Leonard, 1990). In fact, while some empirical work conducted in labor economics (e.g. Eriksson, 1999) and strategy (e.g. Hendrickson & Fredrickson, 2001) supports the normative predictions of tournament theory other findings in organizational sociology and strategic management support the behavioral perspective (e.g. Siegel & Hambrick, 2005; Bloom & Michel, 2002; Carpenter & Sanders, 2004).

Table 2.5: Empirical Studies: Performance Consequences of TMG Pay Disparities

<u>Empirical Studies</u>	<u>Sample</u>	<u>Hypothesized Relationships</u>	<u>Summary of Findings</u>
<i>Leonard (1990)</i>	Private survey data of executive and managerial pay conducted between 1981 and 1985 in 439 of the largest U.S. corporations	Pay differentials across executive ranks has a positive relationship with corporate success	Tournament theory not supported: corporate success is not significantly related to the degree of equity in executive pay or to the steepness of pay differentials across executive ranks
<i>Main, O'Reilly, III, & Wade (1993)</i>	Archival executive pay data from 147 U.S. corporations from 1908 to 1984	Executive wage dispersion has a positive effect on corporate performance	<i>Tournament theory supported</i> : positive effect on the coefficient of variation in pay on Return-on-Assets in U.S. firms
<i>Eriksson (1999)</i>	Private data consisting of 2,600 executives in 210 Danish firms	Pay dispersion across the CEO and contestants in the corporate tournament is positively associated with performance	<i>Tournament theory supported</i> : coefficient of pay variation has a positive effect on a performance index
<i>Hendrickson & Fredrickson (2001)</i>	Sample drawn from the high-tech equipment, natural resources, chemicals, and conglomerates industries from 1985 to 1990 produced a database of 189 firm years	Behavioral and tournament perspectives set up as competing hypotheses. Tournament theory: Interaction of CEO pay gap interacts and coordination is positively associated with performance; Behavioral theory: Interaction of CEO pay gap interacts and coordination is negatively associated with performance	<i>Tournament theory supported</i> : CEO pay gap and TMG coordination needs have a positive relationship with firm performance. Behavioral prediction (negative relationship) is not supported.
<i>Canyon, Peck & Sadler (2001)</i>	Sample of 100 companies drawn from the largest 150 publicly-traded companies in the U.K. for 1997 and 1998	Corporate performance is positively associated with executive wage dispersion	<i>Tournament theory not supported</i> : no relationship between executive pay dispersion and corporate performance; authors acknowledge that findings limited by not including a

			measure of executive interdependence as a moderator
<i>Bloom & Michel (2002)</i>	Sample of 460 publicly-traded U.S. companies from 1992 to 1997	Executive pay dispersion leads to lower average executive tenure and higher executive turnover	<i>Behavioral view supported:</i> Both performance-related hypotheses supported
<i>Carpenter & Sanders (2004)</i>	Sample of 245 multi-national corporations from the S&P 500	Gap between CEO total pay and TMG member pay will be negatively related to subsequent MNC performance; <i>TMG</i> member total pay level positively related to subsequent MNC performance; <i>TMG</i> member long-term incentive Pay positively related to subsequent MNC performance; joint positive relationship between <i>TMG</i> member pay level, degree of internationalization and subsequent financial performance; joint negative relationship between CEO- <i>TMG</i> pay gap, degree of internationalization, and subsequent financial performance	<i>Behavioral view supported:</i> firms with more less disperse <i>TMG</i> compensation structures perform better; degree of Internationalization (proxy for collective and coordination) moderates (positive) this relationship
<i>Siegel & Hambrick (2005)</i>	Sample of 67 vertically integrated U.S.-based technology firms in the same 3-digit SIC code for 1991, 1992, and 1993	<i>TMG</i> pay disparity and subsequent organizational performance negatively moderated by industry technological intensity	<i>Behavioral view supported:</i> In high technology firms a high degree of <i>TMG</i> pay disparity led to lower levels of performance than in low technology firms

In early work in labor economics, Main et al. (1993) pit the economic and behavioral perspectives against one another in a test of competing hypotheses. In their study of pay data from 147 U.S. corporations from 1980 to 1984, the authors found support for tournament theory in that wage-dispersing incentive structures enhance economic performance. In a later study of 2,600 executives in 210 Danish firms over the period from 1992-1995, Eriksson (1999) found support for tournament theory in that a coefficient of variation in the difference in pay between the CEO and other contestants in the corporate tournament is positively associated with accounting profits. And, Hendrickson & Fredrickson (2001) add to this pattern of support. In their study of the top executives of firms in four industry groups (chemicals, high-tech equipment, natural resources, and conglomerates), the authors found that tournament theory not only predicts the gap between the long-term and total pay awarded to CEOs and that awarded to executives at a level lower in the organizational hierarchy, but that larger CEO pay gaps are associated with higher return-on-assets (ROA) and return-on-equity (ROE) in firms that are characterized by a higher level of related diversification (a proxy for firm-level collaboration and coordination needs).

While some support for the use of compensation schemes based on disproportionately large pay differentials has been found in recent work, this stream has also identified a negative association with firm outcomes. For example, Bloom & Michel (2002) analyzed a data set of 460 organizations in 173 four-digit SIC codes over the years of 1992 to 1997 to examine the effects of vertical pay disparities among the members of the *TMG*. Citing behavioral explanations, the authors argued that pay disparities have important implications for strategic decision-makers in that greater disparity in *TMG* pay

leads to higher levels of managerial turnover and shorter tenure-"findings that are robust across different samples, different times, at different managerial levels, and after accounting for external labor market effects" (Bloom & Michel, 2002: 39). In a subsequent study, Carpenter & Sanders (2004) analyzed a sample of 224 multinational firms to examine the relationship between CEO-*TMG* total pay gap and subsequent financial performance. Arguing that compensation that favors collective action among the *TMG* may be particularly applicable to situations demanding coordination and cooperation among individual *TMG* members, the authors found the gap between CEO and *TMG* member total pay to be negatively associated with subsequent financial performance. And, In a study of 67 U.S.-based high technology firms for which compensation data was available for 1991, 1992, and 1993, Siegel & Hambrick (2005) examined the relationship between pay disparities and *subsequent* financial performance. Arguing that pay disparities among the *TMG* tends to diminish collaboration by fostering competition for advancement to lucrative positions (akin to the tournament mechanism), the authors' found pay disparities among the *TMG* to be negatively related to subsequent financial performance.

2.6 Moderators of the *TMG* Pay Disparity/Financial Performance Relationship

Among the empirical themes found in the literature is that some contexts require greater levels of task interdependence. Defined as the need for organizational subunits to intensively coordinate their activities to achieve peak performance, interdependence occurs when organizational subunits share information, negotiate, and make coordinated adjustments to cope with an uncertain environment (e.g. Thompson, 1967; Tushman & Nadler, 1978). Characteristics in both the internal and external environment have been

shown to impose the need for interdependence on executives. For example, in their seminal study of firms operating in high velocity environments, Eisenhardt & Burgeois (1988) found that external environmental changes called for continuously negotiated decisions among members of the *TMG*. And, as is suggested by the following quote from Hambrick (1995), pay differential among *TMGs* may cause problems for the firm in such environments:

"The performance of every one of these executives depends heavily on the others. If I want them to work collaboratively, as a team, it creates severe problems to try to reward them differentially." (Hambrick, 1995: 23).

This point underscores that certain factors in the environment create requirements for task interdependence and cohesion within *TMGs* to the extent that executives should be rewarded in ways that incentivize them to interact frequently, to collaborate, and to process mutually relevant information in ways that benefit organizational performance. And as is entirely consistent with the behavioral view of pay disparities, differential rewards paid to the members of the *TMG* may limit their desire to act with such coordination.

Within the *TMG* pay disparity literature several factors in both the external and organizational environments have been shown to impact the effect that *TMG* pay disparities have on firm performance. For example, in their analysis of proprietary compensation data collected from 67 U.S. high-tech firms, Siegel & Hambrick (2005) found that a firm's technological intensiveness leads to worse financial performance. They explained their findings by arguing that the more technologically intensive the industry, the more harmful for subsequent corporate performance was the presence of pay

disparities among the *TMG* because such disparities tend to result in lower levels of "collaboration by fostering competition for advancement to lucrative positions" (Siegel & Hambrick, 2005: 271).

Conversely, evidence supporting tournament theory predictions has also been found using moderators of the pay disparity and financial performance relationship at the organizational level. For example, in a study of top executives in four industry groups—chemicals, high-tech equipment, natural resources, and conglomerates, Hendrickson & Fredrickson (2001) showed that the level of related diversification moderated a positive relationship between pay gaps between the CEO and non-CEO members of the *TMG* and firm performance. On the other hand, in a related study that uses a firm's degree of internationalization as a proxy for coordinated information-processing needs of the *TMG*, Carpenter & Sanders (2004) found that the disparity in pay between the CEO and other members of the *TMG* has negative performance effects.

2.7 Summary and Assessment of the *TMG* Pay Disparities Literature

Research seeking to answer fundamental questions regarding *TMG* pay disparities reviewed in the previous subsections has provided interesting insights. On the other hand, research designed to identify the performance-related implications of *TMG* pay disparities and the factors that moderate this relationship is far more equivocal with both the economic and behavioral perspectives receiving some support (Guthrie, 2007). Efforts in this area have led to a call by Siegel & Hambrick (2005) for continued exploration in this area because *TMG* pay disparities are of strategic and economic consequence to organizations.

To date, only a few analyses of the antecedents of *TMG* pay disparities have been conducted. Yet, this research raises key questions regarding the factors that create situations in which *TMG* pay is widely disparate. Economic arguments have centered on the use of compensation schemes based entirely on the use of sequential elimination tournaments punctuated by disproportionately large pay differentials at the level of the CEO. In summary, this literature offers that (1) compensation and hierarchical level have a convex relationship with disproportionately larger pay differentials at the top of the corporate hierarchy, (2) that the size of pay differentials is related to the size of the tournament (e.g. the number of contestants in it), and that (3) the pay gap between the CEO and the next level lower in the hierarchy is associated with firm-related strategic factors like the extent of the firm's investment in R&D activity and capital expenditures. This body of work bears strategic relevance because pay disparities among *TMG* members has been linked with firm performance implications (e.g. Bloom & Michel, 2002; Siegel & Hambrick, 2005).

While the use of economic and strategic factors has yielded substantial insight, there is recognition that *TMG* pay disparities do not necessarily imply the use of pay-for-performance schemes (e.g. corporate tournaments), and that widely disparate pay may result from factors in the firm's political environment (Pfeffer & Langton, 1993). Hence, it is reasonable to assert that incorporation of explanatory perspectives in the managerial power and managerial discretion literatures may serve to add to the existing body of knowledge in ways that create greater insights into the *TMG* pay disparity puzzle.

Efforts to identify the performance-related consequences of executive pay disparities are warranted (Siegel & Hambrick, 2005). Yet, to date, only a few studies

have been conducted. As is common in an emerging literature there is significant diversity in the research questions and perspectives used to establish a foundation of knowledge. Research on the performance implications of *TMG* pay disparities is not different. Researchers have used both economic (e.g. tournament theory) and behavioral (e.g. equity and relative deprivation theories) arguments to examine this relationship concluding that pay disparities are both beneficial and detrimental to financial performance depending on the extent of *TMG* pay disparities and the context in which such disparities exist (e.g. degree of task interdependence). The extent to which results are mixed suggests that both models may have explanatory power. In fact, Bloom & Michel (2002) suggest that the use of a nonlinear model may be warranted.

Analysis of the research also indicates that the extent to which a *TMG*'s coordination and collaboration needs are influenced by factors in the external and organizational environments will moderate the theorized relationship between *TMG* pay disparities and subsequent financial performance. Using proxies for task interdependence in both the external environment (e.g. technological intensiveness) and in the organizational environment (e.g. degree of internationalization and level of related diversification), researchers using such moderators have provided more consistent findings (e.g. Bloom & Michel, 2002; Carpenter & Sanders, 2004; Siegel & Hambrick, 2005) than those that omit such potential moderators (e.g. Conyon et al., 2001). To this extent, Conyon et al. (2001) acknowledge that the omission of such a moderator is a key limitation in their study and a reason for limited findings in support of tournament theory.

This dissertation seeks to do two things. First, it identifies elements in the firm's socio-political environment as antecedents of *TMG* pay disparities. In as much, it will

draw from the extant work in the managerial power and discretion literatures to develop a theoretical model that addresses the call of Pfeffer & Langton (1993) to examine the political factors in organizations that lead to pay disparities. Second, this dissertation attempts to answer the call of Siegel & Hambrick (2005) to examine the nature of the proposed relationship between *TMG* pay disparities and subsequent financial performance as is conditioned by factors in the firm's external environment that require increased collaboration and coordination.

To my knowledge this will be the first study in the *TMG* pay disparities literature that delves into the sociopolitical antecedents of the distribution of compensation resources at the level of the *TMG*. By integrating managerial power and managerial discretion this dissertation attempts to move the debate beyond the economic view that *TMG* pay disparities are a function of compensation schemes based on the use of sequential elimination tournaments and disproportionately large pay differentials. Additionally, this is the first study in the *TMG* pay disparities literature that not only tests the economic and behavioral perspectives as competing hypotheses, but also integrates both perspectives in a test of a nonmonotonic relationship between *TMG* pay disparities and subsequent financial performance.

The following chapter of this dissertation integrates perspectives of managerial power and managerial discretion with arguments developed in the corporate governance literature in an attempt to develop a theoretical model that addresses the questions outlined in the first chapter. Chapter 3 begins with a presentation of the theoretical model followed by the development of hypotheses.

CHAPTER 3: THEORETICAL MODEL AND HYPOTHESES

In the previous chapter, I examined the extant *TMG* pay disparity literature in an attempt to identify opportunities for extending the extant framework. This chapter will introduce and develop a theoretical model and testable hypotheses that are designed to extend the extant literature by introducing and integrating elements of managerial power and managerial discretion. I theorize that, under certain conditions, CEOs will have the power necessary to consume a disproportionately large share of the *TMG*'s compensation resources (relative to other *TMG* members). Managerial discretion will be integrated as a moderator of the theorized relationship because it is expected that the capacity of the CEO to appropriate greater compensation resources may be higher in organizational environments characterized by higher levels of discretion. Additionally, theory will be developed to introduce the relative power of non-CEO members of the *TMG* as a moderator of the theorized relationship because it is expected that such power will serve to limit the capacity of the incumbent CEO to consume disproportionate compensation resources. Lastly, in this chapter I will attempt to add nuance to the extant literature focused on the performance-related implications of *TMG* pay disparities by developing competing hypotheses based on both the *economic* and *behavioral* perspectives and by integrating the two perspectives in a test of nonmonotonic relationship.

3.1 Rationale for the Theoretical model

“It is not enough for a leader to know the right thing. He must be able to *do* the right thing. The...leader without the judgment or perception to make the right decisions fails for lack of vision. The one who knows the right thing but cannot achieve it fails because he is ineffectual. The great

leader needs...the capacity to achieve” – Richard Nixon (in Pfeffer, 1992: 8).

As is suggested by the above quote, it is not enough for organizational leaders to simply know what they must do. They must also possess the capacity to act in ways that see their intentions through to fruition. As applicable in strategic contexts as it is in political contexts, this statement suggests that the effective leader must be able to produce intended effects even in the face of resistance. With a long history of study in sociology, power has alternately been defined as the “intentional and effective control by particular agents (Wrong, 1968: 676)”, “production of intended effects by some men over other men” (Russell, 1938: 25), and the capacity to “realize one’s own will even over the resistance of others” (Weber, 1946: 180). In this dissertation I adopt the definition offered by Pfeffer (1992: 30) in that power is seen 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.”

Pettigrew (1973: 240) argues that “an accurate perception of the power distribution in the social arena in which he lives is a necessary prerequisite for the man seeking powerful support for his demands.” Profit-seeking organizations, which have been characterized as constellations of coalitions of stakeholders that include managers, employees, shareholders, suppliers, and customers with often different and competing interests, are contexts in which such support is required (Eisenhardt & Bourgeois, 1988; Mahoney, 2005). Because strategic decisions are inherently unstructured, and replete with ambiguity and uncertainty, they are intrinsically political in that they involve decisions made by actors with often conflicting views who resolve such conflict through

negotiation and the use of power (Eisenhardt & Bourgeois, 1988; Finkelstein, 1992; Mintzberg, Raisinghani, & Theoret, 1976). It follows that the capacity to set the direction of the firm, and to make and implement strategic choices (even those concerning the distribution of bounded compensation resources) is the product of a negotiated process achieved by those managers that possess the capacity to exert their will (Eisenhardt, 1988).

While power is necessary to set the direction of the firm, power can also have negative consequences for the firm. To agency theorists (e.g. Berle & Means, 1932; Fama & Jensen, 1983; Jensen & Meckling, 1976), the concept of centralized power in publicly-traded firms is closely related to the concept of managerial control. In the modern business environment, the publicly-traded firm is characterized by disperse ownership, which results in the capacity of corporate managers to centralize their power as traditional checks like communication and coordinated action among owners disappear (Tosi & Gomez-Mejia, 1989). Centralized power results in the physical control over the methods of production as organizational control is increasingly ceded to powerful managers (Mahoney, 2005): often to the detriment of other organizational stakeholders.

One arena in which the distribution of power has been used to predict the distribution of rewards in strategic management is in the study of CEO compensation. For example, theorists (e.g. Allen, 1981; Kemper, 1976) have argued that corporate managers are able to overcompensate themselves for their roles because their power goes relatively unchecked. In this sense, power in the hands of executives may be conceptualized as a double-edged sword. Further, Lenski (1966: 355) noted that “the fantastically high salaries of managers in American industry can be explained only by their power position

within the organization.” Empirical results show that powerful CEOs are capable of systematically decoupling their compensation from the profit-maximizing interests of firm shareholders while coupling it with personally favorable outcomes such as firm size and unrelated diversification (e.g. Amihud & Lev, 1981; Baumol, 1967; Kroll, Simmons, & Wright, 1990). To this end, powerful executives may be able to overcome the constraints prescribed by proponents of agency theory who assert that compensation should be tied to the profitability of the firm (Fama, 1983; Jensen & Meckling, 1976; Jensen & Murphy, 1990).

In an early direct test of the extent to which compensation received by CEOs is related to the power that they wield within the corporation, Allen (1981) found that powerful CEOs receive more direct and total compensation than less powerful CEOs. And, arguing that CEOs use their power to take a cut from the firm’s profits before sharing the remainder of the firm’s profits (e.g. residuals) with shareholders, Barkema & Pennings (1998) found that the power rooted in social-exchange contracts and information asymmetry versus the board of directors can be used to manipulate in an effort to increase bonuses and salaries. And, in a study of the power of CEOs and their capacity to change the strike price of their stock options, Pollock & Fisher (2002) analyzed the power of the CEO that arises from occupying both the position of the CEO and Chairman of the Board, and found that powerful CEOs have a greater capacity to change the strike price of their stock options resulting in a reduction of the downside risk of stock option pay, which decouples their pay from financial performance. Among others, these studies show that CEO power may imbue the capacity to pursue objectives

which are not entirely consistent with shareholder maximization (Daily & Johnson, 1997).

3.2 Centralized CEO Power and The *TMG*

Given the potentially self-serving manner in which power may be used, there is reason to theorize that greater CEO power will lead to more disparate pay among members of the *TMG*. Many organizations have a triangular structure in which most senior executives arrive at the apex of the organizations by competing up through the ranks in sequential elimination tournaments (Beckmann, 1978). Further, as is indicated by the review and analysis of the *TMG* pay disparities literature in chapter 2, disparities in *TMG* pay are, at least, partially a function of this process by which successful contestants ascend to the title of CEO thereby receiving a disproportionately large pay increase. While this argument has received empirical support in the labor economics and strategic management literatures, what is not explicitly acknowledged is that ascension to the title of CEO by one tournament contestant (e.g. the COO) can *only* occur if the office is abdicated by the incumbent CEO.

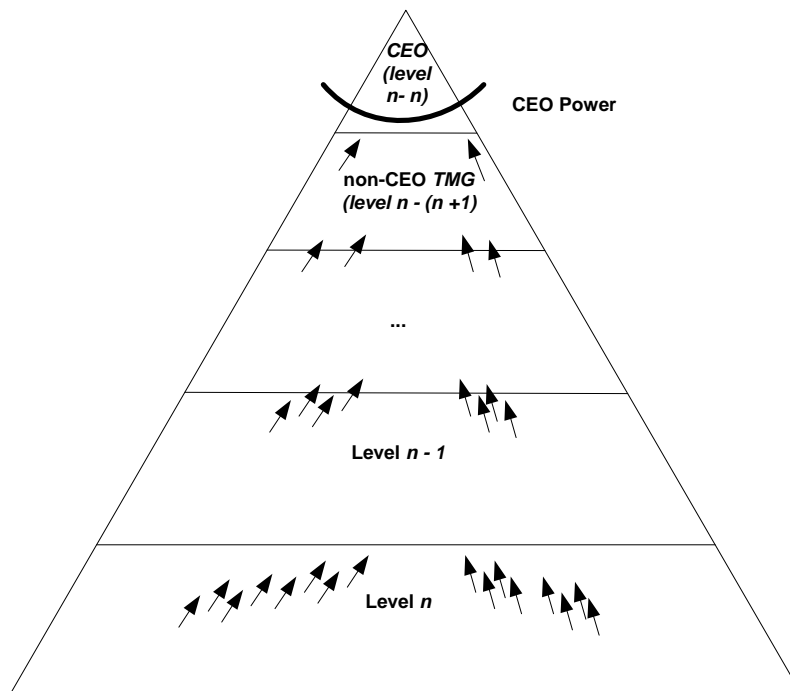
Empirical results in a variety of literatures in strategic management (e.g. takeover defense, succession, entrenchment, etc.) have shown that incumbent CEOs are often unwilling to leave their positions voluntarily (e.g. Buccholz & Ribbens, 1994; Eisenhardt & Bourgeois, 1988; Ocasio, 1994; Sonnenfeld, 1988; Ward, Sonnenfeld, & Kimberly, 1995; Zajac & Westphal, 1996). However, as is implicitly argued by tournament theorists, the power of incumbent CEOs is likely to be challenged by rivals in the firm's sequential elimination tournament as potential rivals to the CEO emerge as a function of their desire to win the title of CEO and its associated disproportionate pay increase.

Hence, the mechanics of tournament theory are analogous to the explicit circulation of power arguments offered by organization theorists (e.g. Ocasio, 1994; Selznick, 1957). That is, within *TMGs*, the distribution of power is not static because individual members of the *TMG* seek to gain power (Eisenhardt & Bourgeois, 1988; Ocasio, 1994; Selznick, 1957; Shen & Cannella, Jr., 2002; Zhang, 2006). In such environments, rule by corporate elites does not always endure because they may be characterized by intra-elite competition for the power associated with the CEO's job. In as much, *TMG* members at the upper echelons of corporations may be seen as potential rivals to the incumbent CEO. Instead of being controlled by the CEO, potential rivals within this dominant coalition may have interests that are independent of those of the incumbent CEO (e.g. becoming CEO) that become manifest *only* as a result of successful challenges to the incumbent CEO's power and position (Hambrick, 1994; Ocasio, 1994; Shen & Cannella, Jr., 2002; Zhang, 2006). As a result of competition for the CEO's title and the resultant privileges, the CEO's power is considered to be subject to contestation over time balanced by periods of relative stability (Ocasio, 1994).

Tournament theory argues that executives successfully compete their way to the CEO's office in an attempt to achieve the ultimate career prize. However, irrespective of the source of the threat to his/her power (e.g. competition among ambitious tournament contestants or corporate takeovers), incumbent CEOs are likely to be unwilling to relinquish their power associated with their position without a fight. On the contrary, they are more likely to extend their tenures in office (e.g. Allen, 1981; Boeker, 1992; Buccholz & Ribbens, 1994; Shen & Cannella, Jr., 2002). In as much, the incumbent CEO's power may be seen as a countervailing force that serves to enhance his/her

capacity to remain in office despite the challenges offered by potential rivals (see figure 3.1). As a result, the incumbent CEO may have the capacity to continue to enjoy the associated disproportionate pay gap vis-à-vis other members of the *TMG*. Hence, CEOs with centralized and institutionalized power can be expected to attempt to suppress competition in the corporate tournament so as to both preserve their position and power and to continue to enjoy the associated privileges.

Figure 3.2: Incumbent CEO Suppression of Competition for the CEO Title

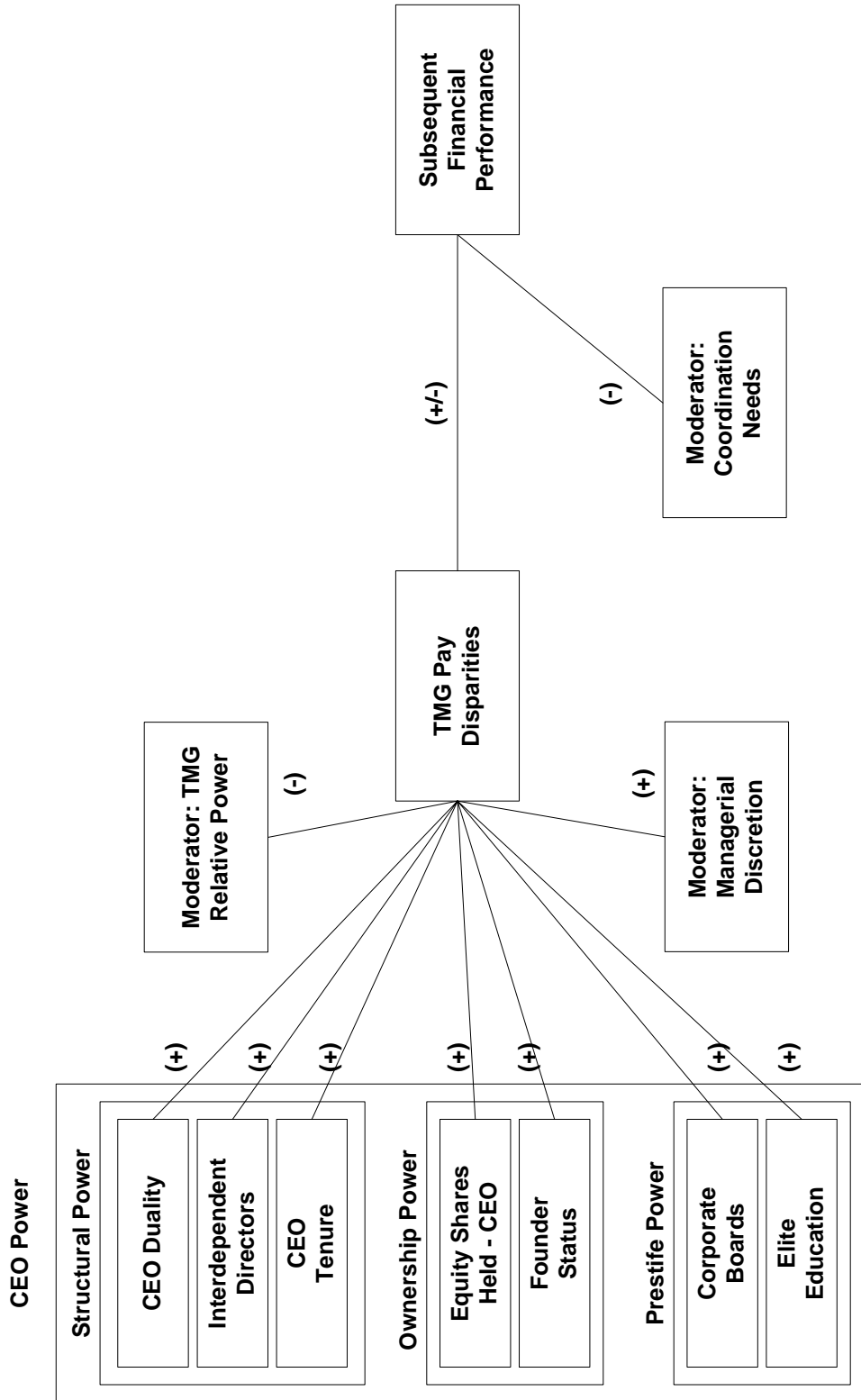


In an empirical attempt to examine the consequences of the power relationship between CEOs and non-CEO members of the *TMGs* Boeker (1992) studied 67 organizations over a 22-year period and found that powerful CEOs are less likely to be dismissed in periods of poor performance because they are able to deflect blame for poor performance onto their less powerful *TMG* counterparts. Hence, it is the powerful CEO's rivals who are more likely to be displaced.

3.3 Theoretical Model and Hypotheses

As is summarized in Figure 3.2, a CEO's power is theorized to be critical to the existence of *TMG* pay disparities. I theorize that a CEO's power (comprised of structural, ownership, and prestige elements) in period t_2 will be positively related to a firm's *TMG* pay disparities (in period t_1) in that greater power will provide CEOs with the capacity to consume a disproportionate share of the firm's *TMG* compensation resources above and beyond that explained by tournament theory explanations. Further, I argue that *TMG* pay disparities will have a direct effect on subsequent financial performance.

Figure 3.3: Theoretical Model



I expect the aforementioned relationship to be moderated by two factors. First, I expect that this relationship will be stronger in firm environments that are characterized by higher levels of discretion. That is, in firm environments that impose fewer constraints on the incumbent CEO, power will lead to more disparate pay within the *TMG*. Conversely, I expect this relationship to be weakened by the presence of relatively powerful others in the *TMG*. Further, because I assume that *TMG* compensation resources are bounded, I argue that when CEOs have the capacity to consume a greater proportion of *TMG* compensation resources, other members of the *TMG* necessarily consume less. And, assuming that individual *TMG* members will wish to consume more compensation resources, I theorize that they may be able to constrain the CEO's power to consume greater compensation resources when they are relatively powerful.

The model also specifies competing hypotheses regarding the theorized relationship between *TMG* pay disparities and subsequent financial performance. With the behavioral perspective of *TMG* pay disparities as a theoretical foundation, it is expected that subsequent financial performance will suffer in firms where *TMG* pay disparities are relatively high. Conversely, and based on the economic perspective of *TMG* pay disparities, subsequent financial performance is expected to strengthen as a function of relatively higher *TMG* pay disparities. Additionally, a nonmonotonic relationship will be analyzed. Further, the theorized relationship between *TMG* pay disparities and subsequent financial performance is expected to be moderated by the need for coordination imposed by the external environment. In as much, the need for coordination is expected to strengthen the negative relationship between *TMG* pay

disparities and subsequent financial performance because it affects the capacity of *TMG* to act in a coordinated manner.

In accordance with previous studies, I use several individual measures of CEO power as antecedents to *TMG* pay disparities. Additionally, it may be that such individual measures may be component elements of broader CEO power constructs (e.g. structural power, ownership power, prestige power). This methodological potentiality will be examined, secondarily. In the subsequent sections of this chapter, I develop theory and the associated hypotheses that are depicted by Figure 3.2.

3.4 Sources of CEO Power and Their Influence on Pay Disparity

In the strategic management literature, CEO power has been conceptualized and measured in a number of different ways that incorporate the use of individual proxies. However, broader examination has turned to the use of a multidimensional measurement typology developed by Finkelstein (1992). Based on a sample of 1,763 top managers in three industries, Finkelstein constructed and tested a multi-dimensional model of CEO power that was based on four different sources of power. His stated intent was to focus the strategic management scholar's attention specifically on the power held by members of the *TMG*. What emerged from his study was that CEO power could be conceptualized as multi-dimensional with sources of power associated with the CEO's location in the organizational structure, his/her ownership, and prestige.

3.4.1 Structural Power

Also referred to as hierarchical power, a CEO's structural power refers to the power that is based on formal organizational position in the organizational system (e.g. Brass & Burkhardt, 1993; D'Aveni & Kessner, 1993; Daily & Johnson, 1997). It

emanates from the CEO's authority or legitimate power, and represents the institutionalized privilege of incumbency that is stored in the formal role associated with the position (Astely & Sachdeva, 1984). In this sense, CEOs have a legitimate right to exert influence and to enjoy power over other members of the organization (including non-CEO members of the *TMG*) because of their formal position in the organization (Finkelstein, 1992). While other members of the *TMG* may challenge the power of incumbent CEOs, relatively high structural power affords the capacity to exert the influence necessary to mitigate potential challenges thereby leaving *TMG* counterparts more likely to defer because structural power confers the "right to exercise power by virtue of their position" (Astley & Sachdeva, 1984: 105-106). As a result, structural power is a function of the formal social recognition of one's power.

Several structural sources of power have been used as proxies of CEO power in the managerial power and agency literatures. Among them are CEO duality, the proportion of outside board members appointed by the incumbent CEO, and the CEO's tenure in the position.

CEO Duality. Commonly used in the agency theory and corporate governance literatures CEO duality can be seen as a measure of a CEO's structural power. A common phenomena, CEO duality refers to the dual leadership structure in which the CEO wears two hats-one as the CEO of the firm and the other as board chairperson (Lorsch & MacIver, 1989; Rechner & Dalton, 1991). Supporters of this centralized leadership structure argue that it provides a single focal point of company leadership in that there is never a question about who is boss (Anderson & Anthony, 1986). On the other hand, detractors counter that the dual leadership structure systematically reduces the board's

independence and its ability to effectively monitor the CEO and other members of the *TMG*. Given that one of the fiduciary responsibilities of the board is to monitor the performance of top management, allowing the CEO to occupy both roles increases the CEO's power and compromises the system of checks and balances (Rechner & Dalton, 1991). Absent effective monitoring, dual CEOs are better able to pursue interests which serve them personally rather than other organizational stakeholders (Fama & Jensen, 1983). For instance, the dual leadership structure allows the CEO to control the agenda of board meetings, to determine what information directors receive in advance of meetings, and to lead board meeting discussions (Daily & Johnson, 1997).

Additionally, an individual that holds both leadership positions is thought to be more powerful and less easily dislodged than when the positions are held by separate people (Harrison, Torres, & Kukalis, 1988). This phenomenon has been associated with several economically and strategically relevant, but dysfunctional, outcomes. For instance, in a study of the repricing of stock options in the latter six months of 1998, Pollock, & Fisher (2002) found CEO duality to be associated with the probability that stock options will be repriced. That is, dual CEOs have a greater ability to change the strike price of their options, thereby limiting the downside risk that is faced by other stockholders. In a study of 671 large American manufacturing firms from 1978 to 1981, Harrison et al. (1988) found that obtaining this joint leadership position results in a centralization and institutionalization of power that lessens the likelihood of turnover in cases of poor financial performance. Characterizing joint CEO/board chairperson structures as "governance structure deficiencies" (Daily & Dalton, 1994: 649) in a study of publicly-traded firms filing for Chapter 11 bankruptcy protection in 1990, Daily &

Dalton (1994) found that the structural combination of CEO and Board Chairperson roles in one person limits the board's power to install new management in an effort to facilitate corporate turnarounds. And, in a study of 193 firms in 12 industry groups, Boyd (1994) found that CEO duality was negatively associated with board control, and that it resulted in higher levels of CEO compensation. Further, arguing that firms with dual CEOs have greater agency problems, Core, Holthausen, & Larcker (1999) found that CEOs earn greater compensation when governance structures are less effective.

Having theorized that incumbent CEOs have the motivation to preserve their positions and the consumption of disproportionate pay vis-a-vis their non-CEO *TMG* counterparts, having the capacity to centralize power through acting in a dual leadership function will allow them to limit the competition for their jobs and the compensation benefits that they enjoy leaving them to consume a disproportionately large share of the *TMG's* compensation resources. Hence, the above theoretical arguments and prior empirical evidence leads to the following hypothesis:

Hypothesis 1: There will be a positive relationship between CEO duality (structural power) 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). Of consideration is the extent to which the CEO is able to exert influence over the board of directors. As the fiduciaries of the firm's owners, the primary responsibility of the board of directors is to hire the CEO, reward him/her commensurate with firm performance, and to fire the CEO when performance falls below acceptable levels. Yet, as Fredrickson, Hambrick, & Baumrin

(1988: 256) have argued, boards of directors “act out of self-interest (e.g. concern for friendships, their image, wealth, reputation) when deciding to dismiss or retain a CEO.”

One way to examine the CEO’s structural power vis-a-vis the board of directors is to examine the interdependent directors that serve on the board (Daily & Dalton, 1994). While independent directors are the outside directors not appointed by the incumbent CEO (Wade, O’Reilly, & Chandratat, 1990), interdependent directors are the directors that are appointed by the incumbent CEO (Daily & Dalton, 1994). Interdependent board members appointed during the incumbent CEO’s tenure are more likely to be individuals with whom the CEO feels comfortable, approved of, and who feel loyalty to the CEO for their appointments. As a result, these interdependent directors may feel some loyalty to the CEOs that are responsible for their appointment (Boeker, 1992) and allow them to pursue agendas that serve them personally.

Although no empirical consensus has been reached regarding the role that interdependent directors play in enhancing a CEO’s structural power, a few studies show that the presence of higher proportions of interdependent directors is, in fact, power-enhancing to CEOs. For instance, Lambert et al. (1993) documented a positive relationship between CEO compensation and interdependent directors. Additionally, Core et al. (1999) documented that CEO compensation is an increasing function of the proportion of outside directors appointed by the CEO. Interestingly, and of note, is that the authors also found that the proportion of insiders serving on the board is negatively related to CEO compensation (a finding consistent with the theory developed in chapter 3).

Having theorized that incumbent CEOs have the motivation to preserve their positions and the consumption of disproportionate pay vis-a-vis their non-CEO *TMG* counterparts, having the capacity to appoint board members who are likely to be sympathetic to the incumbent CEO's capacity to pursue his/her agenda will facilitate higher levels of structural power. Such power will serve to limit the competition for their jobs and the compensation benefits that they enjoy leaving them to consume a disproportionately large share of the *TMG's* compensation resources. Hence, the above theoretical arguments and prior empirical evidence lead to the following hypothesis:

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

CEO Tenure. Once CEOs are appointed they are in a position to centralize and institutionalize their power (Hambrick & Fukutomi, 1991). Because it takes time to centralize and institutionalize one's power, time in the position of CEO can be an important source of structural power. Barkema & Pennings (1998) argued that tenure institutionalizes exchange relationships both within and without the firm and makes them durable characteristics of the governance structure. As a result, relatively long tenure is expected to result in entrenched power as the CEO is better able to pursue his/her own interests vis-a-vis other organizational stakeholders. In this sense, it is argued that power accrues to longer-tenured CEOs for two reasons. First, they are more likely to nominate new board members who subsequently feel a sense of loyalty to the nominating CEO thereby resulting in greater structural power. Such board members are expected to hold a sympathetic view of the CEO's agenda over the course of his/her tenure (Finkelstein & Hambrick, 1989). Second, long-tenured CEOs are able to gain increasing control over the

firm's internal communication systems over time thereby yielding the capacity to control the information that is made available to both members of the board and other members of the *TMG*. As a result, CEOs become more embedded in their positions and increasingly powerful as their tenure increases (Barkema & Pennings, 1998).

Several empirical studies have documented effects of the CEO power that results from relatively long tenures. For example, Hill & Phan (1991) found that as CEO tenure lengthens the capacity to decouple compensation from shareholder preferences (e.g. a higher stock price) and to tie it to personal preferences (e.g. larger firm size) increases. The authors argued that the results obtain because CEOs are able to circumvent monitoring and incentive alignment mechanisms as their power grows. Additionally, in a study of CEO compensation in management-controlled firms, Hambrick & Finkelstein (1989) found that long-tenured CEOs are able to secure disproportionately larger pay increases as their tenure increases. And, in a study that examines the capacity of long-tenured CEOs to preserve their positions, Shen & Cannella (2002) found that the shorter a CEO's tenure, the more likely the CEO is to be replaced by an insider. This result shows that CEOs with relatively short tenures are more vulnerable to challenges as they may lack the structural power necessary to ward off challenges to their position. In fact, CEOs of relatively short tenure are more likely to be dismissed followed by the inside succession of a rival in the *TMG* in a study of 367 large U.S. corporations.

Having theorized that incumbent CEOs have the motivation to preserve their positions and the consumption of disproportionate pay vis-a-vis their non-CEO *TMG* counterparts, having the capacity to institutionalize structural power over time is hypothesized to result in the ability to consume disproportionate pay vis-à-vis the other

members of the *TMG*. Hence, the above theoretical arguments and prior empirical evidence lead to the following hypothesis:

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

3.4.2 Ownership Power

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 have argued 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 (e.g. Daily & Johnson, 1997). CEOs with substantial shareholdings may enjoy the capacity to influence important firm decisions as a function of their ownership capacity, and are more likely to be powerful than CEOs that lack a similar ownership stake (Zald, 1969). The literature identifies two main sources of ownership power.

Equity Ownership. Essentially, 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 in the managerial entrenchment literature has shown 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) found that CEOs who had substantial equity holdings had longer tenures in poorly performing firms than

did CEOs that had less substantial equity holdings. Further, Stulz (1988) found that as CEO equity ownership increases the capacity to resist takeovers by bidding firms declines. And, Dahya, Dimitrov, & McConnell (2006) found a negative relationship between performance-related turnover and CEO equity ownership. In summary, findings suggest that CEOs are better able to enjoy the benefits of power when they have substantial equity holdings in the firm (e.g. Boeker & Wiltbank, 2005; Buccholtz & Ribbens, 1994; Fredrickson et al., 1988; Pfeffer, 1981).

Empirically, ownership power has been shown to be associated with a CEO's capacity to resist takeovers (Buccholtz & Ribbens, 1994), the capacity to lower the probability of dismissal (Shen & Cannella, Jr., 2002), and the capacity to define the firm's direction (Allen, 1981). Another of the privileges associated with relatively high levels of CEO equity ownership is the capacity to consume a greater amount of the firm's compensation resources. For example, Ungson & Steers (1984) found that in firms where the CEO has large shareholdings that the CEO can determine his/her own pay structure. In arguing that CEOs with higher levels of equity *ownership* have the capacity to extract greater pay, Finklestein & Hambrick (1989) found that executives who own significant portions of their firm's outstanding shares are more likely to control both operating and board decisions to the extent that they may be able to set their own compensation. And, in a direct test of CEO power (measured by equity ownership) on a 1985 sample of Dutch top executives, Barkema & Pennings (1998) found that top managers are able to use the power associated with their equity ownership to manipulate their salary and bonuses in their favor.

Having theorized that incumbent CEOs have the motivation to preserve their positions and the right to consume disproportionate pay vis-a-vis their non-CEO *TMG* counterparts, 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 rival contestations to their positions and power, and to continue to consume disproportionate pay vis-à-vis other members of the *TMG*. Hence, the above theoretical arguments and prior empirical evidence lead to the following hypothesis:

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

Founder Status. Another form of ownership is the status of founder or membership in the founding family. Founders are theorized to gain power through their long-term interaction with the board in that they have the capacity to translate their unique positions into control over the board (Finkelstein, 1992). Additionally, Carroll (1984) argued that founders 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.

Research regarding the relationship of ownership power conveyed by status as founder is sparse. However, several arguments have been advanced. Sarason (1972) argued that founders who stay with the firm after founding for an extended period of time are able to institutionalize structural power. McEachern (1975) argued that founders enjoy lower rates of succession because they enjoy greater economic and political power relative to other members of the *TMG*. Some researchers have found that status as founder results in the capacity to remain in office due to lower rates of succession

(McEachern, 1975; Ocasio, 1994; Ocasio, 1999). For example, using interview data and historical analyses of companies in the higher education publishing industry from 1958-1990, Thornton & Ocasio (1999) found that founders enjoyed lower levels of succession than did non-founders.

Having theorized that incumbent CEOs have the motivation to preserve their positions and the consumption of disproportionate pay vis-a-vis their non-CEO *TMG* counterparts, having the capacity to direct the affairs of the corporation as a result of enjoying founder status is hypothesized to result in the capacity to limit rival contestations to their positions and power, and to continue to consume disproportionate pay vis-à-vis other members of the *TMG*. Hence, the above theoretical arguments and prior empirical evidence lead to the following hypothesis:

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

3.4.3 Prestige Power

The managerial elite consists of those executives “who occupy formally defined positions of authority at the head of a social organization or institution” (Giddens, 1972: 348). Because institutional environments are comprised of social actors like governments, financial institutions, and other external actors, a CEO’s image among stakeholders affects perceptions of their influence (Dalton, Barnes, & Zaleznik, 1968). Additionally, a CEO’s membership in the managerial elite conveys an image to other members of the *TMG* a relatively high level of importance (Finkelstein, 1992; Useem, 1979). Prestigious CEOs can aid in legitimizing the firm in that *prestige* conveys power by facilitating the

absorption of uncertainty from the institutional environment by allowing the prestigious CEO to acquire information from other elites that serves to reduce the uncertainty faced by the firm (Finkelstein, 1992). Additionally, prestige power is conveyed when a CEO is perceived to have “gilt-edged qualifications and powerful friends” (Finkelstein, 1992: 510) to the extent that enjoying such status facilitates interorganizational linkages and interpersonal affiliations that convey high status (D’Aveni & Kessner, 1993)

External Boards. One measure of the power afforded to prestigious CEOs is the capacity to participate as an outside board member of the boards of peer firms. Acting in the capacity of director on the board of other 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. For example, empirical research in the anti-takeover literature has found that the external boards a CEO sits on conveys the power necessary to block punishment (e.g. dismissal) for poor performance (Davis, 1991). And, poison pills were more frequently adopted when CEOs sat on more external boards. Other studies have confirmed this finding in that such prestige leads to the adoption of takeover defenses by companies at risk of becoming takeover targets (e.g. Wade et al., 1990). CEO prestige also enhances the CEO’s capacity to fight off unwanted competition in that he/she may be able to use elite connections to resist the performance-related punishment that may otherwise result in replacement by rival members of the *TMG*. Thus, the external board connections of prestigious CEOs may be enlisted as allies in the fight for the preservation of power.

Empirically, few tests have been conducted to evaluate the strategically relevant effects of CEO *prestige*. However, D'Aveni (1990) found that prestigious top managers exited in the five years prior to bankruptcy filing resulting in the withdrawal of the support of key stakeholders in a manner that demonstrates that they enjoyed information advantages. In a later study of how firms respond to tender offers, D'Aveni & Kessner (1993) found that target executives who lacked prestige were less likely to resist tender offers made by more prestigious bidders.

Having theorized that incumbent CEOs have the motivation to preserve their positions and the consumption of disproportionate pay vis-a-vis their non-CEO *TMG* counterparts, prestige may present potential rivals in the *TMG* with an image of high relative power. In as much, prestige power may convey the capacity to suppress the competition that arises within corporate tournaments thereby leaving incumbent CEO able to consume disproportionately large shares of *TMG* compensation resources. Hence, the above theoretical arguments and prior empirical evidence lead to the following hypothesis:

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

Elite Education. In addition to the external boards that a CEO sits on, prestige power may be conveyed by the CEO's educational background (D'Aveni, 1990; Finkelstein, 1992). This argument presumes that attendance at certain elite schools (see table 3.4.3 for the complete list) is replete with an aura of prominence in the corporate elite (Finkelstein, 1992; Useem, 1979).

Table 3.4.3: Elite Education Institutions (Reproduced and *Modified* from Finkelstein, 1992)

Amherst College	Pomona College
Brown University	Princeton University
Carleton College	Stanford University
<i>Cambridge University</i>	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
<i>Oxford University</i>	

Much in the same way that 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). Additionally, candidates for corporate governance positions often come from this group of elites indicating that CEOs with elite educational backgrounds may be more powerful than other members of the *TMG* (Finkelstein, 1992; Useem, 1979). Little empirical research has been done in this area. However, Daily & Johnson (1997) found that CEOs with prestigious educational backgrounds are granted relatively wide discretion within firms as a result of the image of control and competence that are conveyed by prestige (D'Aveni, 1990).

Having theorized that incumbent CEOs have the motivation to preserve their positions and the consumption of disproportionate pay vis-a-vis their non-CEO *TMG* counterparts, prestige may present potential rivals in the *TMG* with an image of high

relative power. In as much, prestige power may convey the capacity to suppress the competition that arises within corporate tournaments thereby leaving incumbent CEOs able to consume disproportionately large shares of *TMG* compensation resources. Hence, the above theoretical arguments and prior empirical evidence lead to the following hypothesis:

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

3.5 Moderating Role of Managerial Discretion

Contrary to the determinism argued by early proponents of population ecology (Hannan & Freeman, 1984), an organization's form and fate do not rest entirely outside of the control of its top executives (Child, 1972). 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 three forces: (1) the degree to which the industry environment allows variety and change; (2) the degree to which the organization empowers the CEO to formulate and execute a variety of actions; and, (3) the degree to which the executive is able to envision or create courses of action (Boyd & Gove, 2007; Hambrick & Finkelstein, 1987). Yet, from an empirical standpoint, discretion has served primarily as a moderator of strategic choice where managerial impact on organizational

outcomes is greatest when discretion is high (e.g. Finkelstein & Boyd, 1998; Hambrick & Abrahamson, 1995). Among the few empirical studies of discretion most focus the level of analysis on industry-level discretion (Chan, Martin, & Kensiger, 1990; Hambrick & Abrahamson, 1995) and firm-level discretion (Chung, Wright, & Charoenwang, 1998, 1998; Finkelstein & Boyd, 1998; Rajagoplan & Finkelstein, 1992) and.

Given that compensation policies must be designed within the firm so as to reward the behavior of the firm's *TMG* members, firm-level discretion will be the level of analysis of this study. 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) found 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) found 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 firm-level discretion will moderate the hypothesized relationship between each of the individual measures of CEO power and *TMG* pay disparities. Hence, the following hypotheses are offered:

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

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

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

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

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

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

3.6 Moderating Role of TMG Relative Power

In that senior executives will be compelled to compete for the CEO's title via sequential elimination tournaments there is reason to hypothesize that rivals to the

incumbent CEO have both the motivation and capacity to mitigate incumbent CEO power (under certain conditions). In as much, it may be expected that rivals in the *TMG* may work to limit the capacity of the incumbent CEO to consume a disproportionately large share of the *TMG*'s compensation resources. This argument has theoretical basis in the concept of monitoring by senior executives. Fama (1980) argued that managerial monitoring may take place in two directions: from the perspective of the board of directors and from the perspective of lower levels of management.

Monitoring from lower levels of management can occur for two reasons (Zhang, 2006). First, as has been argued in earlier sections of this dissertation, interest conflicts between the CEO and other members of the *TMG* may obtain as a function of the tournament mechanism, itself. A primary cause of interest conflicts and competition among members of the *TMG* lies in their desire to ascend to the office of the CEO and the attainment of the power and privileges that accompany such success (Shen & Cannella, Jr., 2002). That is, as senior executives move up the corporate hierarchy, the desire to become CEO, and to run the company, becomes even stronger (Pfeffer, 1981). Second, rival members of the *TMG* have a personal stake in the success of the firm. The external labor market evaluates their performance on the basis of the firm's performance (Fama, 1980). In as much, poor financial performance may suggest low levels of competence to potential employers thereby limiting alternative employment opportunities (Zhang, 2006). Further, poor performance increases the likelihood that a new CEO will be selected from outside the firm. Such external succession may result in the replacement of other members of the *TMG*.

The interest conflicts and competition among rival members of the *TMG* put the CEO at risk of power contests (Ocasio, 1994; Shen & Cannella, Jr., 2002). While research regarding the relative power of non-CEO members of the *TMG* has not been systematically undertaken, some empirical support for this perspective exists. For example, citing the contestation of CEO power as an explanatory perspective in a sample of 347 large U.S. corporations, Shen & Cannella, Jr. (2002) found the proportion of non-CEO inside directors and the equity ownership of non-CEO members of the *TMG* both to be positively linked with CEO dismissal followed by inside succession although neither was related to CEO dismissal followed by outside succession. And, in a related finding, Zhang (2006) found that the presence of a separate COO/president counteracts the incumbent CEO's power. In situations where a separate COO/president is present, the CEO is more likely to be dismissed under conditions of poor financial performance. Zhang (2006) asserts that this finding shows that a separate COO/president may become a rival to the CEO.

In that the relative power of non-CEO members of the *TMG* has been shown to act as a factor that serves to limit incumbent CEO pursuit of personal interests, it is hypothesized that the relative power of non-CEO *TMG* members will moderate the hypothesized relationships between CEO power and *TMG* pay disparities. Hence, the following hypotheses are offered:

Hypothesis 9a: The relative power of non-CEO TMG members will weaken the relationship between CEO duality (structural power) and TMG pay disparities.

Hypothesis 9b: The relative power of non-CEO TMG members will weaken the relationship between the interdependent directors on the board of directors (structural power) and TMG pay disparities.

Hypothesis 9c: The relative power of non-CEO TMG members will weaken the relationship between a CEO's tenure in the position (structural power) and TMG pay disparities.

Hypothesis 9d: The relative power of non-CEO TMG members will weaken the relationship between the proportion of outstanding shares held by the CEO (ownership power) and TMG pay disparities.

Hypothesis 9e: The relative power of non-CEO TMG members will weaken the relationship between the CEO's status as founder or member of the founding family (ownership power) and TMG pay disparities.

Hypothesis 9f: The relative power of non-CEO TMG members will weaken the relationship between the External Boards the CEO sits on (prestige power) and TMG pay disparities.

Hypothesis 9g: The relative power of non-CEO TMG members will weaken the relationship between the CEO's elite education status (prestige power) and TMG pay disparities.

3.7 Performance Implications of *TMG* Vertical Pay Disparities

Economic Perspective. As was discussed in the literature review, the economic perspective ascribes performance-related benefits to *TMG* pay disparities. It is argued that such disparities will serve to motivate a higher level of performance among tournament participants resulting in the most qualified (or competitive) individual that exhibits the highest level of performance winning the CEO's job. For instance, in a test of competing hypotheses, Main et al. (1993) found that wage-dispersing incentive structures enhance economic performance in a sample of U.S. corporations from 1980 to 1984. Eriksson (1999) found that a coefficient of variation in the difference in pay between the CEO and other contestants in the corporate tournament is positively associated with accounting profits. And, Hendrickson & Fredrickson (2001) found larger disparities in *TMG* pay to be associated with a higher return-on-assets (ROA) and a higher return-on-equity (ROE) in firms that are characterized by a higher level of related diversification (a proxy for firm-level collaboration and coordination needs).

Given the empirical results in the labor economics and strategic management literature found in support of normative tournament theory predictions, it is reasonable to hypothesize:

Hypothesis 10: TMG pay disparities will be positively associated with subsequent financial performance.

Behavioral Perspective. While the economic perspective has garnered some support, researchers have also documented negative performance implications to *TMG* pay disparities. The behavioral perspective predicts that large pay disparities among the *TMG* will result in a reduced capacity of the *TMG* to function as a coordinated unit

because pay disparity-induced cognitive dissonance will lead to perceptions of inequity and injustice regarding the rewards structure. For instance in a sample of 460 organizations in 173 four-digit SIC codes over the years of 1992 to 1997, Bloom & Michel (2002) showed that pay disparities among the *TMG* have important implications for strategic decision-makers in that greater disparity in *TMG* pay leads to higher levels of managerial turnover and shorter tenure. Carpenter & Sanders (2004) found the gap between CEO and *TMG* member total pay to be negatively associated with subsequent financial performance (measured as the ratio of market-to-book value). And, Siegel & Hambrick (2005) found that *TMG* pay disparities tends to diminish collaboration by fostering competition for advancement to lucrative positions (via succession tournaments) within the *TMG* thereby resulting in lower subsequent financial performance.

Given the empirical results in the strategic management literature found in support of the behavioral perspective, it is reasonable to hypothesize:

Hypothesis 11: TMG pay disparities will be negatively associated with subsequent financial performance.

Nonmonotonic Relationship. Empirical consensus regarding the performance implications of *TMG* pay disparities has been evasive. The relationship between *TMG* pay disparities and subsequent financial performance seems to be far more complex than either the economic or behavioral perspectives would argue (Bloom & Michel, 2002). While tournament theorists argue that tournaments facilitate higher levels of individual effort as competitors in corporate tournaments compete with one another in order to achieve the prize of the office of the CEO, researchers using a behavioral lens have been

able to show that such competition may have negative performance implications as excessive competition is likely to result in a reduced capacity to act in a coordinated fashion (Siegel & Hambrick, 2005) or even sabotage among competitors (Dye, 1984).

Equivocal findings suggest that organizational performance benefits may accrue to firms as a result of disparate *TMG* pay to a point as higher levels of individual performance result from individual competition with performance benefits to the firm. However, excessive individual competition is likely to result in higher levels of fragmentation among members of the *TMG*, to an inability to function as a cohesive unit in a coordinated fashion, and to lower levels of subsequent performance (Hambrick, 1995). The integration of these competing perspectives implies that the *TMG* pay disparities and subsequent financial performance relationship is concave. Hence, it is reasonable to hypothesize:

Hypothesis 12: TMG pay disparities and subsequent financial performance will have a concave relationship.

3.8 Moderating Effects of Coordination Needs

Defined as the "need for organizational subunits to intensively coordinate their activities to achieve peak performance" (e.g. Thompson, 1967), a *TMG's* coordination needs indicate a need to collaborate, cooperate, and act interdependently in a way that has positive performance implications (Siegel & Hambrick, 2005). One source of imposed coordination needs is the degree of volatility or unpredictability inherent in a focal firm's industry. Empirically linked with uncertainty, industry dynamism imposes such a need in that members of *TMGs* are required to act in a more coordination fashion if their firms are to achieve adequate levels of performance

In their study of firms in dynamic environments, Eisenhardt & Bourgeois (1988) found that the constant change inherent in dynamic and volatile industry environments requires continuous negotiations, adjustments, and decisions among members of *TMGs* in ways that, if successful, lead to higher levels of performance. And, using intensiveness as a proxy for the coordination needs imposed by the dynamic nature of the technology industry, Siegel & Hambrick (2005) found that when compared to low technology firms, subsequent performance in high technology firms was more adversely affected when pay disparities exist within the *TMG*. The authors surmised that the performance consequences of pay disparities in technologically intensive industries is harmful because such disparities tend to result in lower levels of "collaboration by fostering competition for advancement to lucrative positions" (Siegel & Hambrick, 2005: 271). Further, and in support of this argument, Mueller, Mone, & Barker, III (2007) showed that political behavior in firms results in a degradation in the rational strategic decision-making process—a finding that was significant only in dynamic industries. Such degradation in strategic decision-making processes resulted in attending to issues that detracted from focusing on operational issues thereby resulting in missed opportunities and lower financial performance. In earlier work designed to illuminate the effects of political behavior in *TMGs*, Hambrick (1995) argued that fragmentation in top management groups is maladaptive in that it results in a reduced capacity to formulate and implement strategic changes designed to adapt to changes in the environment.

Given the aforementioned arguments, it is hypothesized that greater coordination needs will be higher in relatively dynamic industry contexts. Further, it is expected that lower levels of coordination and interdependence will result from relatively high levels of

TMG pay disparities with deleterious effects to subsequent financial performance. Hence, it is reasonable to hypothesize:

Hypothesis 13: Greater coordination needs arising in dynamic environments will negatively influence the relationship between TMG pay disparities and subsequent financial performance.

CHAPTER 4: METHODOLOGY

In this chapter I will introduce the methods to be used in the analysis of the theoretical model developed in chapter 3. I will first discuss the unit of analysis of this study (the *TMG*) with a focus on demonstrating how the *TMG* will be operationalized. The chapter will then lay out the sampling techniques to be used with a specific focus on data collection, the sampling frame, and sample size. The chapter will then move into a discussion of the measures to be used in the analyses followed by the analytical techniques to be used to test the validity of the research model.

4.1 Unit of Analysis: The *TMG*

One issue that concerns researchers is the definition of the *TMG* (Hambrick, 1995). Conceptually, the *TMG* consists of the CEO and other members of the dominant coalition (Cyert & March, 1963). Researchers have used a range of operationalizations. For instance, Siegel & Hambrick (2005) identified all officers of the firm who were in the top three levels of the firm's hierarchy as members of the *TMG*. Fredrickson & Iaquinto (1989) asked CEOs to identify the members of their *TMGs*.

Like other studies in *TMG* pay and pay disparities research (e.g. Carpenter & Sanders, 2004; Main et al., 1993; Hendrickson & Fredrickson, 2001), this dissertation will operationalize the *TMG* as the CEO and the top four highest paid executives listed in the firm's proxy statements. There are two main reasons for this approach. First, in accordance with tournament theory and previous work on the contestation of power as cited earlier in this dissertation, 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. Secondly, the SEC requires public companies to disclose the compensation of its CEO and the four other highest-paid executives in the firm. While reports of compensation is scrutinized and legitimized by the Securities and Exchange Commission, data for the other managers in the firm is not always reported (Hendrickson & Fredrickson, 2001).

4.2 Research Design

Several relationships that have never been analyzed in the strategic management literature will be analyzed in this dissertation. For example, to my knowledge, no study has incorporated multiple measures of CEO power as antecedents of *TMG* pay disparities. Further, this will be the first study to test the moderating effects of firm-level discretion and relative non-CEO *TMG* power as mitigating conditions of the hypothesized CEO power/*TMG* pay disparities relationship. In an effort to explicate hypothesized associations, I use a large cross-sectional design with appropriate time-lags to allow for the detection of causal relationships. Although a pure longitudinal design might provide stronger support for causal relationships, there are several benefits to this approach. First, the proposed theoretical model is complex and is replete with relationships that have not yet been tested in the extant literature. In as much, a cross-sectional design should explicate important information about the associations that exist between exogenous and endogenous variables.

Several steps are undertaken in the research design to allow for inference (Kline, 2005). First, time precedence is specified theoretically, and operationalized using time lags in the exogenous and endogenous variables of interest. Second, the direction of causality is specified based on extant theory and empirical findings. Lastly, several

control variables (those identified in the extant literature) have been specified so as to limit the possibility that the theorized relationships between exogenous and endogenous variables disappear when covariates are, otherwise, absent from the model. In comparison to a longitudinal design, this research design lacks only the capacity to identify the temporal stability of theorized relationships. Additionally, cross-sectional designs are routinely used in the CEO and *TMG* pay literature (e.g. Finkelstein & Boyd, 1994; Siegel & Hambrick, 2005).

4.3 Data Collection

Issues regarding the measurement of power have served to limit the extent to which research on executive power has been conducted (Pfeffer, 1981). Using perceptual measures of power might allow the investigator to access power at its source by tapping into the cognitions of those executives who operate in a power-laden context. However, using perceptual measures of power has its shortcomings. Power is a sensitive subject both in the business press and in the academic literature (Pfeffer, 1981). Using perceptual measures assumes that actors in the socio-political context both know about the distribution of power across groups and are willing to divulge information about the distribution of power (Pfeffer, 1981). Neither of these conditions is testable, empirically.

In light of the potential problems associated with the use of perceptual measures of power, Pfeffer (1981) argued that individual and representational measures of power be developed so as to allow investigators to assess power objectively and in an unintrusive manner. Addressing the need for objective indicators of power, Finklestein (1992) developed a multidimensional measurement typology using a variety of indicators. Three studies were conducted in order to validate his multidimensional model

of power. In the first study, Finkelstein used perceptual measures of power based on responses from top executives and inside board members to dimensionalize executive power. In doing so, he was able to establish both reliability and discriminant validity. In the second study, top managers were asked to rate the dimensions of power in their own firms. Convergent validity was established when perceptual measures of power were mapped onto individual objective indicators of power. Finkelstein then strengthened the validity of power as a multidimensional construct by testing for predictive validity.

This dissertation follows in the tradition of Finkelstein (1992) in that objective measures of power drawn from archival sources were used to assess power and how it is distributed across *TMGs*. The primary source of compensation, power, personal characteristics, and firm-level discretion data was company proxy statements and 10-Ks because they must meet stringent SEC reporting requirements allowing for the accurate provision of sensitive strategic, financial, and compensation data. Where necessary, secondary data sources were used. Such sources included the *ExecuComp* database, and the following sources of data as made available in the Lexis-Nexis Academic database: *Who's Who in Finance and Industry*, *SGA Executive Tracker*, *InfoUSA idEXEC*, *the U.S. Exec Comp Database*, and *Executive Bios*. Lastly, *Compustat* served as the primary source of firm performance industry dynamism data.

4.4 Sampling Frame and Minimum Sample Size

To test the proposed theoretical model, data was collected from a cross-section of public companies randomly selected from the companies listed in the S&P 1500. The reasons for the choice of this sample are fourfold. First, large publicly-traded firms often have disperse ownership structures. In as much, they are contextually accurate targets

because the separation of ownership from control is a necessary condition of an agency relationship. Further, the literature has shown that dispersed ownership is associated with agency problems. Second, firms must be relatively large because the use of corporate tournaments implies the presence of multiple hierarchical levels in which a relatively large number of individuals compete up through the ranks in an attempt to reach the level of CEO. Third, firms should be public because sensitive information like financial data and the compensation of *TMG* members is not readily available for private firms. Fourth, archival data from proxy statements and databases like *Compustat* and *ExecuComp* have been shown to yield highly reliable and valid measures (Finkelstein & Hambrick, 1996).

Unlike other company lists (e.g. Fortune 500), which use firm size as a singular eligibility criterion, companies listed in the S&P 1500 Index meet stringent eligibility criteria that justify the use of such companies in this study (Standard & Poor's, 2007). First, they are a cross-section of small, medium, and large companies on the basis of market capitalization. Second, they are public in that at least 50% of company stock is characterized as public float. Third, they are financially viable with at least four consecutive quarters of positive reported earnings. Lastly, they are operating companies that are domiciled in the United States. That is, there are no closed-end funds, holding companies, investment vehicles, or royalty trusts listed in the S&P 1500. Simple random sampling was in order to construct the sample. Simple random sampling allows that each company in the S&P 1500 has the same chance of being selected thereby reducing non-random error and increasing validity.

Recently, the average sample size of executive research was 152 observations (Finkelstein & Hambrick, 1996). In order to achieve statistical power of $\beta = .8$ at a $\alpha =$

.05 level of significance, Joreskog & Sorbom (1993) suggest using the following equation to determine the minimum sample size, $n(n - 1)/2$, where n = the number of manifest variables in the model. Including all control variables present in the research framework, the number of manifest variables in the conceptual model is 30. Hence, the minimum sample size required is 435 observations $((30(29))/2)$. Randomly selecting from the S&P 1500 exceeds this minimum. A relatively large sample size reduces sampling error (Kline, 2005), limits departures from multivariate normality, and yields relatively greater statistical power, *ceterus paribus*, allowing that a false null hypothesis to be correctly rejected while a true null hypothesis might not be rejected (MacCallum, Browne, & Sugawara, 1996). Random sampling from the S&P 1500 yielded a sample of 676 firms. After applying inclusion constraints regarding the presence of the CEO in both 2004 (year in which power is theorized to effect *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. As is shown in Table 4.2, the sample of 607 firms is drawn from 59 different economic sectors (at the 2-digit SIC Code level) with business services firms being most highly represented (54) followed by chemical and allied products firms (46), and electronic, electrical equipment and components firms (42).

Table 4.4: Sectors Represented in the Original Sample (N=607)

Sector Code	Sector Description	Count
10	Metal Mining	2
12	Coal Mining	2
13	Oil and Gas Extraction	23
14	Mining and Quarrying of Nonmetallic Minerals, Except Fuels	2
15	Building Cnstrctn - General Contractors & Operative Builders	7
16	Heavy Cnstrctn, Except Building Construction - Contractors	1
17	Construction - Special Trade Contractors	2
20	Food and Kindred Products	14
21	Tobacco Products	2
22	Textile Mill Products	2
23	Apparel, Finished Prdcts from Fabrics & Similar Materials	5
24	Lumber and Wood Products, Except Furniture	4
25	Furniture and Fixtures	5
26	Paper and Allied Products	8
27	Printing, Publishing and Allied Industries	11
28	Chemicals and Allied Products	46
29	Petroleum Refining and Related Industries	3
30	Rubber and Miscellaneous Plastic Products	5
31	Leather and Leather Products	3
33	Primary Metal Industries	13
34	Fabricated Metal Prdcts, Except Machinery & Transport Eqpmnt	5
35	Industrial and Commercial Machinery and Computer Equipment	31
36	Electronic, Elctrel Eqpmnt & Cmpnts, Excpt Computer Eqpmnt	42
37	Transportation Equipment	12
38	Mesr/Anlyz/Cntrl Instrmnts; Photo/Med/Opt Gds; Watches/Clocks	31
39	Miscellaneous Manufacturing Industries	8
40	Railroad Transportation	4
42	Motor Freight Transportation	5
44	Water Transportation	2
45	Transportation by Air	1
47	Transportation Services	4
48	Communications	10
49	Electric, Gas and Sanitary Services	26
50	Wholesale Trade - Durable Goods	19
51	Wholesale Trade - Nondurable Goods	8
52	Building Matrials, Hrdwr, Garden Supply & Mobile Home Dealrs	2
53	General Merchandise Stores	7
54	Food Stores	4
55	Automotive Dealers and Gasoline Service Stations	3
56	Apparel and Accessory Stores	11
57	Home Furniture, Furnishings and Equipment Stores	7
58	Eating and Drinking Places	13
59	Miscellaneous Retail	9
60	Depository Institutions	37
61	Nondepository Credit Institutions	5
62	Security & Commodity Brokers, Dealers, Exchanges & Services	6
63	Insurance Carriers	25
67	Holding and Other Investment Offices	15
70	Hotels, Rooming Houses, Camps, and Other Lodging Places	1
72	Personal Services	1
73	Business Services	54
75	Automotive Repair, Services and Parking	2
78	Motion Pictures	3
79	Amusement and Recreation Services	6
80	Health Services	11
82	Educational Services	2
83	Social Services	1
87	Engineering, Accounting, Research, Management & Related Svcs	7
99	Conglomerates	4

The following section identifies the measures that were used to test the proposed theoretical model.

4.5 Independent Variables

Following chapter 3, which introduced CEO Power as the main theoretical construct, the following section introduces a number of indicators designed to explicate the effect that different sources of CEO Power will have on *TMG* Pay Disparities. Theorized relationships with *TMG* Pay Disparities were evaluated individually for each indicator using path analysis. However, because I expected that indicators would correlate and form distinct dimensions of a CEO Power construct (see chapter 3), I also used structured equation modeling techniques (confirmatory factor analysis) to determine whether the individual measures of CEO Power mapped onto broader dimensions (e.g. Structural Power, Ownership Power, Prestige Power). Then, *TMG* Pay Disparities was regressed onto these latent constructs using latent regression. Introduction of the measures that were used in the analyses follows.

4.5.1 Structural Power

Structural Power is based on a CEO's hierarchical position and refers to the power that is based on formal position in the organization's social system (e.g. Brass & Burkhardt, 1993; D'Aveni & Kessner, 1993; Daily & Johnson, 1997; Finkelstein, 1992). Three items were used as proxies of a CEO's Structural Power-CEO Duality, Interdependent Directors on the board, and CEO Tenure (position).

CEO Duality is a dual leadership structure that allows for the centralization of power in the dual CEO/Board Chairperson. CEO Duality is measured by determining whether the CEO is both the company's CEO and Board Chairperson. This measure 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).

One way to examine the CEO's Structural Power vis-a-vis the board of directors is by examining the proportion of interdependent directors that serve on the board (Daily & Dalton, 1994). Interdependent directors are directors who were appointed during the incumbent CEO's tenure. As such, they are more likely to be individuals with whom the CEO feels comfortable, approved of, and who feel loyalty to the CEO for their appointments. Interdependent Directors is a continuous measure that 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).

The time spent in office serves to institutionalize CEO power. CEO Tenure is a continuous measure that will be measured as the number of years a CEO has 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.

Data for these measures of structural power were collected from company proxy statements for year $t-2$.

4.5.2 Ownership Power

Ownership Power is based on the power that accrues to the CEO as a function of being a member of the founding family and/or the proportion of shares owned by the CEO (Finkelstein, 1992; Finkelstein & Hambrick, 1989; Tosi & Gomez-Mejia, 1989).

Two items were used as measures of a CEO's Ownership Power- Equity Shares Held - CEO, and Founder Status, which signifies the CEO's status as company founder or as a member of the founding family.

Power accrues to CEOs who have relatively high ownership in direct comparison to that of shareholders. Equity Shares Held - CEO is a continuous 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).

A CEO's status as founder or as a member of the founding family is an indication of the CEO's capacity to gain power through long-term interaction with the board (Finkelstein, 1992) and to gain personal power due to relatively high levels of commitment, enhanced entrepreneurial and technical skills, and stronger personal ties with employees and board members (Carroll, 1984). Founder Status is a binary measure 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.

Data for these measures of ownership power were collected, primarily, from company proxy statements, and from secondary sources where necessary. All data were collected for year t_2 .

4.5.3 Prestige Power

Prestige Power emanates from a CEO's capacity to facilitate the absorption of uncertainty from the institutional environment by acquiring information from other members of the managerial or educational elite through interpersonal linkages that

convey high status (D'Aveni & Kessner, 1993; Finkelstein, 1992). Two items were used to measure Prestige Power-Elite Education and External Boards.

One measure of CEO Prestige Power is the number of corporate boards on which the CEO sits, which has been shown to convey the power necessary to block the punishment for poor performance that arises both internally and externally. External Boards is a continuous measure of the number of corporate boards on which the incumbent CEO sits.

Attendance at certain schools conveys an aura of prominence in the corporate elite. Membership in this elite is theorized to provide linkages with executives at other firms allowing an incumbent CEO to forge alliances with other powerful members of the corporate elite. As was argued in chapter 3, candidates for corporate governance positions often come from this group thereby indicating that CEOs with elite educational backgrounds may be more powerful than other members of the *TMG*. 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.

Data for both measures of Prestige Power were collected, primarily, from company proxy statements, and from secondary sources, as needed. Data were collected for year $t-2$.

4.6 Moderators

4.6.1 Managerial Discretion

Managerial Discretion may be operationalized at the industry, firm, and individual levels of analyses (Boyd & Gove, 2007). As suggested earlier in this dissertation, Managerial Discretion was operationalized at the firm level of analyses. Data for several different measures of discretion were collected. I expected these measures to moderate the relationship between CEO Power and *TMG Pay Disparities*. Use of each of the measures used have been validated in the literature as representative of managerial discretion (e.g. Chung et al., 1998; Finkelstein & Boyd, 1998; Jensen, 1986; Wright & Kroll, 2002). 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 were collected for year t_2 from the *Compustat* database.

4.6.2 Relative *TMG* Power

In accordance with the arguments of tournament theory and internal governance mechanisms, inside directors often desire the position of CEO and its associated privileges. Hence, the relative power of the non-CEO members of the *TMG*: Proportion of Inside Directors, *TMG* Equity Shares Held, and the presence of a Separate COO may serve to limit the capacity of incumbent CEOs to act with unmitigated power.

Following, Shen & Cannella, Jr. (2002), the Proportion of Inside Directors was calculated as the number of directors who are current members of the firm's *TMG* (excluding the CEO) divided by the total number of directors on the board (Daily, Johnson, & Dalton, 1999).

Just as Ownership Power accrues to the CEO in obverse to that of other shareholders, Equity Shares Held - *TMG* was expected to accrue to the non-CEO *TMG* members in obverse to the CEO as a function of their aggregate equity ownership. Equity Shares Held – *TMG* was be calculated as the number of firm's outstanding shares held by all non-CEO members of the *TMG* divided by total company shares outstanding (Shen & Cannella, Jr., 2002).

The non-CEO members of the *TMG* may be often considered to be rivals to the incumbent CEO. Because the Chief Operating Officer (COO) often takes on the role of general manager in charge of internal managerial issues, the COO may be considered to be most likely to rival the incumbent CEO for the top job (Zhang, 2006). Following Hambrick & Cannella, Jr. 2004) and Zhang (2006), Separate COO was coded as '1' if there was a member of the *TMG*, other than the CEO that held the title of President or COO or both, and '0' otherwise.

The data for these measures of relative *TMG* power was collected, primarily, from company proxy statements, and from secondary sources, where necessary. All data for *TMG* Relative Power was collected for year t_2 .

4.6.3 Coordination Needs

Coordination Needs was be proxied by industry dynamism, or the volatility in the industry environment, which has been shown to impact relationships between a *TMG*'s

capacity to act with coordinated action and firm performance. Adapted from Dess & Beard (1984), industry dynamism has been defined as the instability of industry sales over time (Boyd & Gove, 2007; Keats & Hitt, 1988; Mueller et al., 2007). Following Keats & Hitt (1988) industry dynamism was operationalized as antilog of the regression slope coefficient from the following growth equation:

$$Y_t = b_0 + b_1t + \varepsilon_t, \text{ where}$$

y = aggregate industry net sales

t = year, and

ε = residual

Aggregate industry net sales data were collected for the 5-year period 2001-2005 (20 quarters of sales data) for 233 industries (4-digit SIC). Data for Industry Dynamism were collected from the *Compustat* database.

4.7. Dependent Variables

4.7.1 TMG Pay Disparities

Following several researchers of *TMG* pay disparities (e.g. Bloom & Michel, 2002; Carpenter & Sanders, 2004; Hendrickson & Fredrickson, 2001; Lambert et al., 1993; Siegel & Hambrick, 2005), the measure for *TMG* Pay Disparities was based on total compensation, which included both short-term and long-term components awarded in the focal year (t_1). Short-term compensation included salary and bonus. Long-term compensation included the value of stock options, performance unit plans, and restricted stock (Hendrickson & Fredrickson, 2001; Lambert et al., 1993; Hendrickson & Fredrickson, 2001).

Following Lambert et al. (1993) and Hendrickson & Fredrickson (2001), the components of long-term pay was valued as follows: (1) stock options was 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 was valued by multiplying the number of performance units by their respective target values (prospective) or by the actual payout (retrospective); (3) restricted stock was valued by multiplying the number of shares by the share price on the date of the grant.

Following Siegel & Hambrick (2005), Hendrickson & Fredrickson (2001), and Carpenter & Sanders (2004), *TMG* Pay Disparities was calculated as the difference between total CEO compensation and the average of the total compensation paid to the other members of the *TMG*. Data were collected from company proxy statements and the *ExecuComp* database, where necessary.

4.7.2 Subsequent Financial Performance

Following *TMG* pay disparities researchers (e.g. Carpenter & Sanders, 2004; Siegel & Hambrick, 2005), Subsequent Financial Performance was measured using measures of market (Market-to-Book Value or “*MTB*”) and accounting performance (Return-on-Assets or “*ROA*”). A firm’s *MTB* value is a valid measure of market-anticipated growth opportunities. This ratio measures the value that the market expects to be extracted by the firm from its pool of tangible and intangible resources (Carpenter & Sanders, 2004). *MTB* value was measured by dividing the market value of the firm by the book value of the firm at the end of the year (t) following the measure of *TMG* Pay Disparities (t_{-1}). *ROA* is an accounting-based profitability measure that reflects the firm’s profitability. *ROA* was calculated as net income divided by total assets. Each measure

was industry-normed by using the difference of MTB/ROA and industry-average MTB/ROA, respectively. Financial performance data were drawn from the *Compustat* database for year t .

4.8 Control Variables

Several control variables were included in the analyses. Control variables incorporated firm-level factors that have been shown to affect *TMG* Pay Disparities and financial performance. With the expectation 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. Prior Financial Performance served as a measure of the firm's ex ante financial health and performance. Both measures (MTB and ROA) of Prior Financial Performance were industry-normed in the same manner as the dependent variable measured in year t . The firm's MTB/ROA value in year t_{-1} were measured as the difference between MTB/ROA and industry MTB/ROA (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 *TMG* member's pay to the median of all *TMG* members in the focal company's industry. Following Bloom & Michel (2002), separate medians were calculated for CEOs and non-CEO *TMG* members. The number of contestants in the corporate tournament 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; Hendrickson & Fredrickson, 2001; Main et al., 1993).

4.9 Data Analysis

Analyses occurred in four steps. Hypotheses were tested on a preliminary basis using OLS regression. Hypotheses were then tested using mediated recursive path analysis in LISREL 8.72. Path analysis is a powerful analytical tool that is well-suited to the evaluation of complex models such as the one in this dissertation (Schumm, Southerly, & Figley, 1980). Path analysis using LISREL 8.72 provides for the use of maximum likelihood estimation, which is a full-information estimation method that estimates parameters of all relationships in the model simultaneously. Path analyses was followed by a confirmatory factor analysis (CFA) that was used to identify and distinguish multidimensional latent constructs that are comprised of the individual measures included in the path analyses. For example, path analysis tested the effect of individual measures of power (e.g. Elite Education, External Boards) on *TMG* Pay Disparities. Through CFA, however, I examined individual measures of CEO Power for their convergence on broader dimension of CEO Power: Structural Power, Ownership Power, and Prestige Power. Upon identification of a valid structural model, latent regression was performed using the latent constructs identified in the CFA. Doing so, served to establish causal relationships between latent constructs.

One of the main benefits of using structured equation modeling techniques in LISREL 8.72 is that doing so allows for the correction of measurement error while providing a greater amount of information regarding model fit than does multiple

regression in that several indices of model fit are provided as a gestalt (e.g. χ^2 , RMSEA, CFI, NFI, SRMR, NNFI, etc.).

In this chapter, I described how the study was designed in order to test the theoretical model and hypotheses that were developed in chapter 3. I addressed how the *TMG* was to be operationalized, what data sources were used to collect data, how measures were constructed, and the sample size that was used in analyses. In the next chapter, I discuss how the model and hypotheses were tested, and the results that emerged from statistical tests.

CHAPTER 5: DATA ANALYSIS AND RESULTS

Primary data analysis was performed in three stages. First, all of the data were screened for accuracy, normality, and missingness. Where necessary nonlinear transformations were made to variables with distributions that diverged from normality, but only in cases where such transformations resulted in closer approximations to normality. Missing data were imputed using the multiple imputation technique. Next, ordinary least squares (OLS) regression was used to conduct preliminary tests of study hypotheses and to establish a statistical basis for the specification of the path model. Second, I conducted a path analysis to evaluate the specified theoretical model and the related hypotheses developed in chapter 3. Third, I evaluated the individual CEO Power measures for the possibility that they would converge onto broader dimensions of CEO Power (as was discussed in chapter 4) using confirmatory factor analysis. And, last, I conducted a latent regression to determine the extent to which latent CEO Power constructs predicted *TMG* Pay Disparities.

5.1 Missing Data

Within the data set of 607 cases there were several instances in which company-specific or executive-specific data was not available from any of the data sources discussed in chapter 4. In fact, 7.2% of the data were missing at random (MAR).

The traditional approach to handling missing data in the strategic management literature is to use listwise deletion, whereas an entire case is excluded from analyses if it has missing data. Although popular, listwise deletion can cause two major problems: (1) severe loss of statistical power caused by a drastic reduction in the sample size; and, (2) biased parameter estimates. To this end, and along with other methods like pairwise

deletion, mean substitution, and regression-based single imputation, listwise deletion is regarded as an unacceptable manner in which to address missing data concerns (e.g. Graham, Cumsille, & Elek-Fisk, 2002; Little & Rubin, 1987).

One of the more efficacious methods of handling missing data is multiple imputation (Graham et al., 2002). Multiple imputation avoids the problems associated with listwise deletion as it both preserves important distributional characteristics of the data and uses them to inform missing values. Multiple imputation is done using three basic steps. First, a random sample is drawn from complete responses taken in order to identify the distribution of the variable with missing data. Several random samples are then taken from the distribution of the variable with missing data to provide estimates of that variable (Tabachnick & Fidell, 2001). Then, the missing values are then filled with different imputations to reflect different uncertainty levels thereby preserving important characteristics of the data set.

As was noted by Graham et al. (2002) procedures such as multiple imputation are superior to listwise deletion because they yield unbiased and efficient parameter estimates. In accordance with this prescription for handling missing data, I imputed missing data using the multiple imputation method available in NORM 2.03.

5.2 Data Screening and Descriptive Statistics

To ensure the accuracy of the data set, 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) allowed me to identify 3 multivariate outliers (Tabachnick & Fidell, 2001). Although preliminary tests suggested that the

outliers did not cause significant changes in model fit, parameter estimates, and significance levels of the variables of theoretical interest, the outliers were removed from the analyses. Hence, the final data set of 604 cases excluded UST, Inc., Hercules, Inc., and Lucent Technologies.

An examination of variable histograms, normality plots, and measures of variable skewness identified several variables with distributions that diverged from normality. Specifically, the following variables diverged from normality: Equity Shares Held - CEO, Equity Shares Held - *TMG*, CEO Tenure, Interdependent Directors, Firm Size, Industry-relative Pay - CEO, Industry-relative Pay - *TMG*, Tournament Size, Financial Slack, and Capital Intensity. Following prescriptions made by Tabachnick & Fidell (2002) and others, nonlinear transformations were made in order to correct for nonnormality, but only when their distributions more closely approximated normality as a result. After adding “1” as a shift parameter, non-normality was addressed by making natural log transformations to the following variables: CEO Tenure, Interdependent Directors, Firm Size, Industry-relative Pay - CEO, Industry-relative Pay - CEO, and Tournament Size. In addition to making nonlinear transformations to the aforementioned variables, 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 ROA (2005 and 2006), CEO Age, and the nonlinear transformation of Firm Size were all scaled by dividing by 10.

Table 5.1 reports the descriptive statistics (means, standard deviations, and range) of all variables prior to the nonlinear transformations, but after having imputed missing

data. As can be seen in Table 5.1 the mean level of the dependent variables is \$3,213,000, .409, and -1.04 for *TMG* Pay Disparities, ROA, and MTB, respectively.

Table 5.1: 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 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
<i>TMG</i> Pay Disparities ^b	-5.051	38.023	3.213	4.617
Market-to-Book value (2006)	-62.468	32.009	-1.005	4.943
Return-on-Assets (2006)	-86.412	39.891	.409	7.4250
Separate COO	.000	1.000	.093	.290
Proportion of Insiders on Board	.000	1.000	.161	.098
<i>TMG</i> Shares Held	.000	.26264	.007	.021
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 Dynamism	.001	.722	.028	.040
Industry-relative Pay Level – CEO ^a	-.388	12.373	1.501	1.656
Industry-relative Pay Level - <i>TMG</i> ^a	-.108	17.643	1.510	1.6322
Firm Size ^{a,b}	.000	3.133E5	7.112E3	2.229E4
Tournament Size ^a	.000	43.000	6.431	4.169
CEO Age	37.000	89.000	55.774	7.230
Market-to-Book Value (2005)	-27.450	74.334	.168	5.379
Return-on-Assets (2005)	-65.069	124.925	11.247	22.518

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

The correlations among the study variables are reported in Table 5.2. Among the independent variables of theoretical interest, the highest correlation (.488) exists between Financial Slack and R&D Intensity (both measures of Managerial Discretion). The potential for multicollinearity problems between independent variables will be addressed in subsequent sections.

Table 5.2: Variable Correlations (N=604)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
1. CEO Duality	-																									
2. Proportion of Interdependent Directors ^a	.298**	-																								
3. CEO Tenure ^a	.274**	.491**	-																							
4. Proportion of Equity Shares Held – CEO	.127**	.129**	.378**	-																						
5. Founder Status	.084*	.202**	.373**	.340**	-																					
6. Elite Education	.046	.072	.114**	.032	-.001	-																				
7. Number of Corporate Boards	.174**	.099*	.036	-.054	-.052	.209**	-																			
8. TMG Pay Disparities ^b	.153**	.087*	.049	.043	.074	.130**	.111**	-																		
9. Market-to-Book value (2006)	.084	.011	.015	.056	-.047	.077	.021	.055	-																	
10. Return-on-Assets (2006)	-.021	-.043	.024	.120**	-.038	-.013	.008	.080*	.155**	-																
11. Separate COO	-.041	.021	.068	.077	.058	-.045	.107**	.062	.014	.045	-															
12. Proportion of Insiders on Board	-.005	.158**	.250**	.263**	.213**	.029	-.136**	-.069	-.071	.010	-.052	-														
13. Proportion of Equity Shares Held – TMG	.038	.021	.199**	.401**	.207**	-.001	-.077	.065	-.029	.008	-.020	.264**	-													
14. Financial Slack	-.066	.063	.081*	.059	.180**	.016	-.136**	-.051	.071	.064	.016	.059	.056	-												
15. R&D Intensity	-.055	-.016	.023	.020	.151**	.115**	.052	-.016	.028	-.001	.030	.057	.098*	.488**	-											
16. Capital Intensity	.020	-.087*	-.036	-.040	.005	.077	.140**	-.048	.019	.011	.003	-.026	-.015	.209**	.103*	-										
17. Advertising Intensity	.034	-.033	.013	-.006	-.052	.105**	.010	.003	-.018	.028	.097*	.051	-.065	.014	-.164**	-.111**	-									
18. Industry Dynamism	-.004	.068	.023	.001	.038	-.025	.077	-.059	-.013	-.009	.023	.011	-.014	-.027	.044	.230**	-.140**	-								
19. CEO Industry-relative Pay Level ^a	.168**	.058	.045	.014	.003	.152**	.148**	.720**	.057	.143**	.116**	-.090*	.018	.010	.015	-.046	-.001	-.079	-							
20. TMG Industry-relative Pay Level ^a	.134**	.024	.016	.012	.014	.196**	.163**	.466**	-.030	.095*	.132**	-.033	-.018	-.018	-.033	-.043	.028	-.066	.766**	-						
21. Firm Size ^{a,b}	.058	-.023	-.086*	-.075	-.008	.052	.096*	.239**	-.028	-.038	.004	-.080*	-.075	-.098*	-.040	.000	-.056	.264**	.324**	-						
22. Tournament Size ^a	.071	-.084*	-.080	-.060	-.066	.086*	.148**	.077	.048	-.003	.001	-.119**	-.047	-.066	.036	.060*	-.012	-.014	.153**	.108**	.188**	-				
23. CEO Age	.300**	.250**	.481**	.215**	.100*	.083*	.134**	.110**	-.033	.102*	.070	.099*	.141**	-.062	-.027	.066	.127**	.020	.129**	.126**	-.006	.015	-			
24. Market-to-Book Value (2005)	.056	.106**	.025	.103*	.040	.114**	.000	.048	.637**	.104*	.061	-.015	-.021	.171**	.074	-.044	.025	-.034	.069	-.009	-.001	.033	-.037	-		
25. Return-on-Assets (2005)	.027	-.011	-.016	-.008	-.014	.041	.115**	.026	.053	.298**	.037	-.077	-.027	.133**	.174**	-.044	.187**	-.077	.072	.047	-.033	.095*	-.028	.083*	-	

5.3 Treatment of Moderators and Quadratic Terms

The theoretical model specifies the testing of relationships involving several product terms. Specifically, Managerial Discretion, *TMG* Relative Power, Industry Dynamism, and the quadratic term of *TMG* Pay Disparities are all variables of theoretical interest. One method that is commonly used to construct product terms is mean-centering. While mean-centering is useful in some circumstances, mean-centered product terms can be collinear with their component variables when those variables have distributions that diverge from normality (Lance, 1988). A more conservative approach to constructing product terms is to orthogonalize the product terms vis-à-vis their component variables by centering the residuals of the component variables. This approach 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 using the residual centering method.

Of note is that only two of the Managerial Discretion variables were consistently significant in preliminary analyses. While both R&D Intensity and Financial Slack are significant in a number of models, Capital Intensity and Advertising Intensity are never significant. Hence, they are left out of subsequent analyses. Additionally, R&D Intensity and Financial Slack are highly correlated at .488 ($p < .01$). To mitigate problems associated with collinearity and to aid in the interpretation of results from subsequent analyses R&D Intensity and Financial Slack were combined into a composite Managerial Discretion score by standardizing each variable by its mean and then averaging the two.

5.4 Preliminary Regression Analysis

In order to better specify the path model, several regression models were run prior to conducting the path analysis in LISREL 8.72. While path analysis in LISREL 8.72 is superior in testing complex theoretical models (see Chapter 4 for a discussion), OLS regression analysis is useful in that it provides preliminary tests of the hypotheses and informs path analysis regarding which control variables should be included in the analysis of the path model.

Given that the theoretical model includes multiple dependent variables (e.g. *TMG* Pay Disparities and Subsequent Financial Performance), analyses were conducted in three steps. First, *TMG* Pay Disparities was regressed onto multiple indicators of CEO Power, and their interaction with Managerial Discretion and the proxies for *TMG* Relative Power (Hypotheses 1-9). Then, I examined the effects of *TMG* Pay Disparities, its orthogonalized squared term, and its interaction with Industry Dynamism on both measures of Subsequent Financial Performance (Hypotheses 10-13).

Table 5.4.1 Results of OLS Regression: *TMG* Pay Disparities onto CEO Power, Managerial Discretion, and *TMG* Relative Power (N=604)

Variable	Model 1	Model 2	Model 3	Model 4
Industry-relative Prior Performance	.020			
CEO Age	.042 ⁺			
Industry-relative Pay – CEO	.859 ^{***}			
Industry-relative Pay – <i>TMG</i>	-.251 ^{***}			
Firm Size	.139 ^{***}			
Tournament Size	-.113 ^{***}			
CEO Duality		-.019		
CEO Tenure		-.015		
Interdependent Directors		.053 ⁺		
CEO Shares Held		.072 ^{**}		
Founder Status		.078 ^{**}		
Elite Education		.022		
External Boards		-.026		

CEO Duality X Prop. Of Insiders				.020
CEO Duality X Separate COO				-.011
CEO Duality X <i>TMG</i> Shares Held				.021
CEO Tenure X Prop. Of Insiders				-.035
CEO Tenure X Separate COO				.043
CEO Tenure X <i>TMG</i> Shares Held				-.020
Prop. Int. Dirs. X Prop. Of Insiders				-.016
Prop. Int. Dirs. X Separate COO				.013
Prop. Int. Dirs. X <i>TMG</i> Shares Held				.026
CEO Shares Held X Prop. Of Insiders				.024
CEO Shares Held X Separate COO				-.035
CEO Shares Held X <i>TMG</i> Shares Held				.011
Founder Status X Prop. Of Insiders				-.002
Founder Status X Separate COO				-.019
Founder Status X <i>TMG</i> Shares Held				-.029
Elite Education X Prop. Of Insiders				.008
Elite Education X Separate COO				.045
Elite Education X <i>TMG</i> Shares Held				.018
Number of Corporate Boards X Prop. Of Insiders				-.033
Number of Corporate Boards X Separate COO				-.091**
Number of Corporate Boards X <i>TMG</i> Shares Held				.206***
Managerial Discretion X CEO Duality				.031
Managerial Discretion X CEO Tenure				.008
Managerial Discretion X Interdependent Directors				.009
Managerial Discretion X CEO Shares Held				.054 ⁺
Managerial Discretion X Founder Status				-.063*
Managerial Discretion X External Boards				-.014
Managerial Discretion X Elite Education				-.003
F-Change (Significance of Change Reported)	205.519***	.290	.258	.239
Adjusted-R ² (Significance of Change Reported)	.528	.541	.568	.567

⁺ p < .10; * p < .05; ** p < .01; *** p < .001 (1-tailed α)

Note: Standardized beta coefficients reported for parsimony

5.4.1 CEO, *TMG* Power, Managerial Discretion on *TMG* Pay Disparities

In addition to the model with control variables only (Model 1), the results of the regression analyses examining the effect of individual measures of CEO Power, and the moderating effects of *TMG* Relative Power and Managerial Discretion are reported in Table 5.4.1. In Model 2 *TMG* Pay Disparities was regressed onto each of the individual measures of CEO Power. In Model 3, *TMG* Pay Disparities is regressed onto each of the Managerial Discretion moderators. And, in Model 4 *TMG* Pay Disparities is regressed onto each of the *TMG* Relative Power moderators.

In Model 1, I regressed *TMG* Pay Disparities onto five control variables. Of the five, four had significant effects on *TMG* Pay Disparities and in the expected direction. Specifically, the nonlinear transformations of Industry-relative Pay - CEO ($p < .001$), Industry-relative Pay – *TMG* ($p < .001$), Firm Size ($p < .001$) and Tournament Size ($p < .001$) were all both positively associated with *TMG* Pay Disparities as expected. However, CEO Age had a weak positive ($p < .10$) association with *TMG* Pay Disparities.

In Model 2, I regressed *TMG* Pay Disparities onto each of the individual measures of CEO Power. Hypothesis 1 predicted a positive association between CEO Duality and *TMG* Pay Disparities. However, the hypothesized relationship was statistically non-significant. Hypothesis 2 predicted a positive association between Interdependent Directors and *TMG* Pay Disparities. As was hypothesized, hypothesis 2 was partially supported. The relationship was statistically significant ($p < .10$) and in the expected direction. Hypothesis 3 predicted a positive association between CEO Tenure and *TMG* Pay Disparities. Counter to what was expected the hypothesized relationship was not statistically significant. Hypothesis 4 predicted a positive association between Equity

Shares Held – CEO and *TMG* Pay Disparities. As expected, this relationship was statistically significant ($p < .01$). Hence, Hypothesis 4 was supported. Hypothesis 5 predicted a positive association between Founder Status and *TMG* Pay Disparities. In support of Hypothesis 5, this relationship was statistically significant ($p < .01$) and in the expected direction. Hypothesis 6 tested the hypothesized relationship between External Boards and *TMG* Pay Disparities. Counter to what was expected this relationship was not statistically significant. The last test in this model was the test of Hypothesis 7 in which I examined the effect of Elite Education on *TMG* Pay Disparities. Counter to what was hypothesized this relationship was not statistically significant.

In Model 3, I regressed *TMG* Pay Disparities onto each of the hypothesized *TMG* Relative Power moderators (Inside Directors, Equity Shares Held - *TMG*, and Separate COO) of the hypothesized CEO Power and *TMG* Pay Disparities relationship (Hypotheses 9a-9g). Because the moderators have all been orthogonalized using the residual-centering method, only the interaction terms are included in the analyses. Of the twenty-one hypothesized moderators, only two are statistically significant. The presence of a Separate COO moderated ($p < .01$) the hypothesized External Boards and *TMG* Pay Disparities relationship (Hypothesis 9f) as expected (negative). And, Equity Shares Held – *TMG* moderated ($p < .001$) the hypothesized External Boards and *TMG* Pay Disparities relationship (Hypothesis 9f) although the sign of the beta coefficient was in the opposite direction (positive).

In Model 4, I regressed *TMG* Pay Disparities onto each of the hypothesized Managerial Discretion moderators (Financial Slack, R&D Intensity, Capital Intensity, and Advertising Intensity) of the hypothesized CEO Power and *TMG* Pay Disparities

relationship (Hypotheses 8a-8g). Because the moderators have all been orthogonalized by using the residual-centering method, only the interaction terms are included in the analyses. Of the seven hypothesized moderators, only two are statistically significant. As was hypothesized, Managerial Discretion moderated ($p < .10$) the hypothesized Equity Shares Held – CEO and *TMG* Pay Disparities relationship (Hypothesis 8d) and in the expected direction (positive). Managerial Discretion also moderated ($p < .05$) the hypothesized Founder Status and *TMG* Pay Disparities relationship (Hypothesis 9e). However, the beta coefficient was in the opposite direction (negative).

5.4.2 Subsequent Financial Performance on *TMG* Pay Disparities and Coordination Needs

In addition to the model with control variables only (Model 1), the results of the regression analyses examining the effect of *TMG* Pay Disparities, its quadratic term, and the moderating effects of Coordination Needs on Subsequent Financial Performance are reported in Table 5.4.2. In Model 2 Subsequent Financial Performance is regressed onto *TMG* Pay Disparities. In Model 3, Subsequent Financial Performance is regressed onto the quadratic term of *TMG* Pay Disparities. And, in Model 4 Subsequent Financial Performance is regressed onto the *TMG* Pay Disparities and Coordination Needs interaction term. Of note is that analysis is run alternatively with MTB and ROA as measures of Subsequent Financial Performance.

Table 5.4.2 Results of OLS Regression: Subsequent Financial Performance (ROA) onto *TMG* Pay Disparities, *TMG* Pay Disparities Squared, and Industry Dynamism (N=604)

Variable	Model 1	Model 2	Model 3	Model 4
Prior Performance (ROA)	.298 ^{***}			
Firm Size	.041			
<i>TMG</i> Pay Disparities		.067 ⁺		
<i>TMG</i> Pay Disparities - Quadratic			-.162 ^{***}	
<i>TMG</i> Pay Disparities X Industry Dynamism				-.051 ⁺
F-Change	29.841 ^{***}	2.447	16.194 ^{***}	1.761
Adjusted-R ²	.087	.090	.112	.113

⁺ p < .10; * p < .05; ** p < .01; *** p < .001 (1-tailed α); Standardized beta coefficients reported for parsimony.

In Model 1, I regressed Subsequent Financial Performance onto two control variables. Prior Financial Performance was statistically significant ($p < .001$) and in the expected direction (positive). While the sign of the beta coefficient of Firm Size was in the expected direction, the expected relationship was not statistically significant.

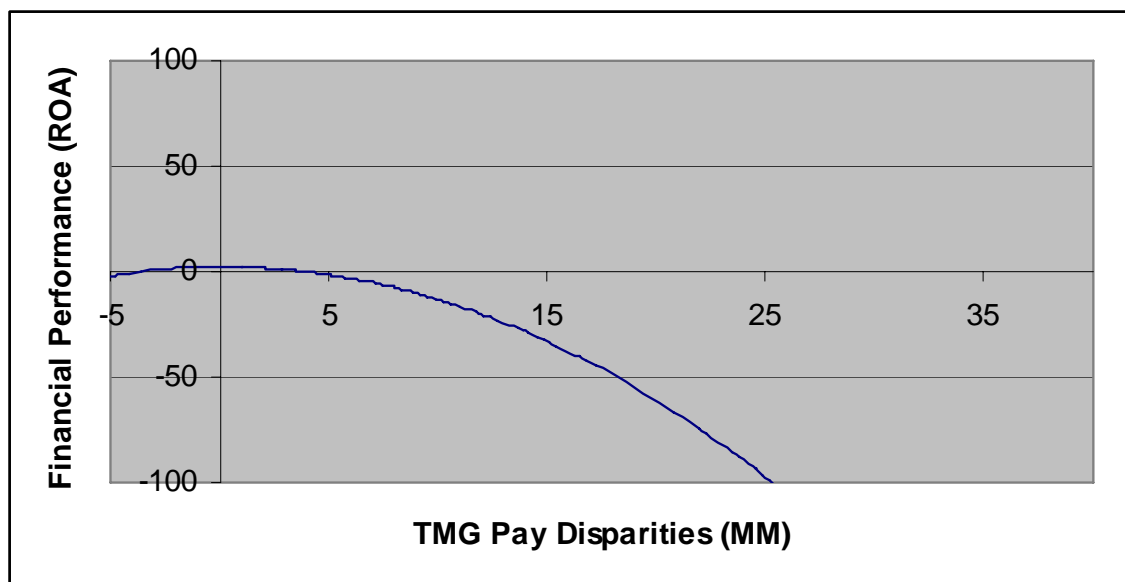
In Model 2, I regressed Subsequent Financial Performance onto *TMG* Pay Disparities. In a test of competing hypotheses, Hypothesis 10 (Economic Perspective) predicted a positive association between *TMG* Pay Disparities and Subsequent Financial Performance while Hypothesis 11 (Behavioral Perspective) predicted a negative association between *TMG* Pay Disparities and Subsequent Financial Performance. Results support Hypothesis 10 albeit at the $p < .10$ level of significance.

In Model 3, I regressed Subsequent Financial Performance onto the quadratic term of *TMG* Pay Disparities. In Hypothesis 12 I argue that a concave relationship between *TMG* Pay Disparities and Subsequent Financial Performance will obtain. A positive sign on the beta coefficient indicates that a convex relationship exists while a

negative sign indicates a concave relationship as is argued in Hypothesis 12. Results support Hypothesis 12 in that the relationship is statistically significant ($p < .001$), and with the expected sign (negative).

In Model 4, I regressed Subsequent Financial Performance onto the Coordination Needs interaction term. In Hypothesis 13 I argued that Coordination Needs would interact with *TMG* Pay Disparities to precipitate lower levels of Subsequent Financial Performance. Results indicate that the beta coefficient has the expected negative sign although the relationship is significant only at the $p < .10$ level. Hence, while hypothesis 13 is supported, it is only partially so. Figure 5.4.1 depicts the nonmonotonic nature of the relationship between Subsequent Financial performance and both the linear and quadratic components of *TMG* Pay Disparities.

Figure 5.4.1 Results of OLS Regression: Nonmonotonic Relationship between Subsequent Financial Performance *TMG* Pay Disparities, and *TMG* Pay Disparities Squared (N=604)



The preceding discussion focuses on, and reports, analyses based on ROA as a measure of performance. It should be noted that none of the hypothesized *TMG* Pay

Disparities/Subsequent Financial Performance relationships rose to the level of significance when MTB was used as the measure of performance. In fact, only the prior performance control variable (MTB in 2005) was significant (see Table 5.4.3).

Table 5.4.3 Results of OLS Regression: Subsequent Financial Performance (MTB) onto TMG Pay Disparities, TMG Pay Disparities Squared, and Industry Dynamism (N=604)

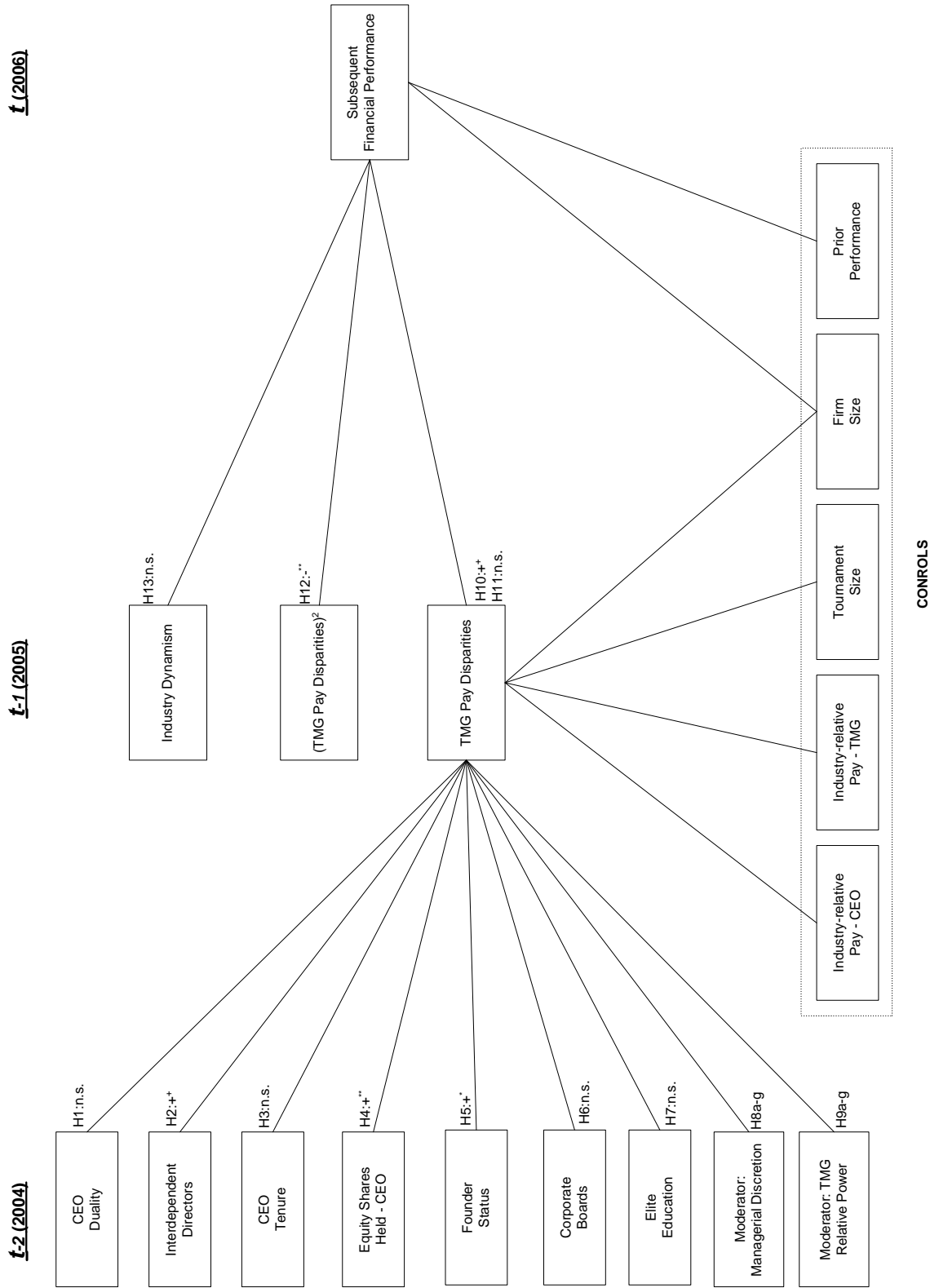
Variable	Model 1	Model 2	Model 3	Model 4
Prior Performance (MTB)	.636***			
Firm Size	.023			
TMG Pay Disparities		.019		
TMG Pay Disparities - Quadratic			-.017	
TMG Pay Disparities X Industry Dynamism				.015
F-Change	205.519***	.290	.258	.239
Adjusted-R ²	.404	.403	.403	.402

+ p < .10; * p < .05; ** p < .01; *** p < .001 (1-tailed α);
Standardized beta coefficients reported for parsimony

5.5 Path Analysis of the Theoretical Model

Path analysis was used to test the validity of the theoretical model. As was discussed in chapter 4 there are several advantages in using this analytical technique. As a structured equation modeling (SEM) technique, path analysis (in LISREL 8.72) is a powerful analytical tool that is well-suited to the evaluation of complex models such as the one developed in chapter 3 (Schumm et al., 1980). Unlike multiple regression, ML estimation is a full-information estimation method that estimates parameters of all relationships in the model simultaneously. And, in addition to the significance testing of hypotheses, SEM programs like LISREL 8.72 provide several indices of model fit (e.g. χ^2 , RMSEA, CFI, NFI, SRMR, NNFI, etc.).

Figure 5.5 Theoretical Path Model



Along with control variables, the modified saturated path model that relates to the 13 hypotheses developed in chapter 3 is presented in Figure 5.5. The parameter estimates and goodness-of-fit indices are reported in Table 5.5.1. Several indices of overall model fit were calculated in order to assess the validity of the theoretical model. While the structured equation modeling literature offers many indices of model fit, Ridgon (2001) recommends that researchers pay special attention to three: (1) the chi-square (χ^2) statistic, which provides a test of whether the sample covariance matrix is equivalent to the model-implied covariance matrix, (2) the root mean square error of approximation (RMSEA), which measures the discrepancy between the two matrices per degree of freedom, and (3) the comparative fit index (CFI), which compares the existing model fit with a null model whereas the variables are uncorrelated. In addition to these commonly used indices of model fit, I also computed and report the non-normed fit index (NNFI), which is one of the indices least affected by sample size.

Table 5.5.1 Parameter Estimates and Goodness of Fit Indices of Modified Saturated Path Model When ROA is the Measure of Subsequent Financial Performance (N=604)

	Path	Estimate	t-value
H1	CEO Duality → <i>TMG Pay Disparities</i>	-.093	-.319
H2	Interdependent Directors → <i>TMG Pay Disparities</i>	1.427	1.637
H3	CEO Tenure → <i>TMG Pay Disparities</i>	-.186	-.792
H4	CEO Equity Shares → <i>TMG Pay Disparities</i>	7.673	3.409***
H5	Founder Status → <i>TMG Pay Disparities</i>	.910	2.269*
H6	Number of Corporate Boards → <i>TMG Pay Disparities</i>	-.103	-1.091
H7	Elite Education → <i>TMG Pay Disparities</i>	.138	.901
H8a	Discretion X CEO Duality → <i>TMG Pay Disparities</i>	.125	.804
H8b	Discretion X Interdependent Directors → <i>TMG Pay Disparities</i>	-.007	-.037
H8c	Discretion X CEO Tenure → <i>TMG Pay Disparities</i>	-.032	-.144
H8d	Discretion X CEO Equity Shares → <i>TMG Pay Disparities</i>	.141	.901
H8e	Discretion X Founder Status → <i>TMG Pay Disparities</i>	X	X
H8f	Discretion X Number of Corporate Boards → <i>TMG Pay Disparities</i>	X	X
H8f	Discretion X Elite Education → <i>TMG Pay Disparities</i>	-.043	-.336
H9a	CEO Duality X <i>TMG</i> Relative Power (Inside Directors) → <i>TMG Pay Disparities</i>	.100	.727
H9a	CEO Duality X <i>TMG</i> Relative Power (Separate COO) → <i>TMG Pay Disparities</i>	-.036	-.241
H9a	CEO Duality X <i>TMG</i> Relative Power (<i>TMG</i> Shares Held) → <i>TMG Pay Disparities</i>	X	X
H9b	CEO Tenure X <i>TMG</i> Relative Power (Inside Directors) → <i>TMG Pay Disparities</i>	-.143	-.869
H9b	CEO Tenure X <i>TMG</i> Relative Power (Separate COO) → <i>TMG Pay Disparities</i>	.187	.926
H9b	CEO Tenure X <i>TMG</i> Relative Power (<i>TMG</i> Shares Held) → <i>TMG Pay Disparities</i>	X	X
H9c	Prop. Int. Dirs. <i>TMG</i> Relative Power (Inside Directors) → <i>TMG Pay Disparities</i>	-.081	-.573
H9c	Prop. Int. Dirs. X <i>TMG</i> Relative Power (Separate COO) → <i>TMG Pay Disparities</i>	.073	.420
H9c	Prop. Int. Dirs. X <i>TMG</i> Relative Power (<i>TMG</i> Shares Held) → <i>TMG Pay Disparities</i>	.048	.325

H9d	CEO Shares Held <i>TMG</i> Relative Power (Inside Directors) → <i>TMG Pay Disparities</i>	.077	.514
H9d	CEO Shares Held X <i>TMG</i> Relative Power (Separate COO) → <i>TMG Pay Disparities</i>	-.132	-.903
H9d	CEO Shares Held X <i>TMG</i> Relative Power (<i>TMG</i> Shares Held) → <i>TMG Pay Disparities</i>	.098	.489
H9e	Founder Status <i>TMG</i> Relative Power (Inside Directors) → <i>TMG Pay Disparities</i>	-.035	-.247
H9e	Founder Status X <i>TMG</i> Relative Power (Separate COO) → <i>TMG Pay Disparities</i>	-.110	-.791
H9e	Founder Status X <i>TMG</i> Relative Power (<i>TMG</i> Shares Held) → <i>TMG Pay Disparities</i>	-.173	-1.006
H9f	Number of Corporate Boards X <i>TMG</i> Relative Power (Inside Directors) → <i>TMG Pay Disparities</i>	-.154	-1.108
H9f	Number of Corporate Boards X <i>TMG</i> Relative Power (Separate COO) → <i>TMG Pay Disparities</i>	-.412	-2.901**
H9f	Number of Corporate Boards X <i>TMG</i> Relative Power (<i>TMG</i> Shares Held) → <i>TMG Pay Disparities</i>	.885	5.407***
H9f	Elite Education <i>TMG</i> Relative Power (Inside Directors) → <i>TMG Pay Disparities</i>	.058	.431
H9f	Elite Education X <i>TMG</i> Relative Power (Separate COO) → <i>TMG Pay Disparities</i>	.201	1.435
H9f	Elite Education X <i>TMG</i> Relative Power (<i>TMG</i> Shares Held) → <i>TMG Pay Disparities</i>	X	X
H10	<i>TMG Pay Disparities</i> → Subsequent Financial Performance (Economic Perspective)	.014	2.063*
H11	<i>TMG Pay Disparities</i> → Subsequent Financial Performance (Behavioral Perspective)	X	X
H12	<i>TMG Pay Disparities</i> (Quadratic) → Subsequent Financial Performance	-.122	-4.073***
H13	<i>TMG Pay Disparities</i> X Industry Dynamism → Subsequent Financial Performance	-.042	-1.333

$\chi^2=78.0$; d.f.=34; $p < .000$; RMSEA = .044; CFI = .993; NNFI = .847

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

The χ^2 was significant ($\chi^2=78.0$; d.f.=34; $p < .000$). However, the ratio of χ^2 to degrees of freedom was 2.29 which is less than the level (<3) that indicates satisfactory model fit (Carmines & McIver, 1981). Additionally, the RMSEA index (.0437) indicates excellent model fit as it falls below the .08 level, which signifies satisfactory model fit (Browne & Cudeck, 1993). The CFI is .993, which also indicates excellent model fit as it is above the recommended .90 level (Kline, 1998). Lastly, the NNFI is .847, which fails to meet the .90 threshold for satisfactory model fit (Kline, 1998).

In observing the significance levels of the parameter estimates for hypothesized paths, several important results emerge. First, as was indicated by preliminary analyses using OLS regression, both measures of Ownership Power (Equity Shares Held - CEO and Founder Status) were statistically significant in predicting *TMG* Pay Disparities. Equity Shares held - CEO is significant at the $p < .001$ level with a t-value of 3.409. Founder Status is significant at the $p < .05$ level with a t-value of 2.269. Also notable is that Interdependent Directors was marginally non-significant at the $p < .10$ with a t-value of 1.637. Given these results, both hypotheses 4 and 5 received strong support in that the relationships are statistically significant with beta coefficients that are in the expected (positive) direction.

Also of note is that two of measures of *TMG* Relative Power were highly significant when moderating the hypothesized relationship between External Boards and *TMG* Pay Disparities. Specifically, the presence of a Separate COO (t-value = -2.901; $p < .01$) served to mitigate the extent to which *TMG* Pay Disparities exist as a function of the number of External Boards (Prestige Power) that a CEO serves on. The sign of the beta coefficient is in the hypothesized direction (negative), which indicates support for

hypothesis 9f when Separate COO is used as a measure of *TMG* Relative Power. However, higher levels of Equity Shares Held – *TMG* served to increase the extent to which *TMG* Pay Disparities exist (t-value = 5.401; $p < .001$) as a function of the number of External Boards on which the CEO serves as the sign of the beta coefficient is positive. This result runs counter to the logic of hypothesis 9f when Equity Shares Held – *TMG* is used as the measure of *TMG* Relative Power.

The path model also provides support for two main hypotheses regarding the effect of *TMG* Pay Disparities on Subsequent Financial Performance. Specifically, as was supported by preliminary analyses using OLS regression the path model provides support for the economic perspective (Hypothesis 10) regarding the relationship between *TMG* Pay Disparities and Subsequent Financial Performance. The beta coefficient is positive with a t-value of 2.063 ($p < .05$). Additionally, and as was indicated by preliminary OLS regression analyses Hypothesis 12 is supported as the expected sign of the beta is negative, as predicted (indicative of a concave relationship), and highly significant ($p < .001$). However, unlike what was indicated in preliminary OLS regression analysis the hypothesized moderating effect of Coordination Needs on the *TMG* Pay Disparities and Subsequent Financial Performance relationship was non-significant. Of note is that reported results only apply to the accounting measure of performance (ROA). While testing the model using the market measure of performance (MTB) shows excellent model fit (see Table 5.5.2) an examination of the parameter estimates indicates that (while predicted relationships between Ownership Power/Relative *TMG* Power and *TMG* Pay Disparities are significant), there is no statistically significant relationship between *TMG* Pay Disparities and Subsequent Financial Performance.

Table 5.5.2 Parameter Estimates and Goodness of Fit Indices of Modified Saturated Path Model When MTB is the Measure of Subsequent Financial Performance (N=604)

	Path	Estimate	t-value
H1	CEO Duality → <i>TMG Pay Disparities</i>	-.090	-.309
H2	Interdependent Directors → <i>TMG Pay Disparities</i>	1.518	1.736 ⁺
H3	CEO Tenure → <i>TMG Pay Disparities</i>	-.190	-.812
H4	CEO Equity Shares → <i>TMG Pay Disparities</i>	7.946	3.518 ^{***}
H5	Founder Status → <i>TMG Pay Disparities</i>	.905	2.258 [*]
H6	Number of Corporate Boards → <i>TMG Pay Disparities</i>	-.108	-1.138
H7	Elite Education → <i>TMG Pay Disparities</i>	.155	1.006
H8a	Managerial Discretion X CEO Duality → <i>TMG Pay Disparities</i>	.120	.770
H8b	Discretion X Interdependent Directors → <i>TMG Pay Disparities</i>	.012	.063
H8c	Discretion X CEO Tenure → <i>TMG Pay Disparities</i>	-.046	-.204
H8d	Discretion X CEO Equity Shares → <i>TMG Pay Disparities</i>	.152	.967
H8e	Discretion X Founder Status → <i>TMG Pay Disparities</i>	X	X
H8f	Discretion X Number of Corporate Boards → <i>TMG Pay Disparities</i>	X	X
H8f	Discretion X Elite Education → <i>TMG Pay Disparities</i>	-.048	-.380
H9a	CEO Duality X <i>TMG</i> Relative Power (Inside Directors) → <i>TMG Pay Disparities</i>	.096	.706
H9a	CEO Duality X <i>TMG</i> Relative Power (Separate COO) → <i>TMG Pay Disparities</i>	-.035	-.237
H9a	CEO Duality X <i>TMG</i> Relative Power (<i>TMG</i> Shares Held) → <i>TMG Pay Disparities</i>	X	X
H9b	CEO Tenure X <i>TMG</i> Relative Power (Inside Directors) → <i>TMG Pay Disparities</i>	-.205	-1.019
H9b	CEO Tenure X <i>TMG</i> Relative Power (Separate COO) → <i>TMG Pay Disparities</i>	.146	.889
H9b	CEO Tenure X <i>TMG</i> Relative Power (<i>TMG</i> Shares Held) → <i>TMG Pay Disparities</i>	X	X
H9c	Prop. Int. Dirs. <i>TMG</i> Relative Power (Inside Directors) → <i>TMG Pay Disparities</i>	-.077	-.544
H9c	Prop. Int. Dirs. X <i>TMG</i> Relative Power (Separate COO) → <i>TMG Pay Disparities</i>	.059	.342
H9c	Prop. Int. Dirs. X <i>TMG</i> Relative Power (<i>TMG</i> Shares	.044	.297

	Held) → <i>TMG Pay Disparities</i>		
H9d	CEO Shares Held <i>TMG</i> Relative Power (Inside Directors) → <i>TMG Pay Disparities</i>	.071	.473
H9d	CEO Shares Held X <i>TMG</i> Relative Power (Separate COO) → <i>TMG Pay Disparities</i>	-.133	-.923
H9d	CEO Shares Held X <i>TMG</i> Relative Power (<i>TMG</i> Shares Held) → <i>TMG Pay Disparities</i>	.095	.473
H9e	Founder Status <i>TMG</i> Relative Power (Inside Directors) → <i>TMG Pay Disparities</i>	-.043	-.303
H9e	Founder Status X <i>TMG</i> Relative Power (Separate COO) → <i>TMG Pay Disparities</i>	-.121	-.868
H9e	Founder Status X <i>TMG</i> Relative Power (<i>TMG</i> Shares Held) → <i>TMG Pay Disparities</i>	-.176	-1.026
H9f	Number of Corporate Boards X <i>TMG</i> Relative Power (Inside Directors) → <i>TMG Pay Disparities</i>	-.149	-1.073
H9f	Number of Corporate Boards X <i>TMG</i> Relative Power (Separate COO) → <i>TMG Pay Disparities</i>	-.414	-2.927**
H9f	Number of Corporate Boards X <i>TMG</i> Relative Power (<i>TMG</i> Shares Held) → <i>TMG Pay Disparities</i>	.884	5.409***
H9f	Elite Education <i>TMG</i> Relative Power (Inside Directors) → <i>TMG Pay Disparities</i>	.062	.462
H9f	Elite Education X <i>TMG</i> Relative Power (Separate COO) → <i>TMG Pay Disparities</i>	.193	1.385
H9f	Elite Education X <i>TMG</i> Relative Power (<i>TMG</i> Shares Held) → <i>TMG Pay Disparities</i>	X	X
H10	<i>TMG Pay Disparities</i> → Subsequent Financial Performance (Economic Perspective)	.023	.609
H11	<i>TMG Pay Disparities</i> → Subsequent Financial Performance (Behavioral Perspective)	X	X
H12	<i>TMG Pay Disparities</i> (Quadratic) → Subsequent Financial Performance	-.081	-.050
H13	<i>TMG Pay Disparities</i> X Industry Dynamism → Subsequent Financial Performance	.084	.490

$\chi^2=51.5$; d.f.=34; $p < .028$; RMSEA = .027; CFI = .997; NNFI = .941

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

The parameter estimates of the control variables for the model using ROA as the measure of Subsequent Financial Performance are reported in Table 5.5.3 while

parameter estimates of the control variables for the model using MTB are reported in Table 5.5.4. With the exception of expected CEO Age and Prior Financial Performance effects on *TMG* Pay Disparities, and Firm Size on Subsequent Financial Performance, control variables were in the expected direction and statistically significant.

Table 5.5.3 Parameter Estimates of Control Variables Included in Saturated Path Model When ROA is the Measure of Subsequent Financial Performance (N=604)

Path	Estimate	t-value
CEO Age → <i>TMG</i> Pay Disparities	.182	.913
Industry-relative Pay Level – CEO → <i>TMG</i> Pay Disparities	8.194	17.354***
Industry-relative Pay Level - <i>TMG</i> → <i>TMG</i> Pay Disparities	-3.051	-5.595***
Firm Size → <i>TMG</i> Pay Disparities	5.916	6.407***
Tournament Size → <i>TMG</i> Pay Disparities	-.840	-3.617***
Prior Financial Performance → <i>TMG</i> Pay Disparities	-.013	-.227
Firm Size → <i>Subsequent Financial Performance</i>	-.156	-.859
Prior Financial Performance → <i>Subsequent Financial Performance</i>	.093	7.288***

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

Table 5.5.4 Parameter Estimates of Control Variables Included in Saturated Path Model When MTB is the Measure of Subsequent Financial Performance (N=604)

Path	Estimate	t-value
CEO Age → <i>TMG</i> Pay Disparities	.168	.840
Industry-relative Pay Level – CEO → <i>TMG</i> Pay Disparities	8.222	17.417***
Industry-relative Pay Level - <i>TMG</i> → <i>TMG</i> Pay Disparities	-3.069	-5.636***
Firm Size → <i>TMG</i> Pay Disparities	5.936	6.490***
Tournament Size → <i>TMG</i> Pay Disparities	-.833	-3.605**
Prior Financial Performance → <i>TMG</i> Pay Disparities	-.026	-1.124
Firm Size → <i>Subsequent Financial Performance</i>	.270	.273
Prior Financial Performance → <i>Subsequent Financial Performance</i>	.585	20.199***

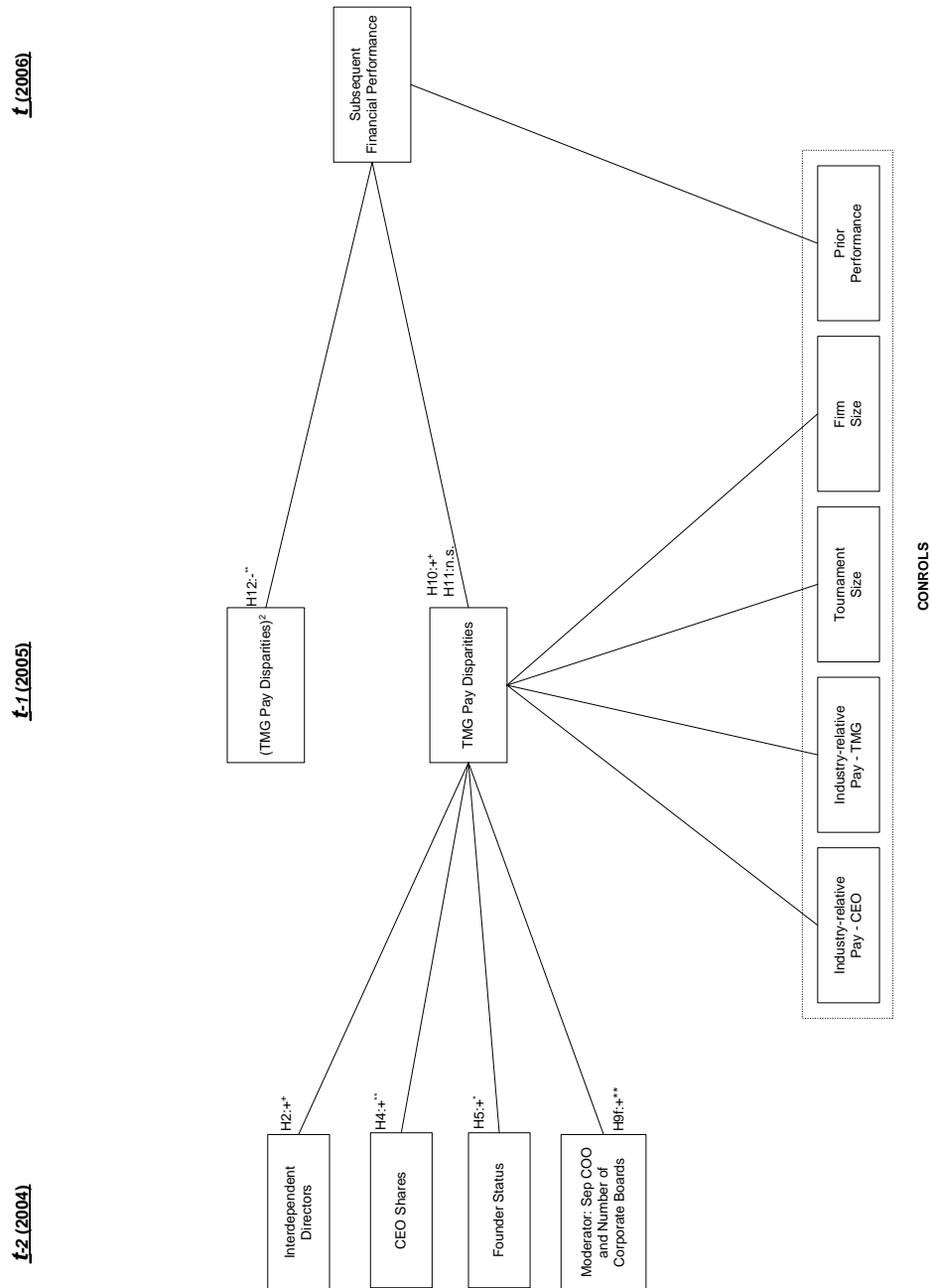
+ p < .10; * p < .05; ** p < .01; *** p < .001

5.6 Modified Path Model

One of the advantages of using a structured equation modeling software package (e.g. LISREL) to test a path model is that model development is aided by the provision of fit indices. Path models may be trimmed by removing non-significant paths from the

saturated model so as to identify, specify, and test a better fitting model. Evaluation of the parameter estimates in the modified saturated model suggested that several paths be removed. Specifically, all parameter estimates with t-values < 1.6 were removed on an iterative basis beginning with the lowest t-values.

Figure 5.6 Modified Theoretical Path Model



The modified theoretical path model is presented in Figure 5.6. Model fit indices and parameter estimates for hypothesized relationships are shown in Table 5.6.1.

Table 5.6.1 Parameter Estimates and Goodness of Fit Indices of Modified Theoretical Path Model When ROA is the Measure of Subsequent Financial Performance (N=604)

Hypothesis	Path	Estimate	t-value
H2	Interdependent Directors → <i>TMG Pay Disparities</i>	1.124	1.736 ⁺
H4	CEO Equity Shares → <i>TMG Pay Disparities</i>	7.332	3.471 ^{***}
H5	Founder Status → <i>TMG Pay Disparities</i>	.820	2.109 [*]
H9f	External Boards X <i>TMG</i> Relative Power (Separate COO) → <i>TMG Pay Disparities</i>	-.301	-2.435 ^{**}
H10	<i>TMG Pay Disparities</i> → Subsequent Financial Performance (Economic Perspective)	.012	1.894 ⁺
H12	<i>TMG Pay Disparities</i> (Quadratic) → Subsequent Financial Performance	-.113	-3.925 ^{***}

$\chi^2=98.3$; d.f.=63; $p < .003$; RMSEA = .028; CFI = .995; NNFI = .934
⁺ $p < .10$; ^{*} $p < .05$; ^{**} $p < .01$; ^{***} $p < .001$ (1-tailed α)

As was expected, the model improved in overall fit as is exemplified in the improvement of all fit indices. The χ^2 was significant ($\chi^2=98.3$; d.f.=63; $p < .003$). However, the ratio of χ^2 to degrees of freedom improved from 2.29 to 1.56 indicating improved model fit (Carmines & McIver, 1981). Additionally, the RMSEA index improved from .044 to .023 thereby indicating excellent model fit (Browne & Cudeck, 1993). The CFI improved marginally by increasing from .993 to .995 (Kline, 1998). And, the NNFI improved dramatically from .847 to .934 thereby indicating radically improved model fit. More importantly, the NNFI exceeds the .90 threshold for satisfactory model fit in the modified theoretical model (Kline, 1998).

Of note is that Hypotheses 4, 5, 9f, 10, and 12 are all supported as they were in the modified saturated model. Additionally, Hypothesis 2 (*TMG Pay Disparities* regressed onto Interdependent Directors) receives some support ($p < .10$) level with a moderate increase in the t-value from 1.637 to 1.736. Also of note is that the significance

level of the *TMG* Pay Disparities and Subsequent Financial Performance relationship (Hypothesis 10) is significant at $p < .10$ (it was significant at $p < .05$ in the saturated model). Because the saturated model does not support the use of MTB as a measure of Subsequent Financial Performance in this model, the saturated MTB model was not modified.

The parameter estimates of all significant control variables for the modified theoretical path model using *ROA* as the measure of Subsequent Financial Performance are reported in Table 5.6.2.

Table 5.6.2 Parameter Estimates of Control Variables Included in Modified Theoretical Path Model When ROA is the Measure of Subsequent Financial Performance (N=604)

Path	Estimate	t-value
Industry-relative Pay Level – CEO → <i>TMG Pay Disparities</i>	8.184	17.687***
Industry-relative Pay Level - <i>TMG</i> → <i>TMG Pay Disparities</i>	-2.900	-5.372***
Firm Size → <i>TMG Pay Disparities</i>	5.325	6.083***
Tournament Size → <i>TMG Pay Disparities</i>	-.814	-3.597***
Prior Performance → <i>Subsequent Financial Performance</i>	.094	7.416***

+ $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$ (1-tailed α)

5.7 Summary of Hypothesis Testing

Table 5.7 presents the summary of hypothesis testing using both regression and the path analysis aspects of structured equation modeling in LISREL 8.72. In summary, 8 of the 13 hypotheses developed in this study received, at least, some support in one of the two methods (OLS and SEM-Path Analysis) used to analyze the theoretical model. Hypotheses 4, 5, 9f (*TMG Pay Disparities* on *Number of Boards* and *Separate COO*), and 12 received strong support irrespective of the method of analysis used.

Table 5.7 Summary of Hypothesis Testing

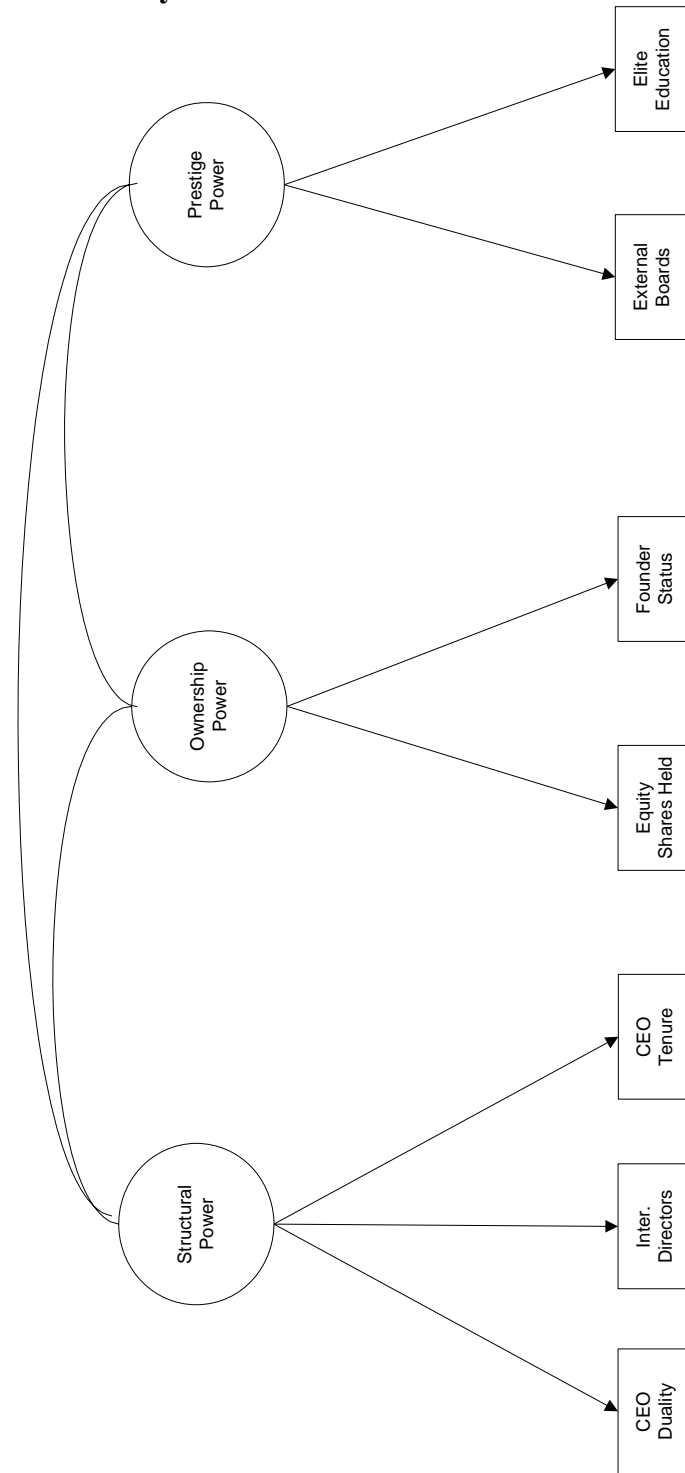
Hypotheses	OLS Regression	Path Analysis
H1: CEO Duality → <i>TMG Pay Disparities</i>	Not Supported	Not Supported
H2: Interdependent Directors → <i>TMG Pay Disparities</i>	Partially Supported	Partially Supported
H3: CEO Tenure → <i>TMG Pay Disparities</i>	Not Supported	Not Supported
H4: CEO Equity Shares → <i>TMG Pay Disparities</i>	Supported	Supported
H5: Founder Status → <i>TMG Pay Disparities</i>	Supported	Supported
H6: External Boards → <i>TMG Pay Disparities</i>	Not Supported	Not Supported
H7: Elite Education → <i>TMG Pay Disparities</i>	Not Supported	Not Supported
H8: Managerial Discretion X CEO Power → <i>TMG Pay Disparities</i>	Partially Supported (8d only)	Not Supported
H9: <i>TMG</i> Relative Power X CEO Power → <i>TMG Pay Disparities</i>	Supported (9f Only)	Supported (9f Only)
H10: <i>TMG Pay Disparities</i> → Subsequent Financial Performance (Economic Perspective)	Partially Supported	Supported
H11: <i>TMG Pay Disparities</i> → Subsequent Financial Performance (Behavioral Perspective)	Not Supported	Not Supported
H12: <i>TMG Pay Disparities</i> (Quadratic) → Subsequent Financial Performance	Supported	Supported
H13: <i>TMG Pay Disparities</i> X Industry Dynamism → Subsequent Financial Performance	Partially Supported	Not Supported

Further, the squared multiple correlations are .581 and .117 for *TMG* Pay Disparities and Subsequent Financial Performance (ROA), respectively. Hence, the amount of variance of *TMG* Pay Disparities and Subsequent Financial Performance (ROA) explained by the model is 41.9% (1-.581) and 88.3% (1-.117), respectively.

5.8 Confirmatory Factor Analysis

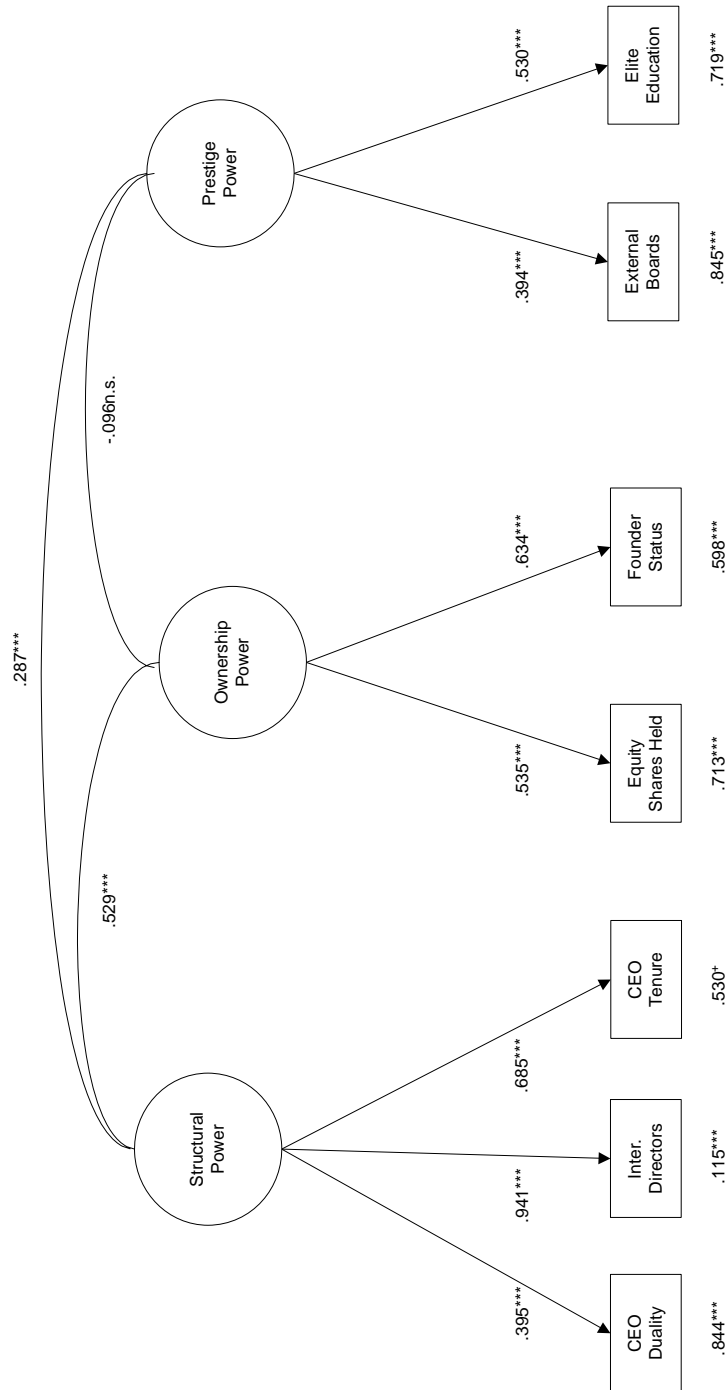
In addition to the preliminary analyses of the theoretical model using path analysis, secondary analyses was done in order to ascertain the multidimensional nature of CEO power. Specifically, as is shown in Figure 5.8.1, it was argued in chapter 3 that CEO Duality, Interdependent Directors, and CEO Tenure would be representative of a CEO's structural power. Further, Equity Shares Held – CEO and Founder Status were argued to be representative of the power that emanates from ownership. And, External Boards and Elite Education were posited to be representative of the power that results as a function of the CEO's social or prestige power.

Figure 5.8.1 Confirmatory Factor Model



The parameter estimates of the measured confirmatory factor model are reported in Figure 5.8.2.

Figure 5.8.2 Confirmatory Factor Model – Measured



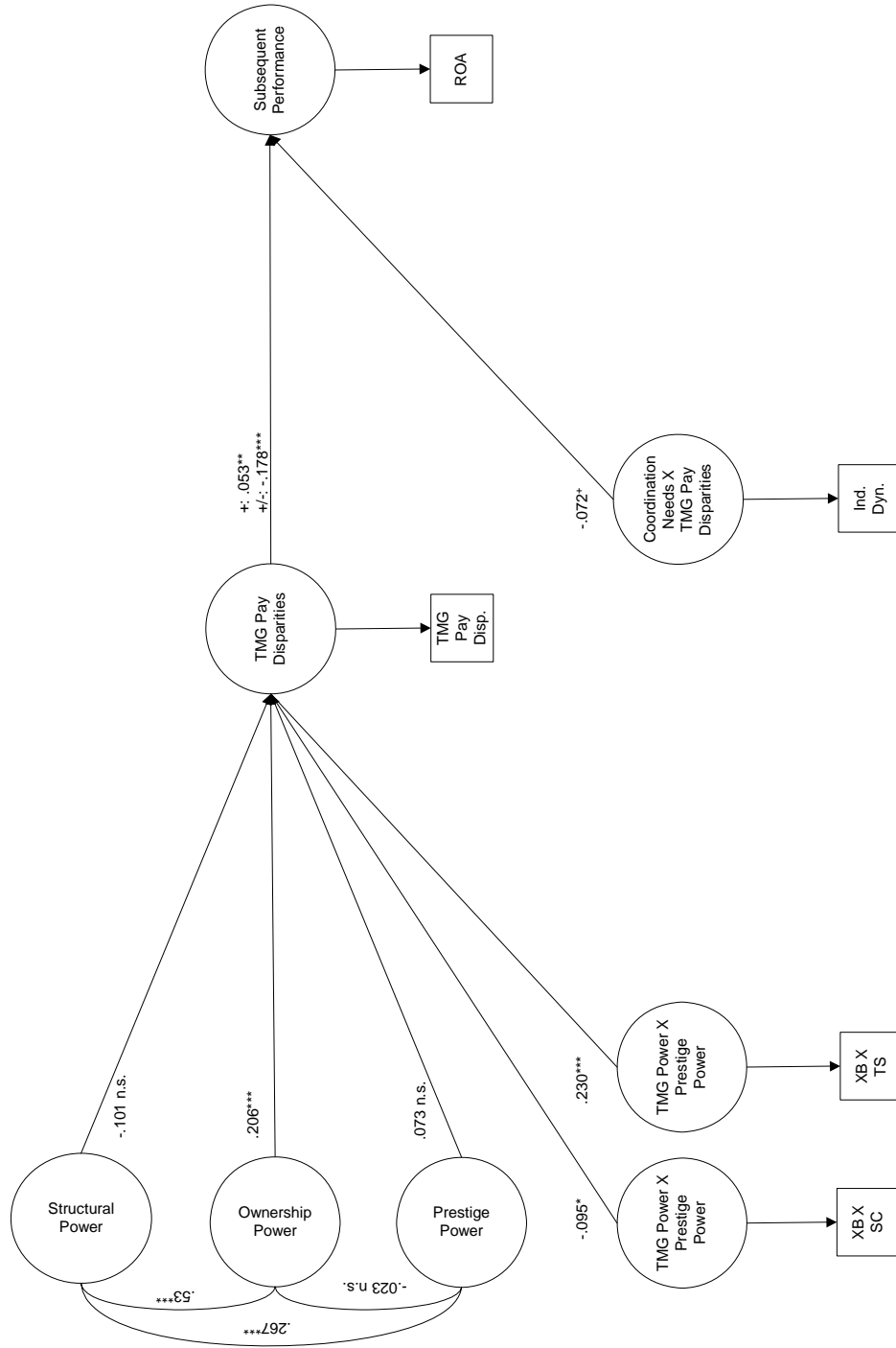
Individual measures of power were all statistically significant while factors loaded onto the individual measures of power as expected. Specifically, CEO Duality ($t = 9.251$; $p < .001$), Interdependent Directors ($t = 20.830$; $p < .001$), and CEO Tenure ($t = 15.772$; $p < .001$) all loaded onto Structural Power as expected. Equity Shares Held – CEO ($t = 9.643$; $p < .001$) and Founder Status ($t = 10.337$; $p < .001$) loaded onto Ownership Power as expected And, External Boards ($t = 4.9.635$; $p < .001$) and Elite Education ($t = 9.635$; $p < .001$) loaded onto Prestige Power as expected.

Additionally, fit indices all indicate that the structural model is a good fit with the data. The χ^2 was significant at 29.9 with 12 degrees ($p < .003$). The ratio of χ^2 to degrees of freedom was 2.49, which is less than 3-the level that indicates a satisfactory model fit (Carmines & McIver, 1981). The RMSEA index of model fit (.050) was below.08 indicating good model fit. The CFI was .974. The NFI was .957, and the NNFI was .954.

5.9 Latent Regression

In addition to the preliminary analyses of the theoretical model using path analysis, and secondary analyses designed to ascertain the multidimensional nature of CEO power, a tertiary analysis was conducted in order to test the theoretical path model using the latent CEO Power constructs in a latent regression model. Specifically, as is shown in Figure 5.9.1, it was expected that each of the three latent constructs identified through confirmatory factor analysis would act as antecedents of *TMG* Pay Disparities in addition to the moderators and covariates identified in the path analysis. Further, as was shown using path analysis it was expected that *TMG* Pay Disparities would affect Subsequent Financial Performance. The measured latent regression model described herein is presented in Figure 5.9.1.

Figure 5.9.1 Latent Regression Model



Results indicate that only one of the latent CEO Power constructs had a statistically significant relationship with *TMG* Pay Disparities. Specifically, while Structural Power and Prestige Power were both non-significant, Ownership Power was significant at the $p < .001$ level (t-value = 3.607). Also, of interest is that the relationship between *TMG* pay Disparities and Subsequent Financial Performance got stronger with a linear effect of .052 at the $p < .01$ (t-value = 2.056) level and a non-monotonic effect of -.178 at the $p < .001$ (t-value = -4.164). Further, the moderating effect of Industry Dynamism on the *TMG* Pay Disparities and Subsequent Financial Performance relationship was significant at the $p < .10$ (t-value = -1.773). Additionally, all covariates remained significant in the latent model. See Table 5.9.1. for details.

Table 5.9.1 Parameter Estimates of Control Variables Included in the Latent Regression Model When ROA is the Measure of Subsequent Financial Performance (N=604)

Path	Estimate	t-value
Industry-relative Pay Level – CEO → <i>TMG Pay Disparities</i>	3.091	17.981***
Industry-relative Pay Level - TMG → <i>TMG Pay Disparities</i>	-1.078	-6.378***
Firm Size → <i>TMG Pay Disparities</i>	1.898	7.096***
Tournament Size → <i>TMG Pay Disparities</i>	-.224	-3.215***
Prior Performance → <i>Subsequent Financial Performance</i>	.133	7.196***

⁺ $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$ (1-tailed α)

Although the results mimic those found using path analysis, overall model fit is poor. Specifically, χ^2 was significant at 443.7 with 112 degrees ($p < .0$). The ratio of χ^2 to degrees of freedom was 3.96, which exceeds the level that indicates a satisfactory model fit (Carmines & McIver, 1981). While the RMSEA index of model fit (.071) was adequate, the CFI (.878), NFI (.845), and NNFI (.833) all indicated overall poor model fit.

CHAPTER 6: DISCUSSION

The primary objective of this study was to develop and empirically test a theoretical model that associates CEO power, the relative power of other (non-CEO) members of the *TMG*, and managerial discretion with *TMG* pay disparities, and *TMG* pay disparities with subsequent financial performance. This study was motivated by the desire to contribute to the evolving body of research regarding *TMG* pay disparities by addressing three important, but previously unaddressed questions. First, the study was conducted in order to determine the extent to which sociopolitical factors influence the extent to which *TMG* pay disparities exist within large, publicly-traded corporations. Specifically, my theoretical model focused empirical attention on the roles that CEO power and the relative power of other (non-CEO) members of the *TMG* play. Second, the theoretical model hypothesized that the amount of discretion conveyed by the firm environment would serve to moderate the hypothesized CEO power/*TMG* pay disparities relationship. Lastly, I sought to clarify the relationship between *TMG* pay disparities and subsequent financial performance.

Several important findings emerge from this study. First, results indicate that multiple sources of CEO power affect the extent to which pay disparities exist within *TMGs*. Second, results from the study also demonstrate that some sources of the relative power of non-CEO *TMG* members do, in fact, serve to mitigate the extent to which the CEO may consume a disproportionate share of the *TMG's* compensation resources. Additionally, the results indicate that the *TMG* pay disparities/subsequent financial performance relationship is best explained when the economic and behavioral

perspectives are integrated as was developed in chapter 3. Results will be discussed in the subsequent sections.

6.1 CEO Power and *TMG* Pay Disparities

Based on existing theory (e.g. tournament theory, managerial power, CEO compensation, governance, etc.), I hypothesized that multiple sources of CEO power (in year t_2) would be positively associated with the extent to which pay is disparate within *TMGs* (in year t_1). The predicted relationships were based on the argument that while the capacity to “realize one’s own will even over the resistance of others” (Weber, 1946: 180), is necessary for CEOs to formulate, negotiate, and implement strategies (Eisenhardt & Burgeois, 1988) such power may be seen as a double-edged sword. In the context of sequential elimination tournaments and *TMG* pay disparities, it was argued that powerful CEOs can limit the extent to which potential rivals in corporate tournaments may serve to mitigate their capacity to consume a disproportionate share of the *TMG*’s compensation resources thereby serving to increase *TMG* pay disparities. 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 played an important role.

While never tested in the context of *TMG* pay disparities, the findings regarding the relationship between the proportion of equity shares held by the CEO and *TMG* pay disparities is consistent with the extant managerialism and CEO compensation research, which indicates that power accrues to CEOs who maintain substantial ownership positions in their firms to the extent that such CEOs are able to effect how compensation resources are allocated more so than are CEOs who lack such an ownership stake (e.g. Daily & Johnson, 1997). Additionally, results are consistent with empirical studies that

demonstrate that powerful CEOs (as a function equity shares held) are able to enjoy the privileges (e.g. higher levels of compensation) associated with relatively high levels of power (Finklestein & Hambrick, 1989). In as much, the results of this study indicate that CEOs with higher levels of the ownership power that are attributed to relatively high levels of equity shares are able to consume larger proportions of firm compensation resources in relation to other members of the *TMG*.

Ownership power was also theorized to accrue to incumbent CEOs as a function of being either the founder or a member of the founding family. While never tested in the context of *TMG* pay disparities, the extent to which founders are able to gain power through their long-term interaction with the board in ways that translate into the capacity to enjoy the privileges associated with such status (Finkelstein, 1992). For example, research has shown that status as founder results in the capacity to remain in office due to lower rates of succession (McEachern, 1975; Ocasio, 1994; Ocasio, 1999). Results of this study are consistent with this logic in that CEOs who are also the founders of their firm (or members of the founding family) are able to consume larger proportions of firm compensation resources in relation to other members of the *TMG*.

As a source of structural power, the proportion of interdependent directors appointed to the board by the incumbent CEO also served to increase the extent to which *TMG* pay disparities exist within large, publicly-traded companies. The proportion of interdependent directors has been shown to serve as an important source of institutionalized structural power in that the achievement of the agendas of incumbent CEOs may be facilitated by the presence of directors who feel loyalty to the CEO for their appointments (e.g. Boeker, 1992). While no empirical consensus exists regarding

the influence of interdependent directors, the results of this study support the notion that interdependent directors enhance a CEO's power to the extent that they may consume larger proportions of firm compensation resources in relation to other members of the *TMG*.

This study failed to find support for several hypothesized relationships. Specifically, none of the following characteristics was associated with *TMG* pay disparities: 1) whether the incumbent CEO also acted as Board Chairperson; 2) the amount of time in the position; 3) the CEO's educational background; and, 4) the number of external corporate boards on which the CEO served.

Based on arguments developed in the corporate governance and managerial power literatures, it was argued that acting as Board Chairperson would allow the incumbent CEO to centralize the combined structural power associated with both the CEO and Board Chairperson roles to the extent that the resulting power would facilitate the consumption of greater proportions of the *TMG's* compensation resources. Results may be non-significant for two possible reasons. First, while dual CEOs have been found to achieve higher relative power than non-dual CEOs, many of the studies in which such power was observed were conducted in the governance studies of the 1980s, 1990s, and in the early part of this decade (e.g. Daily & Johnson, 1997; Pollock, & Fisher, 2002; Rechner & Dalton, 1991). The temporal specification of this context is important because the effectiveness of the corporate governance structures changed in the years subsequent to the adoption of the Sarbanes-Oxley Act in 2002. For example, it has been shown that post-SOX boards are larger and more independent than they were prior to this period (Linck, Netter, & Yang, 2007). In as much, it may be that such boards have become

increasingly effective in monitoring dual CEOs in ways that mitigate the potential for agency problems.

Based on arguments developed in the top manager characteristics, corporate governance, and managerial power literatures, it was argued that the number of years a CEO is in office would serve as a significant source of power. Specifically, long tenure was expected to result in the capacity to institutionalize the structural power of the position in a way that would facilitate entrenchment because institutionalized power would allow incumbent CEOs to nominate new board members who subsequently feel a sense of loyalty to the nominating CEO and to gain control over the information that is made available to both members of the board and other members of the *TMG* (e.g. Finkelstein & Hambrick, 1989). However, what is of note in this study is that the average tenure of the CEOs in this sample is only 6 years while the range of CEOs who fall within one standard deviation is 3.7-8.3 years. Hence, the non-significant findings may be an artifact of the distributional characteristics of the sample and the influence of its institutional context in which institutional changes in the regulatory environment may have resulted in greater turnover and shorter tenure of the CEOs of large, publicly-traded firms.

Based on arguments developed in the top manager characteristics and managerial power literatures, it was argued that incumbent CEOs may be more likely to limit challenges to their position and power as a result of their membership in the corporate elite. CEOs were argued to acquire prestige from the capacity to convey images of competence as a function of having an elite educational background (D'Aveni, 1990; Finkelstein, 1992). Although little empirical research has been done in this area, Daily &

Johnson (1997) showed that CEOs with prestigious educational backgrounds are granted relatively wide discretion within firms as a result of the image of control. In the context of *TMG* pay disparities, the results of this study do not indicate that such power is associated with the capacity to consume relatively more compensation vis-à-vis the other members of the *TMG*. This non-significant finding may be due to the likelihood that multiple members of the corporate elite (e.g. the Chief Financial Officer, Chief Operating Officer, etc.) have similar educational backgrounds. In fact, given the extent to which the *TMG* is considered to act as a dominant coalition with the CEO as the focal figure it is likely that the preeminent member of this coalition hires other executives that have similar educational backgrounds (Schneider, 1987). It may also be that this non-significant finding is a function of the distributional characteristics of this variable. Specifically, more than half (n=314 or 52%) of the CEOs in this sample have a college degree that is not earned at an elite institution. Hence, there may be a restriction of range issue that confounds analyses using this measure of elite education.

In that membership in the corporate elite also results from serving on external corporate boards as an outside director, it was argued that acting in the capacity of director on the board of other 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. The capacity to project the power that emanates from membership in this network was argued to deflect challenges to the incumbent's position and resulting power, and to allow for the consumption of disproportionate shares of the *TMG*'s compensation resources. The results of this study did not support this logic. Statistical non-findings may result for two

related reasons. First, one of the foci of changes in the corporate governance environment resulting from the Sarbanes-Oxley Act (2002) was to facilitate greater board independence by increasing director workload and risk (Linck et al., 2007). For instance, audit committees were found to meet twice as often post-SOX than they did pre-SOX while Director and Officer (D&O) insurance premiums more than doubled (Linck et al., 2007). The extent to which boards are more independent and active may serve to dampen the extent to which incumbent CEOs may project the power associated with having powerful friends internally. Another possibility is that, in a post-SOX world, the CEOs of large-publicly-traded companies had fewer opportunities (and desire due to higher risk) to act as outside directors on the boards of peer firms. For instance, 71% of the CEOs in this sample served on 1 external corporate boards while nearly 84% served on 2 or fewer external boards.

6.2 The Role of Managerial Discretion

The managerial discretion literature posits that managers are provided with a greater capacity to shape the course of the organization in certain situations (e.g. Child, 1972; Finklestein & Boyd, 1998; Hambrick & Finkelstein, 1987). Based on this logic I argued that in firm-level environments characterized by relatively high levels of discretion powerful CEOs would better have the capacity to consume a greater portion of the *TMG's* compensation resources. As a result, I expected that *TMG* pay disparities would be greater when powerful CEOs have the latitude to shape *TMG* compensation policies in firms characterized by greater discretion.

The results of this study partially support this line of reasoning in that discretion allows that CEOs who enjoy founder status (a measure of ownership power) are able to

consume greater pay vis-à-vis the other members of the *TMG*. While this result obtains, discretion does not moderate the relationship between *TMG* pay disparities and any other measure of CEO power. One explanation is that managerial discretion is conceptualized and operationalized solely at the firm-level. It is possible that this level of analysis does not capture the extent to which the “environment” conveys latitude. While discretion within the firm is thought to effect the degree to which the organization empowers the CEO to formulate and execute a variety of actions, it may be at the level of the industry that variety and change is effected (Boyd & Gove, 2007). In this sense, it is possible that explaining the variance in *TMG* pay disparities is best done when viewing managerial discretion as an element of the industry, or as a combination of the firm and the industry rather than solely as an element of the firm.

6.3 The Role of the Relative Power of the *TMG*

Based on arguments inherent in tournament and circulation of power theories (e.g. Ocasio, 1994; Rosen, 1986), I argued that the non-CEO members of the *TMG* may become rivals to the incumbent CEO as a function of the incentive mechanisms inherent in sequential elimination tournaments. Specifically, interest conflicts and competition among members of the *TMG* was thought to be born from the desire of other *TMG* members to ascend to the office of the CEO and to attain the associated power and privileges (Pfeffer, 1981; Shen & Cannella, Jr., 2002). In as much it was expected that, if relatively powerful in their own rights, potential rivals would be able to mitigate a powerful incumbent CEO’s capacity to consume a disproportionate share of the *TMG*’s compensation resources.

Several proxies (the proportion of insiders on the board, the proportion of shares held by the *TMG*, and the presence of a separate COO) of relative *TMG* power were used as moderators of the individual measures of *TMG* pay disparities. Among the many relationships tested, only Prestige Power (the number of external boards on which the incumbent CEO serves) is affected by the relative power of other members of the *TMG*. As was expected, and as is consistent with extant empirical work (Zhang, 2006), the presence of a separate COO served to limit the extent to which CEOs with prestige power might extract disproportionate pay. It is possible that this finding is indicative of CEOs being somewhat less present in their “home” firms when they participate on a number of external corporate boards to the extent that a competent, and highly paid, COO serves (somewhat) as a surrogate.

On the other hand, the proportion of shares held by the non-CEO *TMG* members had a very strong and positive effect on *TMG* pay disparities. This result is counter to extant theory (Shen & Cannella, 2002) and the theory developed in chapter 3. For example, Shen & Cannella, Jr. (2002) found that the equity ownership of non-CEO members of the *TMG* was positively linked with CEO dismissal followed by inside succession although it was not related to CEO dismissal followed by outside succession. Findings in this study may indicate that non-CEO *TMG* members may be paid largely in the way of long-term equity rather than with short-term compensation.

6.4 *TMG* Pay Disparities and Subsequent Financial Performance

Based on the economic and behavioral perspectives of *TMG* pay disparities discussed in chapter 3, I developed competing hypotheses that predicted (1) that *TMG* pay disparities (in year t_2) would lead to better subsequent financial performance

(economic perspective) in year t_{-1} , or (2) that *TMG* pay disparities (in year t_{-2}) would lead to worse subsequent financial performance (behavioral perspective) in year t_{-1} . In terms of the economic perspective, the predicted relationship was based on the argument that performance-related benefits would accrue to firms as a function of wider *TMG* pay disparities. The argument holds that disparities in pay within the *TMG* will serve to motivate higher levels of individual performance among tournament participants that result in the most qualified (or competitive) individual among them achieving the CEO's job. Further, it is argued that such competition results in higher levels of subsequent organizational performance.

On the other hand, and with respect to the behavioral perspective, it was argued that relatively large disparities in pay within the *TMG* would result in a reduced capacity of the *TMG* to function as a cohesive unit with coordinated action because cognitive dissonance regarding disparities in pay would lead to perceptions of inequity and injustice regarding the rewards structure. Consistent with results supporting the economic perspective of *TMG* pay disparities, results of this study indicate that, at relatively low levels of *TMG* pay disparities, subsequent firm performance increases as a result of the higher levels of individual performance that results from the vigorous competition associated with the use of sequential elimination tournaments.

However, based on the logic that an optimal level of individual competition for the top job would result in higher levels of organizational performance, I argued that benefits to subsequent performance would obtain *only* to the point that such competition would result in the cognitive dissonance, feelings of injustice, and political behavior that would result from excessively high levels of pay disparities within the *TMG*. In as much,

Hypothesis 12 integrates both the economic and behavioral perspectives of *TMG* pay disparities. Although never tested in the context of *TMG* pay disparities, results strongly support such theoretical integration and indicate that *TMG* pay disparities is both beneficial and deleterious to subsequent financial performance depending on the extent to which their presence breeds individual competition among potential rivals in the *TMG*.

Of particular interest is that the relationship between *TMG* pay disparities and subsequent financial performance held *only* when ROA was used as a measure of performance. This insight may suggest two things: (1) that the sociopolitical effects of *TMG* pay disparities impact only the operational capabilities of the firm; and, (2) that capital market stakeholders may not have the opportunity to observe the performance-related (sociopolitical) effects of *TMG* pay disparities. This is an empirical question that should be evaluated in subsequent research.

6.5 The Role of Coordination Needs

Based on the arguments developed in the industry dynamism (e.g. Boyd & Gove, 2007; Dess & Beard, 1984; Eisenhardt & Bourgeois, 1988) and coordination needs (e.g. Siegel & Hambrick, 2005; Thompson, 1967) literatures, it was argued that the effects of relatively disparate pay within *TMGs* would be deleterious to subsequent financial performance. The argument was based on the notion that *TMGs* who operate in industry environments are more required to collaborate, cooperate, and to coordinate their activities in order to achieve peak “team” and organizational and performance. To the extent that pay is disparate within *TMGs* in industry environments that are characterized by relatively high levels of uncertainty and volatility, it was expected that subsequent financial performance would suffer. Although support is weak, results are entirely

consistent with this line of reasoning in that *TMG* pay disparities worsen subsequent financial performance in industries that are characterized by volatility.

6.6 Multidimensionality of CEO Power

Results of this study support those originally shown by Finkelstein (1992). Specifically, the confirmatory factor analysis indicates that CEO power is, indeed, multidimensional. Further, CEO Power may be modeled as a latent factor that is comprised of 3 unique dimensions: Structural, Ownership, and Prestige. Results also indicate that Structural Power is accurately represented by CEO Duality, Interdependent Directors, and CEO Tenure, that Ownership Power is represented by Equity Shares Held – CEO and Founder Status, and that Prestige Power is represented by External Boards and Elite Education represent Prestige Power.

Although the confirmatory factor analysis identifies the nature of CEO Power as multidimensional, among the previously identified latent factors only Ownership Power appears to be linked with *TMG* Pay Disparities. This finding echoes those emanating from both preliminary regression analyses and path analysis. It should also be noted that the latent model did not adequately fit the data as is indicated by relatively poor fit indices. One of the primary causes of the relatively poor fit may be that many of the measures are under-identified (specifically, *TMG* Pay Disparities and Subsequent Financial Performance) in that they were single-indicated. In as much, one of the primary benefits (correction for measurement error) of using structured equation modeling could not be achieved.

6.7 Theoretical Implications

The findings of this study have important theoretical implications in terms of both the antecedents and performance-related implications of financial performance. First, evidence shows 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 manner in which power is distributed across *TMG* members. This research suggests that powerful CEOs use their power (specifically, power associated with ownership and location in the structural hierarchy) to consume a disproportionate share of the *TMG*'s compensation resources. This research also suggests that powerful CEOs may be able to do so without constraint and irrespective of the amount of discretion conveyed by the firm environment. It seems that the presence of a separate COO is the only factor that appears to mitigate this capacity (but, only in cases where the incumbent CEO participates on a number of external corporate boards). Hence, empirical investigation of the antecedents of *TMG* pay disparities should account for the contextual effect of distributions of power within the *TMG* as it appears that sociopolitical factors that are somewhat deterministic in how rewards are distributed.

Another important implication of this study regards the extent to which *TMG* pay disparities affect subsequent financial performance. Findings indicate that both the economic and behavioral perspectives have some merit in explaining the relationship between *TMG* pay disparities and subsequent financial performance. That is, while individual competition seems to yield performance enhancements for the firm, this benefit is limited by the extent to which excessive individual competition may be

deleterious to subsequent financial performance. The evolution of theory should address the interplay of the economic and behavioral perspectives in identifying an optimal level of *TMG* pay disparities vis-à-vis subsequent financial performance. Findings also suggest that there may be some industry-specific effects. Specifically, theory should evolve to incorporate specification of industry effects in the evaluation of the *TMG* pay disparities/financial performance relationship.

6.8 Practical Implications

In addition to theoretical implications, the findings have important implications for practice. First, the results of this study indicate that powerful CEOs (specifically, those with relatively high equity share ownership and who enjoy founder status) 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).

While interesting, this finding has implications for the firm's financial performance. Specifically, after accounting for the effects of past performance and industry effects, it appears that the extent to which members of the *TMG* are paid as individuals (rather than collectively as a team) has real economic benefits/costs depending on the extent to which *TMG* pay is disparate.

The implications identified herein are important for compensation policy-makers and stakeholders in the governance context. For example, findings indicate that power within the *TMG* must be balanced to the extent that one powerful individual cannot direct the compensation policy to the exclusion of the benefit of others. Findings also suggest

that compensation should be devised so as to ensure that members of the *TMG* are paid as a collective so as to facilitate greater cohesion and coordinated action while incorporating the benefits of individual incentives that facilitate performance-enhancing individual competition.

6.9 Limitations and Directions for Future Research

As is the case with all empirical studies, this study is not without its limitations. The following limitations should be taken into consideration in the interpretation of the findings presented herein. First, as the sample was drawn from S&P 1500, the context of the study was confined to relatively large, publicly-traded companies that are domiciled in the United States. In as much, 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. Second, while the sample was constructed using time lags in order to allow for causal inference, the data is not purely longitudinal. In as much, the relationships that have been explicated statistically inform us as to how the constructs studied herein relate, and not whether they are stable over time. Last, 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. First, it opens up the question of 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 regarding

managerial power and behavioral agency (e.g. Wiseman & Gomez-Mejia, 1998) may inform the literature of the antecedents of *TMG* pay disparities in a more comprehensive and nuanced fashion. Additionally, findings also suggest that performance implications not only obtain, but that the effects of *TMG* pay disparities on performance are complex and somewhat specific to industry context. In as much, future research would benefit from evolving out of the either/or dichotomy between proponents of economic and behavioral perspectives to an integrated approach that recognizes the importance of both in advancing knowledge regarding the impact of this important phenomena on financial performance. Studies also echo the findings of previous research in that industry context seems to moderate the *TMG* pay disparities/subsequent financial performance relationship.

6.10 Contributions and Conclusions

The primary objective of this dissertation was to contribute to the evolving *TMG* pay disparities literature by developing insights into the causes and effects of this important phenomenon. Drawing on the managerial power, managerial discretion, governance, and equity literatures, this study investigated the role that *TMG* power (and, CEO power specifically) plays in the extent to which *TMG* pay is disparate. It also addressed questions regarding the effect that *TMG* pay disparities have on subsequent financial performance. By empirically examining a theoretical model that was developed in order to link CEO power, the relative power of other *TMG* members, and managerial discretion to *TMG* pay disparities, and *TMG* pay disparities to subsequent financial performance, this study makes some important 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 and Michel, 2002; Conyon et al., 2001; Hendrickson & 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 this study I developed a framework that is based largely on the role that CEO power plays in the extent to which *TMG* pay disparities exist. In doing so, it went beyond tournament theoretic explanations of the presence of disparate pay by incorporating a sociopolitical perspective. Doing so shines a light on how the distribution of power affects how rewards are distributed within the dominant coalition. 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 (e.g. CEO equity ownership). Additionally, findings suggest that any attempt to explain the performance consequences of *TMG* pay disparities should adopt an integrated approach that focuses on the interplay of economic and behavioral perspectives in tests of nonmonotonic relationships with financial performance.

In addition to extending the work on *TMG* pay disparities, this work suggests that researchers in strategic management and organization theory would be well-served to focus empirical efforts on the sources and implications of CEO power. Specifically, while this study indicates that CEO power emanates from multiple sources individually, it also suggests that such power may be used to pursue individual objectives irrespective of the amount of latitude conveyed by the firm environment or the constraints posed by potential rivals within the firm. In as much, it suggests that, when they are so motivated

to do so, powerful CEOs may act without constraint: an issue that may be addressed in the context of corporate governance.

Finally, this study makes an important contribution to the CEO/*TMG* compensation literature in that it indicates that firms tend to do better when their rewards' systems both (1) motivate competition among members of the *TMG*, and (2) recognize that, in excess, such competition may be deleterious to organizational performance. In as much, compensation policies should be devised in order to both facilitate competition while recognizing the need for motivating cohesive team play and coordinated action irrespective of industry context.

Overall, this dissertation presented some interesting new insights into the antecedents and consequences of *TMG* pay disparities. While the study provides answers to a number of theoretically and empirically interesting questions, it should also motivate inquiry designed to address unresolved issues in this evolving stream of research.

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