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## **Corporate boards of directors : a study of the relationship of board structure and composition and corporate performance.**

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CORPORATE BOARDS OF DIRECTORS: A STUDY  
OF THE RELATIONSHIP OF BOARD STRUCTURE  
AND COMPOSITION AND CORPORATE PERFORMANCE

A Dissertation Presented

By

RICHARD MOLZ

Submitted to the Graduate School of the  
University of Massachusetts in partial fulfillment  
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

September 1984

School of Management

Richard Molz      1984  
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To my son Todd,  
that we may always have time.

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ABSTRACT

Corporate Boards of Directors: A Study  
of the Relationship of Board Structure  
and Composition and Corporate Performance

September 1984

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This study examines the relationship of the structure and composition of corporate boards of directors and measures of financial and social performance. The study was done in three phases, [1] developing a model that can discriminate boards as being more managerial dominated or pluralistic, [2] using this model to study the relationship of board form to financial and social performance, and [3] examining the particular attributes most associated with superior financial and social performance.

In phase one a discriminant model was developed using fifty firms selected at random from the 1982 Fortune 500 Industrial list. Using ten measures of board structure and composition a confirmatory factor analysis provided

input into a discriminant model that could identify boards as managerial dominated or pluralistic.

In phase two this model was used with two separate sub-populations of the Fortune 500 Industrial list. Two hypotheses were tested; the first relating managerial dominated boards to superior financial performance and the second relating pluralistic boards to superior social performance. The financial performance hypothesis was tested using 45 Fortune 500 food firms, while the social performance hypothesis was tested using firms identified by two independent cross-industry measures of social performance. Neither hypothesis was supported.

Phase three compared the ten attributes of composition and structure with various measures of financial and social performance. The boards that were most associated with superior financial performance were characterized as having normative control of the organization. The boards most associated with superior social performance seemed to be characterized by consensus decision making and a common sense of values. A contingency theory of board composition and structure was developed, relating board form to superior corporate performance.

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# C H A P T E R I

## INTRODUCTION

### Overview

The focus of this research is corporate boards of directors. Boards of directors have the ability to compose and structure themselves in nearly any manner they choose; there are few constraints upon their actions in these areas, and those existing constraints are generally modifiable at the board's recommendation. The board serves a legitimization function within the capitalist system, being the focal point of interaction between the firm's owners and the professional managers. The board is the unit of the organization recognized in the corporate charter as having the authority to manage the corporation.

The board has been assigned a lofty position within our society, in terms of corporate chartering, legitimization and representation of owners. But there is a fundamental question: Is the board only for appearance? Does the board actually affect the way a firm acts? These



are not moot questions. Several authors have suggested the board is dominated by management, and is as such only one more vehicle for officers and professional managers to control the corporation. Others have noted a widening gulf between ownership and control of the corporation. Still others have suggested that by reformulating the board, by changing its composition and structure, the fundamental actions of the firm could somehow be changed. In the view of Pfeffer and Salancik [1978], management and the board is overwhelmed by the range of choice alternatives and constraints on resources, relegating the decision making process to be only symbolic. Given such an effete role, both the board and management structure should be unrelated to corporate performance.

The objective of this research is to investigate these kinds of problems. Does a fundamental relationship exist between the board's composition and structure and the performance of large firms? If so, is there some composition and structure that is related to superior performance? The research investigates directly the composition and structure of boards of directors of Fortune 500 Industrial firms, and compares the board form [structure and composition] with measures of the firm's

financial and social performance. The research is not an attempt to study the sociological interactions within the board, nor does it attempt to develop totally new measures of financial or social performance. Rather, the attempt is to relate board composition and structure to relevant measures of financial and social performance.

#### Synopsis of Methodology

This research can be identified as design research, in the sense used by Litterer and Jelenik [1982]; it is not pure "knowledge" research, nor is it applied or "action" research. Rather it is oriented toward bridging the gap between these two extremes. It is grounded in theory, but its results are of benefit to individuals wishing to affect corporate behavior through the board of directors. Still, it is not organization specific, hence its classification as design research.

Corporate boards of directors differ markedly with the size of the corporation. Small corporations frequently have owner-managers who make up the entire board, while larger corporations have been seen as having boards more representative of professional managers than

owners [Berle and Means, 1967; Chandler, 1977]. It is irresponsible to infer that shareholder democracy does not function well in these closely held firms, as the shareholders are the firm. But it is also a dubious claim that shareholder democracy is ineffective in most publicly held firms, as there are several thousand publicly held corporations in which major shareholders control the board of directors. Conrad [1976] and Eisenberg [1969] have suggested for the several hundred largest industrial firms the board of directors is likely to be more responsive to managers than to the shareholders, but for the thousands of smaller firms the reverse is likely to be true. For this reason, this research focuses on Fortune 500 Industrial firms, and its validity does not extend beyond these very large publicly traded firms.

The research proceeds in three phases. Phase one is oriented around construction of a model. This model is useful for this research, and it will also enable other researchers to examine measurable board attributes and classify the board as either managerial dominated or pluralistic. Harrigan [1983] identified a common problem in policy research of focusing on measures of independent variables that may be too fine to be meaningful in a broad

based macro level research project. She suggests aggregating measures to create more coarse measures to improve both validity and reliability. Phase one of this project, the construction of a model of two board categories, seeks to achieve this coarse measure. It also allows testing of two extreme archetypes of board form.

Phase two is the examination of the relationship between the two extreme board archetypes and measures of the firm's financial and social performance. Statistically, the model in phase one was created by using confirmatory factor analysis to verify the existence of boards that could be identified as the managerial dominated or pluralistic archetypes, with the results of this factor analysis used to create a discriminant model. The testing in the second phase of relationships of financial and social performance is done with multiple analysis of variance and a Chi square test, respectively.

Phase three of the research breaks away from the analysis being driven by the two archetypes, reverting to a more traditional analysis of non aggregated variables. In this phase statistical regression techniques are used to determine which board attributes are significantly related to superior financial or social performance. This

analysis is used to develop an interpretive aggregation of the attributes, and relate these to alternative archetypes of boards of directors.

### Background

There are three legally recognized units of the corporation; the shareholders, the board of directors and the officers [Conrad, 1976]. While the shareholders legally own the corporation, it is the board of directors that is legally recognized as responsible for the management of the corporation. Corporate charters granted by the various states assign the responsibility of management to the board of directors, who may choose the degree to which responsibilities are delegated to officers and professional management. The board is elected by the owners of the firm to carry out these tasks.

The specific interrelationship between these three legally recognized units is described by the Model Business Corporation Act. This Act has been developed by the American Bar Association to establish an "ideal" corporation law. Many states have used the Model Business Corporation Act as a foundation for modernizing antiquated

corporate laws, and it can be referred to as a guide to modern corporate law [Kline, 1978]. The Act specifies the relationship between the three units.

The shareholders meet annually and to vote on matters that properly come before the shareholders. The board of directors is charged with the overall management of the business and affairs of the corporation, unless otherwise provided for within the articles of incorporation or corporate by-laws. The board of directors has the responsibility to recommend changes in the articles of incorporation and the corporate by-laws to the shareholders at the annual meeting. It also makes recommendations to the shareholders on issues such as mergers or dissolution of the corporation. Officers of the corporation are elected by the board of directors, and have such responsibilities as delegated by the board of directors, or as provided by the corporate by-laws.

The Model Business Corporation Act clarifies the relationship between shareholders, the board of directors and corporate officers. When the corporate form of organization was originated each corporation was granted a separate charter by the state legislature. The transition from individually granted legislative charters to

legislatively authorized administrative charters has maintained the concept of the three separate legal units of the corporation. The issue of overall control of the corporation is related to the size of the firm and concentration of stock ownership. In the thousands of smaller publicly held firms the shareholders continue to have predominant control of the corporation and the board of directors [Conrad, 1976; Eisenberg, 1969].

Such is not the case for the few hundred largest industrial firms in the United States. Over the years the growing complexity and size of corporations has led to the separation of ownership and control, concurrent with the demise of owner-capitalism and the growth of managerial-capitalism [Berle and Means, 1967; Chandler, 1977]. Owners are theoretically interested in maximizing their investment, either in terms of dividends or stock appreciation. These owners may also be willing to trade off some of their potential profit maximization for generating certain amounts of social amenities by the corporation. There is, however, no reason to assume that professional managers have the same orientation. Management of these few hundred largest corporations has been seen as focusing on long term stability and steady

growth over short term profits, occasionally sacrificing social amenities to achieve these goals [Chandler, 1977; Stone, 1975; Best and Connolly, 1982].

Others argue that the corporation has a responsibility beyond those of satisfying shareholders or managers. This argument is based upon recognition of the corporation as a social institution, granted a charter by one of the various states. As such the corporation exists by permission of the society, and it must therefore consider the social implications of its decisions [Dooley, 1969; Stone, 1975; Brudney, 1982; Hurst, 1982]. The board of directors is the appropriate focal point to resolve these differing perspectives. It is the focal point where the management meets the shareholders, with the shareholders electing a board to represent their interests, make appropriate strategic decisions trading off profit and social amenities and hire a management team that will operate in a manner consistent with these interests.

Many authors have suggested this is pure folly; boards of directors of very large industrial firms are controlled by management through the nominating process to the board, or by constructing a board that is so



fragmented any consistent perspective [i.e. management] will be the one to which board members most easily agree [Berle and Means, 1967; Mace, 1971; Stone, 1975]. Others have argued boards exist in their present form because it minimizes agency cost, providing the most efficient manner for owners to exert the degree of control they wish over their corporation [Fama and Jensen, 1983]. A similar perspective is that the directors' overriding standard is to create and protect the economic value of the firm [Aram and Cowen, 1983].

Boards may construct themselves in a wide variety of structural and compositional designs. The manner in which a board designs itself is under its control. Even if a skeletal design is outlined in the bylaws of the corporation, the board can recommend, and probably get, shareholder approval of a modified design. If a skeletal design is not present in the corporate bylaws, the board may make changes with a simple vote of the board itself. This leads to boards in differing corporations having vastly different structure and compositions.

The question arises as to the relation between the board form [structure and composition] of very large industrial corporations and the firm's performance. If

there is no relationship, why be concerned with board form at all? If the board form is not related to the performance of the organization, discussions of reformulating the board become superfluous. If there is a relationship, it would be beneficial to understand the relationship between board form and superior financial or social performance.

## C H A P T E R    I I

### LITERATURE REVIEW and PROBLEM DEVELOPMENT

#### Literature Review

The board of directors, as the unit of the corporation legally recognized to carry out the management function, must take responsibility for the overall corporate performance. Because the board may organize itself in almost any manner it chooses, it is relevant to ask how the board can organize itself to maximize this performance.

The board can not shirk this responsibility. As Greenough and Chapman point out [1981:924]:

The primary task in running American corporations is to make them dynamic and productive. Unless the corporation itself is viable, all other governance objectives - for example, greater responsiveness to environmental concerns, civil rights, safety and social needs - will avail little. A primary function of ..... directors in the future will be to attend to the main job of running the corporation, producing a dependable and worthwhile product, and making a profit, while also trying to see that important social and environmental goals are achieved.

Boards have a responsibility to organize in a manner that will facilitate this high level of corporate performance.

Others have also recognized this responsibility. Conrad [1976] identifies three objectives of the board of directors. First, the board must be responsive to the Chief Executive Officer, offering a diverse group of well qualified people to celebrate the CEO's successes and to criticize his failures. Second, the board must represent the interests of all corporate stakeholders, whether they are shareholders or other groups with legitimate interests in corporate decisions. Third, the board must distinguish between the interests of the shareholders and stakeholders, as opposed to the interests of the professional management.

Eisenberg [1969] identifies four principal tasks of the board of directors. First, the board must provide advice and counsel to the Chief Executive Officer. Second, it must authorize major corporate actions. Third, it is the appropriate point for the interests of corporate stakeholders other than management to be represented. Fourth, it must select, evaluate and remove the Chief Executive Officer.

Both the Business Roundtable [1978] and the American

Bar Association [1978] have produced documents suggesting appropriate responsibilities, duties, functions and composition of boards of directors. The two documents have many similarities. Both recognize the importance of the economic viability of the corporation and the necessity for profit, but also stress the role of the board in assuring corporate decisions are consistent with the norms and standards of society. The two documents concur on the boards' responsibility for selecting, evaluating and removing top level corporate officers, approving corporate financial plans and assuring compliance with applicable laws and regulations. Both also endorse the concept of each board being composed of a majority of outside members, although the Business Roundtable rejects the notion that there should be no inside directors other than the CEO. Both also soundly reject the notion of having directors representative of some particular special interest group. These special interest directors are often referred to as constituency directors.

While several pieces of empirical research have been done on the relationship between board form and financial performance, only theoretical pieces have been developed

on the relationship between board composition and structure and the corporation's social performance. Recognizing that boards of directors of large industrial firms are generally not made up of major shareholders but rather individuals who bear only fiduciary responsibility, empirical research and conceptual studies have suggested particular board forms are related to superior financial or social performance.

### Financial Performance

The first empirical research on the relationship between board structure and financial performance was done by Stanley Vance in 1955. In this work Vance did a cross-industry study to determine if dominance by inside directors [i.e. persons who were part of the management structure] or dominance by outside directors would be associated with superior financial performance. He found a positive relationship between dominance by inside directors and various measures of financial performance.

Vance did a follow up study in 1968 in which he used broader measures of financial performance. In this study

he found a positive relationship between dominance by inside directors and six growth measures and five productivity measures.

Lanser, in a 1969 PhD dissertation at Stanford, studied how board composition related to survival of new corporations. He found that firms including accommodation directors on the newly formed board had lower survival rates. Accommodation directors were defined as persons who had specific interests in the firm's decisions, based upon their outside and primary affiliation. Such accommodation directors would be such persons as the new firm's corporate banker, attorney, etc.

Pfeffer [1972] studied the relationship between board composition and the organization's environment. Among other findings were indications of an optimum inside/outside director balance, depending upon the industry in which the firm competed. This optimum balance was a function of the firm's need to tap capital markets. Firms in more capital intensive industries had a need to place more representatives of the capital markets on their boards to assure adequate information on capital sources. Firms that deviated from these optimums were found to have poorer financial performance.

Schmidt, in a 1974 PhD dissertation at New York University, found no statistically significant relation between the ratio of inside/outside directors and financial performance for firms in the chemical industry.

All of these studies concentrated on defining the board by its balance of inside/outside directors.

Crail, in a 1977 PhD dissertation from the the University of Cincinnati, took a broader view of boards of directors. Including not only the inside/outside balance, but also the occupational and educational background of directors, she found that occupational background was related to return on investment. Dr. Crail took this to indicate firms that selected outside board members whose occupational background complemented the inside directors were associated with superior financial performance.

Vance, in a 1978 study, sought to expand his previous work by including more refined measures of board composition. In this cross industry study of forty firms he found those firms with boards dominated by inside directors had superior financial performance, particularly if the inside directors had technical or managerial expertise. In contrast, those firms with the poorest financial performance had few inside directors, and a



strong representation of outside business qualified directors or special interest directors representing a particular constituency. He found little impact on financial performance when boards had a broad social representation or public directors as part of their membership.

In a 1978 study Herman found boards that were controlled by owner-managers had superior return on investment and return on equity when compared to boards controlled by inside managers.

A 1983 study done by Pearce examined the internal versus external orientation of the firm's dominant strategic planning coalition. The assumption that placing outside directors on the board would enhance a firm's external environmental scanning and create an external orientation was found to be erroneous. Further, it was not possible to predict a board member's internal versus external orientation based on whether the member was an inside or outside director. The research also indicated that firms with an internal orientation were associated with higher levels of financial performance than firms with an external orientation.

There seems to be little consistent evidence on how

board composition relates to financial performance. While Vance has found consistent evidence of a positive relationship between inside domination and good financial performance, others have failed to replicate these findings. One weakness with all of these approaches may be the use of too fine a measure of board characteristics [Harrigan, 1983]. Evidence indicates simply looking at the balance of inside/outside directors may give a misleading picture of the board's relationship to corporate performance. Even Crail's inclusion of occupational and educational background took these measures independently of one another. This research uses a broader measure of board form to test the relationship of the board of directors to financial performance of the firm.

### Social Performance

No empirical work has been done on the actual relationship between board structure and composition and the firm's social performance. While there have been many perspectives about the meaning of "social performance" for firms, no one has actually investigated if evidence exists

supporting the premise that a reformulation of the corporate board will yield different corporate social behavior. There are two reasons for this. First, there is limited agreement as to what constitutes socially responsible behavior; it is a difficult measure to operationalize. Measures of social performance that have been developed are chronologically static; they could not readily be adapted to other time periods. Since public disclosure of board structure and composition is a relatively recent occurrence, there has not been a merging of these two data bases for research purposes. Second, some theorists have claimed socially responsible behavior of a firm should be confined to maximizing financial performance and making efficient use of scarce resources [Friedman, 1962]. If we accept this perception of socially responsible behavior, it is moot to investigate social performance separately from financial performance.

Not all economists agree with the Nobel Laureate. Dooley, writing in the American Economic Review [1969:322] described the board composition affecting social performance:

The performance of outside local business leaders on the board of directors must also force management to consider the interests of

the local community, both in terms of its economic growth and in terms of its social and political development ..... Thus ..... [the firm's] autonomy [within society] increases as management control over the board of directors increases, for then management can isolate itself from other points of view.

Dooley disagrees with Friedman, citing the need for the board and its management structure to be cognizant of the broader social environment.

Stone [1975] develops a strong thesis that corporations do not act in a socially responsible manner. He develops several suggestions that would lead to corporate decisions that were more consistent with the wellbeing of society, one of which is reformulation of the board of directors. Stone recommends a reformed board composition and structure having these characteristics:

Outside directors. The board should be dominated by outside non-managerial directors. It would be ideal if there were no inside directors permitted.

Public directors. A board composed partially of public directors appointed by the President with consent of the Congress. Public directors are defined as individuals who have been appointed as representatives of special interest groups other than owners. Generally they have full voice in the board proceedings. One of their major functions is to issue a statement as part of the

corporation's annual report, indicating the effectiveness of the corporation in carrying out its responsibilities as a socially chartered organization [Crispo, 1983]. Public directors could be removed for cause by the board to which they were appointed, but their presence and loyalty to organizations outside of the corporation on whose board they serve will generate greater objectivity and social awareness within the board.

Independent nominating committee. Existence of an independent nominating committee to select non-public director candidates for election by the shareholders of the firm. This independent nominating committee would be obligated to consider independent nominations made by the shareholders.

A separate board staff. This board staff, independent of the managerial staff, would have full access to corporate records and communications. The separate staff would facilitate more accurate and timely information flows to the board, making it difficult for the managers to manipulate board processes through information control.

Elimination of joint Chairman/CEO. The leadership of the corporation in the persons of the Chairman and the

Chief Executive Officer would be held by two individuals, rather than only one. The CEO would be the only inside director allowed, and it would be unacceptable for the Chairman of the Board to also serve as Chief Executive Officer. This would maintain separation of the governance structure and the management structure.

An active board. Creation of a "working board" that functions on a nearly full time basis would be the norm. Directors would dedicate major portions of their time to the governance of the firm, rather than attend the infrequent board meetings as is now the case. Creation of such a working board would be evidenced by a formal board structure with committees, frequent meetings, and a composition of directors who were not heavily committed to other professional obligations.

Stone believes such board reforms would lead to greater social responsibility on the part of large American corporations.

Many of Stone's ideas were incorporated into the Corporate Democracy Act of 1980. This act, which did not become law, provided for board reform with the goal of making boards more pluralistic, in the hope this would result in increased corporate social responsibility. The

act required corporations to make several reforms. A summary of important portions of the act follows [Green, Marlin, Kamber, and Bernstein, 1982:7].

Title I -- Directors and Shareholders. To establish an "independent", "constituency" board of directors, candidates for which are nominated by a nominating committee and shareholders and elected by individual shareholders. To provide for independent audit and compensation committees, for public policy and law compliance committees, for cumulative voting and for inside and outside lawyers and auditors reporting illegal or probable illegal firm actions to the board.

Title II -- Corporate Disclosure. To increase the flow of information to consumers, shareholders and workers about employment patterns, environmental matters, job health and safety, foreign production, directorial performance, shareholder ownership, tax rates and legal and auditing fees.

Title III -- Community Impact Analysis. To require 24 month pre-notification if a substantial local employer plans to relocate or close down, to provide severance benefits to cushion the burden to abandoned employees and to make available federal assistance to workers who attempt to buy such facilities.

Title IV -- 'Constitutional' Rights of Employees. To prohibit affected firms from discriminating against or discharging employees for the exercise of 'constitutional', civil or legal rights, or other unjust cause.

Title V -- Interlocking Directorates. To prohibit anyone from being the director of more than two corporations under this Act.

The similarities with Stone's proposed reformulation

of the board of directors is evident. It is also evident that the premise of the act is that creating a more pluralistic board of directors will cause the corporation to better serve society.

As an alternative to legal or regulatory changes, Harold M. Williams, former Chairman of the Securities and Exchange Commission, recommended voluntary alterations in the composition of corporate boards. Williams [1978] recommended that the CEO be the only inside director, and that other directors be classified as management, affiliated, nonmanagement or independent to inform shareholders of the background of outside directors. Although the SEC proposed specific rules for these classifications, the rules were dropped due to the difficulty of properly identifying directors as management, affiliated, nonmanagement or independent.

Brudney [1982] again hypothesized that the increase in outside independent directors will positively affect corporate social performance.

The philosophical foundation for relating board composition and structure to corporate social performance is set. However, the empirical test of these treatises has not been done. While many have suggested a more



pluralistic, less managerial dominated board will lead to improved social performance, no one has demonstrated such a relationship exists, much less a causal relationship.

### Archetypes of Boards of Directors

Various authors have identified different archetypes of boards based on different interpretations, including the board structure, the board composition and the board interaction with other groups. These archetypes provide useful means to interpret combinations of board attributes, and to specify certain categories of boards that may be useful in testing hypotheses or analyzing the relationship between board archetype and corporate performance. Archetype boards of directors have been defined by Vance [1983], Bazerman and Schoorman [1983], Molz [forthcoming] and Lynch [1979].

Vance's typology. Vance [1983] identified boards as constitutional, consultive, collegial or communal, based on the purpose the board served within the organization.

CONSTITUTIONAL BOARDS exist only to fulfill a legal requirement that a board exist, and typically take little

or no action in the governance of the firm. Power typically gravitates to the Chief Executive Officer, who usually also holds the title Chairman of the Board. This type can be further broken down into a proprietary boards or syndical boards. Proprietary boards exist when a founder-owner-manager controls and dominates the enterprise, relinquishing no real power to the board other than to corporate officers who, while serving at the pleasure of the founder-owner-manager, sit on the board. Syndical boards are those controlled by directors with substantial financial interests in the firm, but who refrain from active management. In syndical boards the Chief Executive Officer is granted a great deal of power and control, but serves only at the pleasure of those holding the shareholder control of the firm.

CONSULTIVE BOARDS continue to have a dominant CEO, but also have significant confederates present on the board. These confederates may be corporate officers who also sit on the board, or outside directors. In either case the confederate directors offer technical assistance, buyer-seller contacts, or legal, financial or political advice. The CEO or Chairman may lead the board, but the board is not controlled by the Chairman/CEO. Confederates

offer expert advice and external contacts.

COLLEGIAL BOARDS exist when a corporation has broadly diffused public ownership. Strong countervailing power groups are represented on the board, and the boards resolve matters with open debate over perceptions and value assessments. Collegial boards meet frequently, twelve or more times per year.

COMMUNAL BOARDS are not relevant to private corporations, but are found frequently in quasi-political situations such as the Tennessee Valley Authority, Conrail or the Corporation for Public Broadcasting. Membership on these boards are frequently sensitive to shifts in elected political positions, and may function primarily to assure the political program of the party in power is operationalized within the organization.

Bazerman and Schoorman's typology. Bazerman and Schoorman [1983] identified five types of boards, based upon the group to which the board was responsive. The five types were managerial, financial, class hegemony, reciprocity and multilevel limited rationality.

MANAGERIAL BOARDS are those dominated and controlled by professional managers. As such, the board is primarily responsive to the objectives of the professional

managers. This process is usually characterized by managers holding inside director positions on the board, and the Chairman/CEO being a product of upward movement through the well defined managerial hierarchy.

FINANCIALLY CONTROLLED BOARDS are those dominated by significant suppliers of capital to the firm. These may be major outside shareholders, representatives of commercial banks or representatives of investment banking establishments. The board serves primarily to assure the assets invested by these financial representatives are protected, and a suitable return is generated to continue the investment.

CLASS HEGEMONY BOARDS are those that rely on an "old boy" network to provide corporate directors. This network represents an elite class within society; one that is characterized by hereditary wealth, membership in elite clubs and attendance at exclusive preparatory schools or universities. Such boards are associated with maintaining the status quo, and consideration for other members of the class who may not hold a seat on the board. Such a board might refrain from pursuing a takeover attempt if it could not be carried off amicably, as an unfriendly attempt might violate the norms of the elite class.

RECIPROCITY BOARDS are similar to Vance's consultive board. Again, such a board would offer technical assistance, buyer-seller contacts, or legal, financial or political advice, but in Bazerman and Schoorman's typology these contacts would be primarily external to the corporation. The incentive for such interaction is mutually beneficial exchange, with both parties gaining in some manner. The outside board members would gain benefits that would accrue to the organization they represent.

MULTILEVEL LIMITED RATIONALITY BOARDS are based on a notion of economic utility maximization for each board member, wherein he or she makes decisions maximizing his or her complex utility function. This complex utility function includes personal, social or confederate organization objectives. These boards would be assumed to be structured and composed in a manner that reflects the aggregate utility functions of the individual directors. Such boards would likely be similar to Vance's collegial board, particularly in the process of developing board structure and composition.

Molz' typology. Molz [forthcoming] identified seven types of boards, focusing on the board's relation to

control in the organization. The seven types were managerial, review and approve, control by exception, normative, strategic, shareholder and social.

MANAGERIAL CONTROL occurs when the management of the firm dominates the board of directors, either through outright membership on the board, control of nominations to the board or through information flows to the board. The management controls the board through composition directly or by selectively providing and withholding information relevant to making timely corporate decisions.

REVIEW AND APPROVE CONTROL occurs when the board has power to review and approve corporate policies and strategies submitted by the management. The board does not initiate any enterprise or corporate strategy, but simply acts as a yes-no or go-no go decision point.

CONTROL BY EXCEPTION is a variation of review and approve control. Under control by exception the board would make most decisions on a review and approve basis, but under cataclysmic conditions the board would take independent action. The most frequent occurrence of such action is in the termination of the Chief Executive Officer. Such dismissals are rare, however, and the

management maintains rather solid control of the board.

NORMATIVE CONTROL occurs when the board maintains the responsibility of determining corporate goals and objectives in a normative sense. The board does not make operational or strategic decisions, delegating these to the professional management. The board is in control of the organization. In a very real sense the board carries out the governance function and the professional management carries out the management function.

STRATEGIC CONTROL occurs when the board exerts not only normative control, but also involves itself in the strategic management functions, making specific decisions on how the normative goals of the organization are carried out. In this archetype the board has control over the entire firm. Professional management is relegated to an operational decision level, making no significant decisions on corporate goals or objectives on a strategic or normative level.

SHAREHOLDER CONTROL exists when major shareholders have control of the board, either through direct board membership or through control of shareholder proxies. The professional management serves at the pleasure of the major shareholders, who hold decisive control of the

corporation. The major shareholders, may however, elect to hold this control in reserve, delegating much of the strategic, operational and possibly even the normative control to professional managers. Such delegation would continue only as long as the professional managers made decisions consistent with the wishes of the major shareholders who control the board.

SOCIAL CONTROL is the opposite extreme of managerial control, and is best described by Green, Marlin, Kamber and Bernstein [1982], and Stone [1975]. In social control the board is structured and composed to be representative of many significant stakeholders in the corporation, including consumers, neighbors, minorities, unions and owners. The board is a very active, working board with frequent meetings, an independent professional staff, access to all operational decisions and information and an elaborate committee structure. Professional management control is very limited, and ownership control has been subordinated to control by other stakeholders in corporate performance.

Lynch's "activated" board. In an extensive case study of two firms seeking to make more active use of their boards of directors, Lynch described the process and



results of creating an "activist" board. Such a board was seen as an alternative to the managerial dominated board as described by Bazerman and Schoorman [1983] or Molz [forthcoming], or the constitutional board described by Vance [1983]. The activated board is characterized by the following attributes:

SEPARATION OF BOARD GOVERNANCE AND MANAGERIAL LEADERSHIP. This would be accomplished by having separate persons serving as Chairman of the Board and Chief Executive Officer. Such separation would facilitate the board focusing on a governing role, asking discerning and probing questions of the professional management, and the board taking an active part in making normative corporate policy.

AN INCREASE IN THE NUMBER OF OUTSIDE DIRECTORS.

Having well qualified outside directors would enable the firms to have a broader input into its upper level environmental scanning process, and bring an independence to the boardroom. However, outsiders should be prepared to spend substantial amounts of time on their duties as corporate directors. The directors' position on an activated board is not honorary or to merely confirm the decisions of professional management, but rather to

actively formulate corporate goals and objectives.

FREQUENT BOARD MEETINGS. The activated board is a working board. It meets frequently on a formal basis, and even more frequently informally through tele-conferences, or directors and managers meeting together for informal discussions.

AN ELABORATE COMMITTEE STRUCTURE. The activated working board is facilitated by having an elaborate committee structure, including a nominating committee, audit committee, compensation committee and other relevant committees. Such a committee structure promotes information flows to the board, enables the board to have specialist members among the outside directors and facilitates the board's questioning and probing process of corporate decision making.

A DECISION MAKING BOARD. The activated board makes decisions of a substantive nature. It does not rely on professional managers to make presentations to the board, with predefined decisions already in place for board ratification. Rather the board is a decision making forum, characterized by multiple perspectives, values, questioning, probing and discussion. The result is an active board that makes important corporate decisions.

While some similarities may be drawn between these four perspectives of board composition and structure, their primary usefulness in this research is development of board archetypes that can be used to define board forms to be modeled in phase one of the research and tested for relation to corporate performance in phase two. The different archetypes are used to describe those boards found most effective in phase three.

#### Problem Development

The relation of board form [composition and structure] to the firm's performance has not been clearly demonstrated in prior research. The many archetypes of boards, all based on aggregation of attributes into a board with definable characteristics, suggest the need for broader based research. The work done relating board composition and structure to financial performance is contradictory, and is based on only a few attributes. Superior performance has not been related to any aggregated board archetype.

Further, the lack of empirical work investigating the

relation between board form and social performance has encouraged social theorists to suggest legal reforms, such as the Corporate Democracy Act of 1980. Such new laws would force major changes in the nature of corporate governance, creating more pluralistic boards, but with no evidence the desired changes in corporate social responsibility would follow.

Recent evidence indicates boards are voluntarily moving away from managerial dominated boards toward more pluralist forms [Christie, 1983; Ellig, 1983; Moser, 1983]. Without clear evidence such moves will enhance the firm's financial or social performance the wisdom of such a general movement is open to question.

These factors are the basis of this research. By aggregating measurable attributes of board structure and composition into a model that will allow broader interpretation of boards into two categories, the above problems can be addressed in a more rigorous manner.

Two hypothesis will be tested in this research:

- H01 Firms having managerial dominated boards will have superior financial performance.
- H02 Firms having pluralistic boards will have superior social performance.

The operational definitions of managerial boards,

pluralistic boards, financial performance and social performance are located in the next chapter.

After examining the results of the testing of the hypothesis, the next logical question is, "Is there some other archetypical board of directors that is associated with even more superior corporate performance?". This question is investigated in the third phase of the research project, when specific attributes associated with superior performance are fit into board archetypes.

In doing this research some important qualifications need to be addressed. First, there is no claim of causality between board archetype and the firm's performance, although it is implied in all of the literature. The limited resources available for this research prevented tests for causality; the causal direction could go either way [Gupta and Govindarajan, 1984]. The question of causation is important and worthy of future research. However, before causal research becomes a reasonable objective a relationship between the proposed dependent and independent variables must be demonstrated. Without this relationship the study of causation is moot.

Second, this proposal is investigating very broad,

macro levels of the firm. There are many intervening variables between board form and the firm's performance. This proposed study makes an effort to control for the most obvious and important intervening variables, but the sheer number of such variables demands they be acknowledged as present. The use of the coarse measure of board type, to be developed in Phase I of this project, is one effort to incorporate some of the more obvious intervening variables into the analysis. Similarly, the models developed in phase three will have limited explanatory power over the corporations performance levels, due to these intervening variables.

Third, this study is one of the relationship of the composition and structure of the board of directors to corporate performance. The above literature suggests such a relationship exists. The manner these structural and compositional elements are manifested in the sociological interaction of the board is beyond the scope of this research. It may be concluded that changes in the structure and composition will be accompanied by changes in the sociological interaction, but the interaction itself is not a focus of this research.

Fourth, this research is static, observing measurable

attributes of board form and corporate social and financial performance for only one time period, 1982. While corporate boards are generally quite stable from year to year, the limited availability of data prior to 1982 made a more dynamic study impossible. The static nature of the study further reduces causal inferences appropriate with a longitudinal research project.

## C H A P T E R    I I I

### M E T H O D O L O G Y    A N D    R E S U L T S

The objective of understanding the relationship between board structure and composition and corporate performance was addressed in three phases. The phases were, [1] to develop a model capable of discriminating between managerial dominated boards and pluralistic boards, [2] use this model to test the two hypotheses, and [3] to investigate which attributes of composition and structure best match the characteristics of financial and social performance, and match these attributes with a board archetype.

#### Phase One - Building a Discriminant Model

##### Construction of the model

The first phase of the research involved creating a model that could be used to classify boards of directors



into two categories, based upon measurable attributes. The objective was to create a model that could be used to discriminate between boards without requiring researcher input into the categorization. The model discriminates between two types of boards: managerial dominated and pluralistic. The model will discriminate on the basis of how attributes load on the two types of boards, thereby creating an operational definition that is theory driven. Conceptually the managerial dominated board is analogous to Vance's [1983] constitutional board or the managerial boards described by Molz [forthcoming] and Bazerman and Schoorman [1983]. The pluralist model is most analogous to Vance's collegial board or Lynch's [1979] activated board. The model is not data specific, but rather it is a genuine model in the sense it can be used for future research requiring board categorization. Further, the data used to create the model was independent of the data used to test the hypotheses.

Theorists have suggested that boards of directors can be differentiated on the basis of several compositional and structural attributes. Using confirmatory factor analysis these attributes were analyzed to determine the existence of the two board types. The initial factor

analysis confirmed the existence of managerial dominated and pluralistic boards. From this each case was classified as representing a pluralistic or managerial board, and this information was used as input into a discriminant analysis. The result is a discriminant model that can classify other boards as managerial or pluralistic.

One difficulty in doing a broad-based study of boards of directors is access to information. The literature suggests the following attributes are constructs that can indicate the degree of pluralism or managerial control within a board. The attributes included in the analysis follow. The actual inclusion of each attribute into the final model was a function of the variability of the attribute, the significance it contributed to discriminating between the two board types, and the amount it was correlated with other variables. These attributes become the operational definition of managerial dominated and pluralistic boards. Except as noted on the final two attributes, data on each of the specific attributes were obtained from annual proxy statements. The specific attributes are:

Does the board have a single person who is both the Chairman and the Chief Executive Officer [CEO] of the firm? Firms that have the same individual filling both positions are interpreted most likely to be managerial dominated, and least likely to be pluralistic [Spencer, 1983; Brown, 1976; Lynch, 1979; March, Maakestad and Heiland, [undated]; Ruder, 1981; Mace, 1972; Stone, 1975]. Abbreviated as CHCEO.

Is there an outside dominated Nominating Committee? Firms that have committees are more likely to be working boards, and therefore less managerial dominated [S.E.C., 1980; March, Maakestad and Heiland, [undated]; Vance, 1983; Brown, 1976; Herman, 1981]. Specifically, boards that have a nominating committee made up of outside directors are more likely to be independent of the Chairman/CEO, and are evidence of a pluralistic board [Vance, 1983; Brown, 1976; Bacon, 1981; Lynch, 1979; March, Maakestad and Heiland, [undated]; Greenough and Chapman, 1981; S.E.C., 1980; Palameri, 1979]. Abbreviated as NMOU.

Is there an outside dominated Social Responsibility Committee? Recently, some firms have added a social responsibility committee. These committees can be taken

to be an indication of a firm's commitment to being responsive to broader social issues, and as such are characteristic of more pluralistic boards [Vance, 1983; Brown, 1976]. Abbreviated as SROUT.

What is the composition of the board? Background and affiliation of directors is further evidence of the category to which the board should be assigned. There are two classifications of directors that can be clearly and objectively identified: inside directors and outside directors. Inside directors are either current or former officers of the corporation. They are assumed to have primary allegiance to the management structure and as such would be expected to dominate a managerial controlled board. Outside directors are individuals who are not, and have not been, officers of the firm. A firm that has a majority of outside directors would be an indication of a pluralistic board [Lynch, 1979; Ruder, 1981; Koenig and Gogel, 1981; Mueller, 1982; Dooley, 1969; Pfeffer, 1972; Vance, 1983; Stone, 1975; Mace, 1971; Brown, 1976; Bazerman and Schoorman, 1983; Schoorman, Bazerman and Atkin, 1981; Burt, 1980; Greenough and Chapman, 1981; Jones and Goldberg, 1982]. Abbreviated as BDOUT.

How frequently does the board meet? Boards that meet

frequently are associated with active boards that are more involved in establishing goals and making decisions, while boards that meet infrequently are more likely to be ineffective and only in existence to confirm the decisions and policies of the top management. Thus, boards that meet rarely are associated with managerial dominated boards, while those that meet frequently are associated with more pluralistic boards [Brown, 1976; Stone, 1975; Lynch, 1979]. Abbreviated as NMTGS.

What is the salary relationship between the highest paid officer and the second highest paid officer? The ratio of the salary of the highest paid officer to the second highest paid officer is an indication of the relative power of the highest paid officer [Albrecht and Jhin, 1978; Woo, 1983]. Thus, firms that have a high executive salary ratio are associated with managerial dominated boards, while firms that have a low executive salary ratio are associated with more pluralistic boards. Abbreviated as SLRTO.

How much stock is held by the inside directors? If the inside directors own a major portion of the outstanding stock of the corporation, it would indicate a managerial dominated board; or at least that the managers

were also significant owners of the firm. The holding of large blocks of stock gives the managers not only managerial power, but also ownership power [Chandler, 1977; Berle and Means, 1967, Molz, 1983]. Abbreviated as INNST.

How much stock is held by outside directors? Outside directors who hold large blocks of stock are generally more independent of managers, particularly when compared to outside directors who hold only token amounts of stock. Individuals may hold the stock either directly, or indirectly through family trusts, corporations, foundations or similar means. The greater the percentage of outside directors holding large blocks of stock, the more pluralistic the board [Miller, 1983; Molz, 1983]. Abbreviated as OUTST.

How many members of the board can be identified as minorities or women? Boards that are pluralistic are assumed to be representative of several identifiable groups in society. Boards having blacks or women members would show evidence of pluralism [Daly, 1983; Deloitte, Haskins and Sells, 1983; Wayne, 1983]. Abbreviated as MINOR. Data was obtained from annual reports, proxy statements and standard biographical sources.

How long has the Chairman/Chief Executive Officer held his position? Boards that are dominated by one individual are more frequently associated with managerial domination and control than with the openness and the give and take of a more pluralistic board. Thus boards that have one individual holding the most powerful position for long periods of time would be associated with managerial boards [Chandler, 1977; Herman, 1981]. Abbreviated as TNURE. Data was obtained from annual proxy statements or Moody's Industrial Manual.

In phase one of the research these attributes were used with confirmatory factor analysis to determine if it was feasible to separate actual boards into more managerial dominated and pluralistic groups. In brief, the effort was statistically supported. Such dualism was found to exist; boards loaded positively or negatively on a factor that was consistent in being composed of attributes that were identified as managerial [negative loadings] or pluralistic [positive loadings]. After the development of the confirmatory factor analysis, a factor loading was identified for each case. These factor loadings identified each case [board] as being more managerial or more pluralistic. These boards were used as

input into discriminant analysis to create a model that was used in phase two of the research to objectively identify boards as more managerial or more pluralistic.

The discriminant model generated a discriminant classification function that can categorize boards as either pluralistic or managerial dominated, based on each board's composition and structure. This method was designed to separate boards using a theory driven concept. Obviously some boards identified as managerial might actually fall into Molz' [forthcoming] classification as a review and approve board, or a control by exception board. Phase one and phase two use existing boards to test a theoretical hypothesis; the separation into two divergent board categories is intended to maximize their differences, not absolutely classify boards in a manner to preclude their identification as some other board type. To test the hypotheses a theory-based forced separation was necessary.

The basic steps in phase one were as follows.

Drawing of random sample. A random sample of 50 Fortune 500 industrial firms was drawn from the the May 2, 1983 listing of such firms. The firms were selected by matching their position on the Fortune list with numbers



from a random number table. These firms came from any industrial classifications and were used only to generate the discriminant model. For each firm an analysis was made of the structure and composition of the board of directors, based on public information contained in the firm's 1982 annual report, proxy statement and other relevant corporate material.

Rescaling of data. Both factor analysis and discriminant analysis are sensitive to scale differences of the variables and their variance. That is, if one variable has a large range of variance or is scaled to have an order of magnitude greater than the other variables, these effects will cause distortion in the statistical analysis [Goldstein and Dillon, 1983]. For these reasons each variable was rescaled for phase one of the research. The result was for each variable to have a range from 0 to 100. The dichotomous Chairman/CEO variable was scaled to be either 22 or 78, with 22 representing boards having an individual who was both the Chairman and CEO, while 78 was used to code firms having separate Chairman and CEO. These two numbers were chosen because they retained the dichotomous nature of the variable, and created a measure of variance that was similar to that of

the other variables.

Based on the theory and the nature of the attributes, Table 1 shows the actual range, standard deviation and skewness for each attribute after rescaling, and the method of coding each attribute. To facilitate ease in generating these initial classifications, attributes have been coded so all will be "low" when associated with a managerial dominated board. This was accomplished by coding some of the attributes with a negative relationship, while others were coded directly. Table 1 identifies the coding scheme and characteristics of the data used to create the discriminant model.

Descriptive statistics and review of variance. After each variable had been coded, descriptive statistics were generated. The objective was to assure the following: [1] that each variable was correctly rescaled to have a range between 0 and 100, [2] that the variances of each variable be approximately the same, so that one variable would not overpower the factor analysis or discriminant analysis due to very large variance relative to the other variables, [3] to examine the non-normality of the distribution of each variable. The latter of these three elements was needed primarily for informational purposes. Neither

TABLE 1  
 MEASURABLE ATTRIBUTES, DESCRIPTIVE STATISTICS AND  
 CODED RANGE OF MANAGERIAL AND PLURALISTIC BOARDS  
 MODEL DEVELOPMENT, PHASE I

ATTRIBUTES	RANGE	RESCALED DATA		CODED RANGE
		STD DEV	SKEWNESS	
CHCEO	YES/NO	24.18	1.13	22 OR 78
NMOUT	0-100%	40.84	-0.37	0-100
SROUT	0-100%	21.24	3.63	0-100
BDOUT	23-91%	24.03	-0.55	0-100
NMTGS	4-13/YR	33.06	-0.02	0-100
SLRTO	1.00-			
	2.76	24.29	-1.39	100-0
INNST	0-46%	28.24	-1.77	100-0
OUTST	0-31%	23.80	2.12	0-100
MINOR	0-14%	34.80	0.06	0-100
TNURE	1-46 YR	23.18	-1.80	100-0

KEY

CHCEO	CHAIRMAN/CEO
NMOUT	NOMINATING COMM, % OUTSIDE MEMBERS
SROUT	SOCIAL RESPONSIBILITY COMM, % OUTSIDE MEMBERS
BDOUT	COMPOSITION, % OUTSIDE MEMBERS
NMTGS	FREQUENCY OF MEETINGS
SLRTO	SALARY RATIO
INNST	INSIDE DIRECTORS STOCK
OUTST	OUTSIDE DIRECTORS STOCK
MINOR	% MINORITY MEMBERSHIP
TNURE	TENURE CHAIRMAN/CEO

factor analysis, when using a principal factoring method of factor extraction, nor discriminant analysis depend on a multivariate normal distribution for their use. Both, however, function better when the distribution approaches multivariate normal [Goldstein and Dillon, 1983].

Information on the variance of each variable and its skewness is given in Table 1. Using standard deviation as a measure of variance showed a range of 21 to 35 for all of the variables except the measures of the nominating committee, which had a standard deviation of 40.

Regression of each variable against all other variables. Each of the ten variables was independently regressed against each of the other nine variables. The objective was to obtain information on the relationship between variables. Variables that are highly correlated with several other variables are redundant and cause distortions when using discriminant analysis [Goldstein and Dillon, 1983]. Table 2 shows the correlations between each of the ten variables. The only variable deemed to be a problem in terms of correlation with other variables was the variable showing measures of the nominating committee, which was correlated with six other variables at the .10 probability level.

TABLE 2  
CORRELATION MATRIX OF ATTRIBUTES IN MODEL DEVELOPMENT

		PHASE I									
	CHCEO	NMOUT	SROUT	BDOUT	NMTGS	SLRTO	INNST	OUTST	MINOR	TNURE	
CHCEO	1.00										
NMOUT	0.01	1.00									
SROUT	0.22*	0.20*	1.00								
BDOUT	-0.06	0.29**	-0.02	1.00							
NMTGS	-0.06	0.36**	0.24**	0.11	1.00						
SLRTO	-0.05	0.12	-0.13	0.18	0.16	1.00					
INNST	0.36**	-0.35**	-0.18	-0.35**	-0.18	0.02	1.00				
OUTST	0.12	0.01	-0.11	0.21*	-0.15	-0.05	-0.13	1.00			
MINOR	0.03	0.23*	0.31**	0.08	0.15	-0.10	-0.08	0.35**	1.00		
TNURE	0.08	-0.28**	-0.16	-0.15	-0.20*	-0.09	-0.06	-0.14	-0.21*	1.00	

## KEY

CHCEO	CHAIRMAN/CEO
NMOUT	NOMINATING COM, % OUTSIDE MEMBERS
SROUT	SOC RESP COM, % OUTSIDE MEMBERS
BDOUT	COMPOSITION, % OUTSIDE MEMBERS
NMTGS	FREQUENCY OF MEETINGS
SLRTO	SALARY RATIO
INNST	INSIDE DIRECTORS STOCK
OUTST	OUTSIDE DIRECTORS STOCK
MINOR	% MINORITY MEMBERSHIP
TNURE	TENURE CHAIRMAN/CEO

\* SIG. AT .10  
\*\* SIG. AT .05

Confirmatory factor analysis. Confirmatory factor analysis is a useful statistical tool when there is theory suggesting that measurable attributes are manifestations of some underlying source of the variance of the observable attributes [Kim, 1975; Goldstein and Dillon, 1983]. In this case the underlying source is the nature of the board; whether it is more managerial dominated or more pluralistic. The existence of such an underlying dichotomy implies the possibility of extracting a factor that has the measurable attributes load upon it consistent with the theory. The objective of this phase of the model building was to find a factor that met the needed specifications for statistical significance.

The specifications needed for a statistically sound confirmation of the underlying sources of board orientation [i.e., whether the board was managerial dominated or pluralistic] were as follows:

1. The attributes [variables] included in the analysis have a similar range of variance.
2. The attributes [variables] included in the analysis not be correlated with more than three of the other attributes [variables] at a .10 probability level.
3. Generation of a single factor that can be

interpreted consistent with managerial domination or pluralistic composition. This will require a factor in which all of the attributes of practical significance [i.e., variables with loadings over .30] load either positively or negatively on the factor [Goldstein and Dillon, 1983: 3-11]. A mixture of positive and negative loadings will not be interpretable, indicating it is not possible to identify boards as either managerial dominated or pluralistic.

The confirmatory factor analysis was done using the Statistical Package for the Social Sciences [SPSS]. All of the attributes were entered with the exception of the measure of the nominating committee. This attribute was excluded because it had more variance than any of the other variables, and was significantly correlated with six of the other attributes. The remaining nine attributes were entered into the factor analysis program, which was ordered to generate one factor using the principal factor method with multiple iterations. The iterative process continues to add or delete variables until successive iterations do not offer an improved R Squared at a .001 probability level. During the process each iteration

generates new estimates of communalities that are used as input in the next iteration [Kim, 1975]. The factor was generated after six iterations, with the factor matrix of loadings shown in Table 3.

TABLE 3  
CONFIRMATORY FACTOR ANALYSIS LOADING  
MODEL DEVELOPMENT, PHASE I

---

CHCEO	-.14292
SROUT	.30013
BDOUT	.41880
NMTGS	.35010
SLRTO	-.06177
INNST	.50042
OUTST	.25535
MINOR	.43525
TNURE	.38605

---

KEY

CHCEO	CHAIRMAN/CEO
NMOUT	NOMINATING COMM, % OUTSIDE MEMBERS
SROUT	SOCIAL RESPONSIBILITY COMM, % OUTSIDE MEMBERS
BDOUT	COMPOSITION, % OUTSIDE MEMBERS
NMTGS	FREQUENCY OF MEETINGS
SLRTO	SALARY RATIO
INNST	INSIDE DIRECTORS STOCK
OUTST	OUTSIDE DIRECTORS STOCK
MINOR	% MINORITY MEMBERSHIP
TNURE	TENURE CHAIRMAN/CEO

---



All of the variables of practical significance loaded positively on the factor, indicating the factor confirms the concept of using the variables in aggregate to identify a board as managerial or pluralistic. Boards loading positively on the factor can be identified as pluralistic, while those loading negatively can be identified as managerial dominated.

Generate discriminant model. The objective of phase one of the research project was to construct a model capable of classifying boards as either managerial dominated or pluralistic. The confirmatory factor analysis indicated this was a feasible objective. The last step was to generate a discriminant classification function that can be used in identifying boards of additional firms as either managerial dominated or pluralistic.

The criteria for creating the discriminant model were:

1. The model include several of the attributes [variables] in an appropriate mix. With nine attributes [variables] remaining in the analysis it was desired that most of the nine remain in the discriminant model, and that those not included not

- be deemed intuitively important.
2. That the attributes included in the discriminant analysis load on the discriminant function consistent with the confirmatory factor analysis.
  3. That the function yield two separate groups of boards with the difference between groups being significant at the .05 level.
  4. That 95% of the initial cases be correctly identified by the discriminant model in a test/retest reliability check.

The rescaled attributes of the initial 50 randomly selected boards were used as raw data input to the discriminant analysis. Each of the boards was classified as managerial dominated or pluralistic, depending on how it loaded on the factor of the confirmatory factor analysis. The nine attributes used in the factor analysis and the classification of each board were entered, and the program directed to generate a single discriminant function using Wilk's Criteria in a stepwise process. This process generated a function entering the specified nine variables in order of their overall contribution in maximizing the separation of the group centroids. This process maximizes the F ratio and minimizes Wilk's lambda

[Klecka, 1975].

The results of the discriminant classification satisfactorily met the criteria established for the model.

Seven of the nine variables were included in the discriminant classification function. The two excluded [salary ratio and outside directors' stockholdings] were not significant in the confirmatory factor analysis, as would be expected. Of the seven included, the signs remained the same. The standardized canonical discriminant function coefficients are shown in Table 4.

The centroids were 1.88794 for the pluralistic boards, and -1.74271 for the managerial dominated boards. This separation was significant at the .0000 level, and yielded a Chi Square of 66.206 and a Wilk's lambda of .2258.

TABLE 4  
DISCRIMINANT CLASSIFICATION FUNCTION  
MODEL DEVELOPMENT, PHASE I

---

CHCEO	-.24350
SROUT	.27364
BDOUT	.85064
NMTGS	.19740
INNST	.50594
MINOR	.66485
TNURE	.56251

---

KEY

CHCEO	CHAIRMAN/CEO
NMOUT	NOMINATING COMM, % OUTSIDE MEMBERS
SROUT	SOCIAL RESPONSIBILITY COMM, % OUTSIDE MEMBERS
BDOUT	COMPOSITION, % OUTSIDE MEMBERS
NMTGS	FREQUENCY OF MEETINGS
SLRTO	SALARY RATIO
INNST	INSIDE DIRECTORS STOCK
OUTST	OUTSIDE DIRECTORS STOCK
MINOR	% MINORITY MEMBERSHIP
TNURE	TENURE CHAIRMAN/CEO

---

Reliability and validity of the model

The analysis of the model for reliability and validity was based on Kerlinger [1973], Cook and Campbell [1975] and Kidder [1982]. The development of the

discriminant model included the use of confirmatory factor analysis and discriminant analysis. Perhaps the overriding interpretation is simply that the model worked as planned even though three of the original ten attributes were eventually dropped from the model. The final model was able to successfully and consistently separate boards of directors into two groups; those that were more managerial dominated and those that were more pluralistic. The model is both reliable and valid.

Reliability. The discriminant model is reliable in that it is consistent, stable and accurate. The model was successful in correctly identifying cases, as indicated by the test/retest reliability check of comparing actual classification. All fifty of the cases were correctly predicted in the retest, indicating the reliability of the model [Klecka, 1975; Goldstein and Dillon, 1983].

Construct Validity. The construct validity of the model is quite high. The attributes included in the analysis are all supported by either earlier empirical studies or through multiple theoretical and conceptual analyses. Both the confirmatory factor analysis and discriminant analysis had significant attributes load either positively or negatively as predicted by the theory

of each attribute. The model has construct validity in its consistency with theory.

Face Validity. The face validity of the model is also good. For example, Table 5 shows two boards that were about midway within their respective classification as managerial or pluralistic.

While some of the attributes are juxtaposed from the purely theoretical development, the overall sensibility is evident. The fact that neither of these boards are extremely pluralistic or managerial dominated, but rather falling in the center of each respective group is also suggestive of the face validity of the model.

TABLE 5  
 TYPICAL ATTRIBUTES OF TWO BOARDS AS A DEMONSTRATION  
 OF FACE VALIDITY  
 MODEL DEVELOPMENT, PHASE I

ATTRIBUTE	MANAGERIAL BOARD	PLURALISTIC BOARD
DISCRIMINANT SCORE	-1.73	+1.67
CHAIRMAN IS CEO	YES	NO
% OUTSIDERS ON NOMINATING COMMITTEE	NO COMMITTEE	69%
% OUTSIDERS ON SOC. RESP. COMMITTEE	NO COMMITTEE	80%
% OUTSIDERS ON BOARD	27%	61%
NUMBER OF MEETINGS	10	7
SALARY RATIO	1.19	1.02
% TOTAL STOCK HELD BY INSIDE DIRECTORS	9%	2%
% TOTAL STOCK HELD BY OUTSIDE DIRECTORS	0%	0%
% MINORITIES ON BOARD	7%	6%
TENURE OF CEO	13 YEARS	1 YEAR

Statistical and Internal Validity. Statistical and internal validity are considered together in that the model was created solely through statistical analysis, so

the internal validity is a function of its statistical validity. The model demonstrates both forms of validity through its construction. The confirmatory factor analysis was generated by requesting a single factor, so the factor explains 100% of the variance in the attributes of the original cases. The measure of statistical and internal validity is in the nature of the factor loadings. The factor generated demonstrated both forms of validity by having six attributes load upon it with statistical significance [Goldstein and Dillon, 1983]. If the factor analysis was not valid, it would have had only a few or no attributes load on it with statistical significance.

The discriminant analysis demonstrates statistical and internal validity for the same reason. Over half of the included attributes loaded with statistical significance, and the model was able to correctly discriminate between the pluralistic and managerial dominated boards of the original fifty cases. To this extent the reliability of the model is also an indication of its internal and statistical validity.

External Validity. The external validity of the model is high, recalling that the population under consideration



are Fortune 500 Industrial firms. Within this population the validity of the model is high, in that the attributes were selected and coded to be independent of industry, age of firm or size. The size of the firm is a two-edged sword, in that smaller firms are more likely to be largely owned by a single person or family. This would show up as leaning toward managerial domination, which is logical when one considers such persons are usually heavily involved with the management of the firm. It is for this reason the research was limited to Fortune 500 Industrial firms; boards of directors of smaller firms are fundamentally different.

The reliability and validity of the model have been demonstrated. The power of the model in classifying boards as managerial and pluralistic is evident, and it does so without human bias, rather depending on statistically accurate interpretations of measurable attributes.

This completes the first phase of the research project; creating a reliable and valid discriminant model that can classify boards of directors into two categories. This discriminant model was used to test the

hypotheses in phase two of the research project.

### Phase Two - Hypotheses Testing

In phase two of the research project two hypotheses were tested using the discriminant model generated in the first phase. Repeating the hypotheses:

H01      Firms having managerial dominated boards will have superior financial performance.

H02      Firms having pluralistic boards will have superior social performance.

The method for testing each of these hypotheses is described below.

#### Testing for financial performance

The testing of the first hypothesis was done through drawing a sample of firms from a single industry from the Fortune 500 list, classifying the boards by category and using multiple analysis of variance to test the hypothesis.

SAMPLE. The sample for testing for a relationship

between board category and financial performance was the 57 firms from the food industry included in the Fortune 500 list of industrial firms. Of the 57 firms in this grouping, 45 were usable in this project. Twelve firms were excluded from the analysis. These included [1] five firms that were co-operatives, making their financial performance and board composition and structure non-comparable with publicly held firms, [2] one was emerging from a proxy battle, with a very unstable board composition during 1982, [3] two were wholly owned subsidiaries of foreign multi-national firms that were not comparable to others in the population and [4] four had incomplete or inconsistent data.

The food industry was selected for several reasons. First, the largest food firm [Dart and Kraft] is number 30 on the Fortune list, while the smallest [Rath Packing] is number 490. This is a desirable range for this research, in that it covers nearly the entire Fortune 500 list.

Second, the food industry is relatively stable, being less subject to fluctuations in the economy than some other industries such as mining and crude oil production, or metal manufacturing and processing.

Third, by selecting only one industry an effort was

made to control for some of the extraneous factors that would effect financial performance in a cross industry study. It also controls for Pfeffer's [1972] finding that certain industries have an optimum balance in the inside-outside director ratio.

Lastly, the food industry is relatively free of regulation. Regulated industries sometimes attempt to co-opt the environment by placing former members of regulatory bodies on the board of directors [Pfeffer, 1972]. Also, food firms are relatively free to introduce new products without extensive interference from regulatory agencies, as would be expected in industries such as pharmaceuticals or utilities. The industry is also relatively free from threats of intensive foreign competition.

MEASURES. The boards of the 45 firms were classified into the two categories using the discriminant model generated in phase one of the research project. The discriminant analysis of the 45 boards yielded 21 that were classified as managerial dominated and 24 classified as pluralistic.

The financial performance measures used were Return on Shareholder Equity [ROE], Return on Assets [ROA] and

Total Return to Shareholders [TRS] as listed in the May 2, 1983 Fortune 500 list for each firm's 1982 fiscal year. The advantage of using the Fortune list for measures of financial performance was the standardization inherent in one source. All data is summarized in Appendix C, and a correlation matrix of independent variables is in Appendix E.

TESTING HYPOTHESIS. The first hypothesis was tested using multiple analysis of variance to determine if there was a significant relationship between the board category and the Return on Shareholder Equity, Return on Assets and Total Return to Shareholders. This hypothesis was rejected at a 95% confidence level. Three multivariate tests of significance were used to analyze the hypothesis: Pillai's criterion, Hotelling's trace and Wilk's lambda; all yielded identical results; an approximate F of .60053 and a probability of .618.

After analyzing the relationship between Return on Shareholder Equity, Return on Assets and Total Return to Shareholders another test of MANOVA was run to determine if a significant relationship existed between ROE, ROA and board category. TRS was omitted because it was the least stable and most likely measure of financial performance to

cause uninterpretable results. These results were also not significant, and not particularly different from the analysis including all three measures of financial performance. The three multivariate tests of significance were again used to analyze the hypothesis: Pillai's criterion, Hotelling's trace and Wilk's lambda; all yielded identical results; an approximate F of .58020 and a probability of .564.

Because multiple measures of financial performance failed to indicate a relationship between board category and financial performance, a further analysis was made of the financial measures independently of one another with analysis of variance. These results also failed to show any significant relationship between board category and ROE, ROA or TRS. They are shown in Table 6.

These results show no significant difference by board category for any of the three measures of financial performance.

TABLE 6  
 ANALYSIS OF VARIANCE, ROE, ROA, TRS TAKEN INDEPENDENTLY  
 WITH BOARD CATEGORY  
 HYPOTHESIS TESTING [1], PHASE II

FIN. MEASURE	CATEGORY	MEAN	STD ERROR	APPX F	SIG
ROE	PLURALIST	15.12	1.03	1.185	.2824
	MANAGERIAL	13.14	1.54		
-----					
ROA	PLURALIST	7.05	0.63	0.800	.3760
	MANAGERIAL	6.20	0.70		
-----					
TRS	PLURALIST	39.03	4.66	0.005	.9442
	MANAGERIAL	39.80	10.37		

Testing for social performance

To test the second hypothesis a sample was generated that included firms that are considered to have exemplary

social performance, and also firms that have inadequate social performance. After classification using the discriminant function model, a Chi Square test was used to test the hypothesis.

SAMPLE. The sample for testing the second hypothesis was generated from two sources. The first source was the portfolio of the Dreyfus Third Century Mutual Fund. This fund restricts its portfolio to holdings of companies that are determined to be socially responsible. [Dreyfus 1982:1]

.....the Fund considers a company's record in the areas of (1) protection and improvement of the environment and the proper use of our natural resources, (2) occupational health and safety, (3) consumer protection and product purity and (4) equal employment opportunity.

The firms contained in the Dreyfus Third Century Fund portfolio as of May 31, 1982 were defined as "socially responsible firms". Those firms that were listed in the Fortune 500 list of industrial firms as of May 2, 1983 and also in the Dreyfus portfolio comprised the socially responsible portion of the sample to test the hypothesis.

The balance of the sample was generated from those firms identified by Lydenberg and Karpen [1982], writing for the Council on Economic Priorities. Lydenberg and



Karpen identify firms subject to shareholder resolutions during 1982 asking for improved social performance in the areas of management/employee relations, minority hiring, unionization, uranium processing and measures of consumer protection. To maintain consistency throughout model construction and hypothesis testing, only those firms also listed in the Fortune 500 industrial list were included.

Using the Dreyfus Third Century Fund and the Council on Economic Priorities as the sources of the sample yielded 32 cases; sixteen from the Dreyfus list and sixteen from the Council on Economic Priorities list, all of which were also on the Fortune 500 Industrial list.

MEASURES. The boards of the 32 firms were classified using the discriminant model generated in phase one of the research project. Those firms included in the Dreyfus Third Century Fund portfolio were defined as socially responsible, while those from the Council on Economic Priorities list were be defined as less socially responsible, in that the shareholders felt those firms were in need of remedial action. The discriminant classification procedure classified ten of the socially responsible firms as having pluralistic boards, and six as having managerial dominated boards. For the firms defined

as less socially responsible, fourteen had pluralistic boards and only two had managerial dominated boards. All data is summarized in Appendix D, and the correlation matrix for the independent variables is in Appendix F.

TESTING HYPOTHESIS. The second hypothesis was tested using a Chi Square test of differences to determine if there was a significant relationship between board category and the defined measure of social responsibility. Using a 95% confidence interval the hypothesis was rejected. The actual crosstabulation of board category and social performance is shown in Table 7.

In the instance of a 2 X 2 crosstabulation only one degree of freedom is present. In this case the Yates' Corrected Chi Square offers a closer approximation of the Chi Square Distribution, and is a preferable to the Raw Chi Square as an indication of significance [Dixon, 1983]. The hypothesis is therefore rejected.

While the distribution lacks statistical significance, the direction of the relationship is notable. Boards that were dominated by management were associated with socially responsible firms in six of eight cases, or 75% of the time. Boards that were pluralistic were associated with socially responsible firms in only

ten of twenty four cases, or 42% of the time. Not only was the hypothesis of pluralistic boards being associated with socially responsible firms rejected, but the direction of the relationship seems to be reversed. However, it should be noted that the relationship continues to be not statistically significant.

TABLE 7

CHI SQUARE TEST OF DIFFERENCES, MANAGERIAL DOMINATED  
VERSUS PLURALISTIC BOARDS BY RESPONSIBLE AND LESS  
RESPONSIBLE FIRMS

HYPOTHESIS [2] TESTING, PHASE II

CROSSTABULATION	%	N
RESPONSIBLE/PLURALISTIC	31.3	10
RESPONSIBLE/MANAGERIAL	18.8	6
LESS-RESP/PLURALISTIC	43.8	14
LESS-RESP/MANAGERIAL	6.3	2
Corrected Chi Square = 1.50		Sig = .2207
Raw Chi Square = 2.66		Sig = .1025

### Phase Three - Board Attributes and Corporate Performance

The managerial dominated and pluralistic archetypes of boards of directors can not be related to corporate performance. However, previous empirical work has suggested significant relationships can be discovered between board attributes and financial performance, while many theorists have suggested boards of directors do have an impact on corporate social performance. In phase three of the research these suggestions were investigated. The procedure was to take the data compiled to test the hypotheses in phase two, and use regression forms of analysis to determine which attributes were significantly related to financial and social performance. Thus the population, sample and measures remained the same for both phase two and three.

#### Attributes related to financial performance

The initial analysis of board attributes and financial performance was done using canonical correlation. Canonical correlation is a statistical

procedure used when two sets of variables can logically be grouped, and each set compared with the other set [Warwick, 1975]. In this research the three financial variables, ROE, ROA and TRS were grouped and compared with the ten board attributes investigated throughout the research. The objective was to find a particular canonical variate that related a particular set of board attributes to financial performance. This attempt proved futile, as no significant canonical variate was identified.

Three canonical variates were generated. The first was significant at a .139 level, and explained 39.3% of the mutual variance. The other two canonical variates were significant only at a .349 and .647 level respectively, and explained 30.6% and 14.7% of the mutual variance. Adding to the difficulty was the general nature of the three variates, as they were generally not interpretable. In the first canonical variate ROE and ROA loaded inversely to one another, suggesting it would be possible to formulate a board that would induce opposite effects in these two measures of financial performance. This factor could not be identified as representing any common business strategy. The results of the canonical

correlation analysis [using raw data for input] are shown in Table 8.

TABLE 8  
CANONICAL CORRELATIONS OF FINANCIAL PERFORMANCE AND  
BOARD ATTRIBUTES  
FINANCIAL MODELING, PHASE III

ATTRIBUTE	FIRST		SET
	CANVAR 1	CANVAR 2	CANVAR 3
CHCEO	.44039	-.01141	.68117
NMOUT	-.32753	-.08092	.94518
SROUT	.21170	-.62579	-.12428
BDOUT	.25360	.02585	-.87684
NMTGS	-.06080	.50894	.33417
SLRTO	.72243	-.21102	.29581
INNST	.29903	.10664	.14083
OUTST	-.27726	-.61481	.26160
MINOR	.27231	-.08908	.16511
TNURE	-.36835	.04848	-.41924

  

	SECOND		SET
	CANVAR 1	CANVAR 2	CANVAR 3
ROE	1.48722	-.97598	-.87920
ROA	-1.30170	-.18786	1.12746
TRS	.16835	.84529	.90814

The results of the canonical correlation analysis did not offer much help in understanding the relationship between board attributes and financial performance. The

lack of significant relationships between the two sets of variables, and the seemingly inconsistent loadings made the analysis uninformative. Similar results were obtained using only two measures of financial performance in other canonical correlation analyses.

A follow up analysis was done using the three measures of financial performance independently of one another in a multiple linear regression analysis. This was done in a stepwise manner, using the three measures of financial performance as the dependent variable. The objective was to develop a set of models significant at the .05 level, while maximizing the explained variance in the dependent variable. Further, each of the stepwise multiple regressions were to be "well behaved", having a steady increase in the amount of variance explained by the model as variables were added, and the relative magnitude, signs and significance of each Beta were to remain relatively stable as variables were added. These requirements were met, indicating the basic assumptions of multiple regression were not grossly violated.

The models generated are shown in Tables 9 and 10. Each table shows the non-standardized coefficients of the equation and relevant significance levels.

TABLE 9  
STEPWISE REGRESSION, RETURN ON EQUITY  
FINANCIAL MODELING, PHASE III

STEP	VARIABLE	B	SIG	OVERALL R SQRD	OVERALL SIG
	CONSTANT	7.370	.005		
1	SROUT	.067	.042	.071	.076
2	SLRTO	3.409	.014	.163	.023
3	CHCEO	3.816	.083	.198	.027
4	OUTST	.077	.315	.225	.033
5	TNURE	-.087	.330	.244	.045

KEY

CHCEO CHAIRMAN/CEO  
 SROUT SOCIAL RESPONSIBILITY COMM, % OUTSIDE MEMBERS  
 SLRTO SALARY RATIO  
 OUTST OUTSIDE DIRECTORS STOCK  
 TNURE TENURE CHAIRMAN/CEO



TABLE 10  
 STEPWISE REGRESSION, RETURN ON ASSETS  
 FINANCIAL MODELING, PHASE III

STEP	VARIABLE	B	SIG	OVERALL R SQRD	OVERALL SIG
	CONSTANT	5.910	.000		
1	SROUT	.032	.058	.083	.054
2	OUTST	.070	.077	.150	.033

KEY

SROUT SOCIAL RESPONSIBILITY COMM, % OUTSIDE MEMBERS  
 OUTST OUTSIDE DIRECTORS STOCK

Variables that were included with individual levels of significance greater than .10 were included to increase the overall R Square, and to maximize the variance accounted for in the regression.

Some attributes do have a significant relationship with measures of financial performance. The fact that the explanatory power of the models ranges from a low of 15% to a high of 24% also indicates the models are of value, particularly considering the number of undefined intervening variables. There was no model for Total

Return to Shareholders that was significant at the .05 probability level. These models are interpreted in the next chapter.

#### Attributes Related to Social Performance

The analysis of board attributes associated with greater social responsibility was done with the logistic stepwise regression program in the BMDP Statistical Package. The straightforward multiple regression used in the analysis of financial performance was inappropriate for the social responsibility analysis, due to the dichotomous nature of the social responsibility measure.

The result of the analysis of attributes associated with social performance was quite simple. This is desirable because of the small number of cases in relation to the number of independent variables. Exploratory models with large numbers of independent variables were unstable. The model offering the greatest explanatory power is shown in Table 11.

TABLE 11  
 LOGISTIC REGRESSION OF SOCIAL RESPONSIBILITY  
 WITH BOARD ATTRIBUTES  
 SOCIAL RESPONSIBILITY MODELING, PHASE III

VARIABLE	BETA	T	SIG
CONSTANT	-11.200	2.47	<.05
SLRTO	10.100	2.47	<.05
OUTST	.164	2.22	<.05
MINOR	-.583	2.70	<.05

-----  
 Tests of goodness of fit:

BROWN CHI SQ GOODNESS OF FIT = 1.242 [DF=6] p = .537  
 HOSMER CHI SQ GOODNESS OF FIT = 3.667 [DF=2] p = .732

KEY

SLRTO SALARY RATIO  
 OUTST OUTSIDE DIRECTORS STOCK  
 MINOR % MINORITY MEMBERSHIP

Using this logistic model with board attributes yields a score for each board, ranging from zero to one. The more positive the logistic regression score for the dependent variable, the more it moves toward identifying a socially responsible firm. The cut point is the point at which boards are divided into either managerial dominated or pluralistic. The output gives the complete range of

available cut points, so the user may select the desired level of reliability. Using a cut point of .792 with the above model yielded 87.5% of the cases correctly classified. This would indicate the model has moderately good fit [Dixon, 1983: 340].

The Chi-Square goodness of fit statistics essentially answer the question, "What is the probability of the observed frequencies occurring by chance if the estimated structure is correct?". The better the fit, the smaller the Chi-Square value, and the less likely the rejection of the null hypothesis that the specified structure is the correct one. Thus, the smaller the Chi-Square and the higher the reported probability, the better the fit [Hanushek and Jackson, 1977: 197].

The Brown goodness-of-fit test compares the fit of the data to the logistic or some alternate member of the family of models. A small p-value indicates that the logistic model is not appropriate for the data [Dixon, 1983: 333].

The Hosmer goodness-of-fit test compares the observed and predicted frequencies of ten cells. Cells are defined by the predicted values. A small p-value means the predicted values do not fit the data [Dixon, 1983: 333].

The usefulness of such a simple model may be in the attributes that were not found to be significant. A model offering such high predictive power with so few independent variables seems to run counter to much of the conventional thought about how boards of directors can be reformulated to move the firm toward greater social responsibility. An analysis of the model is included in the following chapter.

## C H A P T E R    I V

### ANALYSIS OF RESULTS

This chapter analyzes and interprets the results of phases two and three of the research. It includes in this analysis considerations of reliability and validity, and draws some generalizations from the statistical analysis. Reliability and validity interpretations are based on Kerlinger [1973], Cook and Campbell [1975] and Kidder [1982].

#### Financial Performance

Efforts to analyze financial performance through an aggregation of board attributes through discriminant analysis and canonical correlation were unsuccessful. Comparisons made with aggregate or individual measures of financial performance with aggregated board attributes proved to be statistically insignificant, and even then uninterpretable. The success of the model building process in phase one suggests the conceptual notion of pluralist and managerial dominated archetypes of boards of

directors is appropriate, but these board types do not have a clear relationship to financial performance. The use of multiple regression in phase three was an effort to determine if some other archetype of board might be more closely related to superior financial performance.

The analysis of the multiple regression models in phase three was done by simply examining the signs of the significant independent variables. The results are shown in Table 12.

The signs of these significant variable suggest ROE and ROA can be maximized when a board is composed and structured with the following attributes:

1. An outside dominated social responsibility committee.
2. Large amounts of stock held by outside directors.

This board does not have many distinguishable characteristics, although those significant characteristics definitely suggest a more pluralistic board form.

TABLE 12

## SIGNS OF SIGNIFICANT VARIABLES FOR MULTIPLE REGRESSION

ATTRIBUTE	ROE	ROA
CHCEO	+	
NMOUT		
SROUT	+	+
BDOUT		
NMTGS		
SLRTO	+	
INNST		
OUTST	+	+
MINOR		
TNURE	-	

## KEY

CHCEO	CHAIRMAN/CEO
NMOUT	NOMINATING COMM, % OUTSIDE MEMBERS
SROUT	SOCIAL RESP COMM, % OUTSIDE MEMBERS
BDOUT	COMPOSITION, % OUTSIDE MEMBERS
NMTGS	FREQUENCY OF MEETINGS
SLRTO	SALARY RATIO
INNST	INSIDE DIRECTORS STOCK
OUTST	OUTSIDE DIRECTORS STOCK
MINOR	% MINORITY MEMBERSHIP
TNURE	TENURE CHAIRMAN/CEO
ROE	RETURN ON EQUITY
ROA	RETURN ON ASSETS



To maximize only ROE, presumably without any significant negative effect on ROA, the board should have the following characteristics in addition to those above:

1. A chairman who is also the CEO.
2. A high salary ratio, with the highest paid executive receiving much more than the second highest paid executive.
3. A short tenure for the chairman/CEO.

The firm has outsiders on the board who own large blocks of stock, but are not active in the management of the firm. The board, concerned about the long term success of the corporation, brings in a strong, charismatic Chairman/CEO as a "take charge" corporate leader. This new leader is well paid and given nearly a free reign to make fundamental corporate changes, but the board retains its power to make normative decisions about the nature and direction of the firm. This description is most similar to that of a board using normative control under Molz' [forthcoming] typology, a consultive board by Vance's [1983] typology or Bazerman and Schoorman's [1983] reciprocity board. An example might be Chrysler Corporation or International Harvester.

### Reliability of Financial Performance Models

The reliability of the financial performance models should be quite high. Of the three financial measures, Total Return to Shareholders has the highest reliability in that it is based on facts that are not subject to interpretation. Information of stock dividends and stock appreciation is clear and unambiguous. Its reliability is high.

Measures of Return on Shareholder Equity and Return on Assets are also highly reliable. These measures were taken from audited corporate financial records as they were submitted to the Securities and Exchange Commission. While there is some room for corporations to use creative financial analysis in generating these statistics, the fact they were all audited by a Certified Professional Accounting firm, and reported to a government regulatory agency, enhances the reliability. All of the measures on financial performance were taken from the Fortune 500 List of Industrial firms. Obtaining all of the data from one source further enhances its reliability.

Measures of the various board attributes were obtained from corporate proxy statements, annual reports, Security and Exchange Commission 10K reports and Moody's Industrial Manual. With the exception of Moody's Industrial Manual, all of these represent primary corporate documents. Two of the documents, the corporate proxy statements and SEC 10K reports are required by regulation, and as such most of the information on the ten attributes is included by regulation. The fact the Securities and Exchange Commission requires disclosure of this information in a particular format enhances its reliability. Disclosure on the two attributes which were not required by regulation were those on minority representation and tenure. Information on tenure was frequently included in the proxy statements, and always included in the Moody's Industrial Manual. Information on minority representation was inferred from biographical information on directors, which was most often available in the proxy statements and annual reports. Due to the non-ambiguous nature of these measurable attributes, there were no problems of interpretive reliability. Coding was primarily mechanical rather than interpretive, adding to its high level of reliability.

## Validity of Financial Performance Models

Construct Validity. For the models that were statistically significant, the construct validity is high. The models are theory driven, and the extent to which the theories of the individual attributes are valid, the models are also valid. The collection of the data from primary corporate sources also improves its construct validity.

Face Validity. Face validity is high in that the models that were suggested to be most associated with high levels of financial performance were similar to conceptual models described by Bazerman and Schoorman [1983], Vance [1983] and Molz [forthcoming]. These conceptual models were developed based on actual experience, organizational theory and stakeholder theory. The models as described are sensible and consistent.

Statistical and Internal Validity. The statistical validity of the multiple regression models, which were the only ones with statistical significance, is quite good. Examination of the models for gross violations of

statistical assumptions yielded no evidence that the models were misleading in their results. The models explained between 15% and 24% of the variance in the different measures of financial performance, depending on the measure. While it is obvious that other factors influence between 76% and 85% the total variance, such levels of explanatory power are not inconsequential.

External Validity. The external validity of these models is limited. The population from which the sample was drawn was the Fortune 500 Industrial list. Further, the selection was not random, but rather was industry specific. Attempts to use these models to describe boards at large must be made with care; there is no justification to use the models on firms that are outside the Fortune 500 Industrial list, and the single industry nature of the study must be noted when using the models within the Fortune 500 Industrial list. This is particularly true when recalling Pfeffer's findings that boards were frequently composed to take advantage of industry specific capital constraints.

Taken in aggregate, the suggested models are reasonably reliable and valid. Specific limitations

should be kept in mind when using the models beyond their original data base, but the conclusions generated are empirically sound.

### Social Performance

The analysis of the Chi Square model of differences indicates no significant relationship between managerial dominated or pluralistic board types and social performance. But, as noted earlier, the direction of the relationship is reversed from the hypothesized relationship. Thus, it would seem managerial dominated boards lean toward more social responsibility than pluralistic boards. This relationship could be explained in several possible ways; a greater clarity of internal board values, greater knowledge of what the firm is actually doing, or less need to demonstrate that pluralism does not equate to radicalism.

A pluralist board by definition has diverse interests represented, and no one group will have the dominant power within the board. This may lead to conflicting values and a difficulty in agreeing what course of action is the most desirable. The lack of one central influence group that

can demand a particular line of actions be developed that is consistent with their interests may mean there is no consistent line of action; the action the firm takes is not goal directed or driven by one particular sense of values. Hambrick and Mason [1984] have described the effectiveness of strategies achieving organizational outcomes as reflections of the values and cognitive bases of powerful actors in the organization. Researchers and theorists have suggested an effective board is characterized by consensus building behavior rather than debating behavior [Welty, 1983], and shared values [Parker, 1983]. Given the general qualifications of most board members, it is difficult to believe that such individuals might have values that were hostile to the general social wellbeing. However, in a pluralistic board no single clear set of values can be defined or accepted, the board focuses on debate rather than consensus. The corporation drifts into socially irresponsible actions, not because the members individually lack a sense of socially responsible behavior, but the board cannot agree on what is or is not considered socially responsible.

Another explanation is that the managerial dominated board is composed of individuals who are experts on the

operation of the corporation. This managerial dominated board, being composed of well qualified people who share a common value system, while also having a very clear understanding of the operations of the firm, can make better decisions about trade offs between socially responsible actions and the best course for the firm. By not having to concern themselves directly with satisfying the various constituencies of a pluralistic board, they can concentrate on maximizing corporate effectiveness, both in terms of operational goals and social goals. The social goals become a part of the operational considerations by which the managers are evaluated, and such considerations become a part of the overall indigenous corporate culture, rather than an esoteric objective imposed upon the operating managers by some isolated and uninformed group sitting in the corporate boardroom. Sonnenfeld [1981] found that executives that spent less time interacting with stakeholders were more tolerant and empathetic with the stakeholders' concerns. Thus a board that is managerial dominated can be more responsive to stakeholder issues than a pluralistic board.

Another possible explanation is that the pluralistic



board, being a relatively new phenomenon, is more concerned with fitting into the perceived boardroom culture than they are in assertively representing their constituents [Spencer, 1983]. The pluralistic board may in fact be less effective in representing the genuine pluralism of the corporate stakeholders than the more managerial dominated board. A study of Irish workers sitting on boards of directors has found the workers to be ineffective in representing the views of labor at the board level [Costello, 1983]. Spencer [1983a] found a new board member was most accepted when he was perceived as being from the same class as the existing board members, was cooperative and sought to understand the positions of the current board in terms of policies, strategies and values. Lacking this, the board may degenerate into a debating society, unable to reach a consensus necessary to lead the corporation. The managerial board, with a clearer sense of common values and organizational knowledge, can effectively understand the objectives of stakeholders and consider these objectives when making corporate decisions about socially responsibility. The pluralist board, with actual representatives of these stakeholders, sends mixed signals to the aggregate board

decision process. The representatives of these corporate stakeholders, trying to demonstrate their commitment to the well being of the corporation, don't effectively present their constituent's views, but rather rationalize away such an effective presentation in order to demonstrate the reasonableness of having such constituents represented. To effectively present the views of these constituencies might antagonize the decision makers on the board, freezing the constituency representatives out of the real decision process. It thus becomes more rational to suppress the presentation of constituency issues for the sake of remaining in the decision process.

Using the logistic regression to get a better picture of the attributes that are most closely associated with socially responsible firms supports these interpretations. A restatement of the results of the logistic regression, and a consideration of the range of the relevant variables for the socially responsible portion of the study are shown in Table 13.

TABLE 13  
LOGISTIC REGRESSION FOR SOCIAL RESPONSIBILITY AND  
RANGE OF ATTRIBUTES

ATTRIBUTE	BETA	RANGE
CONSTANT	-11.200	
SLRTO	10.100	1.00-2.43
OUTST	.164	00-- 56
MINOR	-.583	00- 17

KEY

SLRTO    SALARY RATIO  
OUTST    OUTSIDE DIRECTORS STOCK  
MINOR    % MINORITY MEMBERSHIP

An examination of the logistic regression indicates that as, [1] the salary ratio increases, [2] greater amount of stock is held by outside directors, and [3] fewer minority representatives are present, the greater the social responsibility. Further, the combination of the value of the salary ratio coefficient and its range balance the negative value of the constant, automatically bringing the dependent variable near zero. Thus, as the salary range moves beyond its lower limit, social responsibility increases as the salary ratio increases and more stock is held by outside directors. Minority

representation, however, reduces this trend toward greater social responsibility. Many of the firms defined to be socially responsible had low percentages of stock held by outside directors, so the relative combination of all three attributes is critical.

This is consistent with the discussion of the findings of the managerial dominated and pluralistic archetypes. It would be wrong to interpret the logistic regression as supporting the managerial dominated archetype, as several of the characteristics of the managerial board were not statistically significant. These include the following attributes that were excluded as not significant: [1] the chairman may or may not be the CEO, [2] the presence or lack of outside directors on nominating or social responsibility committees, [3] the number of meetings held by the board, [4] the amount of stock held by the inside directors or [5] the tenure of the CEO/Chairman. The socially responsible corporation seems to have a board in which a dominant set of values are allowed to flourish. This dominant set of values may come from a single charismatic individual in the organization, as supported by the significance of the salary ratio, or from outside directors who hold large

amounts of stock and are determined that the corporation operate in a manner consistent with their value system. In any case the existence of minorities on the board only seems to confuse the sense the board has as to proper social actions.

This in no way suggests that minorities have less social concern than any other group to whom the corporation is responsible. Rather there are three [or more] possible explanations for this finding. First, it suggests the different values of minorities may muddle an otherwise consistent set of corporate values, causing confusion in defining relevant social goals. This is consistent with Sonnenfeld's [1981] view. Second, it may be that managers have a better sense of balancing socially responsible actions with other corporate objectives. Third, it may be that the newness of minority representation has not allowed sufficient time for the minorities to become secure in their access to the decision making process, causing a suppression of effectively presenting their constituents views.

The board which maximizes social performance is not the same as the board that maximizes financial performance. The board that maximizes financial

performance seemed to fit the board archetype exercising normative control, consultive behavior or reciprocal interaction. The board maximizing social performance seems to emphasize singleness of a value system, which may be achieved through either a coalition of outside directors who are major stockholders and a single powerful professional manager, or one of these alone. In either case the board is not structured to promote pluralist, active or collegial behavior, or social control. Such a board could be managerial dominated, such as Vance's [1983] managerial dominated syndical board, or shareholder dominated, or a coalition of the two. This aggregated alternative would not be expected to have some attributes appear as statistically significant when the two are lumped together. Specifically, the two are conceptually expected to differ in the areas of joint Chairman/CEO, committee structure, frequency of board meetings, domination by inside directors or the tenure of the CEO/Chairman. Because of these differences they do not show up as statistically significant variables in the logistic regression when the two board types are lumped together.

### Reliability of the Social Responsibility Models

The models developed for social responsibility used all of the same board attributes and data gathering techniques as the financial models, so all of the comments regarding reliability in the financial performance models apply to the social responsibility models.

The indications of social responsibility were gathered separately from the information for the financial performance models. Other researchers have used two different methods to define social responsibility, neither of which was entirely satisfactory for this research.

The first technique is based upon the reputation of the firm. Several indexes of social responsibility have been developed using either the assesment of a single individual or surveys of experts in the area [Council of Economic Priorities, 1971; Moscovitz, 1972, 1975]. These indexes were not used for several reasons. First, they were not chronologically comparable with other needed data for this research. Much of the data on corporate boards of directors has only recently become available, following

disclosure regulations promulgated by the Securities and Exchange Commission. The relevant information on board attributes was most available for the 1982 fiscal year, and it would have been an illogical effort to relate board composition and structure to measures of a firms' social performance from the early 1970's. Second, these indexes were highly subjective, and third, they were in no way representative of any definable larger population [Cochran and Wood, 1984].

The second method of measuring corporate social responsibility was based on content analysis of corporate annual reports and other relevant documents. This method was developed by Beresford [1973, 1975, 1976] and Bowman [1976]. This method has several disadvantages which made it inappropriate for this research. First, it is highly subjective in defining what variables to include in the analysis [Cochran and Wood, 1984]. Second, it is only an indication of what firms say they are doing, which may be very different from what they are doing in fact [Cochran and Wood, 1984]. Third, the very fact this method has been developed leads to its bias. Corporations today are concerned with being labeled "socially irresponsible", and will take efforts to present a more positive image.



Certainly any firm concerned about such an image could easily bias the development of a social responsibility scale by simply including in annual reports and other documents many positive references to social accomplishment. Lastly, corporate annual reports vary widely in development and purpose. The information legally mandated in an annual report is minimal; large firms use their annual report primarily to communicate positive images of the corporation to the shareholder. Smaller firms, or firms with large amounts of stock held by inside managers, need be less concerned with pleasing outside minority shareholders, and at the same time may feel production of a large and sophisticated annual report is a poor use of shareholders' assets. These firms might put out the minimally required annual report, and include nothing on corporate social responsibility.

Having rejected both of these measures of corporate social responsibility, new measures were required. The criteria for selecting an appropriate measure was focused around adopting a measure developed by a experts in the analysis of firms' social behavior. Such experts would have time, motivation and an unbiased set of criteria to examine a wide range of information that would allow an

assessment of corporate social responsibility. The measures used in this research met those criteria.

The Dreyfus Third Century Fund portfolio is generated by a professional investment firm that has a professional staff examining the social behavior of firms. Only those firms are selected for the portfolio that specifically meet criteria described in the methodology section.

The list generated by the Council on Economic Priorities of less responsible corporations is based on shareholder proposals to rectify inadequate social performance. These proposals were submitted by well organized activist groups that scan large numbers of corporations. Corporations targeted by these groups consistently carry out unacceptable social behavior. Organizations that monitor such behavior include the Interfaith Center on Corporate Responsibility, the New World Foundation and the Project on Corporate Responsibility [Lydenberg and Karpen, 1982]. These organizations have professional staff members that do much the same sort of analysis as the Dreyfus Third Century Fund staff.

The main disadvantage of this measure of social responsibility is its dichotomous nature, not allowing a

deeper analysis into continuous gradations of social responsibility. It is, however, generated independently of this research, presumably unbiased, current and based on analysis of large amounts of information. The reliability of this scale of social responsibility is equal to that of the two other scales used in prior research, and because it is current the scale has greater reliability for this research.

#### Validity of Social Responsibility Models

Internal and Statistical Validity. The internal and statistical validity of the Chi Square test of the second hypothesis is quite high. The model was simple and straightforward, the statistical analysis did not have to contend with problematic assumptions or variables.

The logistic regression at the level presented is highly valid for both statistical and internal considerations. The model has moderate predictive power as indicated by the Hosmer and Brown goodness-of-fit tests, and is straightforward. The variables included did not seriously violate any assumptions necessary for a well

behaved model. As more variables were added problems of tractability developed due to variables sorting in divergent directions. Higher order models lacked either significance or explanatory power. The model presented offers the best balance of validity and explanatory power.

Construct Validity. The construct validity of both models is quite high. The construct validity of the tested hypothesis is high; the model was fully theory driven, testing the works of Stone [1975] and March, Maakestad, and Heiland [undated]. The construct validity of the logistic model itself is good, in that all of the variables are direct measures of board form and composition, as in the financial models.

The construct validity of the interpretation of the logistic model is somewhat weaker. While the concept of values affecting board interaction was developed by Spencer [1983, 1983a] and Parker [1983], the notion of consistent values within a board leading to greater social responsibility is somewhat speculative. Further, such boards being either managerial controlled or shareholder controlled is a rational conjecture, but not one that is overpowering in eliminating other possible explanations.

Face Validity. The face validity of the logistic model is good; the explanation offered is viable and consistent with the work of Spencer [1983, 1983a], Parker [1983] and Welty [1983].

External Validity. The external validity of both the rejected hypothesis and the logistic model is valid within the Fortune 500 Industrial list. Because the research was not industry specific it may extend across industry lines. The external validity does not extend beyond the Fortune 500 Industrial list. The external validity, statistical validity and internal validity of the logistic model should all be satisfactory. The interpretation of the logistic model, and its resulting face validity and construct validity in the sense of identifying a board archetype is weaker.

## C H A P T E R    V

### DISCUSSION AND CONCLUSION

The development of the discriminant model in the first part of this research project has validated the concept of categorizing different boards of directors as either managerial dominated or pluralistic. However, the hypotheses that managerial dominated boards were associated with superior financial performance and pluralistic boards were associated with superior social performance were not supported. This research did demonstrate that the board of directors related to superior social performance is different from the board related to superior financial performance. The board associated with superior corporate financial performance seemed to fit the board archetype exercising normative control, consultive behavior and reciprocal interaction. The board related to superior corporate social performance seemed to emphasize singleness of a value system, which may be achieved through either a coalition of outside directors who are major shareholders and a single powerful professional manager, or one of these alone. In either

case it seemed to be the singleness of a value system that was more important than a board structured to promote pluralist, active or collegial behavior, or social control of the board.

### A Contingency Theory of Board Composition and Structure

An implicit objective in this research has been to apply empirical research techniques to get a better understanding of what might be an "ideal" board of directors. Many works have offered conceptual, theoretical and empirical evidence of what an ideal board might have for its composition and structure. This research has done three things: first, it created a model of two conceptual boards, managerial dominated and pluralistic; second, it used this model to test hypotheses relating these board archetypes to corporate performance; and third, it used regression analysis to identify particular attributes associated with superior performance. The implicit question of defining an ideal board form must now be addressed.

Alas, addressing the question is easier than answering it in a deterministic sense. Perhaps the best

answer is that an ideal board form is contingent upon the overall objective of the board itself. Yet this is somewhat circular, in that theoretically boards of directors have as their main objective shaping a corporation that satisfies the shareholders' interests. But the shareholders themselves have different objectives; some may wish to maximize current dividends, others long term growth, others socially responsible corporate actions, ad infinitum. If shareholders could actually practice corporate democracy the answer might be simpler, but the evidence seems to indicate most shareholders think of their corporation as primarily a financial investment, and not as a collection of human and capital assets, market position and the holder of unique competencies. The board must indeed carry out its fiduciary responsibilities for the many diverse shareholders.

The board must also carry out an obligation to the society that has legitimized and nurtured the corporate form. There seems to be nothing in this nation's founding documents that clearly give precedence for the corporate form of mobilizing economic resources. This obvious but often unacknowledged fact demands that some form of corporate responsibility be an explicit part of the



fiduciary responsibility of the corporation.

The ideal board form is in the eyes of the beholder, or at least the person who is addressing the question. For the individual adhering to a Milton Friedman approach to corporate purpose, the ideal board seems to be one that is active in the governing process; setting broad normative corporate goals and acts in a consultive manner. There is a separation between the governance function and the managerial function, although one individual may hold positions as both Chairman of the Board and Chief Executive Officer. But this person is not a tyrant who can ignore or dismiss the wishes of the board, but rather a professional who serves at the pleasure of the board. Perhaps the clearest analogy would be that of the Prime Minister of Britain. The Prime Minister [or the Chairman/CEO] has tremendous power as long as he or she retains the confidence of the Parliament [or the Board of Directors], but once that confidence is shattered, the power of the individual rapidly dissipates. This research seems to verify the conceptual work of Miles Mace [1971] in describing an effective board.

Someone who takes a broader view of the firm than

Friedman would describe a different ideal board. Christopher Stone's argument that the board is an appropriate focal point to foster greater corporate social responsibility is certainly accurate. However, his argument for a more pluralistic board to achieve this goal seems to be incorrect. An ideal board to achieve greater corporate social responsibility seems to be a board that has a focus of values, and seeks out consensus on a strategy to operationalize these values. This ideal board is dependent upon the individuals who sit on the corporate board having values favoring positive social actions. This is consistent with the general background and qualifications of those who sit on boards of directors. Within our political mainstream there are many different factions, each espousing different and often conflicting definitions of social responsibility. Yet there are very few, if any, factions that espouse a clearly hostile view toward society. Responsible individuals may differ in their perceptions of abortion, school prayer, the Equal Rights Amendment, or aid to Central American nations. Yet no one argues for either side of one of these positions because they want society to be worse off; both sides promote their position to make society better off. So it

seems to be with corporate boards of directors. Being made up of responsible and well qualified individuals, society seems to be best served when a corporate board is composed of individuals who are likely to share the same value system, even though these values may not be shared by other responsible members of society.

An ideal board related to both superior financial performance and superior social performance might be described as one that develops normative goals for the corporation, has a consultive interaction with the professional management, shares a common value system, and is ready and willing to replace a Chairman/CEO when the board loses confidence in the individual. However, different board forms would be more appropriate to maximize either financial returns or social responsibility.

#### Implications for Future Research

Several important issues have become evident in the course of this research that merit further investigation.

One is to further research the notions that normative and consultive boards are associated with corporations

having superior financial performance, while the cohesiveness of internal board values is related to superior social performance. This would be a continuation of the research stream from which this dissertation grew. The empirical work done by Vance, Lanser, Pfeffer, Schmidt, Crail, Herman and Lynch all suggested the relevance of the financial performance hypothesis tested in this research. The conceptual work done by Friedman, Dooley, Stone, Brudney and others suggested the relevance of the social performance hypothesis tested in this research. Additional work needs to be done, building upon the findings of this research.

Another important area of research is causality. None of the empirical research has demonstrated causality in the relationship between board form and financial performance or social performance. The assumption of causality has been implicit in much of the empirical research and explicit in nearly all of the conceptual research, but tested in neither case. Such investigations of causality could be carried out through longitudinal studies of corporations or through new statistical causal modeling techniques.

This research could have its external validity

extended by using the same techniques to study different industries and different populations. The food industry was chosen for reasons detailed in the methodology section, and this methodology can readily be used to investigate industry differences in board form and financial performance. Similarly, it would be significant research to test other populations, such as non-industrial firms or smaller firms.

From a methodological perspective, research is sorely needed in better measures of social performance. The techniques used in this research and in other research are all inadequate in some sense, particularly when compared with available measures of financial performance or corporate growth.

Lastly, research is needed in a more fundamental area of corporate legitimization. The corporate form has been legitimized historically and legally. Research is needed in the role of the board of directors in this ongoing process.

The board of directors is an often overlooked unit in considering corporate strategy. Although researchers are becoming more cognizant of this void, much additional work needs to be done in the areas of enterprise goal

formulation, the role of the board in evaluating ongoing corporate strategies and the role of information flows to the board in the strategic management process.

### Operational Implications

How is this research relevant to activists seeking to change corporate social behavior, board nominating committees seeking to improve board and corporate performance or other concerned individuals? Several operational suggestions are appropriate.

First, changes in board composition and structure should not be made without careful consideration for potential outcomes. The increasingly popular notion that outside dominated and pluralistic boards will lead to improved corporate performance should be questioned, as this study and most others do not support this notion. Such a change may improve the corporation's legitimization with society, but this has also yet to be proven. Given the evidence such shifts in board form may have a negative impact on corporate performance, it is unwise to move toward greater pluralism or outside control to achieve greater legitimization when that relationship has not been

demonstrated.

Second, if changes are made, it is probably best to move toward a board that understands the difference between its governance function, and the managerial function of the professional managers. The board should be constructed to facilitate development of normative goals, consensus decisions and a willingness to dismiss a Chairman/CEO when appropriate. Potential directors should be selected for their individual competencies and acceptance of a common value system. Selection of a director as a representative of some particular group in society is probably unwise; it would be better to nominate directors without consideration for their minority status, as selection on this criteria alone may be related to a muddling of the board's value system.

Third, some theorists have expressed concern over the lack of separation of the Chairman of the Board and the Chief Executive Officer positions. This research fails to demonstrate any negative impact of this practice, and in fact seems to demonstrate it is generally useful. It is more important that the board recognize its role in the governance process and assert its willingness to change a Chairman/CEO whenever it loses confidence in a particular

individual.

All in all, this study suggests board composition and structure can be related to corporate social and financial performance. However, theorists and practitioners advocating greater outside control and pluralism of the board of directors are misconstruing and overly simplifying the nature of this relationship.



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A P P E N D I X A

1982 FORTUNE 500 INDUSTRIAL FIRMS USED IN RESEARCH

TABLE 14

## 1982 FORTUNE 500 INDUSTRIAL FIRMS USED IN RESEARCH

FORTUNE NUMBER	FIRM
003	MOBIL
004	TEXACO
005	FORD MOTOR
006	INTERNATIONAL BUSINESS MACHING
007	STANDARD OIL OF CALIFORNIA
008	E.I. DUPONT DE NEMOURS
011	GENERAL ELECTRIC
012	ATLANTIC RICHFIELD
015	OCCIDENTAL PETROLEUM
018	SUN
030	DART & KRAFT
031	WESTINGHOUSE
032	PHILLIP MORRIS
033	UNION CARBIDE
035	BEATRICE FOODS
039	GENERAL FOODS
040	AMERADA HESS
043	McDONNELL DOUGLAS
045	CATERPILLAR TRACTOR
051	CONSOLIDATED FOODS
052	NABISCO BRANDS
059	HONEYWELL
062	GEORGIA PACIFIC
063	GENERAL MILLS
071	RALSTON PURINA
075	DEERE
076	AMERICAN HOME PRODUCTS
077	ANHEUSER-BUSCH
078	GREYHOUND
084	BORDEN
087	CPC INTERNATIONAL
091	INTERNATIONAL PAPER
093	UNITED FOODS
094	IC INDUSTRIES
099	KERR-McGEE

TABLE 14, cont.

FORTUNE NUMBER	FIRM
102	ARCHER DANIELS MIDLAND
103	H.J. HEINZ
104	BRISTOL-MYERS
113	AMERICAN CYANAMID
114	PFIZER
115	PILLSBURY
116	CARNATION
117	ESMARK
118	PPG INDUSTRIES
120	BORG-WARNER
121	DIAMOND SHAMROCK
124	NORTON SIMON
125	MERCK
126	CELANESE
135	CAMPBELL SOUP
146	QUAKER OATS
149	MEAD
152	ABBOTT LABORATORIES
157	SWIFT INDEPENDENT
160	DANA
161	AMAX
164	KELLOGG
167	SCOTT PAPER
170	McGRAW-EDISON
176	TIMES MIRROR
183	MAPCO
191	UPJOHN
198	CENTRAL SOYA
202	CONAGRA
207	ANDERSON CLAYTON
210	SQUIBB
213	STAUFFER CHEMICAL
219	A.E. STALEY MANUFACTURING
220	CABOT
221	CUMMINS ENGINE
223	AIR PRODUCTS AND CHEMICALS

TABLE 14, cont.

FORTUNE NUMBER	FIRM
224	HERSHEY FOODS
239	GEORGE A. HORMEL
240	AMSTAR
247	U.S. GYPSUM
250	POLAROID
251	BLACK AND DECKER MANUFACTURING
254	NORTON
266	FEDERAL CO.
268	INTERNATIONAL MULTIFOODS
270	CAMERON IRON WORKS
276	RICHARDSON-VICKS
284	SMITH INTERNATIONAL
286	GATX
288	G.D. SEARLE
296	MONFORT OF COLORADO
314	ANCHOR HOCKING
326	CLOROX
327	LONE STAR INDUSTRIES
344	ACF INDUSTRIES
346	OUTBOARD MARINE
351	KANE-MILLER
354	WHEELING-PITTSBURGH STEEL
363	McCORMICK
369	GERBER PRODUCTS
380	COLLINS AND AIKMAN
381	INTERSTATE BAKERIES
388	MARYLAND CUP
405	FERRO
407	FREDERICK & HERRUD
408	STOKLEY-VAN CAMP
413	WM. WRIGLEY JR.
417	ARMSTRONG RUBBER
419	MOORE McMORMACK RESOURCES
421	IDLE WILD FOODS
425	TYSON FOODS
449	SHELLER-GLOBE

TABLE 14, cont.

FORTUNE NUMBER	FIRM
451	KERR GLASS MANUFACTURING
452	UNIVERSAL FOODS
464	SHAKLEE
466	KNUDSEN
470	FLOWERS INDUSTRIES
472	CECO
474	MEREDITH
487	SANDERS ASSOCIATES
497	BUTLER MANUFACTURING
499	EASCO

A P P E N D I X B

ATTRIBUTES OF FIRMS USED IN MODEL DEVELOPMENT  
PHASE I

TABLE 15  
 ATTRIBUTES OF FIRMS USED IN MODEL DEVELOPMENT  
 PHASE I

FIRM NUMBER	CYCLO	NSOUT	SROUT	BDOUT	NNTGS	SLRTO	INNST	OUTST	MINOR	TNURE	DISC SCORE
003	NO	75%	78%	52%	12	1.18	00%	00%	10%	14	1.35
005	NO	85%	00%	47%	10	1.22	40%	00%	06%	03	-1.95
011	YIS	83%	00%	76%	11	1.26	00%	00%	06%	04	2.32
015	YIS	100%	00%	57%	07	1.32	02%	04%	00%	26	-1.49
032	YIS	100%	37%	50%	13	1.32	01%	00%	09%	05	1.59
040	YIS	00%	00%	71%	12	1.65	16%	01%	00%	38	-1.60
049	YIS	80%	00%	71%	08	1.56	00%	00%	07%	05	1.90
062	YFS	00%	00%	57%	04	1.39	04%	01%	00%	07	-0.68
075	YLS	00%	00%	27%	05	1.41	08%	00%	09%	28	-2.57
077	YIS	83%	00%	66%	10	2.06	15%	01%	13%	08	1.78
091	YIS	66%	00%	23%	13	2.43	04%	00%	00%	06	-2.27
099	YFS	00%	00%	45%	06	1.73	03%	01%	00%	45	-3.50
117	YFS	00%	00%	91%	12	2.47	00%	17%	09%	06	3.73
118	YIS	100%	00%	77%	12	1.04	00%	14%	00%	04	1.51
120	YFS	75%	00%	57%	06	1.52	01%	10%	07%	08	0.63
121	YIS	67%	00%	82%	09	1.75	00%	00%	00%	09	1.35
126	YFS	60%	80%	68%	10	1.20	01%	00%	13%	03	3.87
149	NO	100%	100%	66%	10	1.47	01%	03%	06%	02	2.44
160	YIS	00%	00%	80%	05	1.69	00%	00%	00%	04	1.26
167	NO	100%	00%	75%	13	1.54	00%	20%	13%	12	2.52

TABLE 15, cont.  
 ATTRIBUTES OF FIRMS USED IN MODEL DEVELOPMENT  
 PHASE I

FORTUNE NUMBER	CHCEO	NMOUT	SROUT	BDOUT	NMTGS	SLRTO	INNST	OUTST	MINOR	TNURE	DISC SCORE
170	YES	80%	00%	78%	08	2.24	01%	00%	00%	10	0.92
176	NO	57%	00%	71%	04	1.00	01%	31%	12%	08	1.70
220	NO	100%	00%	60%	08	1.52	12%	04%	00%	14	-1.51
221	YES	66%	00%	60%	05	1.18	26%	00%	07%	14	-0.74
239	YES	00%	00%	38%	13	1.37	46%	00%	08%	04	-1.86
247	YES	100%	00%	60%	05	1.43	01%	00%	00%	12	-0.57
250	NO	66%	00%	73%	09	1.03	08%	00%	00%	46	-2.27
251	YES	40%	00%	77%	08	1.18	00%	00%	00%	04	1.16
276	NO	00%	00%	33%	07	1.52	44%	00%	00%	03	-4.19
284	YES	00%	00%	50%	10	2.70	05%	00%	00%	06	-0.74
286	YES	80%	00%	81%	09	1.28	00%	00%	09%	05	2.94
314	YES	100%	00%	70%	04	1.38	01%	00%	10%	06	1.95
326	YES	75%	00%	57%	09	1.46	00%	24%	14%	01	2.38
327	YES	00%	00%	90%	06	1.50	14%	14%	00%	06	1.21
344	YES	100%	00%	72%	13	1.00	00%	00%	09%	16	1.92
346	NO	00%	00%	44%	08	1.48	15%	00%	00%	03	-2.06
354	YES	100%	00%	89%	11	2.74	01%	00%	00%	05	2.13
380	YES	00%	00%	60%	07	1.74	00%	03%	00%	22	-1.07
388	YES	00%	00%	23%	04	1.00	30%	03%	00%	22	-4.98
405	YES	100%	00%	73%	12	1.00	00%	00%	00%	07	1.03



TABLE 15, cont.  
 ATTRIBUTES OF FIRMS USED IN MODEL DEVELOPMENT  
 PHASE I

FORTUNE NUMBER	CHCEO	NNOUT	SROUT	BDOUPT	NNTGS	SLRTO	INNST	OUTST	MINOR	TNURE	DISC SCORE
417	YES	75%	00%	58%	04	1.18	08%	20%	00%	03	-0.56
419	YES	00%	00%	54%	08	1.22	07%	00%	00%	10	-0.93
449	YES	66%	00%	42%	10	1.51	02%	01%	00%	11	-1.41
451	NO	00%	00%	62%	04	1.25	17%	00%	00%	31	-2.85
464	NO	66%	00%	73%	06	1.88	43%	00%	00%	08	-1.87
472	YES	00%	00%	50%	05	1.16	09%	09%	08%	19	-7.42
474	NO	00%	00%	70%	04	2.76	36%	12%	09%	20	-1.16
487	NO	50%	00%	58%	10	1.64	02%	00%	00%	07	-0.64
497	YES	80%	00%	67%	09	1.29	00%	00%	08%	08	1.50
499	YES	80%	00%	62%	11	1.00	13%	00%	00%	17	-0.90

A P P E N D I X C

ATTRIBUTES OF FIRMS USED IN FINANCIAL PERFORMANCE ANALYSIS

TABLE 16  
ATTRIBUTES OF FIRMS USED IN FINANCIAL PERFORMANCE ANALYSIS

FORTUNE NUMBER	CHCEO	NMOUT	SROUT	BDOUT	NMTGS	SLRTO	INNST	OUTST	MINOR	TNURE	DISC SCORE	ROE	ROA	TRS
030	YES	57%	00%	68%	12	1.25	01%	00%	05%	03	1.18	12.6%	6.8%	42.1%
035	YES	80%	80%	64%	09	1.36	00%	00%	14%	03	3.74	16.1%	8.2%	38.8%
039	YES	100%	00%	80%	13	1.21	00%	00%	20%	09	4.63	12.3%	5.2%	31.9%
051	YES	67%	63%	63%	08	1.27	04%	01%	11%	06	2.57	17.0%	6.5%	50.0%
052	YES	100%	00%	72%	04	1.03	01%	00%	08%	09	1.59	17.1%	8.5%	24.5%
063	YES	100%	100%	73%	10	1.40	00%	00%	13%	01	4.61	18.3%	8.3%	40.7%
071	YES	75%	00%	79%	06	1.49	00%	08%	07%	03	2.41	6.3%	3.3%	52.3%
078	NO	00%	00%	71%	04	1.34	00%	00%	14%	16	1.71	10.7%	5.1%	19.0%
084	YES	00%	00%	75%	12	1.94	00%	00%	17%	03	4.11	12.4%	6.4%	77.9%
087	YES	100%	00%	67%	11	1.56	00%	00%	13%	03	2.89	17.7%	9.6%	23.0%
093	YES	00%	00%	45%	08	1.00	17%	35%	09%	07	-0.39	0.5%	0.0%	-26.3%
094	YES	100%	00%	81%	12	1.52	00%	00%	06%	14	2.14	4.2%	1.2%	6.4%
102	YES	33%	00%	42%	06	1.66	12%	03%	00%	10	-2.08	12.9%	7.2%	38.4%
103	NO	60%	57%	44%	12	1.52	19%	00%	06%	46	-2.81	18.7%	9.0%	49.5%
115	YES	89%	50%	69%	06	1.47	02%	00%	08%	09	2.11	15.3%	5.6%	32.0%

TABLE 16, cont.

## ATTRIBUTES OF FIRMS USED IN FINANCIAL PERFORMANCE ANALYSIS

FORTUNE NUMBER	CHCEO	NMOUT	SROUT	BDOUT	NMTGS	SLRTO	INNST	OUTST	MINOR	TNURE	DISC SCORE	ROE	ROA	TRS
116	YES	00%	00%	31%	05	1.13	34%	00%	00%	11	-3.94	16.6%	10.7%	59.5%
117	YES	00%	00%	91%	12	2.47	00%	17%	09%	06	3.73	16.7%	6.1%	43.7%
124	YES	100%	00%	56%	10	2.70	00%	00%	33%	13	4.67	14.4%	4.9%	80.3%
135	YES	50%	00%	66%	11	1.30	02%	39%	02%	03	2.79	14.2%	7.8%	76.3%
146	NO	69%	80%	61%	07	1.02	02%	00%	06%	01	1.68	15.4%	6.6%	25.1%
157	YES	00%	00%	78%	04	2.01	00%	36%	00%	01	1.24	26.1%	9.8%	NA
164	YES	75%	67%	58%	12	1.99	00%	48%	08%	03	2.44	25.7%	17.5%	25.1%
198	YES	60%	00%	44%	07	1.74	02%	00%	00%	03	-1.01	6.3%	3.6%	45.6%
202	YES	00%	00%	75%	08	3.37	02%	02%	00%	01	1.20	21.0%	6.7%	66.3%
207	YES	100%	00%	50%	05	1.19	31%	08%	00%	06	-2.26	10.2%	6.1%	4.9%
219	YES	00%	00%	50%	06	2.35	09%	07%	00%	09	-1.35	12.2%	5.5%	-11.9%
224	NO	33%	00%	50%	10	1.14	51%	00%	10%	08	-1.92	17.7%	7.2%	62.2%
239	YES	00%	00%	38%	13	1.37	46%	00%	08%	04	-1.86	11.4%	5.7%	59.4%
240	YES	100%	00%	83%	12	1.80	00%	03%	08%	01	3.34	10.4%	6.0%	4.4%
266	NO	00%	00%	36%	10	1.60	06%	00%	00%	04	-2.09	9.6%	5.6%	38.4%

TABLE 16, cont.

## ATTRIBUTES OF FIRMS USED IN FINANCIAL PERFORMANCE ANALYSIS

FORTUNE NUMBER	CHCEO	NMOUT	SROUT	BDOUT	NMTGS	SLRTO	INNST	OUTST	MINOR	TNURE	DISC SCORE	ROE	ROA	TRS
268	YES	60%	00%	75%	08	1.49	00%	11%	00%	12	0.61	15.6%	6.9%	45.6%
296	NO	00%	00%	38%	06	1.92	49%	00%	13%	02	-2.05	34.5%	10.5%	189.1%
351	NO	00%	00%	55%	05	1.81	50%	03%	00%	23	-4.31	5.0%	2.2%	14.2%
363	YES	00%	00%	00%	11	1.50	27%	00%	00%	05	-4.91	13.3%	6.2%	40.8%
369	YES	100%	00%	67%	04	1.77	03%	11%	13%	11	1.84	15.7%	10.7%	36.0%
381	NO	00%	00%	63%	08	1.30	00%	02%	00%	05	-0.23	5.4%	1.5%	-13.9%
407	YES	00%	00%	44%	04	1.41	84%	00%	00%	23	-6.17	7.2%	1.8%	-9.6%
408	YES	00%	00%	50%	11	1.17	15%	00%	00%	01	-0.85	10.8%	5.7%	55.4%
413	YES	75%	00%	50%	05	1.61	25%	00%	10%	21	-1.29	14.5%	11.2%	21.7%
421	YES	00%	00%	43%	04	1.28	44%	00%	00%	07	-3.45	15.2%	8.3%	-11.1%
425	YES	00%	00%	38%	05	4.84	94%	00%	00%	30	-7.37	16.9%	4.0%	82.0%
452	NO	100%	00%	85%	06	1.13	02%	10%	08%	03	2.36	17.6%	8.4%	56.9%
464	NO	66%	00%	73%	06	1.88	04%	00%	00%	08	-1.87	19.9%	10.8%	71.6%
466	YES	100%	00%	70%	09	1.45	05%	00%	00%	02	0.74	10.1%	3.3%	88.6%
470	NO	25%	00%	38%	04	1.30	33%	00%	00%	48	-6.16	17.2%	7.8%	76.0%

A P P E N D I X D

ATTRIBUTES OF FIRMS USED IN SOCIAL RESPONSIBILITY ANALYSIS

TABLE 17  
ATTRIBUTES OF FIRMS USED IN SOCIAL RESPONSIBILITY ANALYSIS

FORTUNE NUMBER	CHCEO	NMOUT	SROUT	BDOUT	NMTGS	SLRTO	INNST	OUTST	MINOR	TNURE	DISC SCORE	SOCIALLY RESP
004	YES	80%	00%	80%	11	2.37	00%	00%	07%	02	2.86	YES
006	NO	00%	00%	67%	12	1.07	00%	00%	13%	09	2.10	NO
007	YES	100%	00%	43%	14	1.00	00%	00%	07%	01	0.69	NO
008	YES	00%	00%	42%	16	1.05	01%	31%	10%	01	1.17	NO
011	YES	83%	00%	76%	11	1.26	00%	00%	06%	04	2.32	YES
012	YES	80%	00%	47%	11	1.47	00%	00%	00%	17	-1.28	YES
018	YES	67%	40%	56%	12	1.65	30%	00%	06%	04	0.19	YES
031	YES	00%	00%	83%	11	1.35	00%	00%	08%	07	2.92	NO
033	YES	100%	83%	75%	10	1.19	00%	00%	13%	00	4.59	NO
043	YES	33%	00%	53%	06	1.52	09%	00%	00%	10	-1.22	YES
045	YES	60%	00%	56%	08	1.36	00%	00%	06%	05	0.76	YES
059	YES	80%	00%	70%	08	1.56	00%	00%	07%	05	1.84	YES
062	YES	00%	00%	57%	04	1.39	04%	01%	00%	07	-0.68	YES
076	YES	00%	00%	64%	NA	1.31	00%	01%	09%	01	1.48	NO
084	YES	00%	00%	75%	12	1.94	00%	00%	17%	03	4.11	NO
091	YES	66%	00%	23%	13	2.43	04%	00%	00%	06	-2.27	YES

TABLE 17, cont.  
 ATTRIBUTES OF FIRMS USED IN SOCIAL RESPONSIBILITY ANALYSIS

FORTUNE NUMBER	CHCEO	NMOU	SROUT	BDOUT	NMTGS	SLRTO	INNST	OUTST	MINOR	TNURE	DISC SCORE	SOCIALLY RESP
104	YES	100%	00%	78%	10	1.10	01%	00%	11%	10	2.78	NO
113	YES	25%	67%	55%	06	1.07	01%	00%	00%	06	0.37	NO
114	YES	100%	00%	47%	13	1.32	00%	00%	06%	10	0.20	NO
116	YES	00%	00%	31%	05	1.13	34%	00%	00%	11	-3.94	NO
125	YES	00%	00%	86%	11	1.07	00%	00%	14%	06	4.12	NO
152	YES	50%	00%	50%	08	1.62	07%	00%	07%	03	0.32	NO
161	YES	86%	00%	83%	13	1.32	02%	19%	06%	05	2.76	YES
183	NO	00%	00%	80%	11	1.46	00%	01%	00%	02	1.25	YES
191	YES	00%	00%	27%	10	1.19	09%	00%	07%	13	-1.78	NO
210	YES	50%	83%	44%	11	1.20	00%	01%	06%	14	0.66	NO
213	YES	100%	00%	43%	11	1.34	00%	00%	00%	08	-1.02	YES
223	YES	75%	60%	62%	12	1.43	00%	00%	00%	09	1.00	YES
247	YES	100%	00%	60%	05	1.43	01%	00%	00%	12	-0.57	YES
254	NO	33%	40%	62%	11	1.50	01%	00%	08%	11	1.27	YES
270	YES	00%	00%	63%	04	1.21	02%	56%	13%	11	1.62	YES
288	NO	00%	00%	93%	07	1.38	32%	00%	07%	05	1.29	NO



A P P E N D I X E

CORRELATION MATRIX OF ATTRIBUTES IN  
FINANCIAL MODELING

TABLE 18  
CORRELATION MATRIX OF ATTRIBUTES IN FINANCIAL MODELING

	CHCEO	NMOUT	SROUT	BDOUT	NMTGS	SLRTO	INNST	OUTST	MINOR	TNURE
CHCEO	1.00									
NMOUT	-0.19	1.00								
SROUT	0.03	0.32**	1.00							
BDOUT	-0.10	0.47**	0.09	1.00						
NMTGS	-0.18	0.14	0.16	0.14	1.00					
SLRTO	-0.19	-0.23*	-0.13	0.00	-0.08	1.00				
INNST	0.18	-0.44**	-0.23*	-0.57**	-0.34**	0.29**	1.00			
OUTST	-0.20*	-0.05	0.04	0.17	0.07	0.03	-0.22*	1.00		
MINOR	-0.10	0.40**	0.20*	0.31**	0.35**	-0.01	-0.36**	0.03	1.00	
TNURE	0.31**	-0.11	-0.04	-0.29**	-0.27**	0.19	0.44**	-0.21*	-0.12	1.00

  

	CHCEO	NMOUT	SROUT	BDOUT	NMTGS	SLRTO	INNST	OUTST	MINOR	TNURE
CHCEO	1.00									
NMOUT	-0.19	1.00								
SROUT	0.03	0.32**	1.00							
BDOUT	-0.10	0.47**	0.09	1.00						
NMTGS	-0.18	0.14	0.16	0.14	1.00					
SLRTO	-0.19	-0.23*	-0.13	0.00	-0.08	1.00				
INNST	0.18	-0.44**	-0.23*	-0.57**	-0.34**	0.29**	1.00			
OUTST	-0.20*	-0.05	0.04	0.17	0.07	0.03	-0.22*	1.00		
MINOR	-0.10	0.40**	0.20*	0.31**	0.35**	-0.01	-0.36**	0.03	1.00	
TNURE	0.31**	-0.11	-0.04	-0.29**	-0.27**	0.19	0.44**	-0.21*	-0.12	1.00

## KEY

CHCEO CHAIRMAN/CEO  
 NMOUT NOMINATING COM, % OUTSIDE MEMBERS  
 SROUT SOC RESP COM, % OUTSIDE MEMBERS  
 BDOUT COMPOSITION, % OUTSIDE MEMBERS  
 NMTGS FREQUENCY OF MEETINGS  
 SLRTO SALARY RATIO  
 INNST INSIDE DIRECTORS STOCK  
 OUTST OUTSIDE DIRECTORS STOCK  
 MINOR % MINORITY MEMBERSHIP  
 TNURE TENURE CHAIRMAN/CEO

\* SIG. AT .10  
 \*\* SIG. AT .05

A P P E N D I X F

CORRELATION MATRIX OF ATTRIBUTES IN  
SOCIAL RESPONSIBILITY MODELING

TABLE 19  
CORRELATION MATRIX OF ATTRIBUTES USED IN SOCIAL RESPONSIBILITY MODELING

	CHCEO	NMOUT	SROUT	BDOUT	NMTGS	SLRTO	INNST	OUTST	MINOR	TNURE
CHCEO	1.00									
NMOUT	-0.35**	1.00								
SROUT	-0.02	0.17	1.00							
BDOUT	0.33**	-0.07	-0.04	1.00						
NMTGS	0.05	0.27*	0.05	-0.04	1.00					
SLRTO	-0.07	0.23	-0.17	0.04	0.10	1.00				
INNST	0.16	-0.25*	-0.03	-0.13	-0.28*	-0.01	1.00			
OUTST	-0.11	-0.23	-0.13	0.00	-0.07	-0.21	-0.09	1.00		
MINOR	0.07	-0.22	-0.03	0.42**	0.25*	-0.10	-0.18	0.28*	1.00	
TNURE	-0.01	0.02	0.05	-0.35**	-0.28*	-0.12	0.59	0.01	-0.30**	1.00

  

KEY	
CHCEO	CHAIRMAN/CEO
NMOUT	NOMINATING COM, % OUTSIDE MEMBERS
SROUT	SOC RESP COM, % OUTSIDE MEMBERS
BDOUT	COMPOSITION, % OUTSIDE MEMBERS
NMTGS	FREQUENCY OF MEETINGS
SLRTO	SALARY RATIO
INNST	INSIDE DIRECTORS STOCK
OUTST	OUTSIDE DIRECTORS STOCK
MINOR	% MINORITY MEMBERSHIP
TNURE	TENURE CHAIRMAN/CEO

  

*	SIG. AT .10
**	SIG. AT .05

