EXECUTIVE PAY AND CORPORATE PERFORMANCE:

A BEHAVIORAL APPROACH

by

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ABSTRACT

This research tested hypotheses proposing a link between executive compensation and the theory of escalation of commitment. Although agency theory, resource dependence, and legalistic explanations have contributed to understanding executive pay, behavioral interpretations such as the present one have been neglected in management literature in favor of a perspective that views the firm as a "black box."

The practice of decoupling executive pay from corporate performance, particularly when performance is poor, is analogous to classic laboratory escalation of commitment to a failing course of action. Since numerous laboratory studies have defined principles of escalation of commitment, it is appropriate and timely to test its principles more broadly in an applied context. Executive compensation, which results from the decision making processes of a board of directors, has immense potential as a milieu in which to test this theory.

A combination of archival and survey research was employed to test hypotheses. Multiple regression analysis evaluated the data, which was composed of 184 manufacturing firms and included 2,665 directors.

The study's major findings were (a) firm uncertainty was associated with decoupling of pay from performance, (b) demographic characteristics including diversity in education

and diversity in years on a board had significant effects on decoupling, and (c) including more female members on a board led to less decoupling of pay from performance by a board as a whole.

This research broadened the application of principles of escalation of commitment from the laboratory to a corporate setting. Results represent a first step toward the goal of understanding behavioral explanations of board processes, and thereby increasing value to shareholders.

For Inger, Ashley, Erica,

and for Jack

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CHAPTER ONE: INTRODUCTION

Executive compensation has been a fruitful domain for the efforts of organizational scholars, inspiring hundreds of articles in academic journals during the past two decades. In spite of this widespread investigation, fundamental issues remain unresolved. For one, there is equivocal data showing that top executives are paid for performance in that change in CEO compensation is mirrored by change in firm value (Coughlan & Schmidt, 1985; Kerr & Bettis, 1987; Loomis, 1982; Murphy, 1985). The phenomenon of CEO pay not being coupled to the performance of the corporations they lead increasingly puzzles economists, stockholders, political leaders, and observers of contemporary business practice. As a result, decoupling pay from executive performance has become a paradox that is unique in the world of work, and may have profound implications for strategists (Tang, 1988).

This paradox arises because economic thought proposes that executive compensation is an incentive paid to an individual to maximize value. When this individual's pay skyrockets even though the corporation flounders, the result is destruction rather than maximization of value (Scherer & Ross, 1990). Many find this especially troubling in cases where layoffs and downsizing accompany persistent escalation of executive pay.

Compensation paid to an executive represents a bond or commitment between an organization and an individual,

signaling what an organization values and what accomplishments it rewards (Milgrom & Roberts, 1991). Ideally, incentive contracts explicitly link the compensation an individual receives to the result of his/her efforts. Efficiency arguments suggest that a poor producer will not be retained, or in any case will not be highly paid. In the simplest terms, a compensation system "transforms the distribution of productivity to a distribution of earnings" (Lazear & Rosen, 1981:854).

Yet, to the dismay of many observers of compensation practice, this arrangement is abandoned at the highest levels of an organization when pay becomes decoupled from performance. The situation becomes one where financial commitment escalates continually while performance deteriorates. This is the classic definition of escalation of commitment as it is used in organizational behavior research (Staw, 1981). Thus, just as the escalation phenomenon can be created and replicated in laboratory settings, it is also a pattern of behavior that is acted out in the real world by corporate boards who set CEO pay while disregarding performance.

How can we best understand and explain why executives receive exorbitant salaries, even though the firms they lead are not performing well? Ideally, scholars will begin to pursue answers suggested by the science of human behavior. Until now, conventional lines of inquiry, principally drawn

from economics and finance, have left the decoupling paradox unresolved. Perhaps most critically, none of the predominant theoretical frameworks has paid sufficient attention to deliberations by boards of directors to set CEO pay.

This dissertation intends to fill this gap by positing a more comprehensive, behavior-based view of decoupling. The behavioral construct that will account for board actions is escalation of commitment. An incremental raising of financial stakes over time in the face of negative results forms the common ground between escalation of commitment as a theory of behavior and escalation of commitment as a theory of compensation.

Taking this approach to CEO pay is noteworthy in two important ways. First, it applies a behavioral focus to board actions, skirting the earlier economic discussions surrounding CEO pay (e.g., the extent to which the executive labor market is efficient or incentive alignment is present). Second, this framework broadens the range of situations where the theory of escalation behavior, primarily studied and reported in the psychological literature, may be applied.

This particular approach is unique because research on executive compensation has been dominated by economists and macro theorists. Typically, when one prevailing school of thought guides a field of inquiry, it represents a paradigm

that is rich in explanatory value, providing answers to a wealth of research questions. It commonly means that scholars have both arrived at a level of agreement regarding a method to study a question, and that a high degree of consensus has been reached concerning the answers. This is not so in this area of study.

Unfortunately, economic theory has failed to produce consensus regarding an interpretation for top executives' salaries. Whereas assumptions of rational utility maximization have allowed economists to model a variety of phenomena, in reality human beings have different goals, experiences, and risk preferences that operate in an often subjective and uncertain world (Stubbart, 1989). Where knowledge is incomplete and rationality is bounded, economic interpretations of executive compensation fail to resolve puzzling contradictions and ambiguities. Consequently, decoupling of CEO pay from performance has been observed but not fully explained.

The prospect of applying a theory of human behavior to executive compensation is not unjustified. A number of researchers have noted that a great deal still remains to be resolved (Kerr & Bettis, 1987; Leonard, 1990; Murthy & Salter, 1975; Wilson, Chacko, Schrader & Mullen, 1992). Specifically, Gomez-Mejia and Balkin (1992) found that only 20-30% of the variance in executive compensation is accounted for when all conceivable predictors are included

in prediction equations. Their conclusion, that executive compensation is far from an exact science--leaving ample room for personal interpretation--echoed that of O'Reilly, Main & Crystal (1988). Investigating tournaments and social comparison theory as determinants of executive pay, they found that despite contributions of economic theory, there is reason to believe that non-economic factors may be important predictors of executive salaries. In particular, O'Reilly et al. pointed to social and psychological explanations as holding the most promise for continued research.

Furthermore, supplementing economic arguments with explanations derived from theories of human behavior is an idea echoed by economists themselves. For example, Baker, Jensen, and Murphy (1988:615) suggested that it may be left to psychologists, behaviorists, and human resource consultants to describe something about human behavior and motivation "that is not yet captured in our economic models." Since economic theory and practice seem dissociated, they suggested that the challenge may be for economists to find ways to integrate uneconomic, behavioral notions into traditional economic models. Thus, there is a need to expand the customary marginal product explanation of CEO salary determination that is advanced by familiar economic models.

Beyond traditional economics, a number of other theoretical approaches have addressed executive compensation and its idiosyncracies. Agency theory (Eisenhardt, 1985; Fama, 1980; Jensen & Meckling, 1976; Tosi & Gomez-Mejia, 1989), configurations of firm ownership (Baysinger & Butler, 1985; Baysinger & Hoskisson, 1990; Walsh & Seward, 1990), executive power (Allen, 1981) and the economic theory of human capital (Agarwal, 1981; Blair & Kaserman, 1983; Murphy, 1986) have all served as explanatory frameworks for the observed decoupling of CEO pay and firm performance. Most of this literature can be placed in one of various ideological camps, and tends to be poorly, if at all, integrated with other behavioral or economic theories (Gomez-Mejia, 1994).

Largely for this reason, this dissertation presumes that a better understanding of how people make decisions, develop preferences, and act in groups holds promise for solving some of the puzzling paradox of decoupling CEO pay from performance. All these elements are commonly associated with the study of human behavior, yet they contribute to a useful approach that will both complement and extend economic explanations.

The question of the strength of a pay-performance link in executive compensation in the U.S. versus the presence of decoupling has been a controversial one, with strong advocates on both sides (c.f. Baumol, 1959; Crystal, 1990;

Tosi, Gomez-Mejia & Moody, 1991). For example, Murphy (1986) found a powerful pay-performance relationship in a sample of nearly 1,200 large U.S. corporations over a period of ten years. Nonetheless others, using a variety of measures of performance, have established that little or no relationship exists between the two (Murthy & Salter, 1975; Platt & McCarthy, 1985; Sethi & Namiki, 1986). In addition to the practitioner literature, there is also a body of scholarly research on the CEO pay-performance linkage, showing the correlation to be weak at best (e.g., Dyl, 1985; Redling, 1981; Rich & Larson 1984; Wilson et al., 1992).

Table 1 summarizes and presents diverging evidence about the pay-performance relationship. The table offers a summary of recently published articles on executive pay and its relation to corporate performance and other factors. Panel A lists articles supporting a positive relationship, one where pay is linked or coupled to performance; Panel B presents those that suggest a negative relationship prevails--that is, one in which pay is decoupled from performance. Supplementary perspectives used to explain executive pay are presented in Panel C. On balance, articles in academic publications, particularly those appearing in economics and finance journals, support a positive relationship between executive pay and corporate performance. By contrast, the practitioner or popular press

Table 1.

Academic and practitioner articles reporting explanations for executive pay

Panel A

Coupled relationship between pay and performance:

Author & Date	Publication	Journal Type
Ciscel & Carrol 1980	Review of Economics and Statistics	Academic
Coughlan & Schmidt 1985	Journal of Accounting and Economics	Academic
Hirschey & Pappas 1981	Southern Economic Review	Academic
Lewellen & Huntsman 1970	American Economic Review	Academic
Masson 1971	Journal of Political Economy	Academic
McGuire, Chiu & Elbing 1962	American Economic Review	Academic
Murphy 1985	Journal of Accounting and Economics	Academic

Table 1 cont.

Murphy 1986	Harvard Business Review	Practitioner
Panel B		
Decoupled relationship between pay and performance:		
Byrne et al. 1994	Business Week	Practitioner
Crystal 1990	Fortune	Practitioner
Jensen & Murphy 1990	Journal of Political Economy	Academic
Kerr & Bettis 1987	Academy of Management Journal	Academic
Leonard 1990	Industrial and Labor Relations Review	Academic
Loomis 1982	Fortune	Practitioner
Murthy & Salter 1975	Harvard Business Review	Practitioner
Platt & McCarthy 1985	Business Horizons	Practitioner

Table 1 cont.

Redling 1981	Compensation Review	Practitioner
Sethi & Namiki 1986	Directors & Boards	Practitioner
Tosi & Gomez-Mejia 1989	Administrative Science Quarterly	Academic
Wilson, Chacko, Schrader & Mullen 1992	Journal of Business and Psychology	Academic
Panel C		
Other factors explaining pay:		
Agarwal 1981 (Human Capital)	Industrial Relations	Practitioner
Allen 1981 (Power)	American Journal of Sociology	Academic

Table 1 cont.

Baysinger & Hoskisson 1980 (Configurations of firm ownership)	Academy of Management Review	Academic
Boyd 1994 (Board Control)	Strategic Management Journal	Academic
Dyl 1988 (Configurations of firm ownership)	Managerial and Decision Economics	Academic
Walsh & Seward 1990 (Social comparison)	Academy of Management Review	Academic

takes the opposite view. The issue is highly salient because practitioner writings are more likely to reach American workers, stock owners, and other stakeholders, and shape their attitudes. A generally held perception suggesting that pay packages of executives are unreasonable has the potential to undermine productivity and ultimately competitiveness.

One reason why escalation of commitment is so well suited to the study of executive compensation is that researchers who investigate escalation of commitment are concerned with decision making over time. This aspect of the creation of compensation packages that economists usually ignore. For example, what can research predict about compensation decisions when they are observed as discrete decision points occurring in a continuous series of human events?

The parallels between escalation of commitment and compensation practices are abundant. This is especially true because escalation research investigates decisions involving resources and their use to produce either financial or social improvement (Bateman, 1986). Similarity is apparent between this process and the process of providing an incentive to an individual to maximize firm value. To students of human behavior, decisions to commit resources set the stage for later decisions: whether to abandon a course of action, to maintain a course of action,

or to increase financial support for an action. While the latter alternative may become escalation of commitment under the proper circumstances, this same decision process and its three possible alternatives also accurately describe the mechanics of agreeing on compensation for an executive. Insofar as pay represents a commitment by a firm to a CEO, the principles are the same. Whether one considers financial commitment to a project or financial commitment to an executive, the choices are abandoning, maintaining or increasing support.

This phenomenon is interesting to study because, surprisingly, decisions to increase support are often made in the face of clear evidence that success will not be forthcoming (Brockner, 1992; Davis & Bobko, 1986; Staw, 1981). The analogy to classic laboratory escalation studies is most pronounced when firm performance is not positive, but CEO pay nonetheless continues to rise. Pay is decoupled from performance, and in a real sense represents a commitment to a failing course of action.

Until now, executive compensation literature has been dominated by macro scholars drawing from economics and sociology and has ignored behavioral dimensions of decision making (e.g., Ciscel & Carroll, 1980; McGuire, Chiu & Elbing, 1962). Nonetheless, there is a wealth of information and research in organizational behavior that bear on the question of decoupling pay and performance.

The thesis advanced here is that the theory of escalation of commitment addresses this problem aptly. It represents a perspective that can remedy shortcomings of approaches that have overlooked the process in executive compensation. Furthermore, principles of escalation of commitment apply especially well to the primary decision makers setting top management compensation: the board of directors. Investigating escalation of commitment in this context will answer a need for broader conceptual development of the way boards deliberate. In short, a behavioral approach that identifies psychological processes that underlie compensation decisions is called for. Its value is that a behavioral approach goes beyond environmental and board composition variables studied in more traditional macro investigations and considers a range of psychological components that influence board actions.

Thus, this dissertation aims to provide a meaningful addition to existing theoretical knowledge of board functioning, focusing on behavioral aspects that have previously been overlooked. To begin, theoretical frameworks concerning boards of directors are traced, as are processes in board deliberations that decouple CEO pay from performance. Next, a framework is presented that provides a logical basis for understanding escalation behavior by boards of directors who decouple CEO pay and corporate performance. Finally, hypotheses are offered and tested

that apply principles of escalation of commitment to board of directors' compensation decisions.

CHAPTER TWO: BACKGROUND LITERATURE

Contributions of Agency Theory

A majority of the research on the role of boards of directors has been done from the perspective of agency theory (Zahra & Pearce, 1989). Beginning with the work of Berle and Means (1932) and Coase (1937), advocates of this approach suggest that an agency relationship exists between an executive (agent) and the owners (principals) of a firm (Fama & Jensen, 1983; Jensen & Meckling, 1976; Shavell, 1979). Owners contract with an executive to act on their behalf and manage an enterprise but are not in a position to know all an executive's actions in the course of doing so (Fama & Jensen, 1983; Tosi & Gomez-Mejia, 1989). Since an executive/agent is believed to be motivated by self-interest, it becomes necessary to monitor his or her activities. Commonly, a board of directors takes on the role of governance mechanism in monitoring an executive's performance (Baysinger & Hoskisson, 1990; Walsh & Seward, 1990).

The board of directors is widely acknowledged as the major internal corporate control mechanism (Coughlan & Schmidt, 1985). Meanwhile, two goals of board monitoring are (a) to protect shareholder interests, and (b) to align the incentives of each party (Eisenhardt, 1989). Ideally, because of the rich information that boards may provide to owners, their monitoring serves to reduce potential agency conflicts.

Jensen and Meckling (1976) suggested that agency costs are as real as any other costs in publicly held corporations. If true, reducing these costs is a primary function of a board of directors. Following the agency theory framework, principals take into account information provided by a board and reward agents accordingly (Eisenhardt, 1985). To agency theorists, the emphasis is always on rewards. On one hand, this helps to explain why executive compensation, or any pay arrangement involving an employer and employee, is so readily amenable to investigations of agency theory. However agency theory treats the firm as a black box and often only partially explains the actions of boards of directors (Baker, Jensen & Murphy, 1988; Jensen & Murphy, 1990).

Empirical examinations of agency theory propositions have largely ignored behavioral mechanisms in favor of focusing on the firm as the unit of analysis (Tosi & Gomez-Mejia, 1992). Consequently, rather than resorting to subjective evaluation or description of behaviors, scholars have instead chosen objective measures of performance to illustrate agency theory. The result has been emphasis on budgets, return on investment, stock appreciation and return on common equity as evidence of agency relationships in firms. The behavioral side of agency theory has been neglected.

Investigating escalation of commitment by boards, and potentially explaining their actions in terms of theories of organizational behavior, may address questions left unresolved by agency theory. This research offers hypotheses that may be a starting point for such an investigation and then proceeds to test them.

To begin, consider board monitoring. Baysinger & Hoskisson (1990) argued that there are qualitative differences between monitoring done by internal versus external board members. Specifically, both amount and quality of information possessed by inside directors should be superior to that of any outside director. Inside directors have greater opportunities to observe a CEO (Baysinger & Butler, 1985; Hoskisson & Turk, 1990; Walsh & Seward, 1990), and this advantage should shape the methods they use to set executive pay. For example, they may have a working and personal relationship with the CEO that spans many years. In fact, Burt (1980) concluded that a firm is less an economic than a social unit of analysis. Consequently, evaluations of CEO performance, and hence attendant rewards, are more likely subjectively based when internal directors are involved.

Outside directors approach monitoring differently. Often serving on multiple boards and having firms of their own to run (Patton & Baker, 1987; Nader, 1984), they necessarily make evaluations and reward top management

primarily in terms of firm outcomes. Thus, despite qualitative differences between inside and outside directors, monitoring as an internal control mechanism is as close to being a behavioral construct as any that can be found in agency theory.

It is useful to consider why organizations perfer objective evaluation. A persuasive explanation for replacing subjective with objective measures was offered by Baker, Jensen & Murphy (1988). They suggested that the concept of "trust" lies at the heart of this preference. Subjective appraisal systems are unpopular because employees do not trust superiors to evaluate their performance accurately. Thus, objective measures are adopted for their presumably superior validity over subjectively based appraisal systems.

In the case of an executive and a board of directors, higher interpersonal trust may prevail compared with typical supervisor-subordinate relationships. A cadre of board members is personally selected by a CEO to a great extent based on trust, and frequently also on long-standing personal and professional ties (Vance, 1983). Within the upper echelons of a corporation, these bonds may cause objective performance measures to be abandoned in favor of more subjective ones.

When board members are internal--that is, individuals who have worked in a firm for much of their careers--

presumably an ensuing level of interpersonal trust between directors and CEO is even more likely to preclude discomfort with subjective evaluation. This is a fundamental cause of monitoring differences between internal and external board members.

The Legalistic Approach

Observing a corporate entity from an agency theory perspective has been supplemented by taking legal issues into account. Since the writings of Jensen and Meckling (1976), corporations have been thought of as a nexus of contracts among self-interested participants. In some ways, the contractual nature of board functioning can be twofold. There is both an informal contract and a formalized process whereby boards influence corporate performance via legal mandate. However, advocates of a behavioral approach contend that the legalistic viewpoint cannot account for individual differences and preferences among board members. It is a formulaic approach that ignores directors' personal contributions to pay design.

To illustrate, according to the Revised Model Business Corporation Act (1985), boards are responsible for corporate leadership. To this end, some writers see the maintenance of exceptional corporate leadership as a board's most enduring responsibility (Patton & Baker, 1987). However, other responsibilities also claim board attention. For example, boards are charged with selecting and replacing a

CEO, as well as with establishing his or her pay level. Boards also have legal responsibility for advising top management and serving as a control mechanism by monitoring executive and company performance (Zahra & Pearce, 1989). Any of these functions can be, and probably are, influenced by the way this group of individuals interacts collectively, how they arrive at decisions, and by the individual characteristics each brings to the situation. In other words, relying on the legalistic approach without considering human behavior and group processes is an impoverished explanation for board behavior.

Another way the legalistic perspective breaks down is that control may be more evident in theory than in practice. This is because nominations to a board are made by a CEO, who may choose individuals he/she can manipulate (Vance, 1983; Zahra & Pearce, 1989; Zeitlin, 1974). At the very least, serving at the pleasure of the CEO and receiving generous pay and perks, directors are not inclined to oppose but to rubber stamp executive policies and actions (Tosi, Gomez-Mejia & Moody, 1991; Burt, 1980).

Directors may also be aligned economically and personally with top management in spite of whatever legal mandates they are charged with carrying out. Baysinger and Butler (1985) suggested that this alignment may lead to functioning in ways that are at odds with governance specified by law.

Presently the American legal system presumes that boards of directors act properly and on an informed basis. To illustrate, the "business judgment rule" presupposes that directors act in the best interests of a corporation, and that they always make full disclosures to stockholders (Loevinger, 1986). More recently, courts have begun to recognize that directors also fulfill various functions as stewards of stockholders, employees, customers, suppliers, and communities in which a corporation does business. Since boards play all of these parts in addition to a more familiar fiduciary role, studying their internal functioning and how escalation of commitment could enter in may be an important step in understanding the outcomes they generate.

In sum, beside recognizing that a board of directors is a legally mandated entity, one that answers to tradition as well as to statute, relying strictly on a legalistic approach to its study overlooks the fact that directors are individuals first and foremost. As such, they may act in ways that individually influence a corporation for better or worse. Consequently, since legal imperatives do not prevent persons from behaving in idiosyncratic ways, they do not guarantee that all agency conflicts will be resolved without cost to an organization.

Presently, considering the actual behaviors of directors themselves is still an underexplored area with great potential for answering questions about board

functioning. It is particularly intriguing that exploration using a process-oriented inquiry may advance understanding of how escalation of commitment determines the way boards set executive pay.

Resource Dependence

A number of researchers have investigated functioning of boards of directors from a resource dependence perspective (e.g., Bazerman & Schoorman, 1983; Burt, 1980; Pfeffer, 1972, 1973). Typically, they have studied interlocks between directors serving concurrently on multiple boards as a way to reduce environmental uncertainty and enhance company performance. The emphasis from this particular theoretical perspective has been on a board's assuming a more active strategic role. Missing has been any consideration of what behaviors might contribute to the process of doing so (Zahra & Pearce, 1989).

Further, while the resource dependence framework has focused on managing the environment from a strategic standpoint, it has tended to ignore the reciprocal, that is: environmental forces that meaningfully impinge on an organization. Considering a firm as an entity influenced by available resources leads to a fuller understanding of how those resources might prevail upon board processes. In order to do this, the milieu of the corporate environment may be examined in the context of principles of escalation of commitment.

For example, is it possible that perception of available resources may lead directors to decouple executive pay from performance in an ever-increasing (escalating) manner? Is there a likelihood that this could happen if a firm operated in a relatively munificent environment, one where there was abundant growth and plenty of liquid capital resources? Well-understood mechanisms undergirding escalation of commitment theory suggest this might indeed happen (Rubin & Brockner, 1975; Rubin, Brockner, Small-Weil & Nathanson, 1980). Thus, studying the behavior of board functioning need not preclude a resource-based view of the firm, but may supplement it in ways that expand understanding of how directors make compensation decisions. Taking a behavioral view of executive compensation via the theory of escalation of commitment is likely to enrich understanding of the resource based view of board functioning.

Escalation of Commitment

On one level, an individual's commitment to an organization is most often defined as: a belief in and acceptance of the organization's goals and values; a willingness to exert considerable effort on behalf of the organization; and a strong desire to maintain membership in the organization (Mowday, Porter & Steers, 1982). Organizational commitment so defined emphasizes the psychological component of a relationship between an

individual and an organization. Increasingly, research has enlarged our understanding of commitment to include a more behavioral and calculative bond that an individual forms toward an organization--a view of commitment that is tied to the sunk costs and side bets one contracts with it (Becker, 1992).

Thus, at the individual level, there appear to be two factors involved. Whether designated psychological and behavioral commitment, or value and continuance commitment (Mayer & Schoorman, 1992), these two factors represent attitudinal or value attachment on one hand, and a motivation to participate based on personal gain on the other. Both components play integral parts in escalation of commitment studies. Meanwhile, enlarging these concepts from an individual to a group level has become the next task of researchers.

Positive consequences of high commitment in organizations may include low turnover rates, group cohesiveness, common goals, and increased organizational effectiveness (Mowday, Porter & Steers, 1982). However, too much commitment may also prove dysfunctional, including reduced organizational flexibility and excessive entrenchment in past policies (Randall, 1987). Consequently, while high commitment can often be advantageous, high commitment to a failing course of action is seldom so. This is the phenomenon variously called

"entrapment" (Brockner, Houser, Birnbaum, Lloyd, Deitcher, Nathanson & Rubin, 1986; Rubin, Brockner, Small-Weil & Nathanson, 1980), "escalation" (Davis & Bobko, 1986; Ross & Staw, 1986) "knee-deep in the Big Muddy" (Staw, 1976), the "Rosencrantz and Guildenstern effect" (Rubin & Brockner, 1975), and is most widely known as "escalation of commitment" (Brockner, 1992; Staw, 1981).

In empirical studies of escalation behavior (Bateman, 1986; Bazerman, Giuliano & Appelman, 1984; Garland, 1990; Rubin & Brockner, 1975; Whyte, 1993), student subjects committed increasing amounts of either real or hypothetical cash to scenarios created in the laboratory. In cases where the paper project was a failing one, subjects typically increase their level of financial commitment and escalate it over time. The beauty of such laboratory studies is that hypothetical dollars spent becomes a ready proxy for escalation of commitment. Although a majority of research in this field has been devoted to individuals' tendency to escalate, the possibility of escalation of commitment involving decision making groups also arises.

Defining characteristics of escalation of commitment include: an incremental raising of financial (most commonly) stakes over time, an external justification process, and persistence with a course of action well beyond the point where it could be justified monetarily. Brockner's (1992) extensive review of facets of escalation theory also

proposed that decision makers should have a genuine choice in the question of whether or not to go forward; there must be repeated decision points accompanied by feedback on prior resource allocations; and uncertainty should prevail regarding goal attainment. All of these parameters are met when boards of directors decouple CEO pay from performance.

Research on escalation of commitment has primarily investigated individuals committing to a paper project in a laboratory setting. Staw & Ross (1987:42) noted that escalation research is "plagued by laboratory thinking." Later, Whyte (1993) urged that researchers pursue the external validity of the laboratory studies done to date. Besides laboratory evidence, case histories abound recounting tales of corporations and government entities involved in escalation situations (e.g., Ross & Staw, 1986; 1993). Yet, surprisingly, no work has been done in either the laboratory or in the field exploring escalation of commitment by a group or organization to an individual. This is an important issue partly because greater emphasis is placed today on decisions made within groups. From the production line to the boardroom, the importance of individuals operating alone in organizations is waning, and group decisions are widely consequential and pervasive (Donaldson & Lorsch, 1983; Manz & Sims, 1993).

Until now, scholarly literature provides no suggestion that the theory of escalation of commitment may generalize

in this particular manner. Nonetheless, there is no compelling logical reason why it should not, since Staw (1976) concluded that the same process of escalation may occur in many decision contexts. Compensation of CEOs provides a natural opportunity not only to expand the theory, but to test its effects outside a laboratory setting.

CHAPTER THREE: DEVELOPMENT OF RESEARCH HYPOTHESES

An assumption of this, or indeed any research on a complex topic, is that the phenomenon can lend itself to more than one explanation. Certainly there are multiple explanations for escalation, ranging from environmental to psychological reasons causing it to occur (Brockner, 1992). The study of board commitment to a CEO suggests three general categories of determinants of escalation, summarized in the conceptual model shown in Figure 1. Recognizing a board's resource dependence, and that it operates in an environment that influences it in meaningful ways, contextual variables are acknowledged in the model.

Characteristics of board composition comprise a second broad category of escalation determinants. Examples of such variables include educational background of directors, their age and gender.

Finally, the framework includes psychological correlates that have been supported in escalation research. Laboratory, and frequently case studies, identify these factors which include dissonance, self-justification, and reinforcement history. Each has direct and testable application to the question of board of directors' commitment to a CEO. All these components of escalation suggest hypotheses that are investigated in this dissertation. The hypotheses and their proposed relationship to decoupling are summarized in Figure 2.

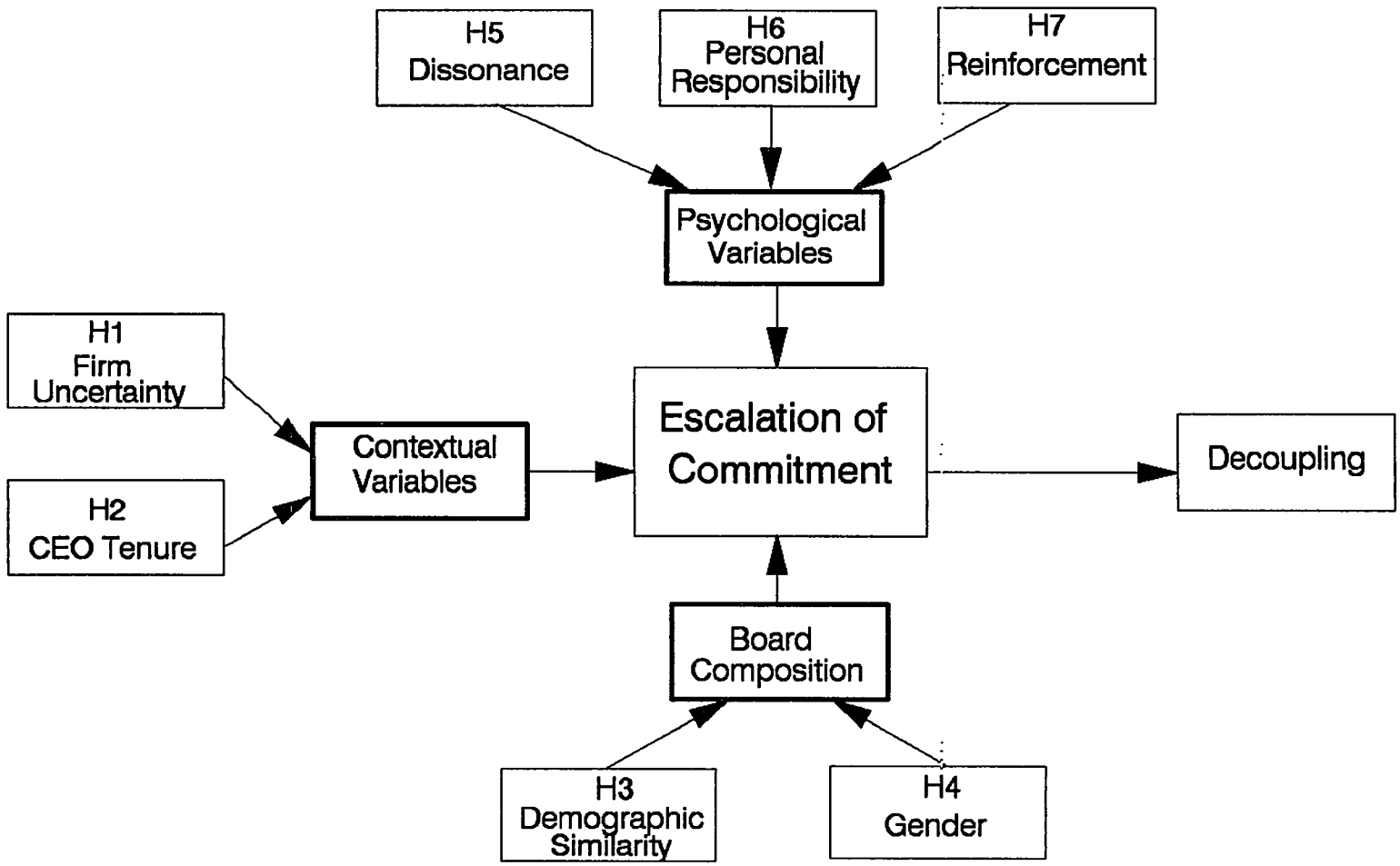

Figure 1. Conceptual model of hypotheses.

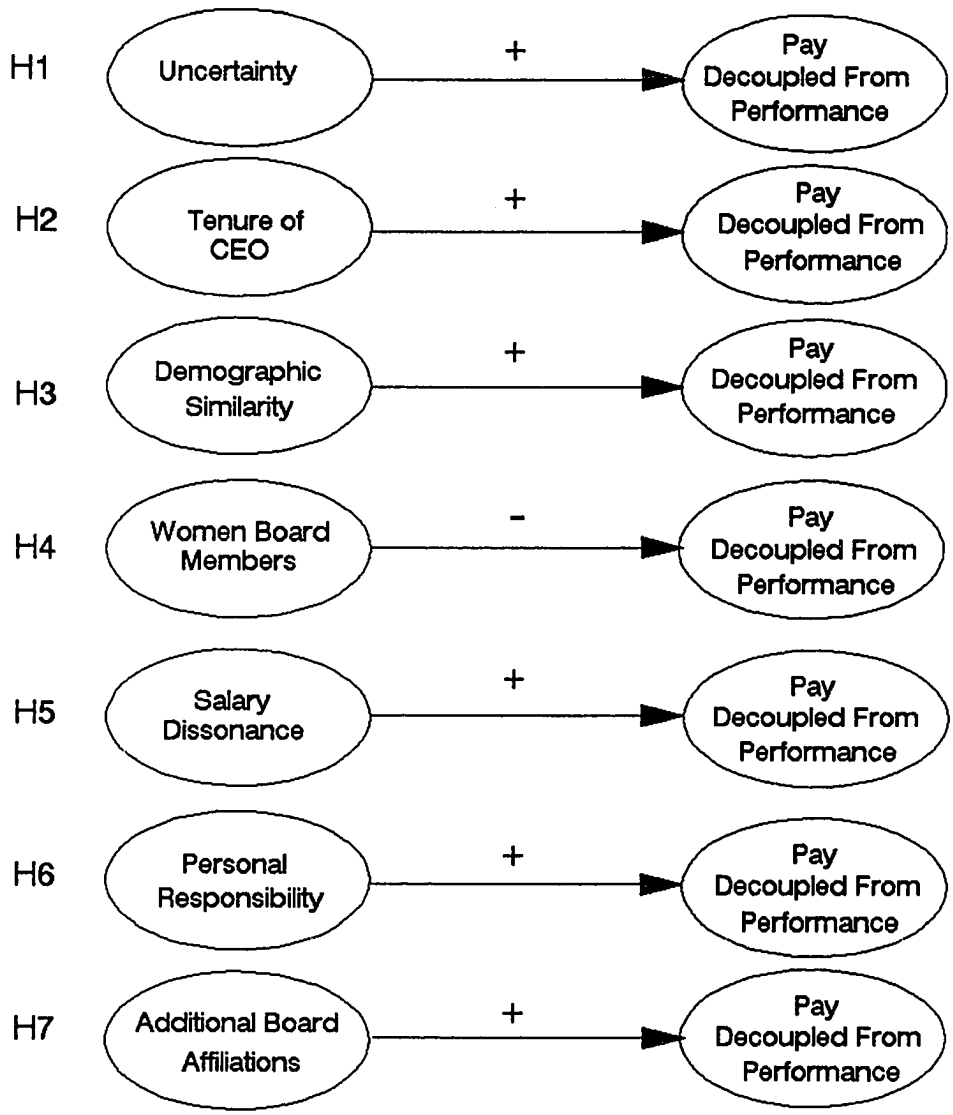

Figure 2. Hypothesized relationships among variables.

Although Figure 1 provides a convenient organizing framework, the literature suggests still other ways to summarize and/or categorize explanations for escalation. Two are worth noting. First, Brockner and Rubin (1985) discussed four types of social variables that influence escalating commitment. Their approach to the problem was supplanted by Brockner's (1992) later review of escalation research. In this review, he concluded that explanations generally fall into one of only two general categories.

The first stream argued that expectancy theory (e.g., Vroom, 1964) best explains underlying causes for escalation of commitment. That is, decision makers intuitively assess the probability that continued resource allocations will eventually result in goal attainment. Further, at some point people make a judgment regarding both the proximity of a goal and the actual value of a particular goal. Individuals analyze potential rewards minus costs, and the resulting analysis produces a subjective expected utility function and a decision whether or not to escalate by committing additional resources.

A second category of explanation, entirely apart from expectancy theory, explains escalation of commitment in terms of self-justifying or rationalizing behavior (Bazerman, Beekun & Schoorman, 1982; Caldwell & O'Reilly, 1982; Ross & Staw, 1986; Staw, 1976; Staw & Fox, 1977). This explanation draws from Festinger's (1957) concept of

cognitive dissonance and argues the following: to vindicate a decision to commit to a particular course of action, an individual will become enmeshed in a cycle of further commitment and escalation, allowing him/her to avoid admitting to others (or him/herself) that resources were committed in vain. According to self-justification theory, negative feedback from the environment triggers entrapment in escalation situations because increased commitment allows the involved person to avoid admitting any previous decisions or cash outlays were mistakes. A more detailed look at these two frameworks for understanding escalation of commitment follows.

Probability and Framing

The first of Brockner's (1992) two general approaches toward explaining escalation is qualitatively more of a mathematic than a psychological approach. The thrust of this stream of research is to look at escalation as a consequence of prospect theory and the framing of decisions (Kahneman & Tversky, 1979, 1984; Whyte, 1986; 1989). This perspective on escalation forms the theoretical underpinnings of other research (e.g., Bateman & Zeithaml, 1989; Bowen, 1987; Davis & Bobko, 1986; Feigenbaum & Thomas, 1988; Kernan & Lord, 1989; Sandelands, Brockner & Glynn, 1988; Tang, 1988) that relies more on characteristics of the decision task itself than on self-justification in explaining escalation.

Expressed most simply, prospect theory tells us that individuals seek risks when they suffer losses, and avoid risks when they do not. Escalation theory becomes an extension of prospect theory simply by treating escalation of commitment as another form of risk seeking. By this logic, firms that are troubled or that receive failure feedback will be risk seeking and consequently more likely to escalate commitment (Bateman & Zeithaml, 1989; Bowman, 1982). When coupled with the concept of industry instability, this is the theoretical genesis of the first hypothesis that this dissertation will explore.

In simplest terms, one way to look at escalation is to couch it in the framework of probability. This was the approach taken in Levi's (1982) work showing that decision makers escalate their commitment to a failing course of action more often if they perceive the reasons for negative feedback as unstable rather than stable. Meanwhile, feedback is broadly defined as incoming information from the environment (Kernan & Lord, 1989).

The Meaning of Instability

Instability, or uncertainty, creates a favorable medium in which escalation thrives. Laboratory studies have confirmed that when decision makers believe reasons for negative feedback--that is poor results--are unstable rather than stable, they are more likely to escalate their commitment to a failing course of action. The presumption

is that they view additional cash allocations as more likely to attain goals in the former than the latter circumstance (Brockner, 1992). Consequently individuals who believe a deteriorating situation is volatile or highly changeable are more likely to spend money to achieve a desired result. A stable situation, on the other hand, does not yield as much hope of change, and added cash investment appears an unwise choice.

In laboratory research, environmental instability is operationalized through scenario creation. However instability is abundant and naturally occurring to real organizations. Certainly it is evident to boards of directors of firms operating in volatile industries. Faced with instability and the hope but not the certainty of positive outcomes, boards are likely to follow a pattern of behavior commonly seen in laboratory studies: escalation of commitment in the form of increased cash paid to an executive.

Interest in this topic dates to the work of Lawrence and Lorsch (1967), when they saw rate of growth, rate of product development, customers with unpredictable needs, and rapidly changing technologies as hallmarks of uncertain, unstable environments. Today researchers usually conceive of instability in industry as involving both volatile markets and rapidly changing technologies accompanied by high ambiguity and uncertainty. These components are often

hailed as characteristic of high technology industries (Ferris & Buckley, 1990). However a number of other factors are often associated with perceived environmental uncertainty (PEU): changing government policies, economic conditions, monetary policies, and general external factors. Thus, PEU is the degree of predictability of all the components of the environment taken together (Javidan, 1984).

Familiar examples of unstable industries include airlines, trucking, savings and loan, women's outerwear, software, and biotechnology. The PEU of these industries may be volatile for any of a number of reasons, and negative feedback might include low ROI, loss of market share, or other measures of financial performance. Whatever the source of negative feedback, lack of predictability is a hallmark of an uncertain environment, a milieu in which escalation behavior will flourish.

When combining the study of compensation and escalation of commitment, it should be possible to study the relationship between CEOs enjoying pay decoupled from corporate performance vis-à-vis the instability of the firms with which they are associated. There is some precedence for employing this approach. In a laboratory study, Umanath, Ray and Campbell (1993) found that an increase in PEU prompted principals to increase the value of compensation contracts they awarded. Further, Rajagopalan and Finkelstein (1992) investigated the relationship between

pay and industry environment as a consequence of monitoring costs.

However it could also be looked at within the framework of escalation of commitment. With the financial market providing regular feedback, all the necessary elements are present that theory tells us allow an escalation situation to arise. Because risk seeking or escalation of commitment is more likely to occur under conditions of instability or low returns, the following hypothesis is offered:

> Hypothesis 1: Boards of directors in firms where uncertainty predominates are more likely to escalate commitment to a CEO by decoupling pay from performance than are boards in stable firms.

Summary. Results from laboratory studies have confirmed that escalation behavior thrives in unstable or uncertain situations. Industries may exhibit volatility in varying degrees, but to parallel laboratory results, those experiencing greater uncertainty should also be those in which a board will escalate its financial commitment to a CEO. The surrogate for this phenomenon will be CEO pay that rises when firm performance does not. In short, CEO pay will be decoupled from firm performance as a result of escalation of commitment in industries where uncertainty rules.

The Role of Tenure

Some researchers have concluded that a long-term association between corporate headquarters and a manager raises issues of trust and commitment that may affect the design and operation of incentive contracts between them (Chodhury, 1985). Heightened trust may emerge as a result of intrinsic effects of a long term bonding process. The possibility of escalation of trust and commitment was not raised by Chodhury, but other scholars have noted the importance of a temporal aspect in escalation situations (Akerlof, 1991; Brockner, 1992; Staw & Ross, 1989).

Certainly one essential element in escalation of commitment is that these predicaments involve continuity over time (Staw & Ross, 1987). Rather than being discrete occurrences, they involve ongoing courses of action, frequently covering long time periods and projects that become institutionally embedded in an organization (Ross & Staw, 1986). Escalation cycles are not short-lived. This makes it somewhat inappropriate that they are most often studied in one-shot laboratory experiments or case studies (Hantula, 1992).

Another consideration introduced by the time factor is a possibility that over time dismantling of a project becomes more costly. Viewed at the level of a board and a CEO, the cost of severing ties between the two is also high. Not only are penalties for abrogated contracts likely to be stiff, but the board incurs high self-justification costs by

admitting a failed decision, and providing explanations to analysts, stockholders, and others.

Similarly, tenure of a CEO may directly lower his/her probability of being dismissed. Fredrickson, Hambrick and Baumrin (1988) concluded that the likelihood of a CEO's dismissal decreases the longer he or she holds office. They suggested that as a CEO's tenure lengthens, allegiance of the board increases. In the experimental literature, entrapment that occurs as a consequence of passage of time is one of the defining characteristic of escalation of commitment (Rubin & Brockner, 1975; Rubin et al., 1980). Thus, time tends to be viewed as both an investment and an expense.

Although time spent following a course of action is an investment to the extent that it increases any likelihood of goal attainment, it represents an expense in relation to the costs incurred by waiting, or to the opportunity costs of forsaking another activity to engage in waiting. Individuals commonly experience this dilemma when deciding how long to wait on "hold" on the telephone or how long to wait in line for ticksts. Despite the fact that costs increase with passage of time, so does presumed proximity to a reward. Waiting actually begets more waiting, escalating commitment to a goal. Consequently, the time factor has direct relevance to situations involving boards of directors and CEOs. Concepts of tenure and escalation of commitment

should be readily testable in corporate settings.

Hypothesis 2: The greater the tenure of a CEO, the more likely a board of directors will escalate commitment by decoupling pay from performance.

Summary. One of the recurring themes of this field of research is that escalation of commitment is heavily time dependent. Whereas this finding appears reliable in laboratory experiments, it should be equally robust in the field where corresponding artificial time limits are absent. Since entrapment occurring over time is a defining characteristic of escalation of commitment, the phenomenon should operate strongly in cases where CEO tenure is greatest.

Group Cohesiveness

Group cohesiveness as a moderator of escalation of commitment is a construct that is especially applicable to a board of directors and its commitment to a CEO. One often noted characteristic of a highly cohesive group is its tendency toward concurrence seeking, even to the point of making unreasoned decisions (Janis, 1982). Striving for unanimity in very cohesive groups overrides the motivation to realistically appraise alternative courses of action. Consequently, the best way to protect unanimity is to remain committed to the group's decision. A condition that impels groups toward concurrence seeking is the need to maintain a good relationship with other members (Whyte, 1989). This

condition operates in nearly every organizational decision context, and board deliberations are no exception. Consequently, a drive toward concurrence is augmented by concerns for social desirability and continued membership in the group.

Demographic similarity influences members' commitment to a group (Tsui, Egan, & O'Reilly, 1992). In their research, Tsui et al. affirmed that being demographically similar to others in a social unit directly increases psychological commitment to that unit. In the case of a board of directors, demographic similarity might be described by educational background, age, or by tenure on the board of its members. (Gender, the most widely researched of all demographic variables, will be discussed separately.) A highly homogeneous group, one that shares demographic similarity and the cohesiveness that flows from it, may more likely engage in escalation of commitment to protect its unanimity.

Demographic similarity of boards has been studied previously from the perspective of CEO influence over their members, giving rise to speculations regarding the effect this will have on executive compensation. Westphal (1994) found that greater demographic similarity between boards and CEOs increases total CEO compensation. The explanation he offered was that CEO/board demographic similarity allows a CEO to co-opt the board and thereby influence his/her own

compensation level. Another answer may lie in the drive for concurrence seeking that highly homogeneous groups share.

Hypothesis 3: When boards of directors share demographic attributes, their cohesiveness will result in escalation of commitment in the form of decoupling CEO pay from performance.

Summary. Since a cohesive group has a vested interest in protecting its unanimity, decisions become embedded and commitment to them to escalate. As commitment goes up, psychologically compelling in-group membership propels further commitment. This hypothesis suggests that demographic similarity will engender cohesiveness, which will in turn escalate commitment.

Gender Effects

There is a separate and growing body of literature on the role of gender in escalation of commitment. Empirical studies have concluded that males and females have distinctly different but characteristic reactions to entrapment situations (Bateman, 1986; Rubin et al., 1980). The difference primarily lies in aspects of the situation itself. Some entrapment situations are faced privately: deciding how long to persist on 'hold' on the telephone is one such private situation. Others are more public, or even social in nature, because the decisions are open to public scrutiny. Boards of directors, since they function as a group, as well as by virtue of being accountable to

stockholders, face the social variety of entrapment or escalation situation.

Empirical research has concluded that social entrapment elicits higher commitment, as measured by amount of money assigned to a project, than non-social conditions invoke. Further, the effect is stronger for men than for women. In cases where a predicament is not social, men are more inclined than women to attend to the economics of a situation. They may prefer to quit early rather than escalate. On the other hand, in social situations, Rubin (1980) concluded that men care more than women about the image they are projecting to their competitive adversary. Additionally, he concluded that men may be more concerned with justifying "macho" behavior. In social and public environments like those constraining a board of directors, preconditions exist for male board members to strongly escalate their commitment to a failing course of action, in this case compensation to a CEO.

Bateman's (1986) research, rather than focusing on the social or non-social aspects of a scenario, investigated decision making probabilities that were attended to differently by men and women. In his research, women were unaffected by results of previous decisions, and only committed additional funds when the probabilities of success were in their favor. Conversely, men who had succeeded previously were not only inattentive to information about

future probabilities, they actually reinvested more money when the odds of future success were 30 percent than when they were 70 percent.

Instead of a self-justifying explanation for the behavior, Bateman (1986) proposed the concept of reactance to interpret his results. Reactance is the motivational arousal caused by imminent threat to one's behavioral freedom or a barrier to one's preferred outcomes. Exhibiting reactance, an individual will attempt to restore his or her personal autonomy by going forward with, or escalating commitment to, a failing course of action. Bateman found that men, more than women, tend to display reactance. Because of this, evidence of poor firm performance, a barrier to a preferred outcome, could invoke reactance on the part of board members.

> Hypothesis 4: As the proportion of women members increases on boards of directors, the likelihood of escalation of commitment in the form of decoupling pay from performance will decrease.

Summary. An important distinction that this hypothesis makes is that where escalation is concerned, board decisions belong to the public rather than private category of decision choices. Empirical research suggests that in groups experiencing public accountability--in this case accountability to stockholders--have less tendency to escalate commitment. This hypothesis tests the application

of a principal ratified by laboratory research in the applied domain of corporate compensation choices.

Cognitive Dissonance and Self-Justification

Self-justification is widely accepted as a cognitive theory that successfully explains escalation behavior. It shares with prospect theory the distinction of having engendered the most research on escalation. On the other hand, it differs from prospect theory in some essential respects. Whereas prospect theory looks at probabilities and incoming information to generate suppositions about future behaviors, self-justification reasoning is primarily a subjective and retrospective exercise (Bateman & Zeithaml, 1989; Whyte, 1986). Early escalation research by Staw (1976) and later by others (e.g., Bazerman et al., 1984; Brockner & Rubin, 1985; Conlon & Wolf, 1980; Caldwell & O'Reilly, 1982; Teger, 1980) has supported the role of self-justification in escalation.

The fundamental consideration in self-justification situations is cognitive dissonance. That is, unwillingness to admit that previous resources were allocated in vain increases continued escalation to a present failing course of action. High need to justify previous action becomes more compelling as dissonance increases and it becomes more difficult to ignore sunk costs (Brockner, Nathanson, Friend, Harbeck, Samuelson, Houser, Bazerman & Rubin, 1984). Laboratory studies have repeatedly supported this

explanation (Staw, 1976). For example, subjects' willingness to authorize increasing amounts of resources for hypothetical research and development projects has been positively related to the proportion of the budget that had already been committed (Garland, 1990).

This relationship appears to apply to corporate performance as well. Leonard (1990) established that executive pay is higher among failing companies with heavy losses than in those with small losses. While the pattern could reflect, as he suggests, the difficulty of retaining competent managers in firms where the outlook is poor, it could also demonstrate board escalation of commitment to a CEO. In this instance, a process of self-justification of prior resource allocations may be propelling compensation upward in the face of negative feedback about firm performance.

From a board of directors' point of view, the greater the level of initial commitment as indicated by CEO compensation, the greater an apparent need to self-justify when CEO performance is not what was hoped for. By comparing the proportion of total budget paid to a CEO over a period of years, one could determine the potential for dissonance and need for self-justification if the sum was substantial and performance lackluster.

Hypothesis 5: In line with dissonance theory, the higher a CEO's salary as a proportion of total

costs, the greater the likelihood of escalating commitment by decoupling pay from performance.

Summary. This hypothesis links cognitive dissonance with a popular explanation for escalation of commitment: self-justification. Where dissonance is great and a CEO's salary is a significant proportion of corporate expense, the potential is also great for escalation of commitment to occur. In such a case, escalation becomes a mechanism for self-justifying pay decisions through the means of decoupling pay from performance.

Personal Responsibility

Personal responsibility for an ineffective course of action predisposes the decision maker to escalate commitment (Brockner et al., 1986; Caldwell & O'Reilly, 1982; Duhaime & Schwenk, 1985). Decision makers are more likely to escalate when they feel accountable for an action or for its outcome. That is, a higher degree of choice on the part of a decision maker involved will result in greater feelings of ownership of any negative consequences.

Staw (1976) concluded that individuals tend to invest substantially greater amounts of resources when they feel personally responsible for a failing outcome. Support for this viewpoint exists in the performance appraisal literature in the work of Bazerman, Beekun & Schoorman (1982). In their research, when individuals in an experimental group made promotion decisions on their own

authority, they subsequently evaluated an employee more favorably and provided greater pay increases in the face of negative performance data than did a control group that did not have such authority.

An analogy may be drawn to boards of directors making pay decisions for CEOs. In spite of the prevalence of compensation consultants who often have a hand in determining CEO pay (Crystal, 1990; Gomez-Mejia & Balkin, 1992), it is important to look at the level of responsibility for setting pay that individuals on compensation committees acknowledge. Either because they are close associates of a CEO, or because they are CEOs themselves, committee members likely believe they possess the requisite reference points for setting a CEO's pay level (Cook, 1991; Burchman & Schneier, 1989). In any case, a board of directors that shoulders high responsibility for compensation decisions becomes enmeshed in a situation that could translate into escalating commitment if their CEO performs poorly. Acting very much like what happens in laboratory studies, feelings of personal responsibility for pay level determination could heighten an inclination to escalate commitment to a failing CEO by decoupling subsequent pay from firm performance.

Empirical support exists for the position that highly responsible individuals not only experience increased commitment but also higher confidence and greater

expectations for reversal of outcomes than their low-responsibility counterparts (Bazerman et al., 1984). Outside the laboratory, CEO pay as determined by a board of directors provides a ready testing ground for the wider application of these findings.

Hypothesis 6: Boards of directors with members assuming high personal responsibility for compensation decisions will escalate commitment to a CEO, as evidenced by decoupling pay from performance.

Summary. This hypothesis is conceptually aligned with the previous one, which had its genesis in motives of self-justification. The burden of carrying greater responsibility for a decision and its outcomes results in a tendency to become increasingly committed to it. Boards assuming high responsibility for compensation choices will thus be more likely to disregard negative feedback and to escalate commitment. This sort of escalation will manifest itself in decoupling pay from performance.

The Learning Hypothesis

Learning and the executive. Another factor belongs on the list of possible explanations for executive pay. This factor is "learning." Persuasively argued by Murphy (1986), this logic contends that an executive's ability is unknown at the outset of his or her relationship with a firm but is revealed over time. As a board gets to know a CEO's capabilities more fully with each passing period, it is able

to precisely estimate the executive's ability and to reward appropriately.

Murphy (1986) used data from 1,191 corporations over an eleven year period to show that the relation between pay and performance diminishes with experience in the CEO job. Specifically, he found that over a number of years explained variance in executive compensation decreases. According to the learning hypothesis, this was a result of increasing accuracy of board estimation of an executive's true ability level and its ability to apportion rewards correctly. Other researchers (e.g., Leonard, 1990) have noted a similar role for learning in executive pay, and have demonstrated a U-shaped relationship between pay and performance over time.

Whereas a U-shaped description of the pay-performance relationship is clearly a decoupled one, Leonard (1990) also found that executive pay was higher among failing companies with heavy losses than in those with small losses. The learning hypothesis does not account for this pattern of rewards. Instead it depends on the explanation that firms with poor prospects offer increased compensation to offset the difficulty of retaining executives. The distinction is that over time learning will precisely pinpoint an executive's true value to a firm, except in instances where negative feedback suggests firm performance is especially problematic. In that case, the ability level of an executive appears less critical than a firm's willingness to

compete in the external market and retain a suitable incumbent. A preponderance of negative feedback becomes an important factor in a decision to decouple pay from performance.

Learning and behavior theory. Learning has an additional meaning in the context of escalation, one that is derived from behavior theory. The theoretical basis for this approach is traditional behavioral theory notions of schedules of reinforcement (Ferster & Skinner, 1957). In a laboratory setting involving investments in "stock," subjects escalated commitment when they were exposed to a variable schedule of reinforcement during a pre-training period (Goltz, 1992). In contrast, subjects exposed to a fixed or continuous reinforcement schedule did not escalate when extinction trials began and reinforcement in the form of positive stock returns was withdrawn. Rather, in behavioral terms, they "extinguished" their investment responses.

Persistence of responses learned under variable schedules of reinforcement appears in situations where individuals have financial investment choices to make. If they have experienced positive feedback on a variable reinforcement schedule, a tendency to keep on investing in hopes of another reward or payoff is very strong.

This discovery adds another dimension to the dialogue regarding escalation of commitment. It moves away from

prevalent self-justification and framing explanations and instead recognizes the value of paying attention to the reinforcement history of an individual. It may be that escalation of commitment is not so much an irrational decision error as a rational response to a situation based on established patterns of reinforcement (Hantula, 1992).

This explanation could also address what is happening in an organization that decouples pay from performance. Besides keeping pay at a high level to maintain CEO association with a risky enterprise, elevated pay could easily follow some organizational history of success experiences, commonly called reinforcement in other contexts. Exposure to a variable schedule of success may engender resistance to extinction on the part of a board. The possibility exists, based on reinforcement principles, that a board has reason to hope an adverse situation will "turn around," and reinforcement will be forthcoming. Thus, it could be that variable reinforcement schedules are supplementing whatever cognitive operations go on (e.g., self-justification). As a result, a board continues to escalate commitment in the form of compensation to an executive.

The challenge to research is to assess how much of an executive's pay is compensation for committing to a risky enterprise, and how much is due to escalation of commitment. Perhaps the most conservative and conceptually

straightforward way to measure this is to assume that a firm that is at an "average" point for performance variability will pay at an "average" compensation level, all things being equal. Thus, the pay package will conceptually match the level of career risk for the executive relative to other firms of the same size. By this logic, if a firm experiences performance variance in returns that are 10% above the mean, then executive pay should also be 10% higher to exactly compensate the CEO for willingness to take on such a risky enterprise. Any salary margin an executive enjoys above this point could be attributed to escalation of commitment, since the risk level has already been matched.

Learning and reinforcement. Meanwhile, it is impractical to look into an individual's past and construct a reinforcement history for him/her. Nonetheless, some observations suggest the presence of a general pattern of reinforcement. First, if a board oversees an organization that has a highly variable performance record--one that experiences peaks and valleys rather than showing smoothly rising returns over a period of years--it can be properly said to have experienced a variable reinforcement schedule. This is so because success comes at unpredictable and irregularly occurring intervals. Precedent tells us that boards of firms that primarily experience positive performance will extinguish more quickly. That is, their approximately continuous reinforcement schedules will be

less amenable to persistence or escalation. Once reinforcement is withdrawn, in common with observations in laboratory experiments, they will discontinue investment, in this case investments in high executive pay. The analogous behavior in a laboratory setting is extinction of response.

Furthermore, one may assume a variable reinforcement schedule if individual members of a board of directors serve on a number of other boards simultaneously. It is logical to assume that not all these other organizations are uniformly experiencing identical levels of success. Some may be doing well, while others may be experiencing poor or variable performance. Particularly if an individual has served on many boards over a period of years, he/she would likely have been exposed to a variable schedule of reinforcement, or successes, by the firms in question.

This exposure to a variable reinforcement schedule strongly suggests that an individual will make investments in CEO compensation with an expectation of payoff in the form of positive firm performance at some point. Because this expectation was established under a variable reinforcement schedule, it should be difficult to extinguish. Consequently, escalation in investments in CEO pay will persist. On the other hand, individuals lacking a wide membership on a number of boards of directors will be less likely to have experienced variable reinforcement histories, and will show less tendency to escalate.

Hypothesis 7: Boards of directors with members serving on many other boards have been exposed to a variable reinforcement schedule, and thus are more likely to persistently escalate commitment in the form of CEO pay than boards in which members serve on few or no other boards.

Summary. This hypothesis borrows from theories of operant conditioning to suggest that reinforcement histories of board members might play a part in their tendency to escalate. In classical operant studies, subjects exposed to variable reinforcement persisted the longest and their responses were the most difficult to extinguish. By this reasoning, directors with variable experiences on boards may persist in a course of action, or escalate commitment to a CEO, to a greater degree than their counterparts who had been on fewer boards and consequently experienced a less variable reward schedule.

Chapter Summary

The seven hypotheses that this dissertation tests derive from the organizing framework presented in Figure 1. Determinants of escalation of commitment the figure presents are: a) external to a board, b) pertinent to a board's composition, or c) internal to a board, or psychological in nature. Industry uncertainty and CEO tenure, the focus of Hypotheses 1 and 2, are conditions making up the milieu in which a board deliberates. These hypotheses belong to the

portion of the figure that is designated "contextual variables."

Characteristics of board composition are predisposing factors to escalation of commitment and decoupling pay from performance. This dissertation proposes this is particularly so in the case of demographic similarity and gender, themes of Hypotheses 3 and 4.

Finally, psychological factors that predispose board members toward escalation of commitment form the core of the remaining hypotheses, numbers 5 through 7. Qualities in this part of the figure, dissonance, self-justification, and reinforcement history derive from two sources in the psychological literature. One source focuses on the study of individual psychological characteristics, and the other originates in a more basic concept from psychology, operant behavior theory. In spite of this distinction, it is appropriate that escalation of commitment, a behavioral concept, owes much of its theoretical foundation to previously studied psychological constructs.

Laboratory research in escalation has provided support to the reasoning behind many of these hypotheses. Moving the study of escalation of commitment out of the laboratory and into the field of executive compensation requires valid operations to test research questions. Chapter Four presents measurement solutions and a plan for testing each of the hypotheses.

CHAPTER FOUR: METHODOLOGY

Sample

One of the sources of data for this research was the Executive Compensation Research (ECR) Data Base (Caranikas, Goel, Gomez-Mejia, Cardy & Grabke, 1994). This data base included 185 companies, representing 21 two-digit SIC industries that were listed in the Fortune 500. CEOs in the sample held their jobs from 1987 or earlier through 1990. The data base contained information on salary, bonus, long term income, total compensation, firm size, tenure of CEO, R&D intensity, accounting factors, stock returns, and subjective measures of short term and long term performance.

Additions to Sample

This research also necessitated collection of data to supplement the ECR data base. For example, Hypothesis 3 called for investigation of board member demographic similarity. The data essential to test this hypothesis was not part of the original ECR data base and was therefore collected and added to it. Information regarding educational background, age, number of additional board memberships, and tenure on board of directors was gathered for 2,665 directors. Sources included the Dun and Bradstreet Reference Book of Corporate Management, Standard and Poor's Register of Corporations, Directors, and Executives, and proxy statements.

Another hypothesis for which additional data gathering was necessary was Hypothesis 6. In order to discover the

degree of personal responsibility felt by directors for compensation decisions two procedures were followed. First, the raw number of changes in the composition of the board and of the compensation committee over the 1987-1990 period were counted. Second, a survey to measure this construct was mailed to 530 directors who were in the ECR sample, using methods established by Dillman (1978). Further information regarding the survey is detailed below.

Survey Construction

Appendix D presents the survey instrument that was mailed to compensation committee members targeted by the ECR data base. Following an abbreviated version of Dillman's (1978) suggested methodology the first item, labelled A, was designed both to engage respondent interest and be easy to answer. In terms of theoretical value, it was not devised to address any research hypotheses, and therefore was not part of the ensuing statistical analysis.

Psychological participation. Question 1 came from Vroom's (1960) measure of "psychological participation," or the amount of influence a person believes himself or herself to possess. In this survey, the question asked for extent of influence the board member respondent, a consultant, and management itself had on the executive pay process. Researchers using this scale have recorded reliability as measured by an alpha level of 0.85 (Morris, Steers & Koch, 1979).

Autonomy/Responsibility. Perceptions of individual and committee autonomy were sampled by several survey items. Items from scales measuring autonomy (r=.76) devised by Hackman and Lawler (1971) guided creation of items 18 and 25. Sims, Szilagyi and Keller's (1976) autonomy measure was the source of item 6 (coefficient alpha=.84). Item 7 was adapted from Breaugh's (1989) work method autonomy scale.

Items 20 and 22 were adapted for compensation committee members from Steers' (1975) scale measuring Task-Goal Attributes. These two questions belonged to a subscale called "Participation in Goal-Setting" and had a reported coefficient alpha of .72.

Items 2-4 were adapted from Caplan's (1971) scale, originally constructed to sample Responsibility for Things and Responsibility for Persons. Previous research has found a 0.87 coefficient alpha for the entire scale.

Cohesiveness. Two items, numbers 9 and 10, came from O'Reilly and Chatman's (1986) measure (α = .66), which they derived from Seashore's (1954) cohesiveness index. Item 24, measuring cohesiveness, came from the group cohesiveness subscale of the Minnesota Organizational Assessment Questionnaire (Seashore, Lawler, Mirvis and Cammann, 1982) (α = .64).

Control of pay decisions. Hodgkinson's (1992) Strategic Locus of Control Scale was the source for items 11-14. This is a domain-specific instrument for

organizational settings and is not prone to correlate with social desirability. Item content was reworded to reflect control of compensation decisions rather than control of strategic management issues. Coefficient alpha (Cronbach, 1951) for this scale was 0.82.

Responsibility for work outcomes. Five more items, numbers 17, 21, 23, 26 and 28, were borrowed from Hackman and Oldham's (1975) Job Diagnostic Survey. The authors' model proposed three critical psychological states mediating between characteristics of jobs and individuals' reactions to them. The present research used items from the dimension "Experienced Responsibility for Work Outcomes." The internal reliability coefficient for this dimension has been reported as .72 in previous research.

Role of consultant. Three items, numbers 15, 27 and 29, were created specifically for this survey. Both of these questions directly ask the respondent to assess the role of a compensation consultant in determining CEO pay for the firm. Since they were not part of a previously validated scale, there was no reliability information available for these two items.

Role of management. The source for items 5 and 8 was a personal interview with a former member of multiple compensation committees. This individual saw compensation packages as largely the work of management, but suggested an important behavioral variable was the degree to which

comittee decisions were unanimous (A.J. Pfister, personal communicaton, January 26, 1995).

Finally, the last six questions on the survey asked respondents to provide demographic information regarding age, gender, education, inside/outside board membership, and number of additional boards on which they had served.

Survey Administration

Using corporate proxy statements, compensation committee members were identified for each of the 185 firms in the ECR data base. The Standard and Poor's Register of Corporations, Directors, and Executives provided the home and/or business mailing address for a number of these individuals. Addresses for others came from the Marquis Who's Who, and from Who's Who in Business and Industry. Current editions of Standard and Poor's Stock Market Reports were consulted to determine if any remaining directors for whom addresses had not been located continued to serve on their respective boards up to the present date. For those still serving, and for whom no other mailing address was available, the survey was sent to their attention at the corporate headquarters of their firms.

One week prior to the initial survey mailing, a letter and a copy of the survey were sent to the current CEO of each corporation in the sample (Appendix A). The letter described the survey's purpose and solicited support in encouraging compensation committee members to respond to the

instrument when they received it. A copy of results was offered to each CEO.

Following this, the first mailing of the actual survey was accompanied by business reply envelope and a cover letter to directors enlisting their support (Appendix B). A copy of the eventual results was offered to each individual. This mailing was followed in a week by a postcard reminder to all persons in the sample (Appendix C). Finally, two weeks after the initial mailing, and because all responses were anonymous, a second copy of the survey, business reply envelope, and cover letter went out to all those in the sample (Appendix D). The survey appears in Appendix E.

All survey responses were anonymous. However, in order to determine how trends uncovered by the survey related to the dependent variable of interest, decoupling pay from performance, the following procedure was followed. First, four separate measures of decoupling were calculated using the ECR data base. Next, each firm in the sample was evaluated as either being "decoupled" or "not decoupled" according to each one of these four measures. Using these measures, a firm could be assigned to one of five distinct levels of decoupling: no hits on decoupling measures, one hit, two hits, and so forth up to the fifth level, which meant the firm scored as "decoupled" on all four of the separate decoupling measures. The number of "hits" was calculated, and each firm was assigned a number from zero to

four, a total of five levels, to reflect its degree of decoupling. This tabulation and the firms in the sample appear in Appendix F.

Following this tabulation, five different versions of the survey were created and appropriate versions were sent to the directors of each firm. To illustrate, directors of Advanced Micro Devices, a firm that scored on two decoupling measures, received Version Two of the survey. The versions differed only imperceptibly. For example, directors of firms with no "hits" on decoupling measures received Version 0 of the survey in which the word "functions" in part D was followed by a semicolon. In all other versions "functions" was followed by a period. Directors of firms with one "hit" received Version 1 with a comma after the word "socially" in question 9. This comma was not present in any other version of the survey. For directors of firms with two "hits," Version 2 contained the word "serve" in Part A followed by a colon, whereas it was followed by a period in all other versions. A colon followed the word "decision" in Version 3 that went to directors of firms with three "hits" on decoupling measures. A period followed this word otherwise. Finally, Version 4, sent to directors of firms that scored four "hits" contained none of these punctuation variations. Thus, when completed surveys were returned, each was carefully reviewed for the punctuation code, and marked for analysis with its level of decoupling.

This method of slightly reducing the anonymity of the responses was considered preferable to color coding the surveys, a technique followed in previous research (Gomez-Mejia, 1992; Tosi & Gomez-Mejia, 1994). Since a few very prominent directors in the sample served on more than one firm's compensation committee--and thus received more than one survey--sending different colored surveys for different levels of decoupling might alert respondents that they were being identified. A loss of anonymity was likely to reduce willingness to respond and thereby decrease the final response rate. In contrast, using the punctuation variation methodology, it was extremely unlikely that any director who received more than one survey in the mail ever discovered that they were different in any perceptible way.

Decoupling Calculations

In order to determine whether a firm decoupled executive pay from performance, four different calculations were carried out. In the first, a Z score difference between changes in executive compensation over the four year period were compared to Z score changes in firm performance. Decoupling was defined as instances where positive changes in compensation exceeded positive changes in firm performance.

The next two methods of calculating decoupling involved running regressions for a) difference between actual and predicted CEO compensation for change in pay b) difference

between actual and predicted CEO compensation for absolute pay (Crystal, 1992). Cases where actual compensation was greater than predicted compensation illustrated decoupling.

The final method of determining which firms decoupled pay from performance was to compute a within person correlation of CEO pay and ROE for various years. Instances of a negative correlation between pay and ROE were examples of decoupling. All firms in the sample as well as how they fared on these four decoupling calculations appear in Appendix F.

Measurement

There were some constructs integral to this research that appeared in several hypotheses. However, in other instances, a label or construct was only investigated in the context of one particular research question. The following sections provide operational definitions for frequently used terms and concepts. Subsequent sections present measurement solutions to problems that were unique to a specific hypothesis.

Compensation. There are three elements comprising CEO compensation: base salary, bonus, and long-term deferred income. This study used all three components to measure CEO compensation. As recommended by Finkelstein and Hambrick (1989), this research employed the logarithm of compensation to reduce heteroscedasticity.

Firm Performance. Firm performance was operationalized following Caranikas et al. (1994) using traditional measures of objective firm performance (Hofer, 1983). The following multiple indicators combined to provide a more reliable measure: return on assets (ROA), return on sales (ROS), return on equity (ROE), and Tobin's q (McFarland, 1988).

Decoupling. Decoupling in the ECR data set was assessed by measuring differences between percentage of change in executive compensation over a 3-year period, compared to similar changes in firm performance. First, percent change in compensation (salary plus bonus) was computed. This figure was compared to percent change in performance for the same period. By definition, instances where absolute value of change in salary was greater than absolute value of change in performance presented evidence of decoupling.

Hypothesis 1. Hypothesis 1 investigated a proposed relationship between firm uncertainty and escalating commitment to an executive by raising pay. Uncertainty in the escalation literature is conceptually similar both to Feigenbaum and Thomas' (1988) "lack of predictability," and to what Dess and Beard (1984) called "dynamism." The measurement problem this hypothesis introduced involved separating compensation awarded an executive for taking on an uncertain enterprise from pay attributed to escalation of commitment. Fortunately, there is some precedent in

economics and finance for addressing this type of measurement issue.

Earlier, Ciscel and Carroll explored the separate effects of sales and profitability on executive pay by calculating "residual profit," or the "observed profit variable minus profit predicted by sales" (1980:9). The method in this dissertation was comparable because, in the present instance, a similar residual was computed. In this study, pay due to escalation was assessed by calculating and isolating a compensation residual that was net of pay for return to risk (binding oneself to an uncertain enterprise).

This procedure was carried out in the following manner. First a simple structural model was stipulated:

$$C_{it} = a_{ot} + a_{1t}U_{it} + a_{2t}S_{it} + a_{3t}P_{it} + \underline{u}_{it}$$

where

C_{it} = salary for the chief executive of the $\underline{i}^{th}$ company in year $\underline{t}$

U_{it} = uncertainty for the $\underline{i}^{th}$ company in year $\underline{t}$

S_{it} = total sales revenue for the $\underline{i}^{th}$ company in year $\underline{t}$ (as a proxy for size)

P_{it} = performance of the $\underline{i}^{th}$ company in year $\underline{t}$

A discrete number representing firm uncertainty was calculated for each company in the sample by computing the average variance in ROE a firm experienced during the time period covered by the data set. This is a widely accepted measure used by many researchers as a proxy for uncertainty

or dynamism (Bettis, 1981; Bettis & Hall, 1982; Feigenbaum & Thomas, 1988). This figure, as well as firm sales and performance (market return), was converted to z-score values Next, a regression model was calculated in which uncertainly was regressed on sales and performance to produce compensation predicted by uncertainty:

$$C = c + U_{it} + dS_{it} + dP_{it}$$

In the next step "residual compensation," or the observed compensation variable minus the portion of compensation predicted by uncertainty was calculated:

$$\hat{C} = C - C(U_{it})$$

It was intended to test Hypothesis 1 by separating firms into High Uncertainty and Low Uncertainty groups and run two more regressions using the residual pay score. However, examination of the array of firms sorted by uncertainty level did not provide an appropriate midpoint for creating these groups. Since many firms were clustered with the same uncertainty score at the middle of the range, division at the most convenient point created groups with N of 68 (high uncertainty) and 108 (low uncertainty). For this reason, uncertainty was trichotomized into high, medium, and low uncertainty firms that were as close to equal thirds as possible. The high, medium, and low uncertainty groups were comprised of 54, 59, and 71 firms respectively.

The objective was to compare beta weights for performance in the three groups to one another. Reasoning in Hypothesis 1 suggested that firm performance is a more important predictor of compensation in cases of low uncertainty. Thus, for this group the beta for performance should be higher. When uncertainty is high, firm performance is still a determinant, but escalation enters in, explaining a greater proportion of variance, and the beta for performance should be lower than in the comparison group. In the high uncertainty condition, increasing escalation of commitment should occur concurrently with lower performance betas, demonstrating decoupling of pay from performance. The differences between the regression coefficients for performance in the high and low uncertainty firms were determined by a Chow test (Chow 1960).

One means of improving the predictive potential of uncertainty is to use moderated regression, a special case of nonlinear prediction (Ghiselli, Campbell & Zedeck, 1981). This involved creating a cross-product term consisting of uncertainty and performance and comparing the multiple correlation coefficient ($\underline{R}^2$) of an equation including the cross-product term to one without it. A higher $\underline{R}^2$ in the former equation indicated that a moderator variable, uncertainty was operating (Saunders, 1956). Once a difference in the multiple correlations coefficients was

established, subgroup analysis then separated the sample on the basis of the moderator into subgroups.

The linear regression equation and correlation coefficient between the predictor and the criterion for each subgroup was then computed. Differential regression equations would indicate the operation of a moderator effect.

Hypothesis 2. CEO tenure was a continuous measure of number of years an individual has held the top position within a firm.

Hypothesis 3. Demographic characteristics that are shared by directors are central to Hypothesis 3. Board heterogeneity was measured by three variables: variation in age, variation in years as a director, and variation in level of years of education. In common with Smith, Smith, Olian, Sims, O'Bannon & Scully (1994), a coefficient of variation across all directors in a corporation was calculated for each variable. A score of zero indicated perfect homogeneity along the particular dimension, and higher values denoted greater heterogeneity.

Hypothesis 4. To test this hypothesis, a variable was created for each firm that identified the proportion of members of the board of directors who were women.

Hypothesis 5. This hypothesis required creating a variable for each firm in which executive compensation was

divided by the sum of selling, general, and administrative expenses.

Hypothesis 6. Two methods were adopted to assess level of personal responsibility for compensation decisions among board members. First, the survey instrument directly asked these individuals for perceptions of their own degree of personal accountability in setting executive compensation.

To relate survey responses to archival firm performance indicators and at the same time preserve anonymity, the survey forms were punctuation coded as described above. The responses were subjected to a confirmatory factor analysis to test the assumption that there were three factors being measured: responsibility for compensation decision, cohesion among members, and autonomy from management and compensation consultant. A scale was built by summing all the items with substantial loadings and ignoring remaining items with minor loadings. Standard scores, calculated for each respondent for each item, were multiplied by their respective factor loadings. Finally, the values were summed to obtain composite responsibility scores (Kim & Mueller, 1978; Tosi & Gomez-Mejia, 1994).

A second method for securing answers to the question of board member responsibility relied on archival data sources. This was done to provide some control in the event that the survey response rate was low. In this way information from archival sources that addressed the same questions provided

a back up mechanism for answering survey research questions. This approach called for collection of information pertaining to both stability of board membership and stability of compensation committee membership. Lower membership turnover within a board or compensation committee served as a proxy for heightened personal responsibility, since more transient affiliation implied weaker ties to the unit and its decisions (Granovetter, 1973). This supplementary approach to the question Hypothesis 6 addressed acted to balance potential problems of a survey that asked individuals for retrospective analysis of compensation decisions.

A stability index was created for each organization's board and compensation committee for the period covered by the data set (1987-1990). The most straightforward way to operationalize this variable was to do a count of board and committee members in 1987, the baseline year. The raw number of year to year changes in membership, either additions or deletions, over the three ensuing years was standardized to provide a measure of stability for that particular unit.

Hypothesis 7. Archival data provided a test of the hypothesis that boards of directors with members having ties to many other boards engage in escalation of commitment. The number of directors' additional affiliations was

collected for each board member by examining proxy statements of the firms in the ECR data base.

Control Variables

Log of firm size was used to control for firm size (Balkin & Gomez-Mejia, 1987). Firm performance, or profitability, was measured by return on equity and provided a second control variable. Although studies have shown equivocal results for the relationship between firm size and profitability, widespread use of these variables suggests that they should be included in any study of CEO compensation, particularly for purposes of replication and control (Boyd, 1994).

Statistical Analysis

The hypotheses were tested via ordinary least squares (OLS) regression. This method regressed a continuous dependent variable on a set of independent variables. OLS assumes a linear additive model with normally distributed error terms.

Summary and Conclusions

The ECR Data Base was the chief source of data for this research. Additional data collection provided information regarding board demographic variables and number of changes in the composition of the board and compensation committee. Further, a survey was constructed and mailed to over 500 members of compensation committees.

Survey questions were selected for their ability to sample the constructs of autonomy and responsibility called for in Hypothesis 3. Questions also required respondents to assess their level of independence from both management and consultants. Previously validated scales with acceptable levels of reliability were chosen for inclusion. Dillman's (1978) methodology guided survey administration and composition of cover letters and reminders.

Four methods of calculating decouping permitted measurement of the dependent variable. Firms were thus classified as belonging to one of five possible levels of decoupling since they could score positively on none or up to all four of the meausres.

Operationalizations for variables to test the research hypotheses also included calculating pay net of uncertainty, recording CEO tenure, coefficient of variability for age, education and years on a board, proportion of women on boards, proportion of CEO salary compared to other operating expenses, and counting directors' additional board affiliations. Except for Hypothesis 1, which called for testing by moderated regression and subgroup analysis, all hypotheses were tested by ordinary least squares regression.

CHAPTER FIVE: RESULTS

Introduction

Results are presented in this chapter and address each hypothesis in turn. Hypotheses 6 and 7 were tested with survey data in addition to archival data. Analysis of the remaining hypotheses are based on analysis of archival data only. The overall correlation matrix along with means and standard deviations for all variables in the archival data set are presented in Table 2. Although Table 2 is introduced for descriptive purposes only, some intercorrelations appear to indicate that the hypotheses have support in the expected direction.

Hypothesis 1

Moderated regression, a special case of nonlinear prediction (Ghiselli, Campbell & Zedeck, 1981), was used to discover the predictive potential of uncertainty. A cross product term was created that consisted of both uncertainty and performance. The squared multiple correlation coefficient ($\underline{R}^2$) in a regression equation containing this term was compared to the squared multiple correlation coefficient ($\underline{R}^2$) of a comparable regression equation that included the two predictors entered separately (Saunders, 1956).

Results were as expected, with the $\underline{R}^2$ of the equation with the crossproduct term greater than that of the equation without it. However, this was only marginally true. In the

Table 2

Means, standard deviations, and intercorrelations for all variables

Variable	Mean	S.D.	2	3	4
1. Escalate	.774	.874	-.026	-.032	-.280**
2. Log sales	7.943	.986		-.191*	-.027
3. Control	.250	.297			.214**
4. Human cap.	79.068	15.804			
5. Uncertainty	.151	.868			
6. Prop. cost	.000	.000			
7. Vary/year	.844	.229			
8. Vary/educ.	.105	.039			
9. Vary/age	.123	.042			
10. Interlock	3.410	1.081			
11. CEO tenure	11.672	8.259			
12. Stability	8.021	5.120			
13. % Women	.051	.061			

Table 2 cont.

Variable	5	6	7	8	9
1. Escalate	.092	.080	.241*	-.215*	.061
2. Log sales	-.074	-.413**	.007	.093	-.279**
3. Control	-.046	.033	-.116	-.057	.224**
4. Human cap.	-.007	.070	-.150*	.043	-.202
5. Uncertainty		.013	.031	-.028	-.131
6. Prop. cost			-.018	-.139	.043
7. Vary/year				.135	.096
8. Vary/educ.					-.115
9. Vary/age					
10. Addl. board					
11. CEO tenure					
12. Stability					
13. % women					

Table 2 cont.

Variable	10	11	12	13
1. Escalate	.115	-.144	.195	-.168
2. Log sales	.220**	.165*	.199**	.309**
3. Control	-.230*	.220**	-.227**	-.081
4. Human cap.	-.171*	.676**	-.102	.309**
5. Uncertainty	.178*	-.022	.010	-.081
6. Prop. cost	-.072	.175*	-.134	-.027
7. Vary/year	-.101	-.102	.321**	-.266**
8. Vary/educ.	-.086	-.112	.148*	-.031
9. Vary/age	-.195**	.210*	-.063	.160*
10. Addl. board		-.108	-.005	-.096
11. CEO tenure			-.148	.124
12. Stability				.078
13. % women				.077

* $p < .05$. ** $p < .01$.

equation that included the term, $\underline{R}^2$ =.0255. Whereas without the crossproduct term $\underline{R}^2$ = .0251. Thus, although the differences were small, a moderator variable was indeed operating, according to Ghiselli, Campbell, and Zedeck's (1981) criteria.

Comparison of differential regression equations via subgroup analysis further indicated the operation of a moderator effect and bolstered effects noted in earlier calculations involving the crossproduct, or moderator, term. To illustrate, the correlation between the criterion (executive compensation) and the moderator for the total sample was .01. Subgrouped on the basis of the moderator, the correlations for high, medium, and low uncertainty groups were .04, .55, and -.12 respectively. These results affirm the existence of uncertainty as a meaningful moderator.

Comparison of differences in intercepts in equations for the full sample and for each subgroup provided another statistical indication that uncertainty had a moderator effect. Intercepts, beta values, and correlations between the moderator and the criterion are provided in Table 3.

As a further test of Hypothesis 1, a residual pay score was calculated that represented pay net of return to uncertainty, or for binding oneself to an uncertain enterprise. After a discrete number representing firm uncertainty was calculated for each company in the data set,

this figure and firm size and performance--in this case Tobin's Q--were regressed on the salary plus bonus variable to produce a salary level predicted by uncertainty. In the next step, residual compensation--or observed compensation minus the portion predicted by uncertainty--was calculated. Tobin's Q is equal to the ratio of the firm's market value to the replacement cost of its physical assets. As a performance measure, it can be viewed as measuring the intangible assets of a firm such as future growth opportunities, monopoly power, goodwill, rents appropriated away from unions, as well as the quality of management (Morck, Shleifer & Vishny, 1989).

The following equations clarify these steps by showing how the difference between actual and estimated pay were used to create the residual pay variable:

$$\hat{Pay} = b_0 + b_1 \text{ uncertainty} + b_2 \text{ size} + b_3 \text{ performance}$$

$$Pay - \hat{Pay} = \text{residual pay}$$

Once the firms were trichotomized, three regressions were calculated using the residual pay score. The logic of Hypothesis 1 suggested that the beta for performance should be larger in cases of low uncertainty, whereas when uncertainty was high, escalation should enter in, as evidenced by lower performance betas. In practical terms, this means that as uncertainty rises the performance beta should drop, because escalation is entering into the board's compensation decision as a more important element.

This is exactly the result that was observed when comparing the trend in beta coefficient from the medium to the high uncertainty groups. The standardized beta in the medium uncertainty group was .541, and for the high uncertainty group it was -.061. The statistical significance of the difference in regression coefficients (t = 5.98, $p < .01$) was determined by the Chow test (Chow, 1960).

The beta for performance in the low uncertainty group was -.152, which was unanticipated given the trend of beta values that was observed when comparing high and medium uncertainty groups. This meant that at the low end of the continuum, the beta for performance was more similar to the one in the high uncertainty group. That is, performance became a less important variable in the compensation equation, and more emphasis was likely given to other factors, such as escalation. As before, a Chow test of the beta coefficients for performance determined that differences were significant (t = 4.75, $p < .01$.)

Table 4 presents means, standard deviations and intercorrelations for performance and the residual in high, medium, and low uncertainty firms. Betas and R^2s are presented in Table 5. In the high uncertainty group the R^2 for performance was .009, in the medium uncertainty group it was .293, and in the low uncertainty group it was .023.

Table 3

Moderated regressions: comparison of beta, r and intercept for uncertainty subgroups and entire sample[a]

Group	Beta[b]	r	Intercept
Entire sample[c]	-.056	.01	78657.15
High uncertainty[d]	-.189	.04	824239.40
Medium uncertainty[e]	1.435	.55*	1941377.72
Low uncertainty[f]	.004	-.12	1059680.38

[a] Correlations are between executive compensation and cross-product term (uncertainty x performance).

[b] Beta is for cross-product term.

[c] N = 184.

[d] N = 54.

[e] N = 59.

[f] N = 71.

* $p < .05$.

Finally, a remaining test of Hypothesis 1 involved computing a regression equation and entering the uncertainty variable after firm size and type of governance (internal versus external) had been controlled. Log of firm sales was used to control for firm size (Balkin & Gomez-Mejia, 1987). The ratio of inside to outside board members was used as a measure of external control (Gomez-Mejia, Tosi, & Hinkin, 1987). Table 6 shows the beta weights, significance, change in $\underline{R}^2$, $\underline{R}^2$, and the adjusted $\underline{R}^2$ when this operation was performed. Results did not support firm uncertainty as a significant predictor of escalation.

Hypothesis 2

Hypothesis 2 was tested via two regression equations with escalation entered as the dependent variable. In one case human capital served as the predictor, and in the second instance CEO tenure performed this function. A principal factors factor analysis indicated that tenure of a CEO in the firm, tenure of a CEO in the job, and CEO age (Gerhart & Milkovich, 1990) all loaded on one human capital factor (.76, .77, .83 respectively). A factor score derived from the factor loadings was computed for each CEO and used in this portion of the analysis as "human capital" (Caranikas et al. 1994).

Log of sales was entered into the equation first to control for the effects of size. In this regression, human capital emerged as a significant predictor of decoupling (p

Table 4

Means, standard deviations and intercorrelations for performance and residual in high, medium and low uncertainty firms

High Uncertainty[a]			
Variable	Mean	S.D.	Intercorrelation
Performance	.669	.543	
Residual	11769.81	.41727.65	-.096 (n.s.)
Medium Uncertainty[b]			
Variable	Mean	S.D.	Intercorrelation
Performance	.733	.503	
Residual	1161.36	230.26	.030 (n.s.)

Table 4 cont.

Low Uncertainty[c]			
Variable	Mean	S.D.	Intercorrelation
Performance	.922	.578	
Residual	448.05	201.46	.042 (n.s.)

[a] Sample size for high uncertainty was 54.

[b] Sample size for medium uncertainty was 59.

[c] Sample size for low uncertainty was 71.

Table 5

Multiple regression equation for high, medium and low uncertainty firms

Variables	High Uncertainty		Medium Uncertainty		Low Uncertainty	
	Beta※	R^2	Beta	R^2	Beta	R^2
Performance	-.060	0.009	.541**	.293	-.152	.023
Residual	.079	0.006	.011	0.001	-.009	0.0004
Chow Test: High vs. Medium Uncertainty: 5.98** Medium vs. Low Uncertainty: 4.75**						

** p < .01.

※ Standardized regression coefficient.

Table 6

Results of regression analysis predicting decoupling[a]

Independent Variables	ß	N	*t*	ΔR^2	F	F^b	R^2	Adj. R^2
Step 1								
Control	-0.04	98	-.39					
	(0.10)							
Logsale	-0.25	98	-.34	0.0007	0.06	0.64	0.0007	-0.10
	(0.10)							
Uncertainty	-0.09	98	-.89	0.008	0.33	0.79	0.010	-0.02
	(0.10)							
Step 2								
Control	-.04	98	-.39					
	(0.10)							
Logsale	-0.036	98	-.34	0.0007	0.06	0.64	0.0007	-0.10
	(0.10)							

Table 6 cont.

Human capital	-.282	98	-2.80**	0.07	2.70*	7.86**	0.08	0.05
	(0.10)							
Step 3								
Control	-0.04	98	-.39					
	(0.10)							
Logsale	-0.-36	98	-.34	0.0007	0.06	0.64	0.0007	-0.10
	(0.10)							
CEO tenure	-.142	98	-1.35	0.02	.68	1.82	0.02	-0.01
	(0.11)							
Step 4								
Control	-0.04	98	-.39					
	(0.10)							
Logsale	-0.036	98	-.34	0.0007	0.06	0.64	0.0007	-0.10
	(0.10)							

Table 6 cont.

Vary Year	0.24	97	2.36*	0.06	1.92	5.59*	0.06	0.03
	(0.10)							
Step 5								
Control	-0.04	98	-.39					
	(0.10)							
Logsale	-0.036	98	-.34	0.0007	0.06	0.64	0.0007	-0.10
	(0.10)							
Vary Age	0.068	98	.64	0.004	0.206	0.41	0.006	-0.03
	(0.11)							
Step 6								
Control	-0.04	98	-.39					
	(0.10)							
Logsale	-0.036	98	-.34	0.0007	0.06	0.64	0.0007	-0.10
	(0.10)							

Table 6 cont.

Vary Educ.	-0.24	98	-2.19*	0.05	1.67	4.84*	0.05	0.02
	(0.10)							
Step 7								
Control	-0.04	98	-.39					
	(0.10)							
Logsale	-0.036	98	-.34	0.0007	0.06	0.64	0.0007	-0.10
	(0.10)							
Percent Women	-0.19	98	-1.70†	0.03	1.04	2.90†	0.03	0.001
	(0.11)							
Step 8								
Control	-.04	98	-.39					
	(0.10)							
Logsale	-0.036	98	-.34	0.0007	0.06	0.64	0.0007	-0.10
	(0.10)							

Table 6 cont.

Prop./Cost	0.09	91	.82	0.007	0.24	0.67	0.008	-0.03
	(0.12)							
Step 9								
Control	-0.04	98	-.39					
	(0.10)							
Logsale	-0.36	98	-.34	0.0007	0.06	0.64	0.0007	-0.10
	(0.10)							
Stability	0.20	96	1.91*	0.04	1.32	3.66†	0.04	0.01
	(0.11)							
Step 10								
Control	-0.04	98	-.39					
	(0.10)							
Logsale	-0.036	98	-.34	0.0007	0.06	0.64	0.0007	-0.10
	(0.10)							

Table 6 cont.

Interlock	0.18 (0.11)	98	1.62†	0.03	0.95	2.64†	0.03	-.001

[a] Standardized beta weights are reported; standard errors are in parentheses. [b] This F statistic refers to the change in R^2 attributable to each variable.

† $p < .10$. * $p < .05$. ** $p < .01$

< .05). The second column of Table 6 reports the beta coefficients and the standard error (in parentheses), while the fourth column shows the incremental increase in $\underline{R}^2$ resulting from the insertion of human capital into the equation. In this equation this increase in $\underline{R}^2$ was significant ($\underline{p}$ < .01).

When log of sales and corporate control were entered followed by CEO tenure alone, this variable did not add a significant amount of predictive value. In fact, contrary to the hypothesis, the negative beta coefficient for CEO tenure suggested that increased CEO tenure contributes to less rather than more decoupling of pay from performance.

Hypothesis 3

Once more, a series of regression analyses tested the hypothesis, in this case that similarity along various demographic factors is an important predictor of escalation by a board. Demographic differences have been shown to influence members' psychological commitment to a group (Tsui, Egan, & O'Reilly, 1992). Ultimately, shared demographic similarity is characteristic of highly cohesive groups, ones in which a tendency toward concurrence seeking prevails. To maintain positive rapport with others on a board, it was hypothesized that more similar members would escalate commitment as a means of protecting their unanimity and in-group membership.

A principal factors factor analysis was done to determine if dissimilarities across demographic variables--years as director, age of director, director education, and gender--would all load on one factor. If so, they could be combined into one more general index of demographic difference for purposes of further analyses. Results did not support this approach, however, since only gender and education differences loaded on a common factor. Consequently, each demographic dissimilarity index was investigated separately for its effect on decoupling.

After log of sales and form of control were entered as control variables, measures of demographic heterogeneity in years on the board, educational background, and age of directors were entered. When entered in the same step, the three variables together emerged as significant predictors of escalation. However, introduced separately, only variance in years on the board and variance in years of education were individually meaningful. The standardized betas for each variable appear in column two of Table 6, followed by their standard errors in parentheses.

Referring to Table 6, the variable representing heterogeneity or diversity in years of service on a board was significant ($p < .10$) and the change in R^2 was significant as well ($p < .05$). The positive sign of the beta coefficient indicated that as board members exhibited

more age diversity, they tended to escalate CEO pay. This finding contradicted Hypothesis 3.

Demographic differences in educational level of board members performed similarly in the regression. A significant beta coefficient (see Table 6) indicated that it was a meaningful predictor of escalation ($p < .10$). Furthermore, the change in R^2 was also significant for this variable ($p < .05$). The negative value of the beta coefficient indicated that as boards included members with less variance in education level, they also tended to escalate commitment to a CEO via decoupling pay from performance. Consequently, the more alike they were, the more they escalated their commitment to an executive. This finding supported Hypothesis 3.

Demographic diversity measured by variability in director age did not predict escalation to a significant degree. Neither the beta coefficients (.068) nor the amount of variance explained by including this variable in the equation (.004) were meaningful. Consequently this result rejected Hypothesis 3.

Hypothesis 4

The effect on escalation of adding women to a board of directors was addressed in Hypothesis 4. A regression model was created in which the percentage of female directors on a board was entered following the two control variables. Percentage of women members added significantly ($p < .10$),

albeit modestly, to the amount of variance explained in the regression equation according to Table 6. The negative sign of the beta (-0.19) coefficient also indicated that boards with more women members generally experience less decoupling than boards with fewer women. As such, these results provided some measure of support for Hypothesis 4.

Hypothesis 5

To answer Hypothesis 5, a regression equation was created with a Compustat variable that represented CEO salary as a proportion of selling, general, and administrative expenses. The control variables went into the regression equation first, followed by the term representing proportion of cost. This variable was intended to tap cognitive dissonance, however it did not significantly predict escalation. The betas, change in R^2, and proportion of variance explained, all shown in Table 6, were all too small to be meaningful.

Hypothesis 6

To investigate whether boards and compensation committees that feel responsible for compensation decisions tended to escalate CEO pay, two different methods tested Hypothesis 6. A regression equation was computed using board and committee stability as a proxy for high responsibility. A reliability analysis showed that board and committee stability were highly related ($r = .47$; $\alpha = .59$), therefore these two variables were standardized and

combined into a single measure. Boards or committees with few net changes over time were defined as ones in which responsibility for pay decisions, and thus cohesion, was greater.

With log of sales and corporate control entered first as control variables followed by board stability, the stability variable emerged as significant ($p < .10$) and substantially increased the explanatory power of the equation ($p < .05$) (See Table 6). The sign of the beta coefficient denoted that when there were more personnel changes--additions and removals--on a board, there was more escalation. This result was unexpected, given the direction of escalation predicted by the hypothesis.

To supplement the investigation of this hypothesis, survey results were also analyzed. The survey was sent to 573 directors who served on compensation committees of the 185 firms in the ECR data base (Caranikas et al., 1994). A total of 133 useable surveys were returned, comprising a response rate of 23.2%

Respondents' ages ranged from 50 to 79, with a mean of 66.8 (s.d. = 6.2) years. There were 132 surveys returned by men, and one by a woman. The mean number of years served on the board in question was 14.5 (s.d. = 7.3). Overall, the respondents reported an average of 3.7 (s.d = 2.4) board affiliations in addition to the focal board.

Since personal responsibility for an outcome predisposes decision makers to escalation (Brockner et al., 1986; Caldwell & O'Reilly, 1982; Duhaime & Schwenk, 1985), survey questions were designed to tap the construct of personal responsibility/autonomy from three distinct perspectives. First, questions regarding general autonomy or decision making latitude were assembled from the literature. The concept of responsibility was further investigated in two, more specific, ways: as independence from a consultant and as independence from management itself. Standard questions regarding individual autonomy were modified to apply specifically to these two additional authority sources. A principal axis confirmatory factor analysis confirmed the presence of three factors with Eigenvalues greater than 1.0.

Table 7 presents results of the factor analysis. Bartlett's test of sphericity for this factor analysis yielded a value of 1220.16, ($p < .001$), confirming that the population correlation matrix was not an identity and that the factor model was appropriate. The value of the Kaiser-Meyer-Olin measure of sampling adequacy was .82, which is considered "meritorious" (Kaiser, 1974). In addition, a measure of sampling adequacy was similarly computed for each individual variable. Since reasonably large values are needed for a good factor analysis, variables with small

values were eliminated from further analysis, leaving the 19 that appear in Table 7.

Table 8 presents the coefficient alphas and item-to-total correlations of each of the scales that comprised the initial factor structure of the survey instrument. Because ten survey items demonstrated significant skewness and/or kurtosis, a series of operations were performed to normalize the data before proceeding with further analysis (Tabachnick & Fidell, 1989). Table 9 summarizes these steps.

The means, standard deviations and intercorrelations of the three survey factors--autonomy/responsibility, independence from management, independence from consulant--are presented in Table 10. These values were derived from scoring raw survey data, before transforming operations were undertaken and z-score values were derived. Once those manipulations had been carried out, means on the factors became zero and standard deviations one. Consequently, Table 10 presents more meaningful data, derived from 13 non-standardized items on factor Autonomy (autonomy/responsibility), three items on factor Indep/man(independence from management), and three items on theIndep/con (independence from consultant) scale.

Only one survey was returned by a director of a firm at the highest level of decoupling, the level representing a "decoupled" score on all of the 4 decoupling measures described previously. This raised the issue of response

Table 7

Factor analysis of survey items

Item Description	Factor 1	Factor 2	Factor 3
Autonomy in comp. decisons	.77		
Personal influence in determining objectives	.74		
Personal responsibility for comp. decisons	.65		
* Had little voice in comp. package	.61		
* Comp. decisons beyond my control	.60		
Had direct role in shaping comp. package	.58		
Personally take credit for cttee. work	.54		
Cttee made own decisions	.57		
Independent thought and action on comp. cttee.	.50		
Influence of self on pay package	.50		

Table 7 cont.

Item Description	Factor 1	Factor 2	Factor 3
Responsibility for initiating	.48		
Problems avoided through planning & analysis	.48		
Responsibility for careers of others	.44		
Comp. cttee. influenced by others' expectations		.71	
Comp. cttee influenced by company rules		.65	
Management responsible for pay plan		.49	
Influence of consultant on pay plan			.76
Consultant drove comp. process			.72
* Pay package done without help of consultant			.67

* Item reverse-scored.

Table 8

Cronbach alpha and item-to-total correlation of survey scale items

Item Description	Cronbach α	Item-to-total Correlation
Autonomy	.89	
The Compensation Committee had a great deal of autonomy in making in compensation decisions.		.78
I was allowed a high degree of personal influence in determination of Compensation Committee objectives.		.74
I felt a very high degree of personal responsibility for the executive compensation decisions that were made.		.62
I really had little voice in the formation of the executive compensation package.		.64

Table 8 cont.

To a great extent, the executive compensation decisions were shaped by forces beyond my control.	.63
As a Compensation Committee member, I had a direct role in shaping the executive pay package that the firm adopted.	.66
I felt I should personally take the credit or blame for the results of the work of the Compensation Committee.	.52
To what extent was the Compensation Committee allowed to decide on its own how to go about getting the job done?	.54
The deliberations of the Compensation Committee provided opportunity for independent thought and action.	.57
How much say or influence did you feel you had on creation of the executive pay package?	.52

Table 8 cont.

Describe the responsibility you felt for initiating assignments and projects as a Compensation Committee member.		.54
Many potential problems in the executive compensation package were avoided through careful planning and analysis.		.44
Describe the responsibility you felt for the future careers of others.		.40
Independence from Management	.64	
The way the Compensation Committee did its job was influenced a great deal by what others expected of it.		.45
The way the Compensation Committee performed was influenced a great deal by company rules, policies and procedures.		.53
Corporate management was chiefly responsible for the executive pay plan ratified by the Compensation Committee.		.39

Table 8 cont.

Independence from consultant	.75	
How much say or influence did you feel the consultant had on the creation of the executive pay package?		.62
Recommendations of a consultant really drove the process of making compensation decisions.		.57
Most of the real work on the executive pay package was done without the help of a consulting firm.		.55

Table 9

Skewness and kurtosis of survey items and action taken to rectify

Survey Item	Violation of Normality	Action Taken
Self influence	Skew=-2.82	reflect & log
Career	Skew=-2.97	reflect & square root
Direct role	Skew=-6.79 Kurtosis=6.01	reflect & log
Plan	Skew=-3.07	reflect & square root
No control	Skew=3.78	square root
Personal influence	Skew=-5.83 Kurtosis=3.71	reflect & log
Degree responsibility	Skew=-6.19 Kurtosis=5.99	reflect & log
Voice	Skew=8.07 Kurtosis 5.73	log
Consult	Skew=3.17	square root
Autonomy	Skew=-7.55 Kurtosis 7.51	reflect & log

Table 10

Means, standard deviations and intercorrelations of survey factor data

Variable	Mean	S.D.	1	2	3
1. Autonomy/ responsibility[a]	51.62	7.97			
2. Independent/ management[b]	9.64	1.88	.066		
3. Independent/ consultant[c]	9.58	2.95	.155	.273**	

[a] $\alpha = .89$

[b] $\alpha = .64$

[c] $\alpha = .75$

** $p < .01$.

bias. To investigate, a Chi-square analysis was performed to determine whether the likelihood of survey return was equal for each of the decoupling levels. Results of this analysis are presented in Table 11. A Chi-square value of .375 (df = 4) meant that probability distributions for each of the levels were virtually identical, and there was no response bias. Further, the Phi statistic (ϕ = .025) suggested there was almost no association between decouple level and survey return.

Consequently, to provide decoupling groups that were more equally numerically balanced, the single survey from a level 4 individual, along with level 2 and 3 surveys, were recoded into one decoupling level. Surveys from directors at the 0 and 1 level were also combined into a single level for purpose of analysis. Conceptually, this meant that regression analysis was performed with high and low level of decoupling as the dependent variable. Since logistic regression is the appropriate method for analysis of data with a dichotomous dependent variable, this technique was used. Table 12 presents summary statistics and correlations.

Table 13 presents results of the logistic regression analysis. Four sets of coefficients are reported: one each for the three survey factors and one representing additional board affiliations. All variables remained in the model throughout the likelihood ratio method stepdown procedures.

Table 11

Chi-square table with observed, expected, and residual values for decouple level and survey return

	Decouple Level					
Survey Response:	0	1	2	3	4	Row Total
Returned	23 17.7 5.3	34 41.2 -7.2	47 41.2 5.8	28 29.5 -1.5	1 1.2 -.2	133 22%
Not Returned	56 60.6 -4.6	141 134.8 6.2	137 141.9 -4.9	115 110.7 4.3	7 5.9 1.1	456 77.4%
Column Total	79 13.4%	175 29.7%	184 31.2%	143 24.3%	8 1.3%	589 100%

Results did not support Hypothesis 6's assertion that personal responsibility would predict decoupling, however members' additional board affiliations were significant. This finding will be discussed in the next section, along with other tests of Hypothesis 7.

Finally, survey data were investigated via two separate direct discriminant analyses. This was done to double check findings regarding survey factors role in predicting decoupling group membership. Discriminant analysis was also used to better interpret which factors would separate various levels of decoupling from one another.

In the first discriminant analysis, all three survey factors were entered as predictors, and level of decoupling was the grouping variable. Table 14 summarizes the classification results of this analysis. One discriminant function was calculated, with a $\underline{X}^2$ of 1.67 (3), $\underline{p} < .64$. Overall the results were not significant, with 50.88% of cases correctly classified.

To improve predictive potential, a second discriminant analysis was carried out that included number of additional board memberships by a director. Hypothesis 7 suggested applying this test. A summary of results of this analysis is presented in Table 15. As before, one discriminant function was calculated with a $\underline{X}^2$ of 4.45 (4), $\underline{p} < .35$. Addition of the board affiliation variable improved the predictive potential of the survey somewhat, as the percent

Table 12

Summary statistics and correlations for survey factors, board affiliations, and decouple level

Variable	Mean	S.D.	1	2	3	4
Autonomy/Responsibility	51.62	7.97				
Independent/Management	9.64	1.88	.396**			
Independent/Consultant	9.58	2.95	-.140	-.088		
Board affiliations	3.76	2.43	.088	.189*	-.090	
Decouple level	1.57	.49	.060	-.039	.047	-.163

* $p < .05$.

* $p < .01$.

Table 13

Results of logistic regression analysis

Step	Variable	Beta	S.E.	Log likelihood	Model X^2	Improvement X^2	p	Hit rate
Baseline				153.44			.00	50.0%
1	Autonomy/ responsib.	.033	.044	152.87	.568	.568	.45	58.4
2	Independent/ management	-.138	.147	151.98	.895	.895	.35	61.1
3	Independent/ consultant	.037	.11	151.87	.109	.109	.74	59.3
4	Additional board	-.137	.08	148.87	3.00	3.00†	.09†	62.0

† $p < .10$

of cases correctly classified rose to 58.4% with its inclusion. Consequently, discriminant analysis confirmed findings of the logistic regression analysis that survey factors made no difference in predicting decoupling, although number of additional board affiliations added marginally to the predictive value.

Hypothesis 7

This hypothesis predicted that boards of directors with members serving on many other boards would escalate commitment to a CEO in response to principles of reinforcement theory. It was reasoned that with more board affiliations, directors respond to variable schedules of reinforcement and be more prone to escalation--less willing to extinguish the reward response--in the face of negative feedback. Two tests were used to examine this hypothesis.

First, number of board affiliations was entered into a regression equation after log of sales and form of corporate control entered first as control variables. This variable was called "interlock," and its results in the regression appear in Table 6. The t value for the variable was significant at $p < .10$, and there was a significant increase in the value of R^2 as a result of introducing it into the equation. The positive beta for additional board memberships indicated that as membership rose, so did tendency to escalate, supporting the hypothesis.

Second, as mentioned in the preceding section, the number of additional board affiliations was a significant variable in analysis of survey data. When adding this variable to a general regression that included survey scales, it emerged as significant $p < .10$. The negative beta (-.137), however, was inconsistent with results obtained with archival measures and suggested that as additional board affiliations were included, at least as pertained to survey respondents, escalation decreased.

Summary of Results

Table 16 summarizes the results of all seven hypotheses. Hypothesis 1 (the role of firm uncertainty), Hypothesis 4 (the role of gender), and Hypothesis 7 (effects of additional board memberships) were supported. Notably, support for Hypothesis 7 came from the archival data only, with survey data contradicting the finding.

Results of three hypotheses were mixed. Hypothesis 2 was not confirmed using tenure of CEO, however with a variable representing human capital, data did support Murphy's (1986) learning hypothesis. Demographic effects, the subject of Hypothesis 3 also found mixed support. Educational background of directors supported the hypothesis directly, and years served as a director was predictive, although not in the direction hypothesized. Directors' age made no difference. Hypothesis 6 (the role of personal responsibility) was another that produced mixed results.

Table 14

Results of discriminant analysis involving level of decoupling and survey factors

Actual Group	No. of Cases	Predicted group membership	
Low decoupling	48	26	22
		54.2%	45.8%
High decoupling	66	34	32
		51.5%	48.5%

Percent of grouped cases correctly classified: 50.88%

Table 15

Results of discriminant analysis involving level of decoupling, survey factors and additional board affiliations

Actual Group	No. of Cases	Predicted group membership	
Low decoupling	47	24	23
		51.1%	48.9%
High decoupling	66	24	42
		36.4%	63.3%

Percent of grouped cases correctly classified: 58.41%

Archival data contradicted the hypothesis, while survey data was inconclusive.

One hypothesis was not supported at all. Hypothesis 5, using salary as a proportion of cost to represent cognitive dissonance could not be confirmed with this data set. Finally, statistical levels of significance, while meaningful, were weak in support of both the gender variable and the additional board variable.

Table 16

Results of research hypotheses

Hypothesis	Supported?
1. Boards of firms where uncertainty prevails will decouple	Partial
2. Boards with high-tenured CEOs will decouple	Partial
3. Directors' demographic characteristics predict decoupling	
a) years as director	Yes
b) education	Yes
c) age	No
4. More women directors associated with less decoupling	Yes
5. Salary as high proportion of cost leads to decoupling	No
6. High stability on board/personal responsibility leads to decoupling	
a) archival data	No
b) survey data	No

Table 16 cont.

Hypothesis	Supported?
7. Directors on additional boards leads to decoupling	
a) archival	Yes
b) survey	No

CHAPTER SIX: DISCUSSION

Introduction

This chapter interprets and discusses the results of statistical tests of each of the hypotheses. It explores major findings and contributions of the study, as well as its limitations. Finally, the chapter offers some suggestions for future efforts in the field of behavioral research in executive compensation.

Contextual Variables

The first two hypotheses belonged to a general organizing framework on the conceptual model of escalation (see Figure 2) that was designated "contextual variables." These hypotheses dealt with environmental or extraneous forces operating in the general milieu in which boards function. Hypothesis 1 addressed how firm uncertainty might come into play to influence directors' pay determinations. Hypothesis 2 attempted to relate CEO tenure to escalation of commitment.

Beginning with Hypothesis 1, two tests were carried out to determine the presence of a moderator variable. In the first, Saunders' (1956) method of creating a crossproduct term was used to determine including a moderator variable in the regression would increase predictive power. This type of nonlinear regression should yield more explanatory power than is accomplished by linear regression alone. The results were as expected, although only marginal in their magnitude.

A slightly different approach to the question of a moderator variable, however, yielded clearer results. Subgroup analysis compared correlations between the moderator variable and intercept differences for each of the three levels of uncertainty. Differences were at once evident for the three groups. In the case of the medium uncertainty group in particular, the correlation between the moderator term and the criterion, executive pay, was quite high: .55 ($p < .05$).

The other subgroup correlations exhibited striking differences from this value. The high uncertainty group's correlation with the moderator was .04, and the low uncertainty group's was -.12. Since the objective in subgroup analysis is to demonstrate that the moderator distinguishes effectively between groups via differences in correlation coefficient, this informal comparison suggests such differences exist in the data.

The net effect was to establish that uncertainty played a significant role in the construction of an executive pay package. Furthermore, it had predictive potential according to results of moderated regression analysis. A more detailed look at the role of uncertainty was required, however, because uncertainty in and of itself often garners a monetary return for executives.

For this reason, this research followed the approach of Ciscel and Carrol (1980) in calculating a residual pay

score, or pay that was net of return to uncertainty. Their reasoning was that executive pay is a result of many intercorrelated variables. Whether one considers sales, net income, or other proxies for firm size, there is difficulty in separating these factors from profitability to determine which has the greatest effect on executive pay.

Their answer was to separate the effect of size on profitability to produce a "net" or residual profit term. The result of this particular methodology provided neither a neo-classical nor a managerialist, but an econometric explanation for executive compensation. The present research followed steps Ciscel and Carrol (1980) outlined to create a residual pay term that was net of uncertainty. Whereas Ciscel and Carrol believed that sales and profit exhibited signs of multicollinearity, uncertainty and compensation might present the same dilemma.

Consequently, it was essential to separate the return paid to an executive for managing an enterprise in an uncertain environment from what may simply be escalation of commitment to that person. In the present instance a behavioral explanation, rather than an econometric one, explains the results.

The first step was to compute a pay figure that excluded any return to an executive for binding himself or herself to an uncertain enterprise. With this residual pay score in place, performance betas were compared in

regressions for high, medium and low uncertainty firms. Once the effect of financial reward in return for uncertainty was factored out, the regression equations simply presented the undiluted effect of performance on executive compensation. As the impact of performance rose or fell, depending on the level of uncertainty operating in the environment of firms, other factors in the pay decision came into play as less or more important, respectively.

Differences in the performance beta are the key to understanding results obtained by testing Hypothesis 1. The data are straightforward in affirming, via a Chow test of regression coefficients, that there were significant differences in the relative importance of performance in the compensation contracts of various kinds of firms. Directly supporting the hypothesis, in the group of firms where uncertainty was greatest, the performance beta was smallest. This allowed other factors to play a greater role in executive compensation.

This result is analogous to laboratory findings, wherein decision makers are more likely to escalate their commitment to a failing course of action whenever they believe the reasons for negative feedback--in this case poor performance--are unstable rather than stable (Brockner, 1992). The data are telling us that when a situation is volatile or highly unsteady, a board of directors will be more likely to spend money on a CEO to achieve a desired

result. Further, they will de-emphasize performance in doing so. Thus the pattern of behavior that has been observed consistently in laboratory experiments is mirrored in directors' decisions regarding executive pay: in the hope but not the certainty of a positive outcome they will escalate commitment by increasing executive compensation.

An interesting aspect of tests of Hypothesis 1 was that at the low uncertainty end of the continuum, the relative impact of firm performance again fell, leaving room for escalation to figure into board compensation decisions. While this result was unexpected, it appeared to support the notion that additional correlates of escalation, already established in laboratory studies, could operate to elevate compensation in stable firms.

Where uncertainty was low, the data described a set of firms that functioned in a steady, relatively unchanging environment. According to the results, without uncertainty operating, performance became less important in determining compensation. What was driving pay decisions in its place?

With uncertainty removed as a consideration, other motives for escalation must be in effect. These motives could include (a) effects of belonging to a highly cohesive or autonomous group, (b) results of long association with an executive, or (c) cognitive dissonance. These sources of escalation behavior were investigated in the course of testing other hypotheses. If they were borne out, they

clearly also apply in the case of low uncertainty firms. In any event, the data are unequivocal in telling us that escalation is going on, it is left to additional hypothesis testing to determine its cause.

The data did not support Hypothesis 2, which proposed greater decoupling of pay from performance would accompany increasing CEO tenure. One interpretation of these results is that the "learning hypothesis" may hold true (Murphy, 1986). This hypothesis states that CEO ability is revealed over time as CEO tenure progresses. As a consequence, a board becomes able to identify correctly the real worth of a CEO to an enterprise, and to reward accordingly.

Instead of executive compensation decoupling from performance, the learning hypothesis suggests, and the data concur, that over time pay will become more closely tied to performance, whatever that performance might be. This result replicated the Murphy (1986) data indicating that the effect of performance on compensation increases with CEO tenure, rather than becoming decoupled from it. The learning hypothesis theory suggests that, over time, a board of directors will tie pay to performance more closely as they become familiar with the CEO's true abilities.

In practical terms, data analysis suggested that shareholders are the ultimate beneficiaries of the service of long-tenured CEOs. This is not because an executive's pay will abruptly shift downward to reflect acquisition of

new knowledge by a board, but because steady pay increases associated with updated estimates of abilities and human capital increase at a decreasing rate (Murphy, 1986).

Thus, although elevated trust over time has been seen as an intrinsic effect of a long-term bonding process between an executive and a board (Chodhury, 1985), it was not evident from the data that increased trust led to increased commitment or escalation. The temporal effect worked less to bolster escalation than to pinpoint the real worth of an executive to a corporation.

Temporal aspects of escalation still need to be considered in translating escalation principles from the laboratory to the broader arena of corporate behavior. It is evident from lab studies that escalation of commitment is a heavily time-dependent phenomenon (Akerlof, 1991; Brockner, 1992; Staw & Ross, 1989). Yet measuring CEO tenure did not prove to be the aspect of time that predicted escalation best. Whether a better time-related measure would be time spent as a director, time devoted to a particular enterprise, or overlapping time that directors and CEO have mutually spent on a board, the problem of the role that time plays in escalation merits further study.

Board Composition Variables

Hypothesis 3 investigated board demographic influences on executive pay. Data pertaining to three different demographic variables wre collected and analyzed. Of the

three, two demographic similarity indices demonstrated a significant influence on executive pay. These two were (a) number of years served as a director, and (b) director education. A third demographic variable, director age, had no apparent influence on CEO compensation.

Because the index representing number of years served as a director was based on a coefficient of variation, the positive beta meant that greater tenure diversity increased decoupling of pay from performance. This finding contradicted the hypothesis, which suggested that greater similarity between board members would enhance decoupling. The results lead one to envision two distinct types of corporate boards. One includes directors with a diverse range of years affiliated with a firm. Another type of board would be composed of primarily long-tenured members. According to the data, it was diverse boards that escalated pay.

An explanation for this effect lies in the fact that a diverse board, by definition, includes both individuals who have served for a long time and those who are new to a board. Power differences between members based on seniority may characterize this kind of board. Ultimately, differential power among directors could influence the compensation package. For example, it may be that where compensation decisions are concerned, more powerful members (who are friends of the CEO) prevail upon others on a board

to acquiesce to their wishes and preferences. This scenario could explain the escalating commitment noted in the data exercised by boards comprising variable director service .

One characteristic of the data that expands upon the director power explanation is the fact that all CEOs in the sample were in office for the entire 4-year period studied. Naturally, many were in office long before that. Consequently, the data set, by its very definition, consisted of reasonably long-tenured executives (mean time in office: 11.67 years). Boards that also included long-tenured directors created a situation with the potential for CEOs to co-opt these individuals or to rely upon social influence tactics and norms of reciprocity to control the compensation-setting process (e.g., Finkelstein and Hambrick, 1988; Wade, O'Reilly, & Chandratat, 1990).

Furthermore, even though this research did not investigate similarity between a CEO and a board, finding increased decoupling among directors with tenure diversity provided some indirect support to earlier work by Westphal and Zajac (1994). They concluded that increased CEO/board demographic similarity resulted in more generous CEO compensation contracts. Support for their findings comes from the fact that the ECR data set included predominately long-tenured CEOs. Results showed where boards included long-tenured directors as well--the diverse boards--decoupling occurred.

In the present case, no relationship between board tenure per se and escalation was hypothesized. For all the reasons discussed above, it may be that long service on a board is associated with decoupling. On the other hand, even short service on a board could account for escalation in the following way. Westphal and Zajac (1994) found that when CEOs were more powerful, they appointed new directors who were more like themselves demographically and more generous CEO compensation contracts ensued. Consequently, it could be short-tenured individuals on a board who are falling into line, becoming co-opted by a CEO.

The present data did not attempt to answer whether it was short-tenured or long-tenured directors who were at the root of escalation. The data simply affirmed that diversity on a board, that is, having a mix of short- and long-tenured directors was in some way associated with escalation of commitment to an executive.

Thus, future research should investigate whether boards composed of long tenured directors or short tenured directors tend to escalate pay to an executive. This would be a valuable piece of information, since entrenchment on corporate boards, if it leads to decoupling of pay from performance, is a situation that should be avoided from the perspective of protecting shareholder interests.

Investigating another aspect of Hypothesis 3, results showed that where there was board diversity in educational

background, there was likely to be less decoupling of pay from performance. This result confirmed Hypothesis 3. It appeared that when individuals brought a more heterogeneous educational experience to a board, the positive result was that executive compensation, as hypothesized, became more closely tied to performance.

The hypothesis proposed that high demographic similarity would promote cohesiveness and escalation. The education variable provided a good test of the effect of cohesiveness and suggests topics for further study as well. A demographically similar board on education, for example, might be a board characterized by numerous MBAs and little else in terms of educational diversity. These individuals could conceivably have shared some thought-patterns based on similar educational backgrounds, but they could also have shared an in-group membership because of where they got the MBA degree. When the in-group membership was diffused, and more educational diversity was observed, escalation occurred significantly less often.

Data collection did not include noting schools directors attended or where they obtained degrees. However, the possibility that this additional expression of cohesiveness could add explanatory value to the demographic data suggests looking at it in a future study. In terms of what the data suggest in the present study, educational

demographic similarity may have engendered cohesiveness and subsequent decoupling of CEO pay from firm performance.

A caveat must be added to a discussion of cohesiveness flowing from demographic similarity. The hypothesis suggested that similarity would lead to in-group thinking and tendency to protect unanimity by escalating commitment to a CEO. Variability or demographic diversity on boards could also be a means of achieving critical thinking and failure to escalate would result. This possibility should be noted and examined in further studies of board decision making.

Hypothesis 4, addressing gender of board members, also provided solid evidence of the benefits of diversity. Overall, about 5% of board members in the data set were women. However, as the proportion of female board members rose, so did the practice of tying CEO pay more closely to performance. This result directly supported evidence from lab studies showing that women are less likely than men to escalate commitment to a failing course of action.

Keeping in mind the effect educational diversity had on decoupling, another explanation may be that it was simply diversity per se, and not necessarily gender diversity, that was most critical. However, in exploring this particular hypothesis, the gender variable was the only one that could have been responsible for the result. Whereas there were several different levels of education in the previous

hypothesis, Hypothesis 4 had only two values: male and female.

When similar results have prevailed in lab studies, the proffered explanation has been that men become more invested in any threat to their own personal expertise, particularly in more public situations, than women do. Consequently, in order to self-justify, they escalate commitment past the point where escalation could be supported. If this is what really happens on male-dominated boards, perhaps adding women to a board introduces individuals who are less concerned with protecting their self-image. Thus, they are less likely to boost pay to an executive when performance does not support doing so. This was the cumulative effect of adding women to a board, in the case of the present data.

It must also be mentioned, in view of the in-group, stable core, and executive co-opting arguments presented above, the possibility that women have not been members of inner circles of power brokers long enough to establish ties with CEOs, promoting reciprocity in pay-setting. Because of this, they view compensation packages from the perspective of true outside board members, and not fellow CEOs, making any potential social comparison effect irrelevant.

Firms appear to be making a concerted effort to add female members to their boards (Schonfeld, 1994). The problem has been in finding enough well-qualified women to fill available seats. The somewhat surprising fact that

only one survey out of 133 returned in the survey portion of data collection came from a woman likely speaks to the immense demands on the time of this coterie of highly qualified women. Concrete data supporting their tendency to tie pay more closely to performance, as opposed to escalating commitment, is an additional strong argument for making efforts to recruit qualified and able women for corporate boards.

Psychological Variables

Hypothesis 5 postulated that boards invoke cognitive dissonance when they pay out a high proportion of total costs in the form of executive compensation, yet firm performance remains poor. The hypothesis was derived from laboratory studies that in order to self-justify a high compensation level, directors would escalate or decouple pay from performance. In fact, this did not appear to be the case.

Instead, there was no statistical evidence that escalation rose along with a rising proportion of firm cost represented by salary. This was somewhat surprising, since self-justification is one of the most powerful and widely accepted explanations for escalation behavior in laboratory experiments. It could be that the relative proportion of compensation compared to total cost in this data set (.003%) was not enough to engender real dissonance. Companies in the sample were manufacturing firms. Compared to more

regulated industries, such as utilities, or to lower margin industries like retailing, manufacturing is an industry category in which relatively high salaries, often related to firm size, are more common (Crystal, 1989). Perhaps in a sample of firms from less high-paying SIC codes, salaries as a high proportion of costs would engender more dissonance, and thus provide support for the hypothesis.

Personal responsibility, the theme of Hypothesis 6, was measured in the archival data by raw number of changes (additions and deletions) to a board of directors. A low number of changes, resulting in a board with stable membership, was theorized as one in which members over time develop high personal responsibility for compensation decisions. As personal responsibility rose, so should escalation behavior. Results supported the opposite effect. In essence, as changes occurred--more members moving onto and off a board--a significant amount of decoupling became evident. Conceptually, this suggested the same sort of board that Hypothesis 3 showed engages in decoupling: one in which board members have highly varying tenure on a board. Since two sources revealed the same effect, it is important to understand what may be going on.

An explanation might relate to the stable membership core of a board. Analysis of both Hypotheses 3 and 6 supported the presence of a core group of individuals. A stable core is likely to include persons who are long-time

members and who have survived board turnover. It may also represent individuals hand-picked by a CEO to rubber stamp his or her preferences. These alternatives are not mutually exclusive. Indeed, a considerable literature exists that alleges CEO dominance over the director selection process is a significant source of management control (e.g., Kosnik, 1987; Pfeffer, 1972).

One of the motives of director selection by a powerful CEO is to ensure appointment of individuals sympathetic to his or her preferences, in particular to compensation preferences. Consequently, it may be a powerful CEO who is the real force behind a stable core of board members. This possibility cannot be overlooked since data have established that presence of a stable core of board members fosters decoupling.

In essence, this meant that the net effect of board entrenchment was to raise CEO pay undeservedly. Whether or not director entrenchment occurs when CEOs co-opt a board is unclear in this case, but it could be one interpretation. There is no reason for a CEO to replace individuals who decoupled pay from performance, and a highly stable board that escalated pay would become the end result. Neither archival data nor survey data supported the personal responsibility variable. Autonomy/responsibility as measured on the survey instrument was not a significant predictor of decoupling. Two considerations should be

noted, however. First, the autonomy/responsibility construct was tested differently in archival and survey data. The archival measure of membership stability was selected as a proxy for personal responsibility, whereas the survey measure included 13 questions about autonomy/responsibility. Failure of the two tests to produce the same result may imply these indices measured different constructs.

Second, since there were over 2,600 director observations in the archival data set and only 133 responses to the survey, archival results should probably be given more weight. Furthermore, results supporting the role of personal responsibility in escalation that were obtained by analyzing the larger data set have theoretical support in the literature on corporate control (e.g., Kosnik, 1987; Westphal & Zajac, 1994).

Another possibility is statistical power. The number of firms in the archival data set was 185. However the 133 survey responses could have come from, at most, only 133 firms, and possibly came from fewer. (Anonymous response format precluded knowing which firms were represented.)

Turning to additional board memberships, which Hypothesis 7 postulated would underlie decoupling, analysis of archival and survey measures again yielded conflicting results. Operant reinforcement principles formed the basis for Hypothesis 7's prediction that more board affiliations

would lead to decoupling. Theoretically, directors who serve on numerous boards had a reinforcement history--experience with firm success--that was likely to be variable.

It was unlikely, for example, that if an individual served on 10 boards that all 10 firms would be uniformly successful companies. Operant theory predicts that variable experience with success--having success in some instances mixed with failure in others--retards response extinguishment. Directors who were on numerous boards would be likely to persist in hoping for success (reinforcement), and would probably escalate commitment because they were accustomed to variable schedule reinforcement. This is, in fact, what was observed in the archival data.

The significant and positive beta for additional board memberships meant that as these affiliations rose, so did decoupling. Thus, the data support the effect of variable reinforcement on directors. There is also evidence from the finance literature of a link between number of directorships and performance of executive's companies (Kaplan & Reishus, 1990). Namely, executives who manage successful companies amass more outside directorships than those managing poorer performing firms. Consequently, a positive reinforcement history likely is a built-in feature of the experience of a director with many board affiliations. This appeared to be

the case in the present data, where numerous board memberships were strongly linked to escalation.

The experiences of those who responded to the survey, however, did not mesh so neatly with this explanation. Analysis of data for survey respondents showed the opposite trend. Although additional board affiliations significantly predicted decoupling, the negative beta coefficient meant that more affiliations actually decreased decoupling. One explanation may be that some real differences existed between individuals who took the time to respond to the survey, and directors in the larger data set from which they were drawn.

Furthermore, following Kaplan and Reishus' (1990) logic, directors with many board affiliations are themselves successful executives. Perhaps such individuals are less likely to tolerate poor performance, and escalate commitment, to a poor performing CEO. In either case, since there were over 20 times as many directors in the archival data set as responded to the survey, the archival data probably gave more reliable answers to research questions.

Research Limitations

Efforts were made at the data gathering stage to ensure that information was complete and accurate. Nonetheless, some companies provided very sketchy director information in their proxy statements compared to others, leading to questions of validity of the proxies themselves. Ideally,

every entry would be complete and there would be no missing data, however this is a practical impossibility no matter how many auxiliary sources are consulted. Hopefully, continuing changes in reporting requirements by the Securities and Exchange Commission will prescribe more complete details regarding members of boards of directors.

Firm representation in the data set was exclusively manufacturing firms from 21 two-digit SIC industries. Although firm varied in size and were geographically dispersed, data from other industries conceivably could produce different results.

Further, the four measures used to calculate decoupling were choosen to capture the relevant aspects of the phenomenon. Clearly, it would be preferable to employ a flawless measure of decoupling, if one existed. Use of multiple measures, then, is an acceptable compromise.

Although respondent anonymity enhanced the survey response rate, more might have been done in terms of analyzing surveys for evidence of decoupling if directors had been asked to identify their companies. For example, responses could have been matched to CEO pay information the archival data set to provide a more complete picture of the respondent's firm. This represented a trade-off that typically must be made when conducting survey research, and to the extent that it reduced the richness of data, it limited the present study.

Another major problematic element was the retrospective nature of the survey instrument, calling for respondents to remember attitudes they held during the 1987-1990 time frame. Directors may have forgotten important aspects of board processes, particularly if they served on many boards. Also, subsequent firm performance--either positive or negative--might have colored their recollections and influenced responses. However, since this was the time period for which abundant and detailed financial data was available in the ECR data set, there was no way to avoid having to contend with this particular limitation. Lastly, several individuals added personal comments to their surveys indicating that board of directors' attitudes toward compensation had changed significantly since the time frame being surveyed. This is a real possibility, and one worth exploring at a later date.

Suggestions for Future Research

In addition to seeing how director attitudes have changed since the 1987-1990 period, the possible importance of director tenure and entrenchment on a board are subjects that this research has identified are important and worthy of more investigation. Furthermore, along with executive compensation, director compensation is one part of the broader agency picture that should be investigated. When director pay is decoupled from firm performance, similar decouping of CEO pay could result in response to the self-

justification motive. Exploring director rewards is particularly salient in light of evidence in the popular press that director compensation will increasingly be tied to firm performance through stock ownership (Linden, Lenzer & Wolfe, 1995). Overall, the relationship between director and executive compensation is likely to be a productive area in compensation research and could be furthered with the ECR data set as a starting point.

Since results demonstrated that diversity of demographic variables like gender and education were important predictors of decoupling, additional demographic issues could be investigated in the general context of board diversity. Possibilities might include alma mater, functional background, or race. It would also be unfortunate to abandon trying to get at other "soft" constructs like commitment and cohesiveness on boards. Perhaps the best way to investigate these issues would be via one-on-one interview methodology, since survey methods and archival data are so resistant to yielding this kind of information.

Executive compensation research has been characterized up to now by very large efforts aimed at huge data sets, most often composed of archival financial information. Since many believe that information about human behavior and motivation is not fully captured in economic models, further research, to the extent possible, should endeavor to cross-

validate using primary sources. The difficulty will always be in securing cooperation from a population that has a vested interest in the status quo. Perhaps one tactic to pursue with recalcitrant executives is the argument that archival sources have generally always told researchers the same handful of "truths." The possibility that primary data could yield a different picture is an appealing one and should be vigorously promoted to those who are potential sources of data.

Summary and Research Contributions

This research was the first attempt to apply behavioral principles of escalation of commitment to pay decisions by a board of directors. A wealth of laboratory research, chiefly in psychology, has established some widely accepted explanations for escalation occurring. This study confirmed that research's findings in three significant areas.

First, it affirmed that environmental uncertainty influenced decoupling pay from performance. After removing the effect of financial return for managing in an uncertain environment, escalation entered into the compensation decision of firms operating under high uncertainty. There was evidence that escalation also played a part in firms that experienced low uncertainty as well, an unexpected finding.

Next, board diversity in education and in years on a board both affected decoupling. Where education was

concerned, it was educational homogeneity that elevated decoupling. This supported the thesis that greater cohesion within the board led to escalation. In the case of years on a board, a more likely explanation was that in-group membership on a board or the power of a CEO to dictate board appointments might explain decoupling.

Finally, the study supported earlier research conclusions that gender produces escalation of commitment. One of the strongest and most consistent finding of laboratory studies, the effect also translated to the corporate setting. This finding presents a forceful argument for the benefits of including women on corporate boards. Thus, a value of the study was to provide concrete and quantifiable evidence that naming women to corporate boards can benefit shareholders.

Regarding interlocks, or number of additional board memberships, the evidence that they influenced decoupling via operant learning was mixed. Survey data did not confirm the hypothesis, although archival data did. Certainly if one accepts the robustness of the archival data set, there was ample support for the operant learning explanation for decoupling. Again this is a phenomenon that laboratory studies had earlier demonstrated, and has strong theoretical support. This dissertation represents the first business-focused application of this principle.

Taken in total, the results added significant support to Murphy's (1986) learning hypothesis, as well as the managerialist literature on corporate governance. For example, acknowledging that member diversity in years on a corporate board does not lead to pay for performance but rather to decoupling, affirms a cynical view of corporate governance. Such data implies that a powerful CEO may succeed in imposing his or her will on a board either through rapport with long-tenured directors or personal appointment of short tenured directors.

Compared to the bulk of published work in executive compensation, this study attempted to resolve calls for research from two disparate quarters. On one hand, escalation scholars have decried the fact that their field is "plagued by laboratory thinking" (Staw & Ross, 1987:42). On the other, economists have urged behavioral scientists to take on the challenge of filling gaps left by economic models (Baker, Jensen & Murphy, 1988). Results of the present study provide evidence that spanning these two research streams can be attempted with some success.

Conclusion

Behavioral aspects of board of directors' deliberations will always be a difficult construct to identify and measure. Beyond natural resistance to sharing what goes on behind closed boardroom doors, directors are seeing continual SEC encroachment on the sanctity of their

proceedings. Nonetheless, efforts should continue to provide greater understanding of behavioral aspects of board processes. This is true since there is clearly more operating than the "black box" notion of corporate functioning that has dominated management research up to now. Results of this dissertation, while mixed, represent a first step toward furthering understanding of behavioral aspects of board processes.

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APPENDIX A

LETTER TO CEOs

February 17, 1995

1~

Dear 2~,

I am a university researcher studying decision making processes of individuals who determine compensation plans for corporate top management. My present research follows a set of 185 firms from 1987-1990. The methodology I am using is a short survey that is going out to persons who served on compensation committees during that time period.

This letter is being sent to let you know that your company is among those I am following. Since some of your present and/or past board members will be receiving this survey in the next few weeks, I am taking this opportunity to send you a copy in advance. I hope you will review it, and particularly that you will encourage those who receive the survey to take a few minutes to complete and return it.

As you will see, my focus is on a process or behavioral approach to decision making. I am hopeful that results derived from this way of looking at board functioning will ultimately be useful in helping both firms, and particularly directors, to increase value for stockholders.

If you would like a copy of the results when they are available, please contact me at the address on the right, or via e-mail at: AGJSM@ASUVM.INRE.ASU.EDU. Thank you in advance for your interest and assistance.

Sincerely,

Janice S. Miller
Project Director

APPENDIX B

INITIAL LETTER TO DIRECTORS

Dear 2~,

Directors who serve on compensation committees perform critical functions for the Boards of their organizations. Frequently however, our knowledge of the executive pay packages they ratify is only limited to the end product that we observe as stockholders or members of the general public. Nevertheless, there may be significant interpersonal and decision making processes occurring during committee deliberations that could affect the end result. Ultimately, a broader understanding of Board behavioral and process issues might help directors to create additional value for stockholders.

I have been following a set of 185 firms during the 1987-1990 time frame. Among them has been 3~, on whose Board you have served. Since you were on the compensation committee during that time frame, you are in a unique position to provide some of the answers to issues addressed in the enclosed questionnaire. I am particularly interested in your perceptions of how the decision making process worked, and how much responsibility you personally felt for the executive pay package that emerged.

You may be assured of complete confidentiality in responding to the enclosed questions. All data gathered during the course of this study will be analyzed at the aggregate level, and no individual respondent will ever be identified. Further, the entire set of questions takes only about 5 minutes to complete.

It is my intention to publish the results of this research in both academic and popular press outlets, however you may receive a summary of the results as soon as they are available whether you chose to participate in the survey or not. To do so, please contact me at the address printed to the right.

I would be most happy to answer any questions you might have. Please write or call. In addition to the phone and FAX numbers provided, I may be reached via e-mail at: AGJSM@ASUVM.INRE.ASU.EDU.

Thank you for your assistance.

Sincerely,

Janice S. Miller, Project Director

APPENDIX C

POSTCARD REMINDER

Dear Board Member:

About a week ago I mailed you a copy of a survey prepared at Arizona State University. This survey asked you to describe some aspects of board decision making and the experience of helping to make executive pay decisions. If you have not already done so, please take about 5 minutes to respond to the survey.

Again, let me offer you a summary of results when they are tabulated. I may be reached at (602) 965-3431 (phone) or via e-mail at AGJSM@ASUVM.INRE.ASU.EDU to add you to a mailing list for results, or to answer questions about this research.

If you have already responded, accept my thanks,

Janice S. Miller
Project Director

APPENDIX D

FOLLOW-UP LETTER TO DIRECTORS

March 10, 1995

1~

Dear 2~,

I am a university researcher who has been following a set of 185 firms during the 1987-1990 time frame. Among them has been 3~, on whose Board you have served. You may recall receiving a copy of the survey I am enclosing approximately 2 weeks ago. As I indicated at that time, the survey is entirely anonymous. Because of this, I have no way to know if you are among those who have responded or not. Hence, you are receiving another copy of the survey instrument.

If you have not already done so, please take about 5 minutes to fill out the questionnaire and return it in the enclosed envelope.

I am particularly interested in your perceptions of how the decision making process worked on the compensation committee, and how much responsibility you personally felt for the executive pay package that emerged. This is important because ultimately, a broader understanding of Board behavioral and process issues might help directors to create additional value for stockholders.

Let me reiterate that responses are entirely anonymous and no individual respondent will ever be identified. If you would like to receive a copy of the results of this research, please contact me at the address printed to the right. In addition to the phone and FAX numbers provided, I may be reached via e-mail at: AGJSM@ASUVM.INRE.ASU.EDU.

If you have already returned the survey that was mailed earlier, please accept my thanks for your assistance.

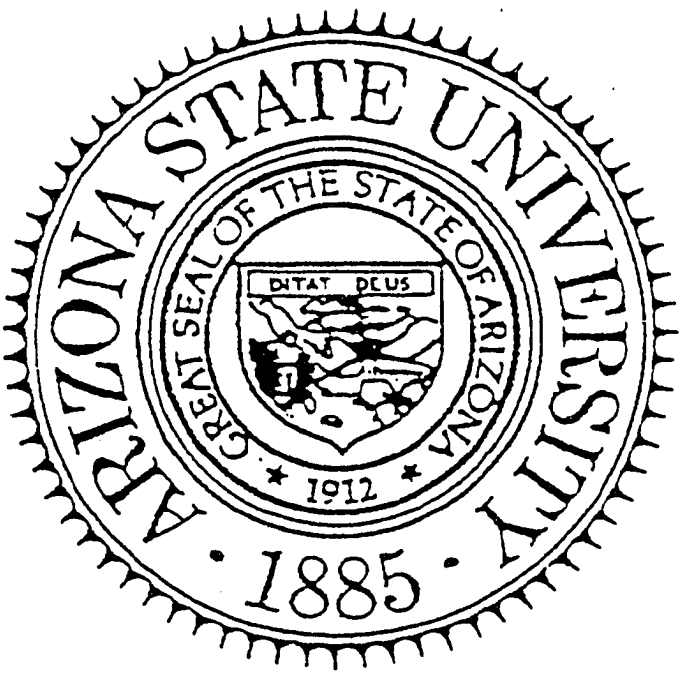
Sincerely,

Janice S. Miller
Project Director

APPENDIX E

SURVEY INSTRUMENT

EXECUTIVE PAY: A SURVEY OF DIRECTORS



ARIZONA STATE UNIVERSITY

DEPARTMENT OF MANAGEMENT

Please answer all of the questions. It is important to remember to respond based on your experiences between 1987-1990 on the board referred to in the cover letter. If you wish to comment on any questions or qualify your answers, please use the margins or the space provided on the back cover. When finished, return this questionnaire to:

Department of Management
Arizona State University
Box 874006
Tempe, AZ 85287-4006

A. Suppose you could have served on any committee on this board. Please put a check (✓) by the name of the committee on which you would have most and least preferred to serve.

Most like to serve		Least like to serve
____	AUDIT COMMITTEE	____
____	COMPENSATION COMMITTEE	____
____	EXECUTIVE COMMITTEE	____
____	FINANCE COMMITTEE	____
____	NOMINATING COMMITTEE	____
____	PUBLIC AFFAIRS COMMITTEE	____

1. In general, how much say or influence did you feel the following had on creation of the executive pay package? (Circle a number)

	LITTLE OR NO INFLUENCE		SOME INFLUENCE		QUITE A BIT OF INFLUENCE
MANAGEMENT	1	2	3	4	5
CONSULTANT	1	2	3	4	5
YOURSELF	1	2	3	4	5

B. Please describe the amount of responsibility you felt for the following areas when you were a Compensation Committee member. (Circle the number that applies)

	VERY LITTLE	LITTLE	SOME	GREAT	VERY GREAT
2. Your responsibility for initiating assignments and projects	1	2	3	4	5
3. Your responsibility for the work of others	1	2	3	4	5
4. Your responsibility for the future careers of others	1	2	3	4	5

C. The following items relate to the process of making decisions on the Compensation Committee. Please circle the response that best represents your experience with these decisions.

	VERY SELDOM		SOMETIMES		NEARLY ALWAYS
5. To what extent were decisions unanimous on the Compensation Committee?	1	2	3	4	5
6. To what extent were you able to act independently of management in performing your duties on the Compensation Committee?	1	2	3	4	5
7. To what extent was the Compensation Committee allowed to decide on its own how to go about getting the job done?	1	2	3	4	5

D. The next section concerns process issues surrounding Compensation Committee functions:

8. How difficult was it to reach consensus during Compensation Committee deliberations?

1 VERY DIFFICULT

2 DIFFICULT

3 NEITHER DIFFICULT NOR EASY

4 EASY

5 VERY EASY

9. How often did you see one or more persons from the Compensation Committee socially outside of meetings?

1 ALMOST EVERY DAY

2 ABOUT ONCE A WEEK

3 ABOUT ONCE A MONTH

4 ONLY AT TIMES WHEN THE COMMITTEE MET

5 NEVER

10. If you had a chance to work on a different committee within the same board of directors, how would you have felt about moving to another committee?

1 I WOULD HAVE WANTED VERY MUCH TO MOVE

2 I WOULD RATHER HAVE MOVED THAN STAY WHERE I WAS

3 IT WOULD HAVE MADE NO DIFFERENCE TO ME

4 I WOULD HAVE RATHER STAYED WHERE I WAS THAN MOVE

5 I WOULD HAVE WANTED VERY MUCH TO STAY WHERE I WAS

E. An important purpose of this study is to learn more about how compensation committee members make decisions. Which of the following do you think is the best answer to the questions below? (Circle the number that applies.)

	STRONGLY DISAGREE		UNSURE		STRONGLY AGREE
11. As a Compensation Committee member, I had a direct role in shaping the executive pay package that the firm adopted	1	2	3	4	5
12. Many potential problems in the executive compensation package were avoided through careful planning and analysis	1	2	3	4	5
13. There was very little an individual board member could do in order to change the "rules of executive compensation" in this firm	1	2	3	4	5
14. To a great extent the executive compensation decisions were shaped by forces beyond my control	1	2	3	4	5
15. Most of the real work on the executive pay package was done without the help of a consulting firm .	1	2	3	4	5
16. The way the job of the Compensation Committee was performed was influenced a great deal by company rules, policies and procedures	1	2	3	4	5
17. The compensation Committee deserved credit or blame for how well the executive compensation plan worked in this organization	1	2	3	4	5
18. The deliberations of the Compensation Committee provided opportunity for independent thought and action	1	2	3	4	5
19. The way the Compensation Committee did its job was influenced a great deal by what others (managers, consultants) expected of it	1	2	3	4	5
20. I was allowed a high degree of influence in determination of Compensation Committee objectives ..	1	2	3	4	5

	STRONGLY DISAGREE		UNSURE		STRONGLY AGREE
21. I felt a very high degree of personal responsibility for the executive compensation decisions that were made	1	2	3	4	5
22. I really had little voice in the formulation of the executive compensation package	1	2	3	4	5
23. I felt I should personally take the credit or blame for the results of the work of the compensation committee	1	2	3	4	5
24. I looked forward to meetings of the compensation committee	1	2	3	4	5
25. The Compensation Committee had a great deal of autonomy in making compensation decisions	1	2	3	4	5
26. Whether or not the executive compensation package was done right was clearly the responsibility of the Compensation Committee	1	2	3	4	5
27. Recommendations of a consultant really drove the process of making compensation decisions	1	2	3	4	5
28. Corporate management was chiefly responsible for the executive pay plan ratified by the Compensation Committee	1	2	3	4	5
29. The specifics of the executive pay package were largely supplied by a consultant	1	2	3	4	5

F. Finally, we would like to ask a few questions about yourself for statistical purposes.

30. Your present age: _____ YEARS

31. Your gender: (Circle number)
1 MALE
2 FEMALE

32. Number of years you have served on this board of directors: _____

33. Please characterize your role on the board: (Circle number)
1 INSIDE MEMBER
2 OUTSIDE MEMBER

34. Number of boards on which you serve besides this one: _____
(Include for-profit organizations only)

35. Which is the highest level of education that you have completed? (Circle number)
1 COMPLETED HIGH SCHOOL
2 SOME COLLEGE
3 COMPLETED COLLEGE
4 SOME GRADUATE WORK
5 A GRADUATE DEGREE
(specify degree) _____

Is there anything else you would like to tell us about the executive compensation decision process and your role in it? If so, please use this space for that purpose.

Also, any comments you wish to make that you think may help in future efforts to understand the process of board member decision making in general will be appreciated, either here or in a separate letter.

Your contribution to this effort is very greatly appreciated. If you would like a summary of results, please contact the researcher at the mailing or e-mail address provided on the cover letter.

APPENDIX F

LIST OF FIRMS AND DECOUPLE LEVEL

LIST OF FIRMS AND DECOUPLE LEVEL

1. Z score difference between changes in executive compensation over 4 years compared to A score changes in firm performance.

2. Difference between actual & predicted CEO compensation for change in pay.

3. Difference between actual & predicted CEO compensation for absolute pay.

4. Within person correlation of pay and ROE as measure of tightness of coupling.

COMPANY NAME	1	2	3	4
Advanced Micro Devices		✓	✓	
Air Products & Chemicals	✓	✓		✓
Alberto-Culver Co.		✓	✓	✓
Allied Signal	✓		✓	✓
Amax Inc.				✓
Amerada Hess		✓		
Amdahl Corp	✓		✓	✓
American Cyanamid Co.			✓	
American Home Products Co.				
Amoco Corp.		✓		✓
Aneheuser Busch Cos. Inc.				
Apple Computer Inc.		✓	✓	
Archer-Daniels-Midland Co.	✓	✓	✓	
Arvin Industries Inc.				✓
Asarco Inc.				
Ashland Oil Inc.				✓
Atlantic Richfield Co.	✓	✓	✓	
Baker-Hughes Inc.		✓		
Ball Corp.			✓	✓
Bausch & Lomb Inc.	✓	✓	✓	

Baxter International Inc.		✓		✓
Bethlehem Steel Corp.	✓			✓
Black & Decker Corp		✓	✓	✓
Boeing Co.	✓			
Boise Cascade Corp.	✓			✓
Borden Inc.		✓	✓	✓
Bowater Inc.	✓			✓
Briggs & Stratton				
Bristol Myers Squibb	✓			
Brown Forman			✓	✓
Brunswick Corp.			✓	✓
Champion International Co.		✓		✓
Chesapeake Corp.	✓		✓	
Chrysler Corp.	✓			✓
Clark Equipment Co.	✓			
Clorox Co.			✓	
Coca-Coca Co.		✓	✓	
Colgate Palmolive Co.	✓	✓	✓	
Commerce Clearing House				✓
Compaq Computer Corp.	✓	✓	✓	✓
ConAgra Inc.		✓	✓	✓
Consolidated Papers Inc.		✓		✓
Cooper Industries Inc.	✓		✓	✓
Coors				✓
Corning, Inc.		✓		✓
Crane Co.			✓	
Cray Research	✓			✓
Cummins Engine				✓

Cyprus Minerals Co.		✓		✓
Deluxe Corp.	✓			✓
Diamond Shamrock			✓	✓
Digital Equipment				✓
Dover Corp.		✓		✓
Dow Jones	✓		✓	✓
Dresser Ind.		✓		
Eaton Corp		✓	✓	✓
Echlin Inc.				✓
Emerson Elec.		✓		
Engelhard Corp.			✓	
Ethyl Corp.				
Exxon			✓	✓
FMC Corporation				
Federal Paper Board	✓		✓	
Ferro Corporation				✓
First Brands Corporation				
Fleetwood Enterprises			✓	
Freeport McMoRan		✓	✓	
Fruit of the Loom				
Gannett				✓
Gencorp	✓			
General Electric	✓	✓	✓	
General Mills			✓	
Georgia Pacific		✓	✓	✓
Gillette			✓	
B.F. Goodrich	✓		✓	✓
W.R. Grace	✓	✓	✓	

Great Lakes Chemical	✓		✓	
M.A. Hanna		✓	✓	
Harnischfeger Ind.			✓	
Harris Corp.	✓	✓		
H.J. Heinz				
Henley Group		✓	✓	✓
Hercules Inc.				
Hershey Foods	✓			
Hewlett Packard	✓		✓	✓
Hormel	✓	✓	✓	
Illinois Tool Works				✓
Inland Steel Ind.			✓	✓
Intl. Business Machines		✓	✓	✓
Intl. Flavors & Fragrances				
Intl. Paper Co.		✓		✓
James River Corp of VA				✓
Jostens		✓	✓	✓
Kellogg		✓		✓
Kerr McGee	✓	✓	✓	
Kimberly Clark				✓
Leggett & Platt	✓	✓		✓
Eli Lilly		✓	✓	
Litton Ind.				
Longview Fibre		✓		✓
Loral		✓	✓	
Louisiana Pacific	✓			✓
Lubrizol		✓	✓	✓
Manville				✓

MAPCO		✓	✓	
Masco		✓		✓
Mattel		✓		
Maytag		✓	✓	✓
McCormick		✓	✓	
McGraw Hill		✓	✓	✓
Mead	✓			✓
Medtronic			✓	✓
Merck		✓	✓	
3M		✓		
Monsanto				
NCR Corp.			✓	
NACCO Ind.	✓		✓	✓
Nalco Chemical		✓		
National Semiconductor		✓		
New York Times				✓
Newell				
Nucor		✓	✓	
Occidental Petroleum	✓	✓	✓	✓
PPG industries		✓		✓
PACCAR				✓
Parker Hannifin	✓	✓	✓	
Penn Central				
PepsiCo	✓	✓		✓
Perkin Elmer				
Pfizer			✓	✓
Philip Morris				
Phillips Petroleum				

Pitney Bowes			✓	✓
Polaroid Corp.				✓
Potlatch Corp.				
Premark International			✓	
Quaker Oats			✓	
Quantum Chemical	✓			✓
Ralston Purina				
Raytheon Co.			✓	✓
Reader's Digest Assn.				
Reynolds Metals	✓			✓
Rubbermaid			✓	✓
Sara Lee				
Savannah Foods		✓		✓
Schering-Plough				
Scott Paper			✓	
E.W. Scripps				
Seagate Technology			✓	
Sequa Corp.		✓	✓	✓
Shaw Industries	✓	✓	✓	
Sherwin-Williams			✓	✓
Sonoco Products				✓
Springs Industries	✓			✓
Standard Register				✓
Stone Container	✓	✓	✓	✓
Storage Technology				
Sun Microsystems	✓			✓
Tandem Computers				✓
Tecumseh Products				✓

Teledyne	✓		✓	✓
Temple-Inland				
Texaco Inc.			✓	
Texas Instruments		✓		
Textron Inc.		✓	✓	✓
Times Mirror		✓		✓
Timken				
Trinity Ind.		✓	✓	
Trinova Corp.				✓
Tyco Laboratories		✓	✓	✓
Tyson Foods		✓	✓	✓
Union Camp Corp.	✓			✓
Union Carbide Corp.		✓		
United Technologies Corp.				✓
VF Corp.	✓		✓	✓
Valhi Inc.				
Valero Energy	✓	✓	✓	
Vista Chemical		✓	✓	✓
Vulcan Materials			✓	✓
Warner Lambert	✓	✓	✓	
Washington Post	✓	✓		✓
Weyerhaeuser	✓			✓
Willamette Ind.				✓
Worthington Ind.			✓	✓
Wm. Wrigley Jr.				