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To the Graduate Council:

I am submitting herewith a dissertation written by Jia Wang entitled "Outside Director Composition and Corporate Performance." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Business Administration.

H. Dudley Dewhirst, Major Professor

We have read this dissertation and recommend its acceptance:

Alex Miller, Ronald E. Shrieves, Esteban Walker

Accepted for the Council:

Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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and recommend its acceptance:

  
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Accepted for the Council:

  
Associate Vice Chancellor  
and Dean of The Graduate School

OUTSIDE DIRECTOR COMPOSITION AND CORPORATE PERFORMANCE

A Dissertation

Presented for the

Doctor of Philosophy

Degree

The University of Tennessee, Knoxville

Jia Wang

May 1991

I want to especially thank Professor H. Dudley Dewhirst, the chairman of my committee, for his invaluable advice, support, and help throughout my entire program of study and dissertation research. I also want to express special appreciation to Professor Alex Miller, who, using a nomological tree approach, led me from seeing only weeds to small trees and inspired me in the development of this research. A considerable debt is owed to the other committee members--Professors Ron E. Shrieves and Esteban Walker--who greatly facilitated the research at critical periods.

A very special appreciation and thanks must go to my best classmate and friend, Betty S. Coffey, who supported and helped me at every important step of my study and research. I am most grateful for the very loving support of my dear wife, Yuan Li Yan, who has been sacrificing everything for me. I dedicate this research effort to my family: my parents, Geng Xiang and Li Wang, my parents-in-law, Xi Ping Huang and Hao Yan, my wife, Yuan Li Yan, and my son, Kang Wang.

The purpose of this study has been to investigate the following questions: Do outside board directors provide real benefits to firms' performance? If yes, as the literature of finance, organization theory, and strategic management suggests, then why haven't empirical studies found conclusive evidence of real benefits? And how can these real benefits be detected? Integrating concepts from agency theory, resource dependence theory, and stakeholder theory, a model was developed which predicted positive relationships between outside director types and three corporate performance dimensions. Four hypotheses derived from the model were empirically tested by using time-series and industry adjusted data from multiple sources and by applying several multivariate statistical techniques. The nonrandom sample consisted of 123 Fortune 500 firms representing 23 industries.

The results showed that there were no relationships between: 1) the proportion of principal outsiders and firms' financial performance; 2) the proportion of business outsiders and firms' business performance; 3) the proportion of public outsiders and firms' social performance; and 4) outside director composition and firms' performance. A major conclusion was that board composition variables based on directors' principle occupation and stock ownership were inadequate predictors of corporate performance. The results of the study suggest that board researchers should search for more meaningful criteria to classify directors in future corporate governance effectiveness studies.

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## CHAPTER 1

### INTRODUCTION

#### BACKGROUND

Boards of directors are one of the greatest innovations of corporate America (Johnson, 1990) and have served society well for more than a century (Mace, 1972). All publicly held companies--large, medium, and small--are required by the general corporate laws of the states in which they are incorporated to have boards of directors. In order for directors to fulfill their legally mandated responsibilities, they have been given considerable power. For instance, the Revised Model Business Corporation Act stated that "all corporate powers shall be exercised by or under the authority of and the business and affairs of the corporation managed under the direction of, its board of directors" (1985: 193). Boards of directors are responsible for corporate strategic leadership without interference in day-to-day operations. In general, directors' duties include selecting and replacing the chief executive officer (CEO) and other senior executives, overseeing the conduct of the firm's business, reviewing and approving major corporate plans, representing the interest of the firm's stockholders, and providing advice and counsel to top management (Lorsch & MacIver, 1990; Vance, 1983). Although the list of duties is not exhaustive, directors' principle role underlying the legal perspective is to be accountable to the shareholders and protect shareholders' interests. This fundamental assumption is evident in a Delaware court

statement, "...directors are fiduciaries in relation to the corporation and its shareholders, not as individuals, but as a class" (Lorsch & MacIver, 1990: 11). Thus, boards can enhance firms' performance by fulfilling these duties and responsibilities.

In the past several decades, however, both practitioners and academicians have sharply criticized corporate boards. Boards have been blamed, at least partially, for the loss of competitiveness of American companies in the global market and the undervalued market prices of stocks as well as for the associated wave of takeovers and restructuring. A former executive vice president and director at General Motors put it, "U.S. boards grew fat, dumb, and comfortable on a diet of post war stability and prosperity," and he urged saving corporate America "by shaking up its boards" (Johnson, 1990: 46). According to a former chairman of International Telephone & Telegraph, "the boards of directors of U.S. industry include numerous first-rate people doing what amounts to a second-rate job" (Geneen, 1984: 258). Mace summarized the role of boards as follows, "generally accepted roles of corporate boards have little relationship to what they in fact do and do not do in actual place" (1972: 37), and he believed that outside directors "are today overpaid for what they do, and underpaid for what they should do" (1972: 49).

Critics have been most vocal about the independence and effective functioning of corporate boards (Drucker, 1973; Jensen & Meckling, 1976; Mace, 1972; Vance, 1983). For example, the most frequently voiced criticism is that the corporate board of directors is merely ceremonial, rubber-stamping the views of the incumbent management. As Mace

concluded, "the board of directors serves as a sounding board...the decision is not made by the board" (1971: 13).

Another closely related criticism is that corporate boards are dominated by the CEO, who usually also serves as chairman. In over 75 percent of large firms, the CEO serves simultaneously as board chairman (Heidrick & Struggles, Inc., 1981). This arrangement is detrimental to the effective functioning of boards because the chairman and the CEO play two completely different roles (Geneen, 1984; Palmieri, 1979). While a CEO is a professional manager and represents the management on the board, the board chairman's role is to question and judge management. Thus, these two contradictory roles can not be played by a single individual.

Over the years, numerous recommendations of boardroom reform have been proposed. Some of these recommendations call for separating the position of CEO and chairman, redefining directors' constituent responsibilities, reducing the number of directors, asking all insiders on the board other than the CEO to resign, requiring directors to own a substantial amount of stocks relative to their compensation, and redefining precisely what directors should or should not do as well as establishing criteria for board evaluations (Drucker, 1973; Lorsch & MacIver, 1990; Mace, 1971, 1972; Vance, 1964, 1983; Weidenbaum, 1986).

The most frequently proposed boardroom reform is to increase the representation by outsiders, directors who are not current or retired employees of the company on whose board they serve (Vance, 1964). According to advocates of this position, corporate boards should have majority outside directors because a higher proportion of outsiders can

strengthen a board's independence, provide greater breadth of knowledge and experiences, and enhance the effective functioning of the board (Bacon & Brown, 1973; Williams & Shapiro, 1979).

The outsider dominance perspective has received theoretical support from several disciplines such as finance, organization theory, and strategic management. According to the agency theory perspective, a higher proportion of outsiders on a board can better monitor and control the opportunistic behavior of the incumbent management, thus, minimize the agency problem and maximize shareholders' wealth (Fama & Jensen, 1983; Jensen & Meckling, 1976). Based on resource dependence theory, outsiders serving as boundary spanners can help organizations grow, reduce uncertainty, and survive by facilitating a firm's co-optation process with its environment and providing needed resources (Pfeffer, 1972; Pfeffer & Salancik, 1978; Selznick, 1949). Finally, viewing corporations as social institutions, stakeholder theorists argue that outsider directors have fiduciary responsibilities to stakeholders, serve as advocates, representatives and protectors of a broad range of stakeholders, and help firms to balance the conflicting demands of various constituent groups and promote corporate social performance (CSP) (Freeman, 1984; Gilbert, Hartman, Mauriel, & Freeman, 1988).

During the 1970s and 1980s, corporations, voluntarily or involuntarily, made drastic changes in the composition of their boards of directors. In a survey of 1,300 large companies, Heidrick and Struggles, Inc. (1981) reported that the proportion of outside directors increased from 59.6 percent in 1971 to 72.2 percent in 1981. Today, most publicly held large companies have 75 percent or more outsiders on

their boards (Lorsch & MacIver, 1990; Neff, 1989). The call for more outsiders on corporate boards has also received support from the government. A number of new rules and regulations have been passed regarding board composition in recent years. For example, both the New York Stock Exchange (NYSE) and the American Stock Exchange (ASE) require that all firms listed on the exchanges have a minimum of two outside directors (Securities and Exchange Commission (SEC), 1980). It should be pointed out that the minimum requirement of two outsiders strongly reflects the outsider dominance perspective because the law only requires that the corporation "shall be managed by a board of at least three directors" (Mace, 1972: 37). Furthermore, the SEC, NYSE, and ASE all encourage boards to appoint a significant portion of outsiders to audit committees (Kesner, Victor, & Lamont, 1986). In fact, the NYSE specifies that all firms listed on the exchange must have an audit committee "comprised solely of directors independent of management and free from any relationship that...would interfere with the existence of independent judgement" (National Association of Corporate Directors, 1982: 46).

Despite the popularity of the outsider dominance perspective, the adoption of government rules and regulations, and the dramatic changes made by corporations, practitioners continue to criticize the lack of independence and ineffective functioning of corporate boards (e.g., Johnson, 1990; Neff, 1989). Similarly, corporate governance researchers remain unconvinced that firms actually benefit from an increased number of outsiders on boards. Extensive research has been conducted over the past four decades to examine the relationship between board composition,

usually measured as the proportion of outsiders on a board, and various aspects of corporate performance (see Zahra & Pearce, 1989, for a comprehensive review). In summary, research on board composition-performance yields rather mixed results and overall findings seem to suggest that inside directors, not outside directors, are essential to firms performance (e.g., Cochran, Woods, & Jones, 1985; Kesner et al., 1986; Singh & Harianto, 1989; Vance, 1955, 1964). Puzzled by these controversial findings, some researchers have begun to question the prevailing outsider dominance view and the usefulness of outsiders on boards (e.g., Cochran et al., 1985; Kesner et al., 1986).

Clearly, the importance of outside directors on corporate boards and the inconclusive results from research on board composition-performance demand further investigation. It is hoped that the above mentioned puzzle will be partially solved in this study.

#### PURPOSE

The purpose of this study is to address the following fundamental questions: Do outside board directors provide real benefits to firms' performance? If yes, as the literature of finance, organization theory, and strategic management suggests, then why haven't the empirical studies found any conclusive evidence of real benefits? And how can these real benefits be detected empirically?

In order to answer these general questions, a theoretical model, which will predict the relationship between outside director composition and corporate performance, is developed and tested. Specifically, the model raises the following research questions:



1. Does the proportion of principal outsiders (outside directors who are large shareholders) positively influence firms' financial performance?
2. Does the proportion of business outsiders (outside directors who are members of other business organizations) positively affect firms' business performance?
3. Does the proportion of public outsiders (outside directors who are members of other nonbusiness organizations) positively influence firms' social performance?
4. Do outside directors contribute to firms' performance?

#### SIGNIFICANCE

To students and academicians, this study is significant because it integrates three different theories from the fields of finance, organization theory, and strategic management into a comprehensive analysis and provides opportunities to explore the relationships between outside board directors and corporate performance. Theoretically, this study builds upon and goes beyond previous work to suggest a novel framework of how outside board directors affect corporate performance. This model classifies outside directors into three distinct types, develops three classes of corporate performance measures, and theorizes the linkages between each type of outside director and each type of corporate performance. Furthermore, the theoretical model is empirically tested by using time-series and industry-adjusted data pooling from multiple sources and by applying several multivariate statistical techniques. Finally, this study is important because it not

only overcomes some theoretical and methodological limitations of past research, but also advances the study of corporate governance to a higher level.

To practitioners, this study is significant because it investigates a timely and important issue which is directly related to the fundamental strength and long-term vitality of private enterprise institutions in the United States. Insight into how different types of outsiders affect different types of corporate performance will enable practitioners to better understand how to select different directors for different corporate goals. Understanding the complex relationship between outside director composition and corporate performance will also assist practitioners to design better boards to cope with the changing environment.

This study will also shed light on the future direction of government regulations and laws. It is argued that government regulatory agencies, such as the SEC, NYSE, and ASE, may be aiming at the wrong target by imposing outsider requirements without considering the composition of outsiders.

## CHAPTER 2

### REVIEW OF THE LITERATURE AND THE MODEL

#### LITERATURE REVIEW

Public policy makers and organizational scholars have assumed that outside directors on a corporate board are instrumental to a firm's performance. Legislation has been proposed which would mandate certain requirements for outside directors. Theories from the fields of finance, organization theory, and strategic management have been used by researchers to support this view. Due to the comprehensive scope of the literature on corporate governance, three most relevant theories, one from each field, have been identified and are reviewed:

1. Agency theory,
2. Resource dependence theory,
3. Stakeholder theory.

The literature review will briefly discuss each theory including its assumptions and major themes, pinpoint theoretical relationships between the theory and the outsider dominance perspective, and summarize the limitations of the theory compared to other theories as it is applied to the study of corporate boards.

Furthermore, this chapter will also review the major empirical studies on board composition-corporate performance in the past four decades. The limitations of previous research will be discussed. Based on the review of both theories and empirical studies, a theoretical

model will be developed. Finally, several hypotheses will be derived based on the model.

### Agency Theory

Deeply rooted in economics and developed in the domain of finance, agency theory emerged in the 1970s as a powerful framework to address the conflicting relationship between owners and managers and to suggest possible resolutions. In a recent paper, Eisenhardt argues that "agency theory provides a unique, realistic, and empirically testable perspective on problems of cooperative effort" and she urges organizational scholars "to use agency theory in their study of the broad range of principal-agent issues facing firms" (1989: 72).

### Separation of ownership and control

The separation of ownership and control advanced by Berle and Means (1932) remains central to the discussion of the theory of the firm and the resolution of the potential conflict of interests between owners and managers (e.g., Demsetz, 1983; Fama, 1980; Fama & Jensen, 1983a; 1983b). Fama (1980) maintains that the separation of ownership and control can be an efficient form of economic organizations. Specifically, he argues that firms are composed of various constituent groups bounded together by contracts. These contracts enable shareholders to specialize in the risk bearing of residual claims at the lowest cost by constructing efficient portfolios. These contracts do not require managers to bear unnecessary residual risk, thus, ensure managers to specialize in management. Second, Fama suggests that factor

markets play crucial roles in providing alternative opportunities and disciplines. In particular, capital and managerial labor markets establish parameters and constraints which govern the relationship between security holders and managers. Examples of capital market mechanisms are financial unification, informal organizations, and contingent claim contracts. Examples of managerial labor market mechanisms include boards of directors, competition from lower level managers within the firm, and competition from other firms which are constantly looking for competent managers. Finally, Fama asserts that if managers' compensations are fully adjusted and reflect their true performance, which is termed as "full ex post settling up", the agency problem will be resolved (1980: 296).

Demsetz (1983) views the ownership structure of the firm as an endogenous outcome of a maximizing process in which more is at stake than just focusing on shirking problems. According to Demsetz, there are two kinds of on-the-job consumption, known and unknown. On-the-job consumption becomes a problem only in the later case. Demsetz (1983) explains that unless there exists a positive monitoring cost, there is no reason to believe that diffuse ownership gives rise to on-the-job consumption, fails to yield maximum profit, or leads to under-representation of shareholders.

### Agency theory

According to Jensen and Meckling, an agency relationship is defined as a "contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service

on their behalf which involves delegating some decision making authority to the agent" (1976: 308). Agency theory assumes that principals and agents have different self-interests and try to maximize their own utility. Principals are profit oriented because they have direct residual claims on a firm's earnings while agents tend not to be profit driven. Agency theory also assumes that principals and agents have different attitudes toward risk. For example, principals, who are capable of diversifying their investments, have a more liquid position than agents in the event of a takeover. Thus, principals should be risk neutral. Alternatively, agents, unable to diversify their jobs, should be more risk averse than principals. The risk difference argument supports the notion that principals and agents tend to have conflicting goals. Thus, the separation of ownership and control induces management or agents to exhibit different self-interests, different attitudes toward risk, and conflicting goals with owners or principals. If agents do not own substantial stock of the company or are not closely controlled by principals, agents are likely to engage in behavior that benefits themselves at the expense of stockholders. Examples of such opportunistic or shirking behavior include: managerial perks ranging from free lunches to private jets, investment in unprofitable projects, and excessive use of free cash flow (Fama, 1980; Fama & Jensen, 1983a, 1983b; Jensen, 1986; Jensen & Meckling, 1976). Consequently, monitoring what agents are actually doing becomes a central agency problem for the principals.

Within this perspective, an organization is viewed as "the nexus of contracts, written and unwritten, among owners of factors of

production and customers" (Fama & Jensen, 1983b: 302). Agency problems also arise "because contracts are not costlessly written and enforced" (Fama & Jensen, 1983a: 327). Agency costs are defined as the sum of the monitoring expenditures by the principal (e.g., the use of boards of directors), the bonding expenditures by the agent (e.g., the preparation of financial statements), and the residual loss (Jensen & Meckling, 1976). Thus, the major task facing agency theorists is how to solve or mitigate these agency problems while at the same time preserving the beneficial aspects of the separation of ownership and control.

#### Agency theory and boards

According to agency theory, "individual shareholders bear residual risk efficiently, but only to the extent that their collective interests are safeguarded by governance mechanisms" (Baysinger & Hoskisson, 1990: 75). Within this perspective, the board of directors is one of the monitoring mechanisms which "the stockholders within large corporations could use to monitor the opportunism of top executives" (Eisenhardt, 1989: 59). As Fama noted, the board's "most important role is to scrutinize the highest decision makers in the firm" (1980: 294). Boards can fulfill their monitoring role because they "have the power to hire, fire, and compensate the top-level decision managers and to ratify and monitor important decisions" (Fama & Jensen, 1983b: 311).

Consistent with the outside dominance perspective, agency theorists call for an increasing number of outside directors on the board to monitor and control the behavior of top management. Fama views the outside directors as "professional referees whose task is to

stimulate and oversee the competition among the firm's top management" (1980: 293). Outsiders, who are usually the decision makers of other organizations, have the potential to carry out the task of stimulating and monitoring the incumbent management because they are disciplined by the efficient managerial labor market "which prices them according to their performance as referees" (Fama, 1980: 294).

However, outsiders may not efficiently and effectively perform their monitoring task (Oviatt, 1988; Walsh & Seward, 1990). For example, compared to the incumbent managers, outsiders usually lack independence (e.g., Mace, 1971, 1972), depend very much on the CEO who often also serves as chairman (e.g., Palmieri, 1979), and play merely a ceremonial role (e.g., Vance, 1983). Moreover, outsiders' tasks in monitoring and controlling the behavior of top management are very difficult due to time pressures, information asymmetry, and an unsophisticated analytical approach in their decision-making process (Walsh & Seward, 1990). Thus, Walsh and Seward conclude that "internal control mechanisms are not fully efficient" (1990:430). Furthermore, both the firm and outside directors incur costs in performing monitoring duties. As Walsh and Seward pointed out "while they are compensated handsomely for their time, neither their incentive structure nor their time commitments allow them to devote their energies fully to these monitoring activities" (1990: 430). Consequently, the board will monitor the behavior of top managers only to the point where the marginal cost equals the marginal gain (Walsh & Seward, 1990). Recognizing these problems and limitations of outside directors, Fama



(1980) argued that less reliance may be placed on this form of discipline than on other forms of the managerial labor market.

### Large shareholders' role as outside directors

Recently, there has been an increasing amount of theory development and research on control implications of large shareholders' role on corporate boards. The basic theme is that "concentrated ownership is thought to bring with it an incentive to closely monitor managers" (Walsh & Seward, 1990: 433). Jensen and Meckling (1976) argued that managers perform better the greater their shareholdings in the firm. Share ownership has been viewed as "an important source of incentives for management, boards of directors, and outside blockholders" (Jensen & Warner, 1988: 4). Shleifer and Vishny (1986) more clearly stated that only large shareholders have the economic motivation and justification to monitor the incumbent management. Consistent with these arguments, it is expected that outside directors with concentrated ownership are more motivated to closely monitor and control the behavior of top management, and thus more efficiently and effectively protect the interests of shareholders.

This idea has been empirically tested and received support. For example, based on his 25 years of board studies, Mace concluded that "many directors who own a substantial number of shares of stock take a deep interest in the operations of the company, spend considerable time in learning the business, and insist on being involved in major company decisions" (1972: 44). Holderness and Sheehan studied 114 companies with majority shareholders. Their results revealed that "majority

shareholders are usually directly involved in firm management," in other words, "majority shareholders do not merely monitor management teams, they lead them" (1988: 319).

## Resource Dependence Theory

### Historical development

Deeply rooted in sociology (Selznick, 1949), built upon open systems theory (Katz & Kahn, 1966) and contingency theory (Lawrence & Lorsch, 1967), resource dependence theory emerged in the 1970s as a new perspective on how organizational environments affect, constrain, and control organizations and how organizations deal with these external constraints and controls (Pfeffer & Salancik, 1978). One of the major themes of the sociological approach is that organizations can not exist as self-contained entities isolated from their environments (Parsons, 1956; Selznick, 1949). According to Parsons (1956), an organization is defined as a social system that focuses on achieving specific goals, and thus, contributes to the accomplishment of goals of a more comprehensive system, such as society itself.

During the 1960s, Katz and Kahn (1966) articulated the concept of organizations as open systems. According to system theorists (Katz & Kahn, 1966; Thompson, 1967), an organization is viewed as a complex set of dynamically interrelated elements, including inputs, outputs, feedback loops, and the environment in which it operates. A change in any element of the system will affect other elements. Contingency theory is a "close cousin" of system theory (Shafritz & Ott, 1987: 238).

According to contingency theorists, the effectiveness of an organization is seen as the fit between the element in question and all other elements of the system at a given time (Lawrence & Lorsch, 1967). This approach emphasizes that everything is situational. Therefore, there are no absolutes or universals.

In both systems and contingency schools of organization theory, organizations are assumed to be institutions whose main purpose is to achieve established goals. In these schools, the primary means of managing the relationship between organizations and their environments involves how best to design internal structures, information systems, integration mechanisms, and task forces in order to achieve their declared goals and adapt to their environments (Galbraith, 1973; Lawrence & Lorsch, 1967; Thompson, 1967).

### Resource dependence theory

Unlike the above schools, resource dependence theory views organizations from the perspective of power. Resource dependence theorists reject these assumptions about organizations as being naive and unrealistic. Instead, organizations are seen as being complex systems of coalitions. The coalitions compete with each other for scarce resources. Therefore, conflict is inevitable and influence is the primary weapon for use in competition and conflicts. According to Pfeffer (1981), power should be viewed as the most important structural phenomenon. Power and influence are important and permanent facts of organizational life (Mintzberg, 1983; Pfeffer, 1981; Pfeffer & Salancik, 1978).

Resource dependence theory also differs from open systems and contingency schools in its view toward the external environment. Resource dependence theorists argue that organizations, instead of focusing on adapting to the environment, try to influence, control, or even create the environment (Pfeffer, 1981; Pfeffer & Salancik, 1978). As Weick put it, "the human creates the environment to which the system then adapts. The human actor does not react to an environment, he enacts it" (1969: 64).

To survive, organizations need resources. In order to acquire resources, the organization must interact with those who control the resources. Thus, organizations depend on their environments. Because the organization does not control needed resources and other organizations that control the resources may be undependable, uncertainty may arise in acquiring resources from other organizations.

Resource dependence perspective defines the success of an organization as maximizing its power for obtaining needed external resources (Pfeffer, 1981). This perspective rests on several assumptions which explain how organizations work to acquire power. Organizations are assumed (1) to be comprised of external and internal coalitions, (2) to exist in an environment which contains scarce and valued resources that are essential to organizational survival, and (3) to acquire control over resources that minimize their dependence on other organizations and to acquire control over resources that maximize the dependence of other organizations on themselves (Pfeffer, 1981; Pfeffer & Salancik, 1978). The major theme of the resource dependence theory is that the links among organizations are characterized as a set

of power relations which originate from the exchange of resources. Facing external constraints and control, organizations attempt to change their dependence relationships and to maximize their power by decreasing their own dependence or by increasing the dependence of other organizations on themselves.

### Resource dependence theory and boards

The resource dependence perspective views boards as vehicles through which organizations "coopt, or partially absorb, important external organizations with which they are interdependent" (Pfeffer, 1972: 222). Selznick (1949), in his study of the Tennessee Valley Authority, observed an organization could partially neutralize strong external opposition by bringing and subsuming representatives of hostile groups onto its board to diffuse a potential threat to the organization. According to Pfeffer, cooptation is likely to be used by business organizations "when total absorption is (1) legally proscribed, (2) impossible due to resource constraints, or (3) when partial inclusion is sufficient to solve the organization's problems of dealing with the external organization" (1972: 22).

Consistent with the outsider dominance perspective, resource dependence theorists call for the use of outside directors as a means of achieving cooptation. In general, the resource dependence perspective views the major role of outside directors as important "boundary spanners" who provide tangible and intangible resources to the focal organization (Zahra & Pearce, 1989: 297). Previous research has suggested that outsiders absorbed from such external groups as

customers, suppliers, and competitors enable firms to facilitate resource exchange agreements and reduce both vertical and horizontal external constraints (e.g., Burt, 1980). In order to achieve the ultimate goal of maximizing an organization's power, outside directors are expected to perform duties that help organizations grow, achieve stability, and survive.

It should be noted that organizations will only select representatives of certain external organizations to serve on their boards because of the cooptation purpose of using outsiders and the business orientation based on exchange of resources. For example, the interlocking approach focuses exclusively on the relationship between the firm and its competitors. A direct interlock occurs "either when two firms share a director or when an executive of one firm sits on the board of a second" and an indirect interlock occurs "when two firms have directors who are also on the board of the third firm" (Lang & Lockhart, 1990: 106). The empirical evidence suggests that the use of interlocking directorates increases as the industry uncertainty and a firm's dependence on others such as financial institutions increase (Lang & Lockhart, 1990; Pennings, 1980). Previous empirical research also found that interlocks had a positive impact on firms' business performance mainly because interlocking directorates help to reduce competitive uncertainty through, for example, sharing and exchanging information about the industry (Dooley, 1969; Pennings, 1980).

Bankers, financial analysts, accountants, and attorneys are other types of individuals the focal organization often seeks to include on its board. In a study of eighty firms, Pfeffer (1972) hypothesized that

if an organization has greater needs for external financing, access to the capital market, and legal assistance, particularly in a regulated environment, it will be more likely to have a greater proportion of outsiders who are representatives from financial institutions and law firms.

## Stakeholder Theory

### Historical development

Deeply rooted in philosophy and grounded in strategic management, stakeholder theory emerged in the 1980s as a very different, powerful, and comprehensive strategic management framework on how organizations deal with individuals or groups who influence or are influenced by the actions taken by the firm (Freeman, 1984). The word stakeholder first appeared in an internal memorandum at the Stanford Research Institute in 1963. The stakeholder concept was originally defined as "those groups without whose support the organization would cease to exist" (Freeman, 1984: 31). With this definition, the traditional concept of managing solely for stockholders was broadened to include not only stockholders, but also employees, customers, suppliers, lenders, and society. Subsequently, the stakeholder concept has been, to a varying degree, developed or criticized or even rejected in the literature of corporate planning, systems theory, organization theory, and corporate social responsibility (CSR).

For example, Ansoff (1965) rejected stakeholder theory and maintained that **responsibilities** and objectives are not the same. He

clearly stated that economic performance was the primary purpose of a firm and social responsibility, contingent upon the economic performance, was thus a secondary purpose.

Ackoff (1974) used the stakeholder concept to analyze organizational systems. He claimed that many social problems could be solved by including stakeholders in the system. Specifically, Ackoff (1974) stressed the participation of stakeholders in the decision-making processes. While the system model of the stakeholder is a useful tool in problem formulation, "it is not, however, focused on solving strategic management problems which are narrower than total system design" (Freeman, 1984: 58).

The distinguishing feature of CSR literature is the application of the stakeholder concept to nontraditional stakeholder groups. In particular, within this literature, "less emphasis is put on satisfying owners and comparatively more emphasis is put on the public or the community or the employees" (Freeman, 1984: 38). In order to rebut the criticism: CSR is fine, if you can afford it, it is no surprise that many CSR researchers have devoted much of their time to the study of the relationship between CSR and financial performance (Aupperle, Carroll, & Hatfield, 1985; Cochran & Wood, 1984; McGuire, Sundgren, & Schneeweis, 1988; Ullmann, 1985). Although the CSR literature has raised many social concerns which are believed to be the essential duties of organizations (e.g., Ullmann, 1985), "it has failed to indicate ways of integrating these concerns into the strategic system of the corporation in a non-ad hoc fashion" (Freeman, 1984: 40).



### Stakeholder theory

Freeman's stakeholder theory emerged in the 1980s to satisfy the need to develop theories about certain non-traditional groups, to apply the stakeholder concept, and to integrate divergent and limited conceptualizations of the stakeholder concept in various schools. A stakeholder is defined as "any individual or group who can affect, or is affected by, actions taken by the managers of a business" (Gilbert, Hartman, Mauriel, & Freeman, 1988: 106). A stakeholder framework differs most significantly from previous managerial theories, such as agency theory and resource dependence theory, on a very basic issue: for whom do modern corporations stand? Within this perspective, a corporation is not viewed as solely responsible for stockholders as suggested by agency theory, or the company itself as suggested by resource dependence theory. Instead, organizations are defined as social institutions that are responsible for all individuals or groups who have stakes in the firm and whose stakes may be affected by actions taken by the firm.

By emphasizing the stakes and holders of these stakes in an organization's action, stakeholder theorists give legitimacy to all the stakeholders concerned, particularly to those who are viewed as non-traditional groups and often thought of as having adversarial relationships with the firm (Freeman, 1984; Gilbert, et al. 1988). As indicated in Figure 1, a firm has a variety of clientèle who have explicit or implicit claims on the organization. Each stakeholder group has a different set of expectations. As a result, the organization faces different and often conflicting demands. Freeman's stakeholder

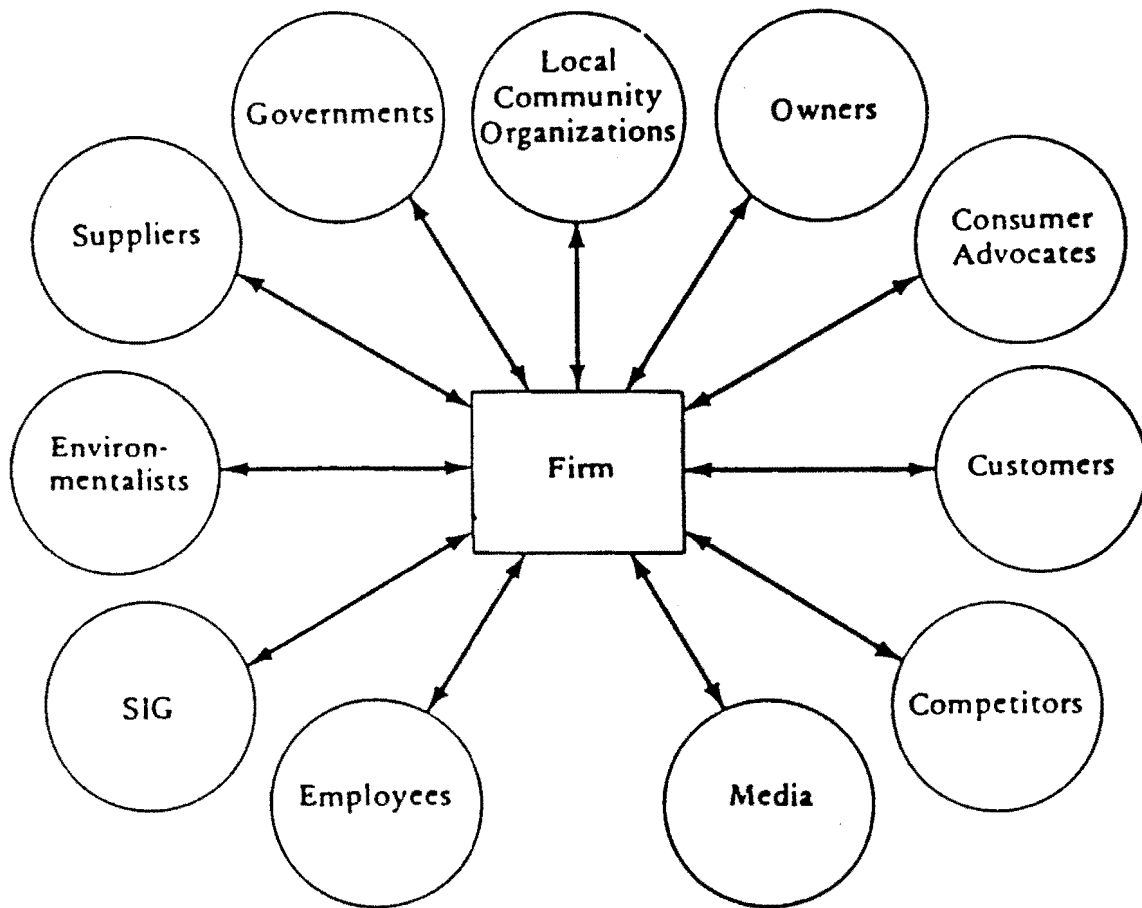


Figure 1. Stakeholder View of Firm

Source: Freeman, R. E. Strategic management: A stakeholder approach. Boston: Ballinger. p. 25.

management framework was developed specifically to help managers balance multiple stakeholder relationships. According to Freeman (1984), this framework consists of three basic processes. First, at a rational level, managers must understand what are the stakes and who are the holders of these stakes. Second, at a process level, managers must understand how to manage the relationship between the firm and its stakeholders by involving these stakeholders in the corporate decision-making processes. Finally, at a transaction level, managers must understand how to negotiate and make deals with all those who have a stake in the firm's actions.

Unlike other managerial models, the successful use of the stakeholder concept is based on the philosophy of voluntarism. According to Freeman, "voluntarism means that an organization must on its own will undertake to satisfy its key stakeholders" (1984: 74). He further argues that "a situation where a solution to a stakeholder problem is imposed by a government agency or the courts must be seen as a managerial failure" (Freeman, 1984: 74-75).

### Stakeholder theory and boards

The major theme of stakeholder theory is that modern corporations are social institutions that stand for all the stakeholders concerned. As a result, stakeholder theory argues that boards of directors have fiduciary responsibility to stakeholders instead of only to stockholders or to the firm itself. Under the philosophy of voluntarism, stakeholder theory advocates that boards of directors strive to maximize the welfare of stakeholders instead of maximizing the welfare of only stockholders

or maximizing the power of the organization. Furthermore, the stakeholder approach demands that boards of directors have thorough understanding of their stakeholders and calls for increased participation of stakeholders, particularly those from non-traditional groups, in the decision-making processes of the firm.

The stakeholder approach also supports the outsider dominance perspective. Consistent with the argument of stakeholder theory, the increased use of outside directors will have the following positive impact on firms' social performance. First, at a rational level, increasing the number of outsiders helps the board to identify the various key stakeholders. Thus, the board's awareness of the impact of the firm's decisions on these key stakeholders also increases. Second, at a process level, the board can formulate better strategies by including outsiders representing various stakeholders in the decision-making processes. As Gilbert et al. put it, "in order to manage stakeholder relationships, your organizational process must 'smell' of stakeholders throughout" (1988: 115). Finally, at a transaction level, after formulating stakeholder strategies by involving outsiders in these processes, firms are better prepared to negotiate with, balance the conflicting demands of, and execute deals with key stakeholders. In this way, firms can maximize the welfare of the stakeholders, which in turn maximizes the corporate social performance.

### Summary of the Theories

In summary, three theories from the fields of finance, organization theory, and strategic management have been discussed.

These theories differ significantly in their origins, unit of analysis, assumptions and definitions of organizations, issues and problems addressed, and organizational goals and objectives.

With respect to the boards of directors, agency theory, resource dependence theory, and stakeholder theory are each relevant and useful frameworks to be applied to board composition-performance studies. However, the theories differ sharply in terms of why outside directors are needed, what roles they should play in the boardroom, which stakeholder(s) they represent, and what goals they strive to achieve. For example, within the agency theory perspective, outside directors are needed to monitor and control the behavior of top managers to protect the interests of shareholders. The most important role of outside directors is the monitoring role on behalf of shareholders. Outside directors are expected to perform duties that will maximize the profitability of the firm and the welfare of the shareholders. Unlike agency theory, the resource dependence perspective views boards as vehicles through which organizations coopt important external interdependent organizations. The most important role of outside directors is as boundary spanners who provide the focal organization needed resources. Within this perspective, outside directors are expected to perform duties that help organizations grow, ensure stability, and survive to achieve the ultimate goal of maximizing the organization's power. Finally, viewing modern corporations as social institutions, stakeholder theorists see outside directors as representatives of various stakeholders. Consistent with the philosophy of voluntarism, outside directors' major role is to advocate the

concerns of various stakeholders, particularly the concerns of non-traditional groups. Stakeholder theorists argue that outside directors have fiduciary responsibility to stakeholders instead of only to shareholders or the firm itself. As a result, the sole objective of boards is to maximize the welfare of stakeholders or corporate social performance.

### Empirical Studies

Extensive board research has been conducted over the past four decades (see Zahra & Pearce, 1989, for a comprehensive review). Table 1 summarizes some of the major board composition-corporate performance studies by chronological order, 1955-1990. Of the studies listed in Table 1, many used agency theory and resource dependence theory in arguing the importance of outside directors and generating hypotheses (Baysinger & Butler, 1985; Kesner, Victor & Lamont, 1986; Kosnik, 1987; Pfeffer, 1972; Singh & Harianto, 1989). Unfortunately, no article in Table 1 adopted stakeholder theory to examine this topic.

As Table 1 indicates, the traditional classification of boards of directors, insiders versus outsiders, has been used as the board composition variable by every author. Board composition, the independent variable, has been related to various aspects of corporate performance. Among the performance criteria used as the dependent variable are financial ratios (Baysinger & Butler, 1985; Pfeffer, 1972; Schmidt, 1975, 1977; Vance, 1955, 1964; Zahra & Stanton, 1988), corporate control variables such as illegal acts (Kesner et al., 1986), bankruptcy (Chaganti, Mahajan & Sharma, 1985), shareholder suits (Kesner

TABLE 1

Summary of Major Board Composition-Corporate Performance Studies by Chronological Order, 1955-1990

Author(s)	Independent Variables	Dependent Variables	Sample	Statistical Approaches	Results
Vance (1955)	Insiders vs. outsiders	Sales Net income Equity	200 major companies	Regression	Insiders were positively associated with performance
Vance (1964)	Insiders vs. outsiders	Sales Net income Equity	103 major companies	Regression	Insiders were positively related to performance
Pfeffer (1972)	Deviation from ideal insider-outsider ratio	Income/sales Income/equity	80 manufacturing companies	Correlation	Firms that deviated from an ideal ratio performed more poorly
Schmidt (1975)	Insiders vs. outsiders	Debt, Dividends Current ratio	80 chemical companies	Regression	No relationship
Schmidt (1977)	Outsiders' financial affiliation	ROE Debt ratio Current ratio	156 companies	Chi-square Z-statistics	No relationship
Baysinger & Butler (1985)	Number of outsiders	Relative financial performance	266 major companies	Cross-lagged regression	Firms having more outsiders in 1970 outperformed their counterparts in 1980
Chaganti, Mahajan, & Sharma (1985)	Proportion of outsiders	Bankruptcy	21 pairs of retailing firms	T-test	No relationship

TABLE 1 (Continued)

Author(s)	Independent Variables	Dependent Variables	Sample	Statistical Approaches	Results
Cochran, Woods, & Jones (1985)	Proportion of insiders	Golden parachutes ROA ROE	406 Fortune 500 companies	Logit regression	The grant of golden parachutes was negatively related to insiders' ratio
Kesner, Victor, & Lamont (1986)	Proportion of outsiders	Number of illegal acts	384 Fortune 500 companies	Correlation	No relationship
Kosnik (1987)	Proportion of outsiders Types of outsiders	Greenmail	110 companies targeted for greenmail	Discriminant	Boards resisted the payment of greenmail had more outsiders and outsiders with executive experience
Zahra & Stanton (1988)	Proportion of outsiders	ROE EPS Sales/equity	100 Fortune 500 companies	Canonical correlation	No relationship
Singh & Harianto (1989)	Proportion of outsiders	Golden parachutes	213 large companies	Logit regression	Adoption of golden parachutes was positively related to outsiders' ratio
Kesner & Johnson (1990)	Proportion of outsiders	Shareholder suits	56 pairs of companies	T-test	Boards sued tended to have fewer proportion of outsiders. No relation between composition and suit outcome



& Johnson, 1990) and criteria related to takeovers such as golden parachutes (Cochran, Woods & Jones, 1985; Singh & Harianto, 1989) and greenmail (Kosnik, 1987). Of the 13 studies reviewed, four found significant results that were contrary to their hypotheses. Five studies reported no relationship between board composition and firms' performance. Only four studies confirmed or partially confirmed their hypotheses. Several of these studies and their findings are briefly discussed below.

In his pioneering research, Vance (1955, 1964) examined the association between the ratio of insiders/outsiders and firms' financial performance and found that firms with fewer outsiders performed better. Schmidt (1975, 1977) found no relationship between firms' financial ratios, such as ROE, dividends, current ratio, and debt ratio, and the ratio of insiders/outsiders or outsiders' financial affiliation.

Cochran et al. (1985) and Singh & Harianto (1989) studied the relationship between the proportion of outside directors and firms' adoption of golden parachutes. Golden parachutes "involve a renegotiation of top-management compensation contracts to include very sizable payments to be made in the event of a takeover" (Singh & Harianto, 1989: 7). Contrary to their expectations, both studies reported that the higher the percentage of outsiders on boards, the more likely firms would adopt golden parachutes.

Using resource dependence theory, Pfeffer (1972) suggested a ratio of inside-outside directors which was necessary for a firm's survival in a given industry. He concluded that firms which deviated from this ratio performed more poorly. Baysinger & Butler (1985) investigated the

relationship between the number of outsiders and the relative financial performance. Their empirical results indicated that firms having more outsiders in 1970 outperformed their counterparts in 1980. However, higher performing firms did not have a majority of outsiders. Kosnik (1987) studied the effects of directors' types and composition on greenmail. A greenmail transaction is when "a company privately buys back a block of stock from a dissident stockholder who poses an explicit or potential threat to top management's control position" (Kosnik, 1990: 129). She found that boards which resisted greenmail had more outsiders, outsiders with executive experience, and outsiders with contractual interests with the company. More recently, Kesner and Johnson (1990) examined the association between the proportion of outsiders and shareholders' suits. Although they found that boards sued tended to have a smaller proportion of outsiders, no relationship between board composition and suit outcome was obtained.

In summary, research on board composition-performance yields mixed results. Overall, findings seem to suggest that inside directors, not outside directors, are essential to company performance. Surprised and puzzled by their findings, some researchers began to question the prevailing outsider dominance perspective and usefulness of outsiders on boards. As Cochran et al. put it, if their results could be generalized, "the scholars and practitioners would have to question pressure to increase percentages of outside directors on corporate boards" (1985: 670). Kesner et al. also expressed concern "... whether this method of reform reaches desired ends" (1986: 797). However, it is this author's opinion that it is far too early to draw such conclusions.

All the above mentioned theories, agency theory, resource dependence theory, and stakeholder theory, call for an increased number of outside directors on boards and suggest that outsiders will enhance firms' performance. If these theories are true, then why haven't empirical studies found any real benefits? This author believes that the main reason is that some theoretical and methodological limitations of past studies may have prevented researchers from detecting such benefits.

#### Limitations of past research

First, one of the most serious limitations of past research is the improper use of the predictor variable, board composition. Most board researchers assumed that outside directors have the same roles, goals, and motivations. With a few exceptions (Baysinger & Butler, 1985; Kosnik, 1987), researchers used the traditional insider-outsider classification of boards of directors. Past researchers have paid attention to the composition of the board, but seldom considered the composition of outside directors. If outsiders are not the same, the indiscriminate use of this predictor variable may produce biased results.

Second, past researchers failed to use multiple theories and generate competing hypotheses in their studies. Some of the significant differences among often used theories are largely ignored. For example, agency theory differs from resource dependence theory in its assumptions about incumbent management and in its expectations about board directors' roles and goals. Some of the contradictory empirical

findings that can not be explained by agency theory may be readily interpretable by resource dependence theory.

Third, inconsistent use of the independent variable was also evident in previous research. Thus, it is difficult to compare and contrast the findings. The predictor variable has been defined in many different ways, such as the proportion of outsiders, the absolute number of outsiders or insiders, and the ratio of insiders/outsideers. It should be pointed out that these different operationalizations of board composition may be antipodal. For example, the proportion of outsiders differs from the number of outsiders in that the former not only takes into account the size effect of the board, but also reflects the relative power of the outsiders on a board.

Fourth, measures of firms' performance have been inappropriate, narrow, and controversial. For example, several studies examined the relationship between board composition and the adoption of golden parachutes (e.g., Cochran et al., 1985; Singh & Harianto, 1989). Some researchers view the golden parachute as detrimental to stockholders because it rewards failure and incompetence, and thus, wastes shareholders' money (e.g., Morrison, 1982). Others argue the adoption of golden parachutes is in the best interest of shareholders because it gives top management the incentive to not resist the takeover and enables stockholders to make a sizable gain if the firm is acquired (e.g., Singh & Harianto, 1989). Until this controversy is resolved, the empirical findings about the relationship between board composition and the adoption of golden parachutes remain subject to question given one's point of view for interpretation.

Fifth, the performance criteria used in past studies do not systematically reflect the contributions of outsiders suggested by the above mentioned theories. Furthermore, accounting based finance measures dominate board research, market based measures are seldom considered, and CSP measures are rarely used to evaluate directors' performance.

Finally, the lack of control of time and industrial effects and emphasis on univariate analytical approaches, evident in some of the past studies, may have prevented researchers from detecting any significant results. Thus, the inconclusive and often contradictory findings of previous studies may be partly due to the fact that researchers used inappropriate board composition variables and related them to inappropriate performance measures.

The literature review suggests that research on board composition-performance is at a critical point. Kosnik recently suggested that "if researchers really want to understand how composition affects both board and management performance, they need to move beyond the traditional insiders-outsiders dichotomy" (1990: 147). It is apparent that there is an urgent need to develop a theoretically sound and empirically testable model. Such a model should not only overcome some limitations of past research, but should also advance board research to a higher level. The next section presents such a new but preliminary model.

## THE MODEL

### Features of the Model

The model of outside director composition-corporate performance is depicted in Figure 2. The following sections will explain the key features of the model and present four hypotheses.

Three important features of the model deserve elaboration. First, it specifically recognizes that outside directors are not alike. Only a few previous studies tried to examine board composition beyond the traditional dichotomy. For example, Baysinger and Butler (1985) classified boards of directors into executive component (insiders), instrumental component (financier, consultant, legal counsel, interdependent decision-maker), and monitoring component (public outsiders, professional director, private investor, independent decision-maker). Kesner (1988) classified outsiders into business and nonbusiness groups. Under Kosnik's scheme (1990), an outside director could be classified into one of eight categories (executive, retired executive, lawyer, banker, consultant, academic, professional director, and others). Unfortunately, these classifications do not hold promise for the following reasons. First, the classification schemes lacked theoretical support, particularly in the cases of Kesner (1988) and Kosnik (1990). Second, these authors failed to pinpoint the differences between each type of directors with respect to their roles and goals. Third, they failed to establish links between different types of outsiders and different types of corporate performance. Finally, their intention was not to develop a classification of outside directors, but

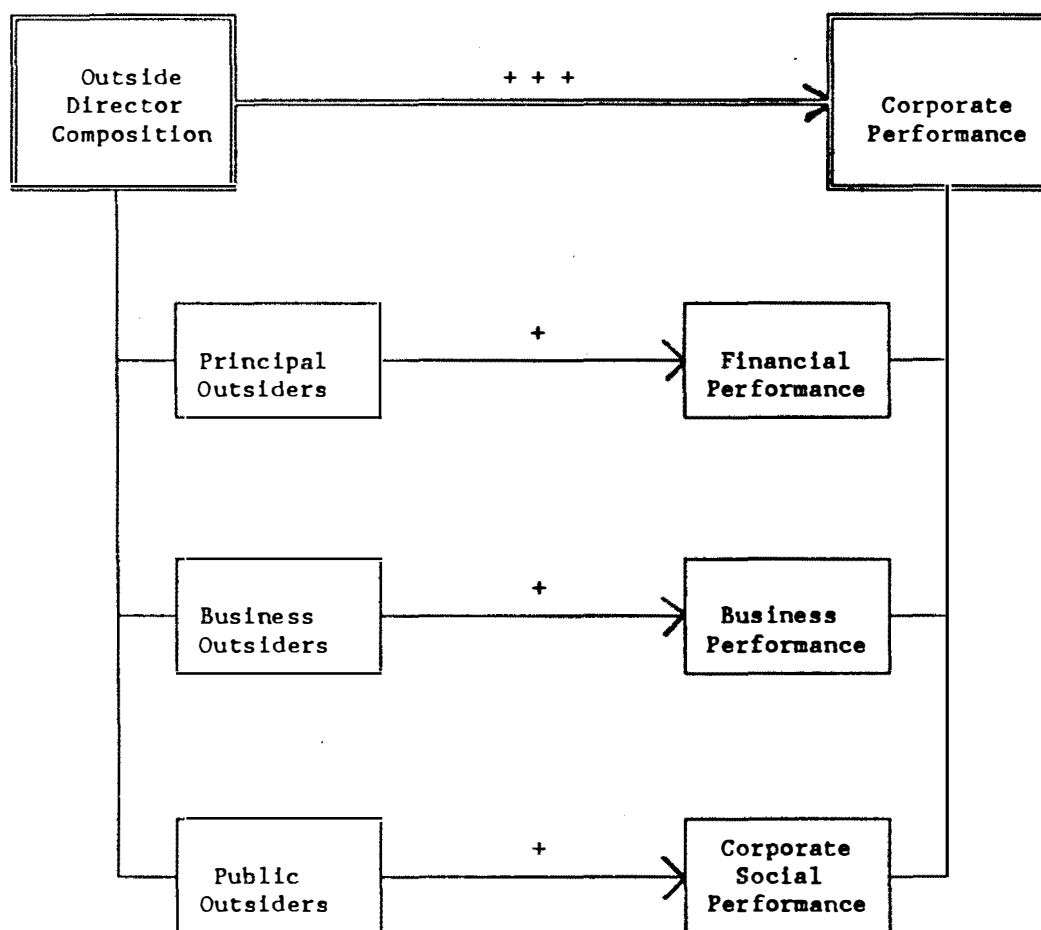


Figure 2. Model of Outside Director Composition-Corporate Performance

merely to examine the impact of outsiders' occupational background on firms' performance.

This model, for the first time in the study of board of directors, classifies outside directors into three distinct types: principal outsiders who are large shareholders of the focal organization, business outsiders who are members of other business organizations, and public outsiders who are members of other nonbusiness organizations. Each type of outside director is supported by agency theory, resource dependence theory, and stakeholder theory, respectively. The three types of directors differ sharply in terms of the reasons they are selected, the roles they play, the domain in which they operate, the goals they pursue, and the performance criteria that should be applied to evaluate their work. The rationale supporting this classification is that the three theories imply the existence of the three different types of outside directors. Furthermore, the contradictory empirical results of past research challenge the validity of the conventional dichotomy of board directors and call for new classifications. The author is also motivated by the studies of top management in general. Organization and strategy theorists have long been pondering the question, why do firms act as they do? Numerous explanations have been generated. However, it was Hambrick and Mason who synthesized previous research and presented the "upper echelons perspective" which states that "organizational outcomes---strategic choices and performance levels---are partially predicted by managerial background characteristics" (1984: 193). Their explanation of the link between CEOs and corporate performance can be



readily applied to the relationship between outside directors and firms' performance.

Second, the classification of outside directors in the model suggests the use of different criteria to evaluate directors' performance or contributions. As shown in the model, three classes of performance measures have been developed corresponding to each type of director. These measures are called financial performance, business performance, and CSP. Performance is at the heart of management. Unfortunately, academic researchers do not agree on appropriate measures of organizational performance (Kanter & Brinkerhoff, 1981). This problem is vividly evident in board studies. In developing these performance measures, this author owes a great deal to Venkatraman and Ramanujam (1986) who, among others, suggest a classification scheme for performance measures. Specifically, they identify three levels of measures, namely, the domain of financial performance, the domain of financial plus operational performance, and the domain of organizational effectiveness (1986: 803). More importantly, the development of these performance measures are based on the central arguments of agency theory, resource dependence theory, and stakeholder theory in terms of the main organizational objectives.

Finally, grounded in theory and past empirical results, the model develops two constructs called outside director composition and corporate performance, each of which is captured by multiple measures. The links between the two constructs and between types of directors and types of performance measures have been carefully established. Next,

hypotheses derived from the model will be presented. Table 2 summarizes the discussion of these hypotheses.

### **Principal Outsiders-Financial Performance**

Borrowing the terminology from agency theory, the first type of outside directors is referred to as principal outsiders. They are defined as directors who are major shareholders of the focal organization. Agency theorists have identified the board as a monitoring device to control the opportunistic behavior of agents. Consistent with the arguments of Jensen and Warner (1988), Mace (1971), Shleifer and Vishny (1986), and Walsh and Seward (1990), it is argued that share ownership is an important source of incentives for outside directors. As a result, principal outsiders, who are large shareholders of the firm, are the most economically justified and behaviorally motivated individuals to carry out the monitoring tasks.

Agency theorists have identified that when stock ownership is dispersed, small shareholders do not have a big enough stake to justify the cost or effort of closely monitoring and controlling the incumbent management (Shleifer & Vishny, 1986). Thus, small shareholders have a strong tendency to free-ride on monitoring efforts of large shareholders (Kosnik, 1990). By the same token, if outside directors own few stocks of a firm, they are also likely to exhibit free-riding behavior. Compared to principal outsiders, other outsiders whose stock ownership is small have less economic incentive to monitor and control the behavior of top management because the fluctuation of a firm's value has little economic impact on their personal wealth. Thus, Kosnik

TABLE 2  
Summary of Outside Director Composition-Corporate Performance Hypotheses

Classifications	Definitions	Domains	Goals	Supporting Theories	Performance Criteria	Hypotheses
Principal outsiders	Outside directors who are large stockholders	Finance	Profitability	Agency theory	Financial performance measures e.g. ROE	Strong positive association between principal outsiders and firms' financial performance
Business outsiders	Outside directors who are members of other business organizations	Business	Growth Stability Survival Power	Resource dependence theory	Business performance measures e.g. growth rate	Strong positive association between business outsiders and firms' business performance
Public outsiders	Outside directors who are members of other nonbusiness organizations	Society	Corporate social performance (CSP)	Stakeholder theory	CSP measures e.g. ratings of firms' public reputation	Strong positive association between public outsiders and firms' CSP
Outside director composition	All of the above	Finance Business Society	All of the above	All of the above	All of the above	Strong positive association between outside director composition and firms' performance

maintained that "the ultimate commitment of a board to defend stockholders' interests actively ... may therefore depend on the presence on the board of one or a few large stockholders whose personal stake in the company will impel them to initialize and encourage critical assessments of management's proposals" (1990: 136). Kosnik's statement is not just a proposition, but, to a great extent, a true fact in reality. For example, concerning the incompetence of the incumbent management, some well-known leveraged buyout specialists (e.g., the Bass brothers and Pritzkers) and takeover specialists (e.g., Icahn and Pickens), demanded seats on some boards in which they own large blocks of stock.

It should be pointed out that there are other roles for large shareholders suggested in the literature, some of which may have a negative impact on shareholders' wealth. Fama and Jensen (1983b), for example, suggest a number of ways in which the incumbent managers who own a large amount of stock could expropriate or consume corporate wealth. Examples of these expropriations include excessive salaries, under investments, and withdrawal of corporate funds. Stulz (1989) shows how it is easier for the incumbent managers to keep their jobs or entrench themselves if they own a large block of shares, "even if that means resisting a value-increasing tender offer", added Holderness & Sheehan (1988: 318). Although these arguments may be conceptually sound with respect to the incumbent managers, they are certainly not applicable to outside large shareholders, or the principal outsiders in this study, because principal outsiders are not the employees of the focal organization and, therefore, can not have these so called

expropriations. Furthermore, these arguments have not received empirical support. After studying 114 companies with large shareholders, Holderness and Sheehan (1988) rejected the proposition that majority shareholders use their voting power to expropriate or consume excessive amounts of corporate wealth.

From agency theory's point of view, principal outsiders serve as protectors of shareholders. Their ultimate goal is to maximize the profitability of the firm and shareholders' wealth. As a result, principal outsiders' performance should only be evaluated in terms of firms' financial performance, such as stock appreciation, dividend yield, and return on equity. The above discussion suggests:

Hypothesis 1: There will be a positive association between the proportion of principal outsiders on boards and firms' financial performance.

### **Business Outsiders-Business Performance**

Based on the central theme of resource dependence theory, the second type of outside directors is identified as business outsiders. Business outsiders are defined as directors who are members of other business organizations. Examples of these directors are CEOs or other executives, accountants, lawyers, professional directors, bankers, and financial analysts. As stated in the literature review section, the resource dependence perspective assumes that organizations try to minimize their dependence on others and maximize the dependence of other organizations on themselves in order to grow, survive, and achieve stability. One way to achieve cooptation is through the use of outside

directors. As a result, it is extremely important for the incumbent management to select the "right" directors who not only will provide the resources needed by the firm but also will be sympathetic, loyal to, and dependent on the incumbent. In reality, many outside directors indeed "view themselves as colleagues and business allies of the CEO" (Neff, 1989: 14). This may explain why business outsiders are in such great demand and account for the majority of outside directors (Kesner, 1988). It should also be pointed out that because of business outsiders, outside directors in general have been vehemently criticized as "another management [-dominated] tool" (Pfeffer, 1972: 219), a passive rubber stamp for management proposals, and lacking independence from the incumbent management (Herman, 1981).

According to the resource dependence perspective, business outsiders serve as "middlemen" to bridge the gap between firms and their environment. Their performance and contribution are judged in terms of how well they facilitate the cooptation process and help the firm to achieve its growth, stability, and survival goals. According to this perspective, the ultimate goal of the organization is to maximize power in order to acquire resources it needs and reduce the dependence on its external environment. It should be emphasized that power may lead to higher profitability (e.g., Burt, 1980), however, "profit or efficiency is not the sole or perhaps even the dominant motivating force" (Pfeffer, 1982: 206).

Consistent with the argument of power acquisition and power maintenance of resource dependence theory, business outsiders are expected, by the focal organization, and are likely, from their own

interests, to engage in activities that reduce the external constraints, control, and uncertainty of the organization. For example, growth represents a firm's attempt to cope with uncertain dependence. As Starbuck noted, "growth is not spontaneous. It is the consequence of decisions" (1965: 453). Pfeffer and Salancik argued that "growth, regardless of how it is achieved, provides organizations with additional control over their environment and enhances their likelihood of survival" (1978: 131).

Another related business activity is organization size. According to resource dependence theorists, size provides advantages in reducing uncertainty and achieving stability because large organizations tend to have more power over their environment and develop more external groups who are willing to assist in survival for their own benefits (Pfeffer & Salancik, 1978; Starbuck, 1965). Furthermore, this perspective views diversification as another organizational response to the environment. Diversification, in this context, is used to reduce the dependence on single customers or sales markets, avoid interdependence, and thus minimize uncertainty. In their example, Pfeffer and Salancik (1978) noted that firms dealing mainly with the government are likely to have problematic interdependence because the government tends to change its buying priorities and the government cannot be easily coopted nor acquired. Consequently, they predicted that these firms are more likely to use diversification to reduce uncertainty. Finally, other business activities such as research and development can also be used by organizations, from the resource dependence perspective, as a means of

coping with the external environment by preparing themselves for the unpredictable future and controlling important resources.

In summary, business outsiders viewed as middlemen to bridge the gap between the focal organization and its external environment are likely to engage in business activities such as growth, size, diversification, and research and development to ensure stability and survival. Thus, the second hypothesis can be derived as follows:

Hypothesis 2: There will be a positive association between the proportion of business outsiders on boards and firms' business performance.

#### **Public Outsiders-Corporate Social Performance**

Inspired by stakeholder theory, the third type of outside directors is identified as public outsiders. They are defined as directors who are members of other nonbusiness organizations. Examples of such directors are academicians, environmentalists, politicians, consumer advocates, and community leaders. According to stakeholder theory, modern corporations are social institutions. Firms' success is determined by how well they manage all the stakeholders who affect, or are affected by, firms' actions. It should be emphasized that stakeholder theory differs significantly from other managerial theories in its treatment of these non-traditional groups. Because stakeholder theory recognizes the legitimacy of these individuals or groups, it defines the modern corporations as social institutions. Recognizing this special focus of stakeholder theory, the voluntarism philosophy of the framework, and the critical advantages of these stakeholders



participating in board decision-making processes, this author argues that firms with such groups on their boards may perform differently than those firms without such representation with respect to CSP.

Consistent with the arguments of Freeman (1984), public outsiders are viewed as representatives of key non-traditional stakeholders. Their major role is to advocate social concerns. By voicing concern in the boardroom, participating in the decision-making process, and negotiating directly with the focal organization, public outsiders encourage the boards to look beyond the traditional stakeholders, such as stockholders, competitors, suppliers, and buyers, and act in a socially responsible manner. Although most executives agree that Friedman's (1962) slogan, the business of business is business, is out of date, there still is a significant gap between what executives say and what they actually do. As a result, the importance of public outsiders in modern corporations should not be underestimated. It is interesting to note that Exxon was in a hurry to seek an environmentalist on its board only after it had spilled oil in Alaska and received strong criticism and numerous lawsuits from various stakeholders. Had Exxon included an environmentalist on its board before the accident, it might have reacted differently, or in a more socially responsible manner, to the crisis.

Since public outsiders' activities represent the broadest domain of society, it is expected that there may be a unique link between the presence of this type of director on a board and the firm's CSP. Consequently, it would be logical to evaluate public outsiders' performance and contribution by CSP measures. In the corporate social

responsibility literature, CSP is defined as the three dimensional integration of corporate social responsibility, corporate social responsiveness, and social issues management (Carroll, 1979; Wartick & Cochran, 1985). Some of the frequently used CSP measures include social disclosure, Council on Economic Priorities' (CEP) pollution rankings, and Moskowitz's (1972) reputation scale (see Ullmann, 1985, for a comprehensive review). More recently, Fortune magazine's ratings of corporate reputations have been used as indicators of CSP (Fombrun & Shanley, 1990; McGuire, Sundgren, & Schneeweis, 1988). The above discussion suggests the following hypothesis:

Hypothesis 3: There will be a positive association between the proportion of public outsiders on boards and corporate social performance.

#### Outside Director Composition-Corporate Performance

The model presents two central constructs, outside director composition and corporate performance. Outside director composition is a function of three types of directors. It reflects the overall make-up of outside directors on a board. Corporate performance is measured by three dimensions, financial performance, business performance, and CSP. The intention of developing these two constructs is to answer the fundamental question raised at the beginning of the paper: Do outside board directors provide real benefits to firms' performance? The author believes that the question cannot be adequately answered by only examining the partial relationship between types of outsiders and types of performance. The inconsistent and contradictory empirical results of

past research have clearly illustrated this point. Using this systematic and multidimensional approach, we will be able to overcome some of the serious limitations of previous studies and provide unbiased and valid answers. Without reiterating the theoretical support discussed in previous sections, it is proposed that:

Hypothesis 4: There will be a positive association between outside director composition (in terms of principal, business, and public outsiders) and corporate financial, business, and social performance.

## CHAPTER 3

### METHODOLOGY

This chapter describes the methodology to be used in the study. The discussion includes: (a) population and sample, (b) empirical issues, and (c) data.

### POPULATION AND SAMPLE

The population is identified as Fortune 500 companies. The reasons for selecting this population are threefold. First, since Fortune 500 companies play an important role in the U.S. economy, generalizing research results to this group should have both theoretical and practical significance from business researchers' point of view. Second, many previous board studies have selected this group as their population (e.g., Cochran et al., 1985; Kesner et al., 1986; Zahra & Stanton, 1988). Finally, the theories discussed above are more suitable to large complex companies than small ones. For example, the agency problem tends to be more serious in large organizations due to the separation of ownership and control (Fama & Jensen, 1983b).

The companies included in the sample have complete five-year (1984-1988) data in all the following sources: (1) Fortune magazine's annual survey of corporate reputations; (2) Standard and Poor's COMPUSTAT tapes; (3) University of Chicago's Center for Research in Securities (CRSP) monthly tapes; and (4) Proxy statements filed with the Securities and Exchange Commission (SEC).

As Cook and Campbell (1979) noted, researchers often use nonrandom samples, especially in research involving multiple large data bases. In such cases, care must be taken in making statistical inferences regarding a target population. Thus, although this sample identified will include a broad range of large firms representing various industries, caution should be exercised in generalizing the findings to the population.

## EMPIRICAL ISSUES

### Statistical Power

Statistical power is defined as the probability of rejecting a false null hypothesis. Three determinants of power (cf. Cohen, 1988), are the significance criterion ( $\alpha$ ), sample size ( $n$ ), and effect size. All else being equal, the larger the  $\alpha$ , or the larger the  $n$ , or the larger the effect size, the higher the power and the more likely a false null will be rejected.

The three parameters and statistical power are so closely related that when any three are known, the fourth can be precisely determined. Because  $\alpha$  has been traditionally set at the .05 level, Cohen (1988) suggested that  $\beta$ , the type II error, be set at .20. Thus, power ( $1-\beta$ ) is set at the .80 level. Of the three power determinants, effect size is perhaps the most difficult to determine. Since it is not feasible to estimate the exact effect size in this study, the following power analysis for multiple regression, which will be used to test most hypotheses (H1, H2, and H3), was performed based on the conservative

estimates. Assuming that 15% ( $R^2 = .15$ ) of the total variance is accounted for by all the independent variables, and setting the significance level at .05 and statistical power at .80, the necessary sample size equaled 66 (see Appendix A). Thus, given these parameters, the sample size of 66 or greater will yield satisfactory statistical power.

### Industry Effects

The importance of industry as a significant predictor of firm performance is well established in the literature of strategic management. Conceptually, the most comprehensive and widely recognized arguments for the important relationship between industry competitive structure and firm performance are those proposed by Porter (1980). In particular, Porter (1980) suggests that the "five-forces" model can be used to analyze the competitive intensity and firms' profit potential within an industry. Empirically, numerous studies have found a positive and statistically significant link between industry profitability and firm profitability (e.g., Beard & Dess, 1981; Hirsch, 1975; Lieberman & O'Connor, 1972). However, in a review of the 40 most frequently cited strategic management studies published during the years of 1980 to 1988, Dess, Ireland, and Hitt (1990) conclude that strategy researchers have not systematically controlled industry effects and urge researchers to measure and incorporate potential industry effects in their studies to avoid misleading interpretations.

There are several methods which can be used to control for industry effects. Single industry study is one way to control for

industry effects. Another method is to use multiple industry control variables. Within this approach, researchers can use industry dummy variables, variables adjusted for industry averages, and multiple industry characteristics measures (Dess et al., 1990). Furthermore, market performance measures can also be used to adjust for industry variations (Lubatkin & Shrieves, 1986). A final method is the use of stratified samples by industry suggested by Harrigan (1983). All these methods have their respective advantages and disadvantages. For example, the single industry design is by far the simplest, but has limitations in its generalizability and accuracy. On the other hand, the design of multiple control variables may improve generalizability and accuracy, but at the expense of simplicity.

Since "a theory of social behavior cannot achieve simultaneously the goals of generalizability, accuracy, and simplicity" (Dess, et al., 1990: 15), researchers need to consider the inherent tradeoffs. Given the research objectives and the nature of this study, it is deemed appropriate to adopt the method of multiple industry control variables to control for potential industry effects. Specifically, where possible and applicable, corporate performance measures, including financial, business, and corporate social performance, will be normalized with respect to the industry means and standard deviations. In this study, industries are identified by the two-digit Standard and Poor's Industry Classification (SIC) codes. The resultant performance variables normalized from the above procedure have the virtue of nullifying spurious industry effects, and thus constitute fairly pure measures of relative corporate performance.

### Time Frame

Researchers have stressed the importance of measuring strategic outcomes over an extended period of time because of the lagged manifestation and impact of strategic moves on firm performance (Fowler & Schmidt, 1988; Gomez-Mejia, Tosi, & Hinkin, 1987; Keats & Hitt, 1988; Lubatkin & Shrieves, 1986). However, as Table 1 indicates, many empirical studies used contemporaneous measures of performance. Many board researchers neglect the lag effect of board variables, such as board composition, on organizational performance (Zahra & Pearce, 1989).

This study intends to overcome the deficiency of previous studies and, more importantly, to ensure the adequate test of proposed hypotheses by measuring all the performance or dependent variables over a five-year period. Previous studies have used a five-year period to measure firm performance (e.g., Cochran & Wood, 1984; Keats, 1990; Keats & Hitt, 1988). The specific years selected for this research were 1984, 1985, 1986, 1987, and 1988.

There are several advantages of using a five-year period to measure corporate performance. First, a five-year period is relatively long enough to minimize the influence of short-term irregularities. Thus, it provides better and more reliable long-term indicators than annual measures. For example, averaging accounting data over a five-year period will control for unusual accounting policy changes in any one year which might alter test results (Cochran & Wood, 1984). Second, since the Capital Asset Pricing Model (CAPM) by Sharpe (1964) and Lintner (1965) is used in this study, the adoption of a five-year period seems appropriate. Lubatkin and Shrieves argued that it is



inappropriate to use short-term horizons to study strategic acts, "because the flow of information regarding strategic events cannot be dated precisely" (1986: 508). Thus, Lubatkin and Shrieves (1986) recommended the use of monthly market return data to study strategic acts. Traditionally, finance researchers have tested CAPM by using 60 month data (see Copeland & Weston, 1988, for a comprehensive review). Recently, researchers in strategic management have begun to use CAPM and its variations to investigate strategic issues by adopting similar time frames (e.g., Fombrum & Shanley, 1990; Hitt & Ireland, 1985; Keats & Hitt, 1988; Lubatkin & O'Neill, 1987; McGuire et al., 1988). Finally, a five-year period reflects a reasonable organizational planning horizon (Keats & Hitt, 1988) and is relatively short enough that "management's philosophy and structure can be thought of as continuous" (Gomez-Mejia et al., 1987: 56).

The three types of outside directors are classified based on information from proxy statements in 1986, which is the middle point of the five-year period. Kesner (1988), after studying 250 Fortune 500 companies, reported that board members in the sample had been in their director position for 11 years. Based on Kesner's (1988) finding, it is reasonable to assume that, on average, board composition in this sample remains relatively stable between 1984 and 1988. Moreover, it is also reasonable to assume that there is a time lag between changes in board composition and changes in firm performance. Therefore, it is adequate and justified to classify outside directors based on 1986 information alone.

## DATA

This section describes the variables used in the study. Table 3 lists the independent and dependent variables.

### Types of Outside Directors (Independent Variables)

As discussed in Chapter 2, outside directors are classified into three distinct types: principal outsiders who are large shareholders of the focal organization, business outsiders who are members of other business organizations and are not large shareholders, and public outsiders who are members of other nonbusiness organizations and are not large shareholders. Although there is no precise definition of large shareholders, research in the past 50 years suggests that "the proportion of stock required to exercise significant control in large firms may be quite small" (Gomez-Mejia et al., 1987: 56). Some studies have defined large shareholders as 5 percent, some as 10 percent, some as 15 percent, some even as 50 percent. Most researchers have used 5 percent as the cutoff point (e.g., Gomez-Mejia et al., 1987; Kosnik, 1990; Singh & Harianto, 1989b). Although popular, the 5 percent cutoff is still arbitrary because the only logical reason for using this figure is that the SEC requires those who have accumulated 5 percent or more stock of a company to file 13D reports. In fact, some researchers argue that stock ownership of less than 5 percent may still be big enough to exercise significant influence and control over top management, particularly in large companies (Demsetz & Lehn, 1985; Hill & Snell, 1988). Both Demsetz and Lehn (1985) and Hill and Snell (1988) used 0.2 percent as their cutoff point. They used data published by Corporate

## List of Variables

Variables <sup>a</sup>		Descriptions
Independent variables:		
X1	PRID	Proportion of principal outsiders
X2	BUSD	Proportion of business outsiders
X3	PUBD	Proportion of public outsiders
X4	INLARGE	Proportion of inside large shareholders
X5	PERCENTO	Proportion of outside directors
X6	SIZE	Number of directors on a board
X7	OLSPCT	Percent of stock owned by principal outsiders
X8	ILSPCT	Percent of stock owned by inside large holders
X9	LOGOLVIL	Log ratio of OLSPCT and ILSPCT
X10	OSPCT	Percent of stock owned by all outside directors
X11	ISPCT	Percent of stock owned by all inside directors
X12	LOGOSVIS	Log ratio of OSPCT and ISPCT
X13	BSPCT	Percent of stock owned by all directors
Dependent variables:		
A. Financial performance		
Y1	ROE	Return on equity
Y2	ROI	Return on invested capital
Y3	ROA	Return on asset
Y4	PROM	Profit margin measured by net income to sales
Y5	DIVY	Dividends yield
Y6	DIVPR	Dividend payout ratio
Y7	EPS	Earnings per share
Y8	ALPHA	Jensen's alpha, excess return
Y9	BETA	Systematic risk
Y10	NEWALPHA	Alpha divided by Beta
B. Business performance		
Y11	GSALES	Sales growth rate
Y12	GASSET	Asset growth rate
Y13	GEMP	Employee growth rate
Y14	SALES	Total sales for 1988
Y15	ASSET	Net asset for 1988
Y16	EMPL	Number of employees for 1988
Y17	RDSALE	R&D expenditures as a percentage of sales
Y18	RDEMP	R&D expenditures per employee

## List of Variables

Variables <sup>a</sup>	Descriptions
C. CSP	
Y19 QMGT	Quality of management
Y20 QPRO	Quality of products/services offered
Y21 INNO	Innovativeness
Y22 INVT	Value as a long-term investment
Y23 FINP	Soundness of financial position
Y24 PEOp	Ability to attract/develop/keep talented people
Y25 COMM	Responsibility to community/environment
Y26 ASSE	Wise use of corporate assets

a. All the dependent variables except Y8, Y9, Y10, Y14, Y15, and Y16 were calculated based on five year data and were normalized with respect to the means and standard deviations of the economic sectors defined by two-digit SIC code. The generic formula used to calculate the variables is defined as follows:

$$\sigma_{ij} = \frac{\sqrt{\frac{\sum_{t=1}^n Y_{ijt}^2}{n} - \left( \frac{\sum_{t=1}^n \sum_{j=1}^m Y_{ijt}}{n \cdot m} \right)^2}}$$

where

Y<sub>i</sub> = variable i,  
j = 1,...,m, number of firms in industry j,  
t = 1,...,n, five years in this study,  
σ<sub>ij</sub> = standard deviation for variable i in industry j.

Data Exchange, which lists all shareholders of each Fortune 500 firm who own at least 0.2 percent of stock. Recognizing the lack of precise definition of large shareholders, this author adopts a contingency approach. As a first step, a 0.2 percent cutoff will be used to distinguish between large and small shareholders. In the data analysis, this cutoff point will be revised to determine whether the change of the cutoff point leads to changes of the results obtained. With respect to the sample of this study, the 0.2 percent stock ownership is equivalent to 10.6 million dollars, which is several hundred times the average fees of outside directors. The outside directors' fees ranged from about 20,000 to 40,000 dollars in 1986 (Lorsch, 1989).

Once the principal outsiders are determined, the other classifications are straight forward. An outside director will be classified as a business outsider if he/she falls into one of the following business categories: executive, retired executive, professional director, accountant, banker, financial analyst, private investor, professional director, physician, and lawyer. An outside director will be classified as a public outsider if he/she falls into one of the following nonbusiness categories: academician, government official, environmentalist, community leader, civic leader, administrator for non-profit organization, consumer advocate, and religious leader. The three independent variables (PRID, BUSD, and PUBD) represent the proportion of principal, business, and public outsiders, respectively, as indicated in Table 3. They were calculated by dividing the number of types of outsiders on a board by the board size.

In order to control for some factors other than the above three types of outsiders and capture the relative influence between outside large shareholders and inside large shareholders with respect to their stock ownership, this author calculated a number of independent variables used in various hypotheses testings. As indicated in Table 3, INLARGE represents the proportion of inside directors who are large shareholders. PERCENTO, which is the traditional measure of board composition, indicates the proportion of all the outside directors on a board. OLSPECT measures the percent of common stock outstanding owned by principal outsiders. Likewise, ILSPCT reflects the percent of stock owned by inside large shareholders. The log ratio of OLSPECT and ILSPCT is named as LOGOLVIL. Unlike OLSPECT, ILSPCT, and LOGOLVIL, which focus exclusively on board directors who are large shareholders, the following variables measure ownerships of all board of directors. OSPCT represents the percent of stock owned by all outside directors. ISPCT is the percent of stock owned by all inside directors. BSPCT measures the percent of stock owned by all directors. LOGOSVIS is the log ratio of OSPCT and ISPCT.

Data regarding directors' stock ownership and occupation were obtained from proxy statements filed with the SEC in 1986. There are 121 companies which have the information needed for this study.

### **Financial Performance (Dependent Variables)**

Consistent with the arguments of agency theory, financial performance is defined as a composite of a firm's profitability and the extent to which it maximizes shareholders' wealth. Multiple indices

derived from accounting data were used to measure financial performance because multiple indices are more valid and reliable than any single measure (Venkatraman & Ramanujam, 1986). Accounting data may have potential problems because it is subject to the manipulation of executives and is influenced by firms' accounting practices, such as depreciation policies, accelerated versus straightline, and inventory procedures, FIFO versus LIFO (Cochran & Wood, 1984; Gomez-Mejia et al., 1987). Recognizing the limitations of accounting measures, it is deemed necessary to also use capital market measures to assess financial performance.

The following accounting measures were calculated based on five-year (1984-1988) data and were normalized with respect to the means and standard deviations of industries defined by the two-digit SIC code. As indicated in Table 3, return on equity (ROE) is based on net income relative to common equity. Return on investment (ROI) is based on net income relative to invested capital. Return on asset (ROA) refers to net income relative to assets. Profit margin (PROM) reflects net income relative to sales. Dividend yield (DIVY) indicates the allocation of net income to common stockholders as dividends per share. DIVPR is the dividend payout ratio. Earnings per share (EPS) reflects net income relative to shares outstanding.

The market measures of  $\alpha_i$  or Jensen's alpha (1969) and  $\beta_i$  or beta were estimated using 60-month (1984-1988) data and the market model in the following form:

$$r_{it} - r_{ft} = \alpha_i + \beta_i (r_{mt} - r_{ft}) + \epsilon_{it} ,$$

where  $t = 1, \dots, T$ , 60 months in this study,

$i = 1, \dots, N$ ,

$r_{it}$  = the monthly rate of return for firm  $i$  in month  $t$ ,

$r_{ft}$  = the risk-free rate of return in month  $t$ , or the yield on treasury bills with one month to maturity,

$\alpha_i$  = alpha of firm  $i$ ; a measure of firm  $i$ 's market performance relative to firms in an unmanaged portfolio of firms having similar market risk; ex ante,  $\alpha = 0$ ,

$\beta_i$  = beta or systematic risk of firm  $i$ ,  $\beta_i = \text{COV}(r_i, r_m) / \sigma_m^2$ ,

$r_{mt}$  = the market return in month  $t$  for all NYSE securities listed on the CRSP tapes,

$\epsilon_{it}$  = a random error term assumed to satisfy the assumptions of the linear regression model.

This market model is an empirical version of the CAPM expressed in terms of ex post observations of security return data instead of ex ante expectations. The use of this form of the CAPM has been highly recommended (Lubatkin & O'Neill, 1987; Lubatkin & Shrieves, 1986).

There are several advantages of using Jensen's alpha. First, it represents a firm's market performance relative to other firms in an unmanaged portfolio of firms having similar market risk (Jensen, 1969).

Second, "alpha is better suited to evaluate returns associated with strategies than are event-related measures of abnormal returns because strategies have no clear starting date" (Lubatkin & Rogers, 1989).

Finally, since alpha is by design market-adjusted, no additional control



for industry effects is needed (Dess, et al., 1990; Lubatkin & Rogers, 1989).

In addition, a new variable termed NEWALPHA indicated in Table 3 was computed by dividing ALPHA by BETA. NEWALPHA calculated by adjusting for beta can be thought of as excess return per beta.

Values for accounting measures were obtained from COMPUSTAT tapes. There are 119 companies that have complete five-year data. The market information needed for estimating alpha and beta was obtained from the CRSP tapes. Due to missing values, only 116 companies have complete 60-month data.

#### Business Performance (Dependent Variables)

Consistent with the arguments of resource dependence theory, business performance is defined as a composite of a firm's business operations and the extent to which it maximizes its power. Business outsiders are expected, by the focal organization, and are likely, from their own interests, to engage in activities that reduce external constraints, control, and uncertainty of the organization. As discussed in Chapter 2, business performance refers to those activities that are closely associated with growth, size, and research and development (R&D).

As reported in Table 3, growth was measured in terms of sales growth (GSALES), asset growth (GASSET), and employee growth (GEMP). Size was captured in terms of sales revenue (SALES), net assets (ASSET), and number of employees (EMPL) for 1988. R&D was measured in terms of R&D expenditures per employee (RDMP) and R&D expenditures as a

percentage of sales (RDSALE). Both of these measures have been used by previous researchers (Graves, 1988; Hill & Snell, 1988a; Zahra & Stanton, 1988). It should be pointed out that since companies are not required to report R&D expenditures on their 10-K forms (Hill & Snell, 1988b), the use of these variables will have a negative impact on the sample size in this study. All the business performance measures except SALES, ASSET, and EMPL, which represent the absolute scale of companies, were calculated based on five-year data and were normalized with respect to the means and standard deviations of industries defined as two-digit SIC code.

Values used to compute the above business performance variables were obtained from COMPUSTAT tapes. There are 119 companies that have complete five-year data with the exception of the two R&D variables representing only 96 firms.

#### CSP (Dependent Variables)

Consistent with the argument of stakeholder theory, CSP is defined as a composite of a firm's social performance and the extent to which it maximizes the welfare of its stakeholders. Measures of CSP were obtained from Fortune magazine's survey data. There are several compelling reasons to use the Fortune data as measures of CSP. First, it provides a valid and reliable measures of CSP. For example, Fombrun and Shanley (1990) performed a varimax factor analysis on the eight attributes of Fortune's 1985 survey and extracted a single factor with an eigenvalue of 6.68 that accounted for 84 percent of the variance. Similar factor patterns were also found in the Fortune surveys of 1982,

1983, 1984, and 1986 (Fombrun & Shanley, 1990). Second, it is better than other CSP measures such as Moskowitz's (1972) reputation index, pollution index (e.g., Bragdon & Marlin, 1972), and content analysis of corporate annual reports (e.g., Bowman & Haire, 1975), which tend to be subjective, unreliable, and narrow (Ullmann, 1985). As McGuire et al. (1988) pointed out, Fortune's respondents only rank firms in an industry which they know very well and do so without relying on annual reports which often provide incomplete and inconsistent information. Third, it is superior to other similar surveys because it not only has a large sample size ( $n > 8000$ ), but also has a 50 percent response rate (Fortune, 1983, 1986). Finally, several researchers have used Fortune's data as measures of CSP (Chakravarthy, 1986; Fombrun & Shanley, 1990; McGuire et al., 1988).

Data on CSP were obtained from Fortune magazine's annual survey of corporate reputations between 1985 and 1989. The one year difference between this set of variables and other dependent variables is due to the fact that Fortune conducts its survey in the fall and publishes its summary results in January of the following year. Thus, a one-year lag is necessary in order to be consistent with other performance measures. Fortune has conducted the survey each fall since 1982. The survey covers 5-10 largest firms in each of 20-32 industries (the number of firms and industries varies from year to year). The respondents, who are usually executives, board directors, and corporate analysts, are asked to rate the leading corporations in their own industry on an 11-point scale (0=poor, 10=excellent). The eight attributes covered in the survey are quality of management, quality of products/services offered,

innovativeness, value as long-term investment, soundness of financial position, ability to attract/develop/keep talented people, responsibility to community/environment, and wise use of corporate assets.

The eight variables (QMGT, QPRO, INNO, INVT, FINP, PEOP, COMM, and ASSE) of CSP corresponding to Fortune's eight attributes were computed by averaging five-year (1985-1989) survey results and normalized with respect to the means and standard deviations of industry groups defined by Fortune, which are similar to the two-digit SIC code. These variables are listed in Table 3. There are 123 companies which have complete five-year data in Fortune's survey.

In order to ensure the adequate tests of the hypotheses, efforts were made to minimize both human and computer errors. For example, all the raw data were inspected for possible coding and programming mistakes through the use of univariate statistics, including frequency tables. Particular attention was paid to the extreme values for reasonableness. Whenever in doubt, the original sources from which the variables were obtained were rechecked.

This chapter discussed population and sample, several empirical issues such as statistical power, industry effects, and time frame, and the variables to be used in the study. Chapter 4 will focus on the data analyses and results.

## CHAPTER 4

### ANALYSES AND RESULTS

This chapter is organized into four sections. First, the sample characteristics are described through discussion of descriptive statistics. Second, the tests of the four hypotheses and the major results are reported. Third, post hoc tests of the relationship between board composition and firms' performance, which were not dealt with or formally stated in Chapter 2, are briefly discussed. Finally, a summary of the analyses and results is presented.

#### DESCRIPTIVE STATISTICS

The descriptive statistics of the sample and each variable are shown in Table 4. The data sample consisted of 96 to 123 Fortune 500 companies depending on the variables used. As the independent variables shown in Table 4 indicate, the average board size of the sample firms was 14 directors, ranging from 5 to 30. The proportion of principal, business, and public outside directors (X1, X2, and X3) were 3.75%, 50.07%, and 11.98%, respectively. Business outsiders accounted for the majority of outside director seats. On average, the boards were comprised of 66 percent outside directors (X5), which is consistent with the results of previous studies (Cochran, et al., 1985; Kesner, et al., 1986). The proportion of inside large shareholders (X4) was about 8%. With respect to directors' stock ownership, outside directors as a group (X10) owned about 2.2 percent of the total common shares outstanding,

TABLE 4

## Descriptive Statistics

Variables <sup>a</sup>		N	Mean	S.D.	Range
Independent variables:					
X1	PRID	121	.0375	.0761	0-.3636
X2	BUSD	121	.5007	.1374	0-.7857
X3	PUBD	121	.1198	.0884	0-.3846
X4	INLARGE	121	.0784	.1045	0-.6000
X5	PERCENTO	121	.6581	.1308	.1666-.9000
X6	SIZE	121	13.9834	3.6354	5-30
X7	OLSPCT	121	.0178	.0585	0-.4656
X8	ILSPCT	121	.0343	.0886	0-.5921
X9	LOGOLVIL	121	-3.3119	8.1926	-18.1488-16.4884
X10	OSPCT	121	.0222	.0637	0-.4675
X11	ISPCT	121	.0408	.0930	0-.5921
X12	LOGOSVIS	121	-1.9146	2.5612	-8.1851-5.0547
X13	BSPCT	121	.0631	.1242	0-.6243
Dependent variables:					
A. Financial performance					
Y1	ROE	119	.1660	.6003	-2.1768-3.0707
Y2	ROI	119	.2056	.4958	-1.2930-1.5812
Y3	ROA	118	.1988	.6228	-3.8743-1.6307
Y4	PROM	119	.2011	.6400	-3.4772-3.0911
Y5	DIVY	119	.4377	.8625	-1.1146-3.8288
Y6	DIVPR	119	.3158	1.1922	-3.2813-7.7888
Y7	EPS	119	.6560	.9242	-3.0817-5.2240
Y8	ALPHA	116	.0007	.0089	-.0351-.0193
Y9	BETA	116	1.1711	.2428	.5491-1.7346
Y10	NEWALPHA	116	.0009	.0088	-.0492-.0192
B. Business performance					
Y11	GSALES	119	-.2415	.3660	-1.1704-1.2373
Y12	GASSET	115	-.1187	.5009	-1.2649-2.1712
Y13	GEMP	119	-.2631	.4442	-1.8182-1.3940
Y14	SALES <sup>b</sup>	116	11677	18325	748-121085
Y15	ASSET	115	15579	29903	534-200348
Y16	EMPL	116	74.6605	107.2171	5.5000-766
Y17	RDSALE	96	.1737	.7585	-1.0202-3.1596
Y18	RDEMP	96	.2770	.8184	-1.070-3.0545

## Descriptive Statistics

Variables <sup>a</sup>		N	Mean	S.D.	Range
<hr/>					
C.	CSP				
Y19	QMGT	123	.1375	.8804	-2.2186-2.1217
Y20	QPRO	123	.1944	.9181	-1.7665-2.2618
Y21	INNO	123	.1163	.8967	-1.6893-2.3374
Y22	INVT	123	.1496	.8608	-2.4925-2.0268
Y23	FINP	123	.1625	.8295	-2.3576-2.0534
Y24	PEOP	123	.1559	.8790	-2.2821-2.0296
Y25	COMM	123	.1733	.9059	-2.3772-1.9727
Y26	ASSE	123	.0963	.8573	-2.3970-2.0759

a. All the dependent variables except Y8, Y9, Y10, Y14, Y15, and Y16 were calculated based on five year data and were normalized with respect to the means and standard deviations of the economic sectors defined by two-digit SIC code. Thus, they do not reflect the actual means and standard deviations.

b. Y14 and Y15 are in millions of dollars and Y16 is in thousands.

while inside directors (X11), on average, owned about 4.1 percent, which is almost twice the outsiders' stock ownership. The boards of directors as a whole in this sample (X13) owned about 6.3 percent of the companies' stock.

The firms in the sample represented 23 industry groups defined by the two-digit SIC code. No single industry group dominated the sample. The sampled companies were among the largest American firms which ranged in size from sales of \$748 million to \$121,085 million. The mean sales (Y14) were \$11,677 million. The firms had average assets (Y15) of \$15,579 million, ranging from \$534 million to \$200,348 million, and averaged 74,660 employees (Y16), varying from 5,500 to 766,000. It should be pointed out that all the dependent variables in Table 4, except market measures (Y8-Y10) and scale measures (Y14-Y16), were normalized with respect to the means and standard deviations of the industry groups defined by the two-digit SIC code. Thus, they do not reflect the actual means and standard deviations. Theoretically speaking, these normalized performance measures should have means of zero and variances of one. However, the descriptive statistics show that the means, except in the cases of Y11-Y13, are significantly greater than zero, indicating that the sampled companies as a group performed better than their industrial averages in all three types of performance. Also, the negative means of the three growth variables (Y11-Y13) in terms of sales, assets, and employees, suggest that these companies grew at a much slower pace than their industrial averages.

The Pearson correlations of the variables are given in Table 5. All the variables have been described in Table 3 and discussed in



TABLE 5  
Pearson Correlation

Variables <sup>ab</sup>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	26	27	28	29	30	31	32		
1. PRID																																	
2. BUSD	-.16																																
3. PUBD	-.22	-.36																															
4. INLARGE	.16	-.17	-.25																														
5. PERCENTO	.25	.70	.16	-.26																													
6. OLSPCT	.53	-.19	-.05	.10	.06																												
7. ILSPCT	.11	-.08	-.12	.58	-.10	.16																											
8. LOGOLVIL	.44	.02	-.01	-.53	.27	.24	-.28																										
9. ROE	.08	-.16	.08	-.04	-.06	.05	.06	.03																									
10. ROI	-.02	-.07	.09	-.18	-.03	-.10	-.10	.09	.50																								
11. ROA	.05	-.07	.10	-.03	.02	.00	.07	.01	.36	.56																							
12. PROM	.05	-.16	.08	.09	-.08	.06	.23	-.10	.26	.33	.73																						
13. DIVY	-.12	.07	-.03	-.10	-.02	-.06	-.19	.03	-.12	.03	.04	-.02																					
14. EPS	-.13	.00	.06	-.01	-.02	.01	.15	-.08	.21	.29	.51	.40	.20																				
15. DIVPR	-.02	.12	-.10	-.01	.04	-.06	-.12	-.10	-.22	-.01	-.02	.05	.24	-.05																			
16. ALPHA	-.14	.00	.04	-.08	-.04	-.10	-.11	-.05	.11	.15	.38	.40	.17	.28	.11																		
17. NEWALPHA	-.12	.02	.05	-.11	-.00	-.09	-.13	-.02	.12	.16	.29	.36	.16	.20	.10	.95																	
18. GSALES	.10	.11	-.09	-.10	.11	-.08	.04	.01	.13	.12	.19	.25	-.08	.06	-.03	.10	.08																
19. GASSET	.14	.01	.00	-.10	.09	.05	.06	.10	.19	.29	.24	.14	.08	.22	-.08	.03	.02	.68															
20. GEMP	.11	.07	-.02	-.03	.12	.03	-.00	-.04	.11	.05	.13	.13	-.20	.06	-.03	-.05	-.06	.65	.43														
21. RDSALE	-.06	-.04	.04	-.13	-.05	-.03	.17	.06	.06	.23	.29	.32	-.08	.07	.10	.01	-.00	.04	.07	.05													
22. RDEMP	-.05	-.09	.03	-.14	-.10	.00	.12	.11	.03	.26	.27	.30	.02	.07	.07	.05	.02	.15	.27	.07	.88												
23. SALES	-.09	-.05	-.03	-.28	-.12	.01	-.15	.30	.00	.19	.06	-.03	.30	.10	.01	.07	.09	.09	.33	-.12	.12	.34											
24. ASSET	-.06	-.04	-.01	-.27	-.09	.03	-.14	.32	.00	.16	.07	.00	.31	.09	-.00	.07	.07	.13	.35	-.09	.11	.33	.96										
25. EMPL	-.10	-.02	.00	-.27	-.08	-.01	-.14	.29	.01	.15	.04	-.05	.24	.16	.09	-.02	-.01	-.05	.24	-.02	.20	.30	.83	.80									
26. QMGT	.08	-.10	-.06	-.12	-.10	.16	-.13	.13	.27	.41	.42	.35	.04	.22	.01	.33	.35	.15	.19	.17	.16	.21	.18	.19	.16								
27. QPRO	.05	-.11	.00	-.19	-.08	.20	-.09	.13	.16	.25	.28	.24	.05	.15	.04	.29	.31	.09	.11	.15	.24	.28	.15	.14	.10	.78							
28. INNO	.05	-.09	.01	-.15	-.05	.15	-.13	.08	.26	.37	.29	.27	-.02	.13	.02	.25	.27	.16	.21	.16	.33	.37	.11	.11	.10	.81	.71						
29. INVT	.10	-.06	-.03	-.16	-.02	.17	-.11	.16	.24	.37	.42	.39	.09	.28	.04	.35	.38	.14	.17	.17	.21	.23	.25	.26	.24	.94	.80	.79					
30. FIMP	.21	-.12	-.06	-.16	-.05	.16	-.12	.24	.17	.31	.47	.42	.14	.28	.10	.34	.37	.08	.13	.13	.20	.24	.31	.30	.30	.80	.74	.59	.87				
31. PEOP	.07	-.14	-.02	-.16	-.12	.19	-.12	.16	.24	.35	.36	.34	.08	.21	.03	.32	.35	.10	.15	.12	.26	.30	.23	.24	.22	.94	.86	.84	.93	.82			
32. COMM	.06	-.19	.08	-.18	-.11	.20	-.10	.16	.09	.18	.23	.25	.15	.14	.12	.30	.33	-.00	.08	.05	.31	.36	.31	.31	.30	.70	.77	.64	.74	.70	.82		
33. ASSE	.12	-.08	-.05	-.09	-.05	.13	-.08	.13	.29	.43	.47	.40	.01	.27	.00	.37	.39	.15	.21	.20	.16	.19	.16	.17	.16	.16	.95	.75	.74	.94	.86	.89	.64

<sup>a</sup> N ranges from 96-123

<sup>b</sup> Coefficients greater than .18 are significant at least at .05 level.

Chapter 3. Briefly, variables 1-8 represent the independent variables including types of directors and variables regarding directors' stock ownership. Variables 9-17 are financial performance measures. Business performance measures are listed as variables 18-25. Finally, variables 26-33 are the corporate social performance measures or the Fortune's eight attributes. As mentioned above, the sample size N varies depending on the variable and ranges from 96 to 123. All the Pearson correlation coefficients which are greater than .18 are significant at least at the .05 level.

### HYPOTHESIS TESTS

This section includes the statistical analyses of each hypothesis, H1-H4, and a discussion of the results of the analyses. Several statistical techniques including factor analysis, simple linear regression, multiple linear regression, and canonical correlation analysis were used to test the four hypotheses. Efforts were made to ensure the adequate and complete tests of the hypotheses by carefully designing the models and selecting the proper statistical techniques.

#### Test of H1

Based on the central arguments of agency theory, the first hypothesis (H1) stated that there would be a positive association between the proportion of principal outsiders on boards and firms' financial performance. As discussed in Chapter 3, principal outsiders (PRID) were defined as outside directors who are large shareholders of the focal organization and were measured by dividing the number of

principal outsiders by the size of the board. Financial performance was defined as a composite of a firm's profitability and the extent to which it maximizes shareholders' wealth. Multiple indices derived from both accounting and market data were employed to measure the construct.

As a first step, the eight financial performance measures were factor-analyzed by the principal axis method to overcome the multicollinearity problem of using each separate item as a dependent variable. The investigation of the eigenvalues indicated that only two factors reached the standard criterion of 1.0. Table 6 shows the rotated varimax solution for all items. Two distinct factors emerged: profit, composed of ROE, ROI, ROA, profit margin, EPS, and ALPHA, and dividend, composed of dividend yield and dividend payout ratio. The two factors jointly explained 55.2 percent of the variance. The two factor scores were computed to be used in subsequent hypothesis tests. It is not surprising that all the profitability ratios and alpha loaded on a single factor. For example, ROE and EPS share the same denominator. In the case of alpha, investors in the financial market use information contained in annual reports to form expectations about future earnings, thus affecting stock returns. As Fama and Miller (1984) pointed out, the announcement of financial earnings such as EPS would lead to changes in stock prices, thus affecting the excess return or alpha. However, the loadings for ALPHA were not very 'clean'. In other words, there is a considerable amount of overlap between profit and dividend factors. Another factor analysis was conducted for all the financial measures plus NEWALPHA (alpha divided by beta) instead of alpha. As indicated in Table 7, the varimax rotated factor pattern is very similar to the one

TABLE 6

Results of Principal Factor Analysis with Varimax Rotation:  
Profit and Dividend Indicators

Financial Performance Items <sup>a</sup>	<u>Factor 1</u> Profit	<u>Factor 2</u> Dividend
ROE	<u>.493</u>	-.585
ROI	<u>.679</u>	-.297
ROA	<u>.889</u>	-.057
Profit margin	<u>.788</u>	.034
Dividend yield	.170	<u>.678</u>
EPS	<u>.670</u>	.197
Dividend payout ratio	.013	<u>.672</u>
Alpha	<u>.566</u>	.341
Eigenvalues	2.915	1.502
Cumulative percent of variance explained	36.4	55.2

<sup>a</sup> N = 112

TABLE 7

Results of Principal Factor Analysis with Varimax Rotation:  
Profit & Dividend Indicators with Newalpha

Financial Performance Items <sup>a</sup>	<u>Factor 1</u> Profit	<u>Factor 2</u> Dividend
ROE	<u>.521</u>	-.551
ROI	<u>.703</u>	-.248
ROA	<u>.884</u>	-.037
Profit margin	<u>.785</u>	.056
Dividend yield	.155	<u>.701</u>
EPS	<u>.657</u>	.208
Dividend payout ratio	.005	<u>.686</u>
NEWALPHA	<u>.489</u>	.325
Eigenvalues	2.858	1.480
Cumulative percent of variance explained	35.7	54.2

<sup>a</sup> N = 112

in Table 6 in terms of item loadings and variance explained. Therefore, only the factor scores computed from Table 6 were used as dependent variables in the following analyses.

Fourteen separate analyses were performed to test the relationship between the proportion of principal directors and firms' financial performance. Table 8 summarizes the major results of these tests. The detailed results, the parameters of the regression models or the coefficients of canonical correlations, were not reported due to the non-significant results of the models.

Four simple regressions (models 1-4 in Table 8) were performed with profit and dividend factors and ALPHA and NEWALPHA as dependent variables and proportion of principal outsiders (PRID) as the predictor variable. Market measures were used as separate dependent variables since ALPHA and NEWALPHA had relatively poor loadings in the factor analysis (Table 6). With the exception of the second model, none of the models were significant (i.e.,  $p \leq .10$ ). The second model had a  $f$  value of 3.076 with a  $p$  value of .082. Only 2.7% of the variance was explained by the model. It is interesting to note that the parameter estimate of principal outsiders was -2.241, indicating that there was a negative relationship between the proportion of principal outsiders and the dividend factor. Caution should be exercised in interpreting this result. First, the dividend factor was a composite of a number of measures and did not represent the pure dividend variables. Second, the Pearson correlations (Table 5) between the proportion of principal outsiders and dividend yield and dividend payout ratio were not significant at the .1 level. Third, the observed relationship was no

TABLE 8

## Test of H1

Model	Dependent Variable	Independent Variable	Statistical Approach	F Value	P Value	R <sup>2</sup>
1.	Profit Factor	PRID	Simple Regression	.005	.941	.000
2.	Dividend Factor	PRID	Simple Regression	3.076	.082*	.027
3.	ALPHA	PRID	Simple Regression	2.170	.143	.019
4.	NEWALPHA	PRID	Simple Regression	1.492	.224	.013
5.	Profit Factor	PRID BUSD PUBD	Multiple Regression	.912	.438	.024
6.	Dividend Factor	PRID BUSD PUBD	Multiple Regression	1.919	.130	.051
7.	ALPHA	PRID BUSD PUBD	Multiple Regression	.844	.472	.023
8.	NEWALPHA	PRID BUSD PUBD	Multiple Regression	.595	.619	.016
9.	Profit Factor	PRID BUSD PUBD INLARGE	Multiple Regression	1.146	.339	.041
10.	Dividend Factor	PRID BUSD PUBD INLARGE	Multiple Regression	1.513	.203	.054
11.	Profit Factor	PRID BUSD PUBD INLARGE OLSPCT ILSPCT LOGOLVIL	Multiple Regression	.745	.634	.048

TABLE 8 (Continued)

## Test of H1

Model	Dependent Variable	Independent Variable	Statistical Approach	F Value	P Value	R <sup>2</sup>
12.	Dividend Factor	PRID BUSD PUBD INLARGE OLSPCT ILSPCT LOGOLVIL	Multiple Regression	1.151	.337	.072
13.	ROE ROI ROA PROM DIVY EPS DIVPR ALPHA	PRID BUSD PUBD INLARGE	Canonical Correlation	.751	.836	.095
14.	ROE ROI ROA PROM DIVY EPS DIVPR ALPHA	PRID BUSD PUBD INLARGE OLSPCT ILSPCT LOGOLVIL	Canonical Correlation	.839	.790	.175

\* p &lt; .1



longer significant when other predictor variables were introduced into the model. Finally, given the significance level used in this study (e.g.,  $p = .1$ ), ten percent of the models would be significant by chance alone.

Eight multiple regressions (models 5-12 in Table 8) were also performed to test the first hypothesis. The primary reason for selecting multiple regression was to obtain a useful model and efficient parameter estimators by controlling relevant variables that might influence the response variable,  $y$ , thus, obscuring the true relationship between  $x$  and  $y$ . The same dependent variables, profit and dividend factors from the factor analysis and two market measures (ALPHA and NEWALPHA), were used separately in each of the models. Models 5-8 included all three types of outside directors as predictor variables, proportion of principal outsiders (PRID), proportion of business outsiders (BUSD), and proportion of public outsiders (PUBD). Models 9-12 used additional independent variables in the multiple regression analyses. For example, models 9 and 10 included the proportion of inside large shareholders (INLARGE) along with the three types of outside directors as predictor variables. Furthermore, the three variables reflecting directors' stock ownership and relative influence, the percent of stock owned by principal outsiders (OLSPCT), the percent of stock owned by inside large shareholders (ILSPCT), and the log ratio (LOGOLVIL) between OLSPCT and ILSPCT, were also added as predictor variables. As indicated in Table 8, all the models had very small  $R^2$  values and large error variances. Moreover, none of the models were significant even at the .1 level.

Although conceptually sound and methodologically straight foreword, factor analysis does have some drawbacks. For example, with respect to the results in Table 6, the factor scores obtained explained only 55.2 percent of the variance. Almost half the variance was lost when the factor scores were used in the subsequent regression analyses, which might have prevented the finding of significant results. Therefore, the first hypothesis was also tested by employing Hotelling's (1935) canonical correlation analysis. The canonical correlation analysis is a powerful, but little used, technique in social sciences (Thompson, 1984). As Knapp put it, "virtually all of the commonly encountered parametric tests of significance can be treated as special cases of canonical correlation analysis, which is the general procedure for investigating the relationships between two sets of variables" (1978: 410). Like other statistical methods, the use of canonical correlation analysis requires several statistical assumptions, which were believed to be met in this study. In particular, the sample size, which was greater than 100, was large enough to satisfy the assumption of the multivariate normal distribution by invoking the multivariate central limit theorem. This theorem suggests that "when sample size is 'large,' certain indices derived from the variables will be normally distributed even when the variables are not themselves distributed in a multivariate manner" (Thompson, 1984: 18). Thus, this hypothesis was tested by using canonical correlation in the following form:

$$u = a_0 + a_1X_1 + a_2X_2 + \dots + a_nX_n$$

$$v = b_0 + b_1Y_1 + b_2Y_2 + \dots + b_mY_m$$

where,  $X_1$ - $X_N$  are predictor variables representing types of directors (model 13 in Table 8) and directors' ownership variables (model 14 in Table 8).  $Y_1$ - $Y_M$  are the eight financial performance variables. The  $a$  and  $b$  are the function coefficients which are the same as beta weights in a regression analysis or pattern coefficients in a factor analysis. The  $u$  and  $v$  are composite variables or composite scores, which are derived to maximize the relationship between the two variable sets they represent (Morrison, 1976; Thompson, 1984). Substantively, the  $u$  can be viewed as the composite of directors and the  $v$  can be seen as the composite of financial performance. The simple or bivariate correlation between the two composite scores,  $u$  and  $v$ , is the canonical correlation. A squared canonical correlation coefficient indicates the proportion of variance that the two composite variables derived from  $x$  and  $y$  sets linearly share. The results of these two canonical correlation models were reported in Table 8 (models 13 and 14). Unfortunately, the two canonical correlations,  $r_{uv}$ , between the  $x$  set and the  $y$  set, were not statistically significant although the use of this method increased the percent of variance explained considerably in both models.

In sum, fourteen different tests were performed to test the first hypothesis. As indicated in Table 8, the overall results do not support the hypothesis and suggest that there is no statistically significant positive linear relationship between the proportion of principal outsiders and firms' financial performance. The possible explanations as to why no significant results were obtained will be discussed in the summary section of this chapter.

## Test of H2

Based on the central theme of resource dependence theory, the second hypothesis suggested that there would be a positive association between the proportion of business outsiders on boards and firms' business performance. In this study, business outsiders (BUSO) were defined as outside directors who are members of other business organizations and are not large shareholders of the focal organization. The variable, business outsiders, was measured by dividing the number of business outsiders by the size of the board. Consistent with the arguments of resource dependence theory, business performance was defined as a composite of a firm's business operations and the extent to which a firm maximizes its power. Multiple indices were used to measure the construct. Similar procedures used for the first hypothesis were adopted for testing the second hypothesis.

As an initial step, the eight business performance variables were factor-analyzed by the principal factor method. Three factors met the minimum eigenvalue criterion and thus were retained. Table 9 reports the factor patterns of the varimax rotation. Three very distinct factors were obtained and named as scale, growth, and R&D factors, respectively. The scale factor consists of total sales, net asset, and number of employees for 1988. The second, or growth factor, is composed of the three growth variables, sales growth rate, asset growth rate, and employee growth rate. The final R&D factor consists of two variables, R&D as a percentage of sales and R&D expenditures per employee. The three factors jointly explained 87.7 percent of the variance. It should be pointed out that since companies are not required to report their R&D

TABLE 9

Results of Principal Factor Analysis with Varimax Rotation:  
Scale, Growth, and R&D Indicators

Business Performance Items <sup>a</sup>	<u>Factor 1</u> Scale	<u>Factor 2</u> Growth	<u>Factor 3</u> R&D
Sales growth rate	.065	<u>.924</u>	.038
Asset growth rate	.374	<u>.784</u>	.069
Employee growth rate	-.167	<u>.831</u>	.046
R&D as a percent of sales	.035	.009	<u>.981</u>
R&D expenditures per employee	.237	.120	<u>.938</u>
Total sales for 1988	<u>.976</u>	.058	.096
Net asset for 1988	<u>.974</u>	.061	.090
Number of employees for 1988	<u>.900</u>	.037	.146
Eigenvalues	2.941	2.182	1.889
Cumulative percent of variance explained	36.8	64.0	87.7

<sup>a</sup> N = 96

expenditures (Hill & Snell, 1988b), the use of the two R&D variables reduced the sample size from 115 to 94 companies. In order to remedy this problem, a second factor analysis was conducted on the business performance variables without the two R&D items. The varimax rotated factor patterns are shown in Table 10. The results were very similar to those reported in Table 9. Two distinct factors emerged, scale, composed of total sales, net asset, and number of employees for 1988, and growth, composed of sales growth, asset growth, and employee growth rates. As indicated in Table 10, almost 84 percent of the variance was accounted for by the two factors. Three factor scores from the first factor analysis and two factor scores from the second one were computed. Both sets of factor scores were used as criterion variables in the subsequent regression analyses. Since these two sets of factor scores did not produce statistically different results in testing the second hypothesis, only the results generated by using the factor scores from the first factor analysis (Table 9) were reported.

Altogether, fourteen models were run to test the relationship between the proportion of business outsiders and firms' business performance. Table 11 summarizes the major results of these tests. The detailed results, the parameter estimators from regression analyses for example, were reported only when the model was significant at  $p = .1$  level.

Three simple regressions (models 1-3 in Table 11) were conducted with the proportion of business outsiders (BUSO) as the predictor variable and scale, growth, and R&D factors as criterion variables, respectively. As indicated in Table 11, the three models were not

TABLE 10

Results of Principal Factor Analysis with Varimax Rotation:  
Scale and Growth Indicators without R&D

Business Performance Items <sup>a</sup>	<u>Factor 1</u> Scale	<u>Factor 2</u> Growth
Sales growth rate	.040	<u>.922</u>
Asset growth rate	.331	<u>.794</u>
Employee growth rate	-.156	<u>.832</u>
Total sales for 1988	<u>.980</u>	.055
Net asset for 1988	<u>.967</u>	.080
Number of employees for 1988	<u>.907</u>	.008
Eigenvalues	2.854	2.181
Cumulative percent of variance explained	47.6	83.9

<sup>a</sup> N = 115

## Test of H2

Model	Dependent Variable	Independent Variable	Statistical Approach	F Value	P Value	R <sup>2</sup>
1.	Scale Factor	BUSD	Simple Regression	.268	.605	.003
2.	Growth Factor	BUSD	Simple Regression	.918	.340	.010
3.	R&D Factor	BUSD	Simple Regression	.117	.732	.001
4.	Scale Factor	PRID BUSD PUBD	Multiple Regression	.244	.865	.008
5.	Growth Factor	PRID BUSD PUBD	Multiple Regression	1.538	.210	.049
6.	R&D Factor	PRID BUSD PUBD	Multiple Regression	.405	.749	.013
7.	Scale Factor	PRID BUSD PUBD INLARGE	Multiple Regression	2.441	.052*	.100
8.	Growth Factor	PRID BUSD PUBD INLARGE	Multiple Regression	1.144	.341	.050
9.	R&D Factor	PRID BUSD PUBD INLARGE	Multiple Regression	.768	.549	.034
10.	Scale Factor	PRID BUSD PUBD INLARGE OLSPCT ILSPCT LOGOLVIL	Multiple Regression	3.241	.004**	.212



TABLE 11 (Continued)

## Test of H2

Model	Dependent Variable	Independent Variable	Statistical Approach	F Value	P Value	R <sup>2</sup>
11.	Growth Factor	PRID BUSD PUBD INLARGE OLSPCT ILSPCT LOGOLVIL	Multiple Regression	1.453	.195	.108
12.	R&D Factor	PRID BUSD PUBD INLARGE OLSPCT ILSPCT LOGOLVIL	Multiple Regression	.923	.492	.071
13.	GSALES GASSET GEMP RDSALE RDEMP SALES ASSET EMPL	PRID BUSD PUBD INLARGE	Canonical Correlation	.749	.837	.159
14.	GSALES GASSET GEMP RDSALE RDEMP SALES ASSET EMPL	PRID BUSD PUBD INLARGE OLSPCT ILSPCT LOGOLVIL	Canonical Correlation	1.127	.256	.263

\* p &lt; .1

\*\* p &lt; .05

significant, indicating that there was no linear relationship between proportion of business outsiders and firms' business performance. As mentioned above, the simple regression analysis failed to explicitly incorporate or control variables that might influence the response variable,  $y$ , and may obscure the true relationship between  $x$  and  $y$ . A number of multiple regressions were performed by adding additional independent variables against the same set of criterion variables to test this hypothesis. Models 4-6 used all three types of outside directors as predictor variables, models 7-9 incorporated the proportion of inside directors along with the above three, and models 10-12 included the additional three directors' ownership variables. As noted in Table 11, only models 7 and 10 were significant and the other seven multiple regression models were not significant. Both significant models had scale factor as the dependent variable. The detailed results of the two regression analyses were reported in Tables 12 and 13. In addition, two canonical correlation analyses, with eight business performance measures as criterion variables and types of directors (model 13) plus ownership variables (model 14) as predictor variables, were also conducted to further test the second hypothesis or confirm the results obtained from the regression analyses. As noted in Table 11, neither of the models was statistically significant, indicating that there was no linear relationship between the  $x$  set and  $y$  set.

As indicated in Table 12, model 7 had scale factor as the dependent variable and three types of outside directors (PRID, BUSD, and PUBD) plus the proportion of inside large shareholders (INLARGE) as predictor variables. The model was significant ( $f = 2.441$  and  $p = .052$ )

TABLE 12

Results of Multiple Regression Analysis for Scale (Model 7)

Variables	Parameters	t	P Value
PRID--Proportion of principal outsiders	-1.042	-.676	.500
BUSD--Proportion of business outsiders	-1.113	-1.374	.172
PUBD--Proportion of public outsiders	-1.998	-1.418	.159
INLARGE--Proportion of inside large shareholders	-3.666	-2.994	.003
R <sup>2</sup>	.100		
F	2.441		
P	.052		

and explained 10 percent of the variance. The inspection of the individual parameters revealed that all the beta coefficients had negative signs. The variable, INLARGE, had the largest beta coefficient and was the only one which was significant ( $t = -2.994$  and  $p = .003$ ), indicating that there was a negative linear relationship between the proportion of inside large shareholders and the scale factor. In other words, the bigger the firm in terms of sales, assets, and number of employees, the fewer the proportion of inside large shareholders.

Table 13 reported the results of model 10, which had the same criterion variable as model 7 but added three additional variables, the percent of stock owned by principal outsiders (OLSPCT), the percent of stock owned by inside large shareholders (ILSPCT), and the log ratio of OLSPCT and ILSPCT. The model was statistically significant ( $f = 3.241$  and  $p = .004$ ) and explained 21.2 percent of the variance. Two variables emerged to be significant. The proportion of principal outsiders had the largest beta coefficient ( $-4.983$ ) and was significant ( $t = -2.664$  and  $p = .009$ ). The log ratio of OLSPCT and ILSPCT had a relatively small beta coefficient ( $.065$ ) and was also significant ( $t = 3.238$  and  $p = .001$ ). The significant relationship between the proportion of inside large shareholders and the scale factor seemed to be accounted for by the variable PRID in this model. However, beta coefficients in multiple regression analyses should be interpreted with caution. Additional tests such as examining the improvement of  $R^2$  should be performed to determine the relative importance of individual variables. In any event, the results of models 7 and 10 indicated that the larger the firm in terms of its sales, assets, and number of employees, the smaller

TABLE 13

Results of Multiple Regression Analysis for Scale (Model 10)

Variables	Parameters	t	P Value
PRID--Proportion of principal outsiders	-4.983	-2.664	.009
BUSD--Proportion of business outsiders	-.774	-.987	.326
PUBD--Proportion of public outsiders	-1.303	-.947	.346
INLARGE--Proportion of inside large shareholders	.062	.037	.970
OLSPCT--Percent of stock owned by principal outsiders	2.062	.994	.322
ILSPCT--Percent of stock owned by inside large holders	2.129	.841	.402
LOGOLVIL--Log ratio of OLSPCT and ILSPCT	.065	3.238	.001
R <sup>2</sup>	.212		
F	3.241		
P	.004		

proportion of both inside and outside large shareholders on its board. When firms become larger it is more difficult for a single individual to own a large percent of the stock. Therefore, there was a smaller proportion of large shareholders on the board, which is consistent with previous research findings (e.g., Berle & Means, 1932; Jensen & Meckling, 1976; Walsh & Seward, 1990).

In summary, fourteen different models were used to test the second hypothesis. Unfortunately, this hypothesis was not confirmed. As indicated in Table 11, the overall results did not suggest that there was a positive linear relationship between the proportion of business outsiders and firms' business performance. Once again, the explanations will be given in the summary section of this chapter.

### Test of H3

Based on the basic arguments of stakeholder theory, the third hypothesis stated that there would be a positive association between the proportion of public outsiders on boards and firms' corporate social performance. As discussed in Chapter 3, public outsiders (PUBD) were defined as outside directors who were members of non-business organizations and were not large shareholders of the focal organization. The variable, PUBD, was measured by dividing the number of public outsiders by the size of the board. Corporate social performance was defined as a composite of a firm's social performance and the extent to which it maximizes the welfare of its stakeholders.

The eight items obtained from Fortune's survey were first factor-analyzed by the principal factor method. All the variables loaded very

well on a single factor, indicating there was a high construct validity in Fortune's survey. Since several researchers have used Fortune's data as a measure of CSP (Chakravorthy, 1986; Fombrun & Shanley, 1990; McGuire, et al., 1988), the extracted factor was named as CSP. Table 14 reported the results of factor patterns with varimax rotation. The extracted single factor had an eigenvalue of 6.651 and explained 83.1 percent of the variance. This finding was almost exactly the same as that reported by Fombrun and Shanley (1990).

Six models were designed to test the relationship between the proportion of public outsiders and corporate social performance. Table 15 summarizes the results of these tests. The simple regression model (model 1) had CSP as the dependent variable and the proportion of public outsiders (PUBD) as the independent variable. The model was not significant and failed to confirm the hypothesis. Three multiple regressions (models 2-4 in Table 15) were performed with CSP as the criterion variable and different combinations of director and ownership variables as predictor variables. The second model with three types of outsiders as predictor variables was not significant. However, the other two models were significant. Table 16 reported the results of model 3. The model was significant ( $f = 2.598$  and  $p = .039$ ) and accounted for 8.2 percent of the variance. The investigation of the parameter estimators revealed that all types of directors except principal outsiders had negative signs. Two of the variables, the proportion of business outsiders and the proportion of inside large shareholders, were significant at the .05 level, indicating that the proportion of business outsiders and the proportion of inside large

TABLE 14

Results of Principal Factor Analysis with Varimax Rotation:  
CSP Indicators

Corporate Social Performance Items <sup>a</sup>	<u>Factor</u> CSP
Quality of management	.958
Quality of products/services offered	.883
Innovativeness	.843
Value as a long-term investment	.971
Soundness of financial position	.880
Ability to attract/develop/keep talented people	.981
Responsibility to community/environment	.825
Wise use of corporate assets	.939
Eigenvalues	6.651
Percent variance explained	83.1

<sup>a</sup> N = 123



## Test of H3

Model	Dependent Variable	Independent Variable	Statistical Approach	F Value	P Value	R <sup>2</sup>
1.	CSP Factor	PUBD	Simple Regression	.052	.820	.000
2.	CSP Factor	PRID BUSD PUBD	Multiple Regression	1.012	.390	.025
3.	CSP Factor	PRID BUSD PUBD INLARGE	Multiple Regression	2.598	.039**	.082
4.	CSP Factor	PRID BUSD PUBD INLARGE OLSPCT ILSPCT LOGOLVIL	Multiple Regression	1.954	.067*	.108
5.	QMG QPRO INNO INVT FINP PEOP COMM ASSE	PRID BUSD PUBD INLARGE	Canonical Correlation	1.584	.024**	.197
6.	QMG QPRO INNO INVT FINP PEOP COMM ASSE	PRID BUSD PUBD INLARGE OLSPCT ILSPCT LOGOLVIL	Canonical Correlation	1.397	.034**	.222

\* p < .1  
 \*\* p < .05

TABLE 16

Results of Multiple Regression Analysis for CSP (Model 3)

Variables	Parameters	t	P Value
PRID--Proportion of principal outsiders	1.012	.840	.402
BUSD--Proportion of business outsiders	-1.490	-2.043	.043
PUBD--Proportion of public outsiders	-1.607	-1.382	.169
INLARGE--Proportion of inside large shareholders	-2.394	-2.683	.008
R <sup>2</sup>	.082		
F	2.598		
P	.039		

shareholders negatively affected the scores of CSP. Table 17 summarized the results of model 4. The model was significant ( $f = 1.954$  and  $p = .067$ ) and explained about 11 percent of the variance. Two predictor variables, the proportion of business outsiders and the percent of stock owned by principal outsiders, emerged as significant at .1 level. The variable of proportion of inside large shareholders which was significant in model 3 became insignificant in this model. Once again, the proportion of business outsiders had a negative sign. The results of models 3 and 4, which were confirmed by their corresponding canonical correlation analyses reported in Table 15, indicate that the ratings of corporate social performance tend to be higher in firms with lower proportion of business outsiders and higher percentage stock owned by principal outsiders.

In sum, six different models were tested for the third hypothesis. As indicated in Table 15, the overall results do not support the hypothesis and suggest that there is no statistically significant positive linear relationship between the proportion of public outsiders and firms' social performance. However, the results indicate that CSP is negatively related to the proportion of business outsiders and positively associated with the percentage of stock owned by principal outsiders. Interpretation of these results is difficult due to the measurement problems of CSP. This author, following others (e.g., Fombrun & Shanley, 1990; McGuire, et al., 1988), thought that the Fortune's survey data might be the long awaited measure of CSP. However, the unidimensionality of the seemingly different eight attributes (e.g., financial soundness, innovativeness, and

TABLE 17

Results of Multiple Regression Analysis for CSP (Model 4)

Variables	Parameters	t	P Value
PRID--Proportion of principal outsiders	-.482	-.292	.770
BUSD--Proportion of business outsiders	-1.330	-1.812	.072
PUBD--Proportion of public outsiders	-1.596	-1.367	.174
INLARGE--Proportion of inside large shareholders	-1.831	-1.353	.178
OLSPCT--Percent of stock owned by principal outsiders	3.092	1.741	.084
ILSPCT--Percent of stock owned by inside large holders	-.659	-.544	.587
LOGOLVIL--Log ratio of OLSPCT and ILSPCT	.004	.309	.758
R <sup>2</sup>	.108		
F	1.954		
P	.067		

responsibility to community and environment) casts doubts on the validity of using Fortune's data as measures of CSP. Moreover, further analyses revealed that there were strong correlations between the factor score extracted from Fortune's data and several financial performance measures, indicating that Fortune's survey might be another measure of firms' financial performance. Therefore, the results, the positive relationship between the percent of stock owned by principal outsiders and CSP and the negative relationship between proportion of business outsiders and CSP, were consistent with the agency theory argument if the CSP is indeed another measure of financial performance.

#### Test of H4

Based on the major arguments of multiple theories, the final hypothesis (H4) suggested that there would be a positive relationship between outside director composition and corporate performance. Since both outside director composition and corporate performance were constructs measured by multiple indices, the canonical correlation analysis was deemed to be the most appropriate method to test the relationship between the predictor set, outside director composition, and the criterion set, corporate performance.

Table 18 reported the results of the canonical correlation analysis. The predictor set consisted of the three types of outside directors and the criterion set was composed of 24 variables, including eight financial performance measures, eight business performance measures, and eight corporate social performance measures. Since the predictor set had three variables, only three functions were generated.

TABLE 18

Test of H4  
Canonical Correlation Results

Function	Wilks' Lambda	F Value	P Value
1	.311	1.253	.116
2	.539	1.008	.472
3	.794	.767	.752

	Function		
	1	2	3
Predictor Set			
PRID	1.047	-.003	-.254
BUSD	.213	1.062	-.051
PUBD	.642	.357	.874
Criterion Set			
A. Financial Performance			
ROE	.061	-.132	-.166
ROI	.460	-.208	.481
ROA	.123	1.238	.229
PROM	-.395	-1.119	.175
DIVY	-.588	.117	-.165
EPS	.022	-.258	.296
DIVPR	-.232	.280	-.363
ALPHA	.142	.130	.280
B. Business Performance			
GSALES	.445	.090	-.130
GASSET	.083	.025	-.123
GEMP	-.223	.097	.014
RDSALE	-.900	-.034	-.366
RDEMP	.635	.085	.211
SALES	-2.137	-.801	-1.334
ASSET	.954	.410	1.087
EMPL	.431	.317	.372
C. Corporate Social Performance			
QMGT	.240	-.918	-1.415
QPRO	-.939	-.345	.584
INNO	.345	.487	-.187
INVT	1.907	2.470	.067
FINP	1.785	-1.097	-1.078
PEOP	-1.661	-1.027	-.300
COMM	.897	-.050	.842
ASSE	-2.150	.076	.901
Canonical Correlation	.649	.567	.454
Squared Canonical Correlation	.422	.321	.206

The detailed function coefficients and canonical correlations as well as squared canonical correlations associated with each of the functions were summarized in the table. The canonical correlations were relatively high. For example, the canonical correlation for the first function was .649. Unfortunately, none of the canonical correlations were significant at the .1 level. The results seem to suggest that there is no linear relationship between outside director composition and corporate performance.

It should be pointed out that multicollinearity, the intercorrelation among the independent variables used in the various multiple regressions for testing H1-H3, may exist. When a regressor is highly and linearly related to other regressors in the model, the affected estimates will be unstable and have high standard errors. The variance inflation factor (VIF), a widely used formal method of detecting the presence of multicollinearity (Neter, Wasserman, & Kutner, 1990), was used to test the severity of the problem. According to Neter, et al., "the largest VIF value among all X variables is often used as an indicator of the severity of multicollinearity. A maximum VIF value in excess of 10 is often taken as an indication that multicollinearity may be unduly influencing the least squares estimates" (1990: 409). Furthermore, if no X variable is linearly related to other independent variables in the multiple regression model, the VIF value would be equal to one. The collinearity diagnostics were performed on all the multiple regression models (20 models) reported in Table 8, 11, and 15. Altogether, the 20 models consisted of 90 VIF values, one for each independent variable. The largest VIF value among

all the X variables was 2.81. Only 22 VIF values exceeded 2. The remaining 68 VIF values were close to 1. Since all VIF values were considerably less than 10 and very close to 1, the collinearity diagnostic results indicated that the multicollinearity problem was not severe. Therefore, no further remedial measures were warranted.

### POST HOC TESTS

Post hoc tests of the relationship between board composition and corporate performance, which were not dealt with or formally stated in Chapter 2, were performed and the results are briefly discussed. The detailed results are not reported due to the non-significant findings of these tests. Only a few plots are presented for illustrative purposes.

First, in order to investigate the relationships between board composition and firms' performance, numerous two-dimensional plots were created with each of the predictor variables against each of the criterion variables, including factor scores obtained from factor analyses. Figures 3-6 illustrate plots of the proportion of principal outsiders against the profit factor, dividend factor, alpha, and newalpha, respectively (Note: the letters, A, B, C etc., in the plots indicate the number of observations). These plots essentially represent the major tests of H1. Figures 7-9 representing the tests of H2 show the plots of the proportion of business outsiders against each of the three factors of business performance, scale, growth, and R&D factors. Figure 10 depicts a plot of the proportion of public outsiders against the CSP factor representing the major test of H3. These plots of data



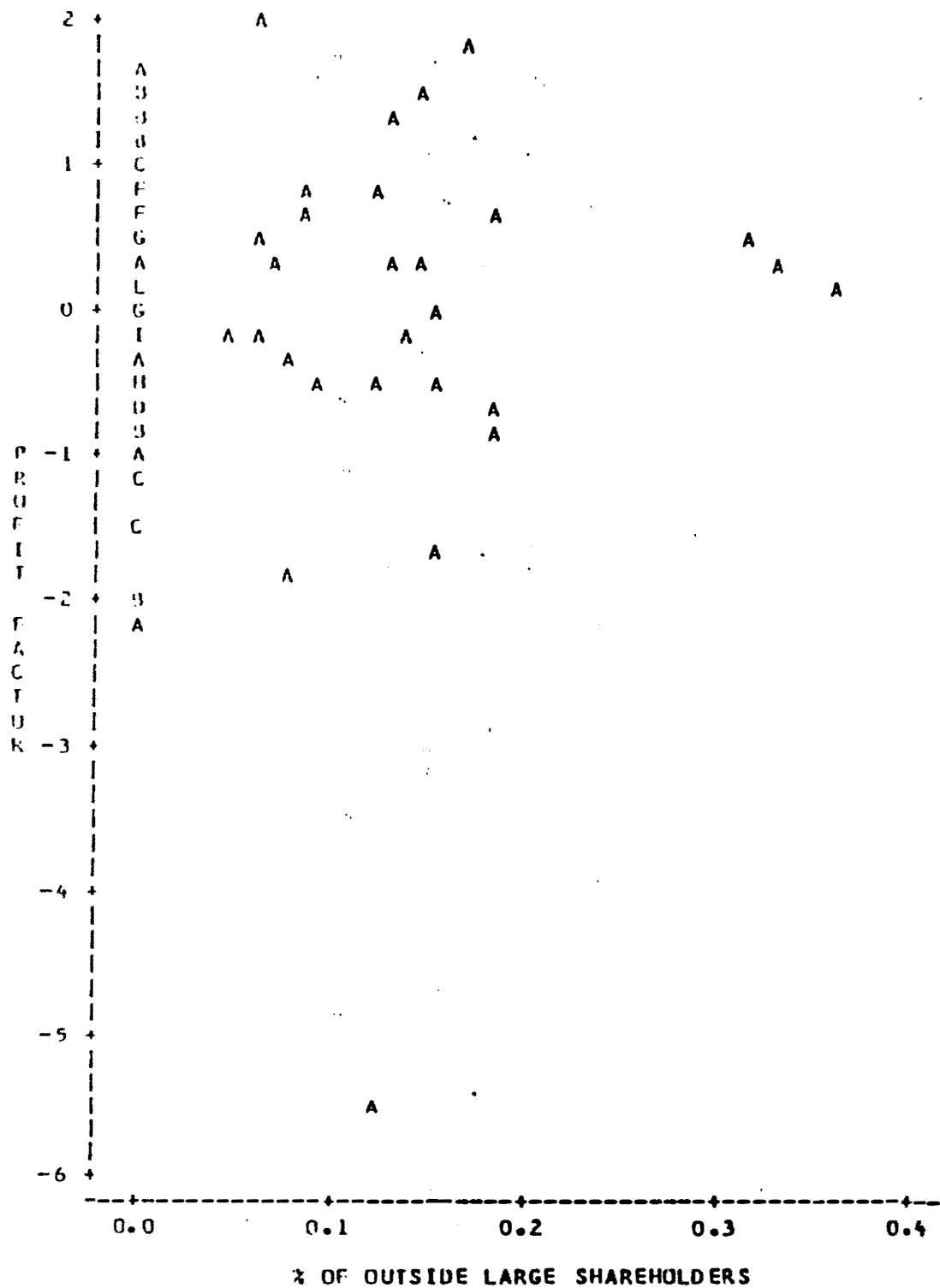


Figure 3. Plot of Profit \* Principal Outsiders

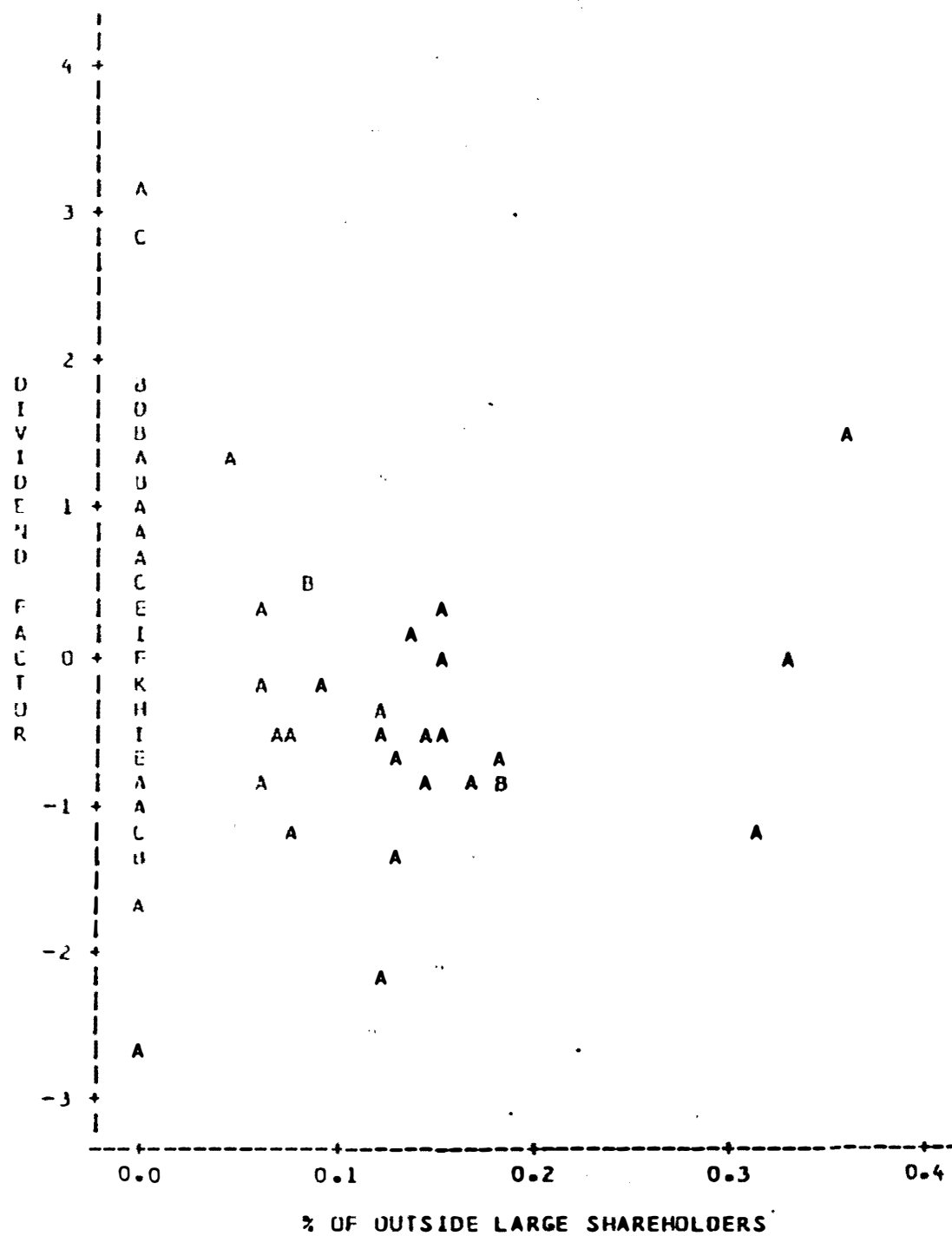


Figure 4. Plot of Dividend \* Principal Outsiders

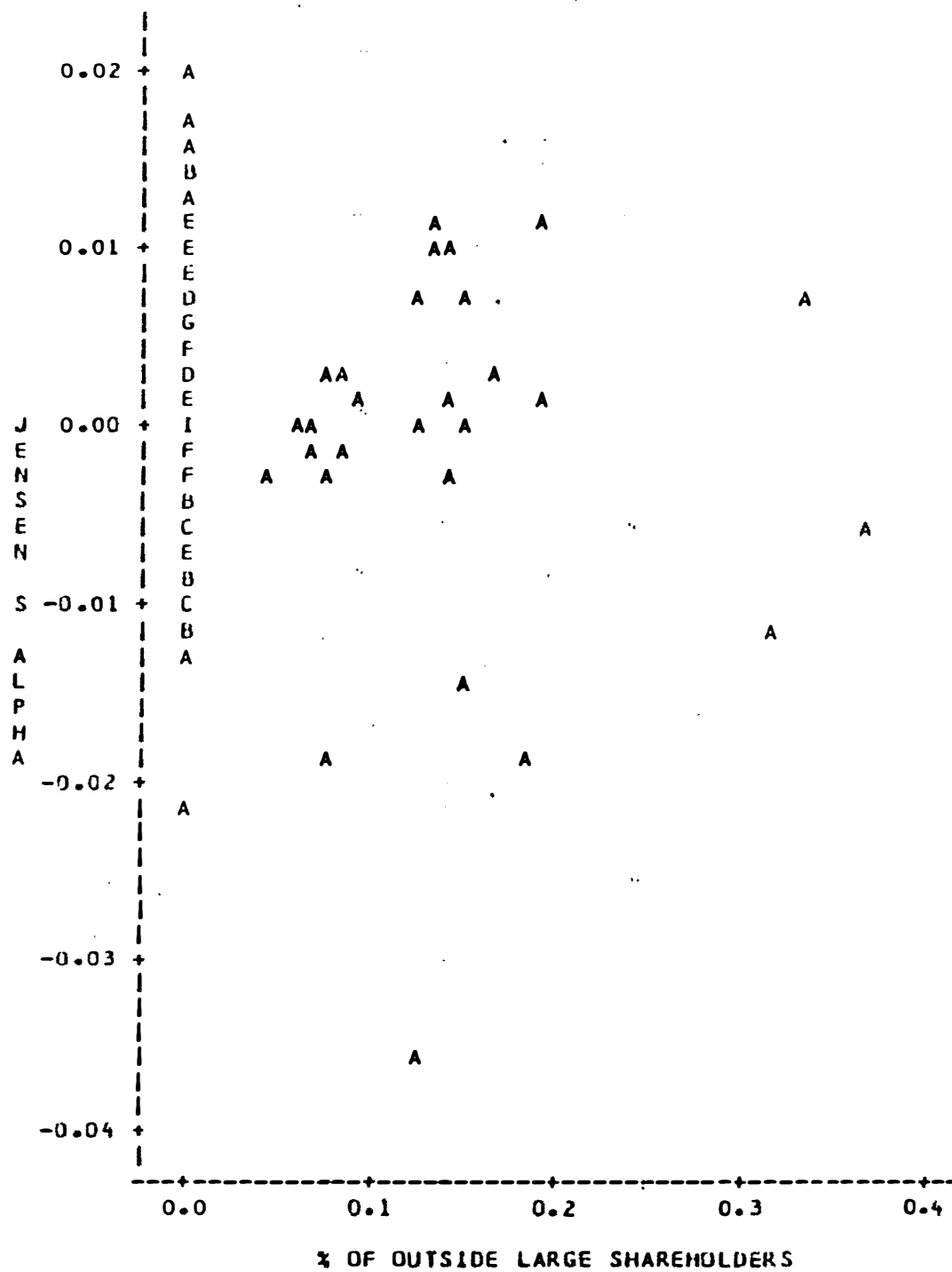


Figure 5. Plot of Alpha \* Principal Outsiders

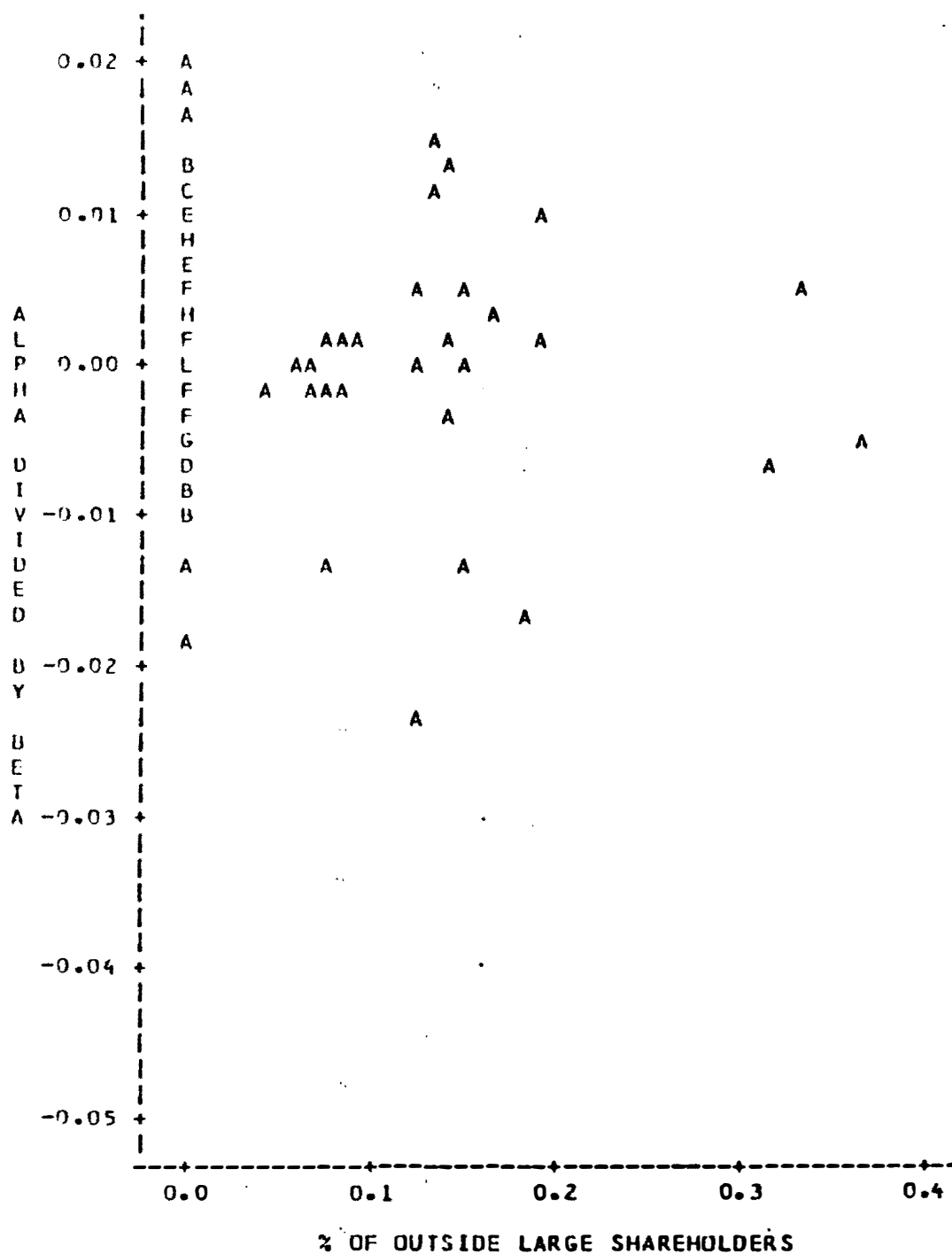


Figure 6. Plot of Newalpha \* Principal Outsiders

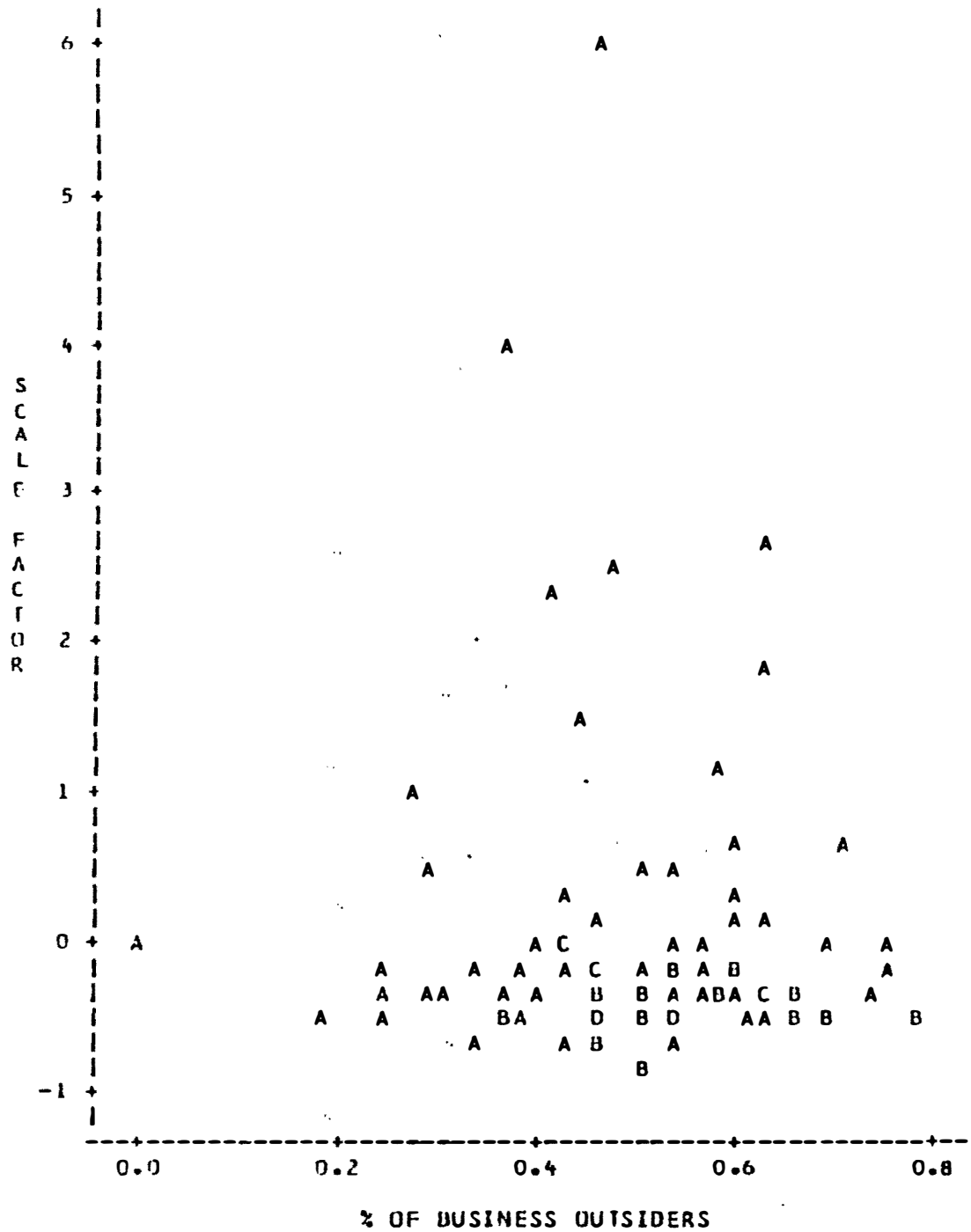


Figure 7. Plot of Scale \* Business Outsiders

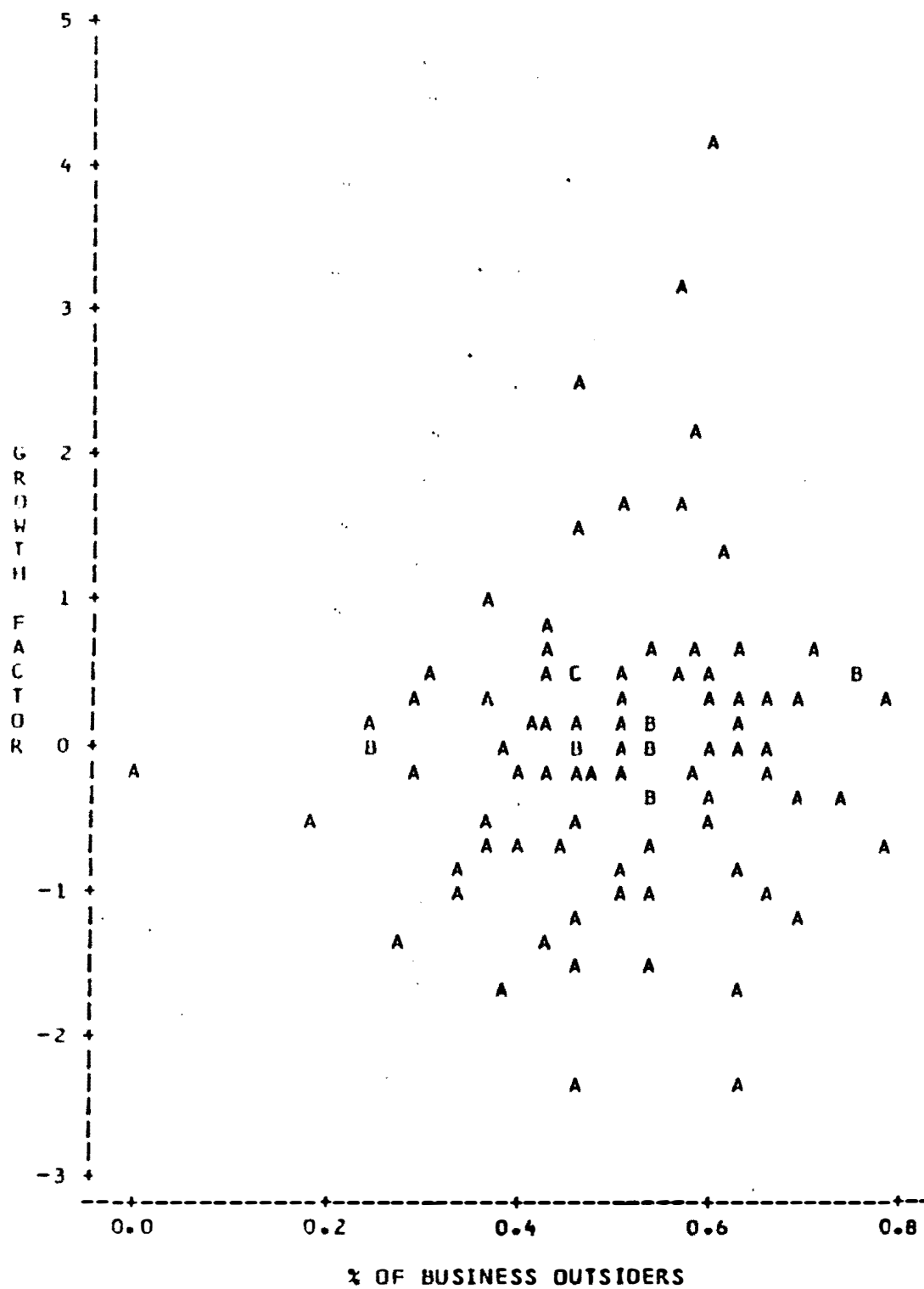


Figure 8. Plot of Growth \* Business Outsiders

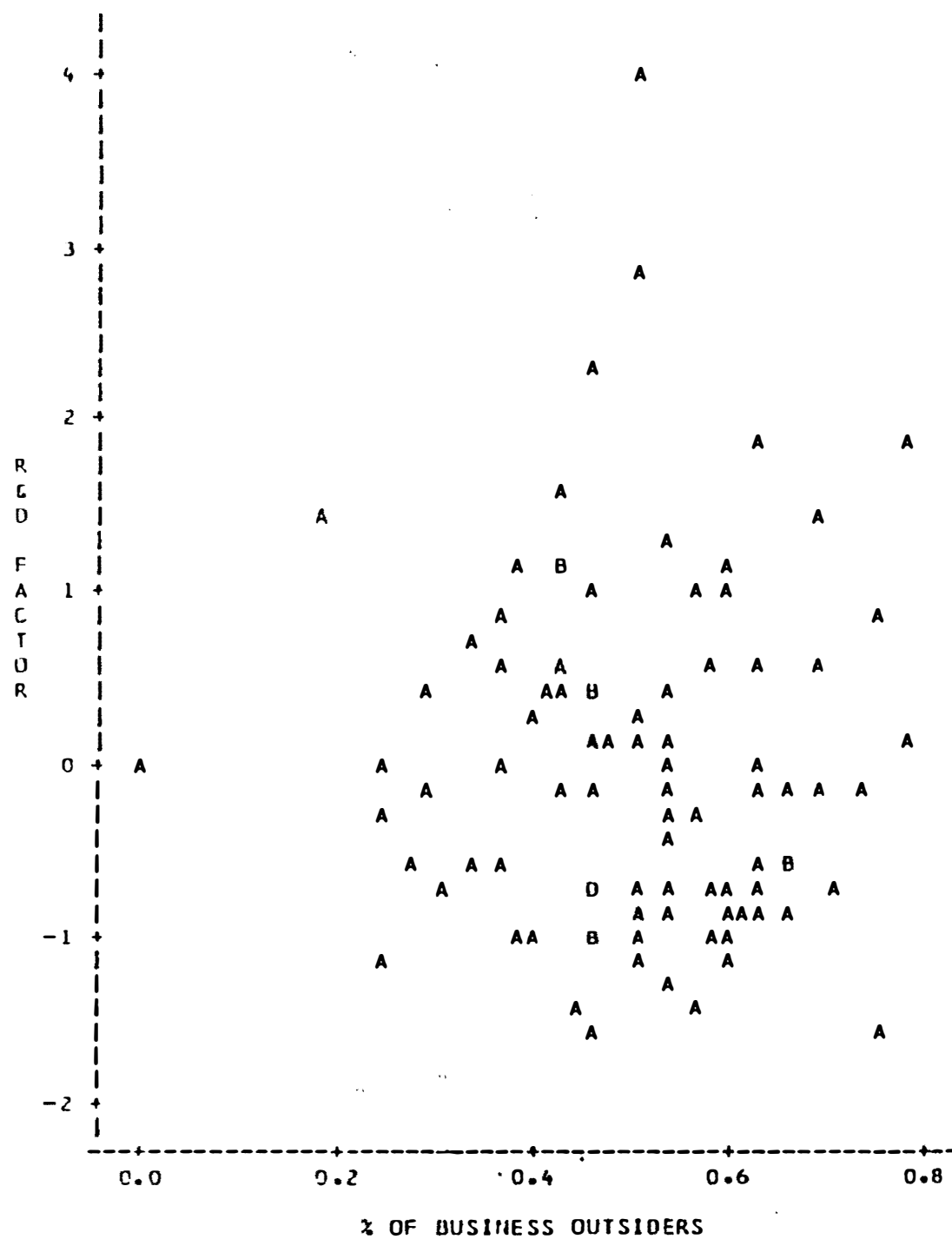


Figure 9. Plot of R&D \* Business Outsiders

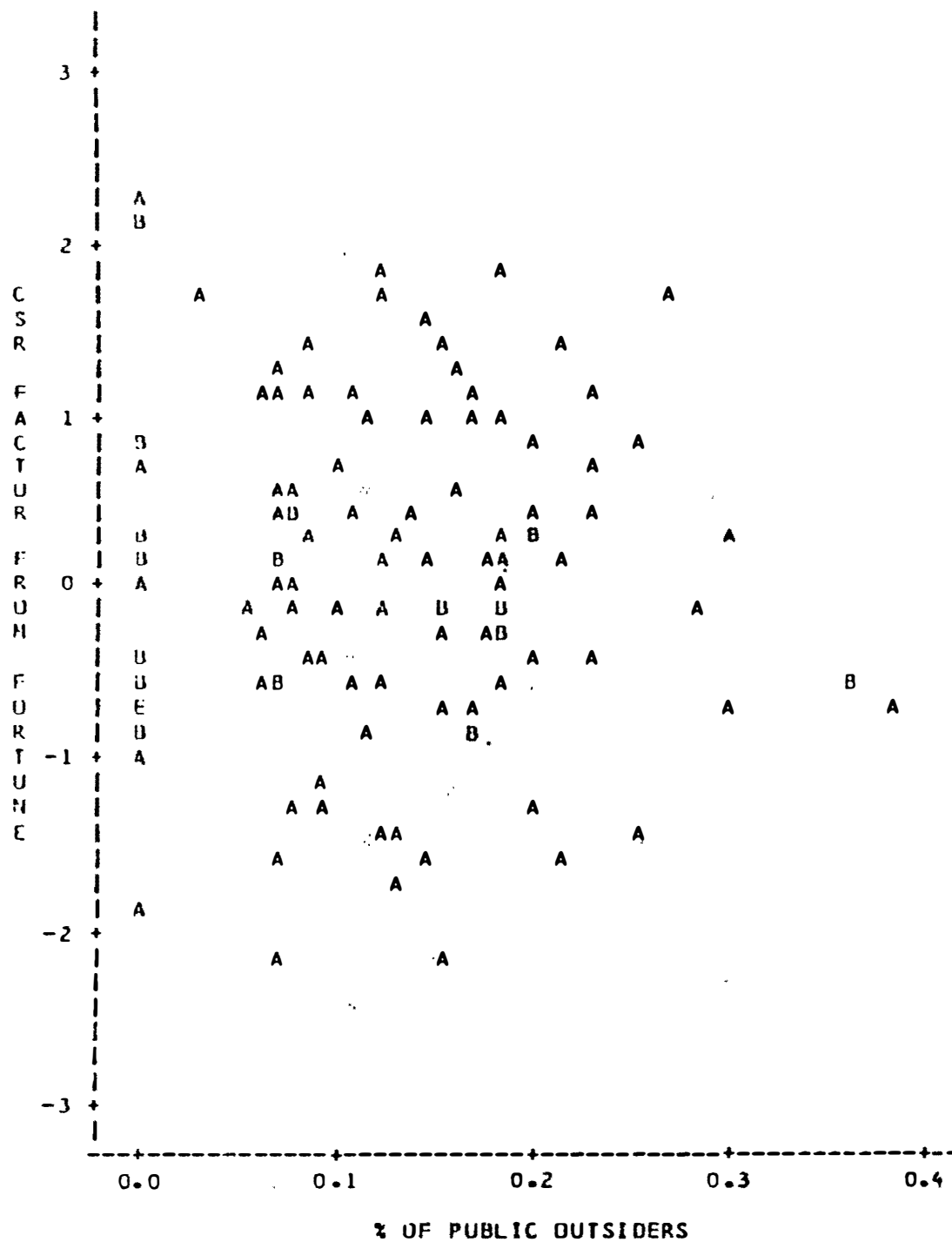


Figure 10. Plot of CSP \* Public Outsiders



in scatter diagrams do not show any specific patterns. In other words, the data appear to be random.

Recognizing the limitations of visual inspection on two-dimensional diagrams, additional steps were taken. Specifically, a number of polynomial regression models, including second-degree and third-degree polynomials, were designed to test the hypotheses. For example, a second-degree polynomial model indicates that the response variable,  $y$ , is a quadratic function of the independent variable,  $x$ . These types of nonlinear relationships were explored in many of the models presented in Table 8, 11, and 15. Unfortunately, none of the models was significant at the .1 level.

The nonlinear relationships were further explored through transformation of the variables. As Bhattacharyya and Johnson put it, in certain situations, "it may be possible to transform the variables  $x$  and/or  $y$  in such a way that the new relationship is close to being linear" (1977: 380). Thus, many new linear regression models could be formulated in terms of the transformed variables and appropriate tests could be performed based on the transformed data. An illustrative example of the steps involved was provided as follows:

- a) A nonlinear model  $y = ae^{bx}$
- b) Transformation  $y' = \log_e y, \quad x' = x$
- c) Transformed model  $y' = \alpha + \beta x', \quad \alpha = \log_e a, \quad \beta = b$

Following the mechanisms of the example, a number of transformations (e.g.,  $\log x$ ,  $1/x$ ,  $e^x$ , etc.) were experimented on both predictor and dependent variables. Then, similar hypotheses tests reported in Table 8, 11, and 15 were performed based on the transformed variables. Once

again, no promising or significant results were obtained from these tests.

Second, other post hoc tests were conducted by adding interaction terms into the original models. Interactions frequently occur in reality. Thus, it is important to recognize their potential presence. Theoretically, there are reasons to believe that the interactions among different types of directors may affect firms' performance. For example, we may suspect that firms with both inside and outside large shareholders on boards perform differently than firms with no such directors, particularly with respect to the welfare of stockholders. As argued in previous chapters, since the three types of outside directors have different motivations, self interests, and goals, the interactions among them may affect firms' performance. Several new variables (e.g., PRID\*INLARGE representing the interaction between the proportion of principal outsiders and the proportion of inside large shareholders) were thus created and introduced into some of the original models. With the exception of the expected improvement of the variance explained, no dramatic changes occurred. In other words, these models were not significant.

This line of thinking was further pursued through the use of multivariate analysis of variance (MANOVA). For instance, consistent with the first hypothesis, firms in the sample were divided into four subgroups based on the types of directors (insider vs outsider) and stock ownership (large shareholders or not). Group 1 had both inside and outside large shareholders on boards; group 2 had only principal outsiders; group 3 only inside large shareholders; and group 4 had no

large shareholders. A MANOVA was performed on this 2 by 2 factorial design to test for both main effects and interactions with the eight financial performance measures as dependent variables. Similarly, firms were also grouped based on the proportion of business and public outsiders, respectively. Two additional MANOVAs were conducted by using business and CSP measures as separate response variables. Contrary to expectations, none of the MANOVA results were significant.

Finally, a number of regression and canonical correlation analyses were performed by using the traditional classifications of boards of directors as predictor variables, the proportion of outside directors and the proportion of inside directors. Overall results seemed to suggest that there was no relationship between the proportion of outside directors or inside directors and firms' performance. These results are consistent with the findings of many previous studies reviewed in Chapter 2 (e.g., Chaganti, et al., 1985; Kesner, et al., 1987; Schmidt, 1975, 1977; Zahra & Stanton, 1988).

### SUMMARY

Contrary to expectations, none of the hypotheses were statistically supported. The overall results suggest that 1) there is no relationship between the proportion of principal outsiders, outside directors who are large shareholders, and firms' financial performance; 2) there is no relationship between the proportion of business outsiders, outside directors who are members of other business organizations and are not large shareholders of the focal organization, and firms' business performance; 3) there is no relationship between the

proportion of public outsiders, outside directors who are members of other nonbusiness organizations and are not large shareholders of the focal organization, and firms' social performance; and 4) there is no relationship between outside director composition and firms' performance. Further, post hoc testings also suggested that curvilinear relationships between types of outside directors and types of corporate performance were not present either.

The results of the study which failed to support the hypotheses may be interpreted using several theoretical and methodological explanations. In general, these explanations can be grouped into two broad categories. The first one is that the model is correct. In other words, there are relationships between types of outside directors and types of performance. However, flaws in the research may prevent us from finding any significant results to support the hypotheses. The other is that the model is incorrect. Since there are no relationships between types of outside directors and types of performance, the hypotheses cannot be confirmed. Thus, the nonsignificant results are the obvious answer. It should be pointed out that failure to reject the null hypotheses does not mean confirming the null hypotheses. Therefore, no definitive conclusion can be made by relying solely on the results of the study. The explanations under each scenario are discussed below.

A plausible theoretical explanation for this finding is the efficient managerial labor markets thesis. According to agency theorists (e.g., Demsetz, 1983; Fama, 1980; Fama & Jensen, 1983a; 1983b), the separation of ownership and control can be an efficient form

of economic organizations. In particular, capital and managerial labor markets establish parameters and constraints which govern the relationship between security holders and managers. Examples of managerial labor market mechanisms include boards of directors and competition from other firms which are constantly looking for competent managers. Since the sample used in this study consisted of larger, better, and more mature Fortune 500 firms, it is reasonable to believe that the boards of directors in these companies performed their duties very well as a group. Consequently, the small variation in terms of corporate performance measures does not reflect a difference in the relationship between board composition and firms' performance.

Although efforts were made to ensure adequate testing of the hypotheses, several methodological problems of the research design may have prevented the finding of significant results. The most serious problem is the nonrandom sample. The data collected based on the nonrandom sample is biased and nonrepresentative, which may reduce the probability of finding significant results. Since the sample consisted of not only the larger but also the better performing companies of the population as indicated in the descriptive statistics, this problem is particularly severe in this study. The small variation resulting from this procedure limits our ability to find significant results. Another explanation of the results may be due to the sample size. The results obtained from various tests clearly indicate that the effect size between types of outside directors and types of performance is very small. The sample size used in this study may still be too small to detect such relationship. Finally, the use of some performance measures

may also have limited our ability to detect significant results. For example, the Fortune's data may not adequately measure the firms' social performance construct, thus, preventing adequate testing of the third hypothesis. Similarly, the business performance variables may fail to fully measure the construct of "power", which is the ultimate goal of business outsiders under the perspective of resource dependence theory.

The second scenario suggests that there may be no direct relationship between types of outsiders and type of performance. In essence, one theoretical explanation is based on the assumption that outside directors may not efficiently and effectively perform their tasks. Researchers (e.g., Fama, 1980; Mace, 1971, 1972; Walsh & Seward, 1990) have argued that internal control mechanisms are not fully efficient. Since extensive review has been conducted in previous chapters, only a few explanations in terms of why there is no direct relationship between outsiders and firms' performance are offered here. For example, compared to the incumbent managers, outsiders usually lack independence and depend very much on the CEO who often controls the nomination of new board members and, thus, influence the board-management relationship. Moreover, outsiders' tasks in influencing firms' performance are very difficult due to time pressures, information asymmetry, and limited knowledge. Also, researchers (e.g., Herman, 1981; Palmieri, 1979; Vance, 1983) have asserted that the club-like atmosphere of boards is the greatest cause of directors' passivity and failure, which may explain why there is no relationship between outsiders and firms' performance.

An alternative theoretical explanation of the second scenario is provided based on the assumption that there may be an indirect relationship between outside director composition and corporate performance. For example, outside directors contribute indirectly to firms' performance through providing knowledge and expertise to the incumbent management or influencing the values, orientations, and education of the focal organization. As a result, the performance measures used in this study do not reflect the actual contributions of outside directors, thus, fail to find significant results. The next chapter presents the summary and conclusions of the study.

## CHAPTER 5

### SUMMARY AND CONCLUSIONS

This chapter begins with a summary of the study. A discussion of both theoretical and methodological contributions of the dissertation follows in the second section. The third section emphasizes the implications of the study. A discussion of the limitations of the study is the major focus of the fourth section. The last section includes suggestions for future research.

#### SUMMARY

This section includes a statement of the problem, hypotheses, methodology, and hypothesis tests and results.

##### Statement of the Problem

The purpose of this study was to address the following fundamental questions: Do outside board directors provide real benefits to firms' performance? If yes, as the literature of finance, organization theory, and strategic management suggests, then why haven't the empirical studies found any conclusive evidence of real benefits? And how can these real benefits be detected empirically?

In order to answer these general questions, a theoretical model, which would predict the relationship between outside director composition and corporate performance, was developed and tested. Specifically, the model raised the following research questions:



1. Does the proportion of principal outsiders (outside directors who are large shareholders) positively influence firms' financial performance?
2. Does the proportion of business outsiders (outside directors who are members of other business organizations) positively affect firms' business performance?
3. Does the proportion of public outsiders (outside directors who are members of other nonbusiness organizations) positively influence firms' social performance?
4. Do outside directors contribute to firms' performance?

## Hypotheses

Based on the literature review, the model of outside director composition-corporate performance was developed. Four hypotheses were derived from the model to address the research questions. According to the central theme of agency theory, the first hypothesis stated that there would be a positive association between the proportion of principal outsiders, outside directors who are large shareholders of the focal organization, and firms' financial performance. Based on the major arguments of resource dependence theory, the second hypothesis argued that there would be a positive relationship between the proportion of business outsiders, outside directors who are members of other business organizations and are not large shareholders of the focal organization, and firms' business performance. Following the assumptions of stakeholder theory, the third hypothesis maintained that there would be a positive association between the proportion of public

outsiders, outside directors who are members of other non-business organizations and are not large shareholders of the focal organization, and firms' social performance. Finally, based on the arguments of multiple theories, agency theory, resource dependence theory, and stakeholder theory, the fourth hypothesis suggested that there would be positive relationship between outside director composition and firms' performance.

## Methodology

The population, sample, and measures utilized in this study are summarized in this discussion. The population of the study was Fortune 500 companies. A nonrandom sample consisted of 96 to 123 companies (depending on the variables used). Each company in the sample had complete five-year data (1984-1988) in the following sources: Fortune's reputation survey, Compustat tapes, and CRSP tapes. In addition, each firm had one year data (1986) in proxy statements filed with the SEC. The major predictor variables consisted of three types of outside directors, principal, business, and public outsiders, and some control and moderating variables such as proportion of inside large shareholders and ownership by different types of directors. This study suggested three classes of corporate performance, financial, business, and social performance. Each performance construct was in turn measured by multiple indices. Furthermore, in order to control for industry and time effects, most of the dependent variables were calculated based on five-year data and were normalized with respect to the means and standard deviations of their industries defined by the two-digit SIC code.

The average board size of the sample was 14 directors with a range of 5 to 30. The proportion of principal, business, and public outside directors were 3.75%, 50.07%, and 11.98%, respectively. On average, the boards were composed of 66 percent outside directors. With respect to directors' stock ownership, outside directors as a group owned about 2.2 percent of the total common shares outstanding, while inside directors owned about 4.1 percent, which is almost twice the outsiders' stock ownership. The boards of directors as a whole owned about 6.3 percent of the companies' stocks.

The firms in the sample represented 23 industries defined by the two-digit SIC code. No single industry group dominated the sample. The sampled companies were among the largest American firms and ranged in size from sales of \$748 million to \$121,085 million. The average sales were \$11,677 million. The firms had average assets of \$15,579 million, ranging from \$534 million to \$200,348 million, and averaged 74,660 employees, varying from 5,500 to 766,000.

### **Hypothesis Tests and Results**

Several statistical techniques, factor analysis, simple and multiple regressions, and canonical correlations, were employed selectively to test the four hypotheses using various models. First, a number of factor analyses were performed on the three classes of corporate performance measures. Factor scores were computed and used separately in the subsequent regression analyses as criterion variables. Second, several simple regression analyses were conducted to directly test H1-H3. These hypotheses were further tested by controlling other

relevant variables in various multiple regression analyses. Third, recognizing the limitations of factor analysis, canonical correlation analyses were also performed to test the hypotheses or confirm the regression results. Finally, the fourth hypothesis was tested by using canonical correlation with three types of outside directors as the predictor set and 24 performance measures as the criterion set.

In addition to the tests of the four hypotheses, some post hoc tests of the relationship between board composition and corporate performance, which were not dealt with or formally stated in Chapter 2, were also performed. First, the nonlinear relationships between board composition and firms' performance were investigated by inspecting two-dimensional plots, designing and testing a number of both second and third degree polynomial regression models, and constructing and testing a series of new regression models based on transformed variables. Second, another set of post hoc tests were conducted by adding interaction terms into the original models. This line of thinking was further pursued by dividing the firms into groups based on several criteria. Then, several MANOVAs were performed to test both main effects and interactions. Finally, some regression and canonical correlation analyses were performed by using traditional classifications of boards of directors as predictor variables.

Contrary to expectations, none of the hypotheses were statistically confirmed. The overall results suggest that 1) there is no relationship the proportion of principal outsiders, outside directors who are large shareholders, and firms' financial performance; 2) there is no relationship between the proportion of business outsiders, outside

directors who are members of other business organizations and are not large shareholders of the focal organization, and firms' business performance; 3) there is no relationship between the proportion of public outsiders, outside directors who are members of other nonbusiness organizations and are not large shareholders of the focal organization, and firms' social performance; and 4) there is no relationship between outside director composition and firms' performance. Further, based on various post hoc tests, no possible non-linear relationships between types of outside directors and types of corporate performance were found.

Finally, possible theoretical and methodological explanations of the results which failed to support the hypotheses were explored. For example, the efficient managerial market thesis may explain the findings of the study. The results may also be largely due to methodological problems, such as nonrandom sample, small sample size, and improper performance measures. Also, the non-significant findings of the relationship between types of outside directors and types of firms' performance may have resulted from inefficient internal control mechanisms and indirect linkages between outside directors and corporate performance.

### CONTRIBUTIONS

Several theoretical and methodological contributions were made in this study. First, past researchers failed to use multiple theories in their studies, thus, ignored some of the significant differences among often used theories. For example, agency theory differs sharply from

resource dependence theory in its assumptions about the incumbent management and its expectations about boards of directors' roles, goals, and responsibilities. This study integrated three different theories, agency theory, resource dependence theory, and stakeholder theory from the fields of finance, organization theory, and strategic management, respectively, into a comprehensive analysis and provided unique opportunities to explore the complex relationships between boards of directors and corporate performance.

Second, most board researchers assumed that outside directors have the same roles, goals, and motivations. With a few exceptions (e.g., Baysinger & Butler, 1985; Kosnik, 1987), researchers used the traditional inside-outside classification of boards of directors. Past researchers paid attention to the composition of boards of directors, but seldom considered the composition of outside directors. Using a multiple theory approach and simultaneously recognizing the similarities and differences among these theories, this study built upon and went beyond previous work to suggest a novel framework of how outside directors affect corporate performance. The conceptual framework was presented at the 1990 Southern Management Meeting (Wang & Dewhirst, 1990) and received strong support from the participants. Specifically, this framework, for the first time in the study of boards, classified outside directors into three distinct types, principal outsiders, outside directors who are large shareholders of the focal organization, business outsiders, outside directors who are members of other business organizations and are not large shareholders of the focal organization, and public outsiders, outside directors who are members of other non-

business organizations and are not large shareholders of the focal organization. The new classification of outside directors allowed further exploration of the relationships between board composition and corporate performance.

Third, measures of firm performance in some previous studies were inappropriate, narrow, and controversial. These measures did not systematically reflect the contributions of different types of outside directors suggested by the three theories. Furthermore, accounting based measures dominated board research, market based measures were seldom considered, and CSP measures were rarely used to evaluate directors' performance. Based on the theories used, this study developed three classes of corporate performance measures, financial performance, business performance, and corporate social performance, and theorized the linkages between each type of outside director and each type of corporate performance. Each type of performance was measured by multiple indices obtained from such sources as COMPUSTAT tapes, CRSP tapes, and Fortune's corporate reputation survey. To the knowledge of the author, this study employed the most comprehensive and systematic measures of corporate performance in the board composition research.

Finally, the lack of control of time and industry effects and the overemphasis on univariate analytical approaches were other major limitations of some past studies. This dissertation explicitly took into account the time and industry effects which might influence firms' performance and thus, obscure the true relationship between outside directors and corporate performance. Most of the performance measures were calculated based on five-year data and normalized with respect to

their industry means and standard deviations. Furthermore, all the hypotheses testings were performed by using several multivariate statistical techniques. Since all the criterion variables used in the regression analyses were obtained from factor analyses, even the simple regression analyses could be viewed as multivariate in nature.

In general, this study not only overcomes some limitations of previous research, but also advances the study of corporate governance to a higher level. Since this study investigated a timely and important issue which is directly related to the fundamental strength and long-term vitality of private enterprise in the United States, the empirical results obtained from this comprehensive research have significant implications to researchers, practitioners, and policy makers. These implications are discussed in the next section.

### IMPLICATIONS

It should be emphasized that caution must be exercised in generalizing the results of the study to the population due to the nonrandom sample. Furthermore, all the statistical inferences and implications should be made within the scope of the research. For example, the relationship between public outsiders and firms' social performance is discussed only with respect to the performance measures used in the study. Finally, the following implications are presented based on one of two alternative assumptions: 1) there is a relationship between outside director composition and firms' performance and 2) there is no relationship between outside director composition and firms' performance.



To researchers, this study has a number of significant implications. This dissertation examined the outside director composition-firm performance relationship through an integrated perspective. Simultaneously using agency theory, resource dependency theory, and stakeholder theory gives a more complete view than previous research has offered. Other scholars studying the relationship may benefit by taking an integrated perspective through reliance on multiple theories.

To adequately and appropriately test the model, the results imply that researchers should use a random sample, a large sample size, valid measures of performance constructs, and multivariate statistical techniques. It should be recognized that although the above recommended methodological improvement increases the likelihood of finding significant results, however, the obtained models which can only explain one percent or less of the variance will be theoretically and practically trivial. Given the comprehensive nature of the study, the results strongly suggest that researchers who are interested in studying boards should focus on variables other than board composition and search for more meaningful criteria to classify directors in future board effective studies.

Furthermore, the model proposed a direct linkage between outside director composition and firms' performance. However, the relationship between outside directors and firms' performance may be indirect and multidimensional. For example, outside director composition may influence the characteristics of the board, such as values, orientations, and education (Zahra & Pearce, 1989). It may also affect

the structure or committees of the board (Kesner, 1988). Further, outside director composition, which can be viewed as a moderating variable, contributes to firms' performance through providing knowledge and expertise to the CEOs. In addition, this relationship may depend on several internal and external contingencies. For example, examination of the linkage should be undertaken by explicitly considering such variables as industry type, legal requirements, product life cycle, and CEO leadership style. Consequently, corporate governance researchers need to focus on these indirect relationship between boards of directors and corporate performance.

To practitioners, the results of this study may be viewed as either reassuring or alarming. On the one hand, the results imply that the managerial labor markets are efficient. As agency theorists suggested, the separation of ownership and control can be an efficient form of economic organizations (e.g., Demsetz, 1983; Fama, 1980; Fama & Jensen, 1983a; 1983b). In particular, the managerial labor markets establish parameters and constraints which govern the relationship between stockholders and managers. Since the sample used in this study consisted of larger, better, and more mature Fortune 500 firms, boards of directors in these firms, pressured by both external and internal forces such as lawsuits from shareholders, performed their duties very well as a group.

On the other hand, the results of this study may be alarming. The results that did not confirm the direct relationship between outside director composition and firms' bottom line performance suggest that the performance of outside directors is below the expectation of the general

public, particularly those who advocate outsider dominant boards and believe that more outsiders in boards would lead to better firms' performance. Despite many decades of boardroom reform, corporate boards are still being criticized. For example, U.S. corporate boards "include numerous first-rate people doing what amounts to a second-rate job" (Geneen, 1984: 258), their roles have "little relationship to what they in fact do and do not do in actual place" (Mace, 1972: 37), "the board of directors serves as a sounding board ...the decision is not made by the board" (Mace, 1971: 13), and "U.S. boards grew fat, dumb, and comfortable on a diet of post war stability and prosperity (Johnson, 1990: 46).

The results, consistent with evidence from prior research (e.g., Cochran, et al., 1985; Schmidt, 1975, 1977; Vance, 1955, 1964; Zahra & Stanton, 1988), strongly suggest that boardroom reform should not stop at merely recommending an increase in the number of outside directors. Instead, reform measures should address a variety of impediments which prevent outside directors' involvement in the operations of firms. For instance, in order to fulfill their duties, outside directors should spend more time acquiring knowledge and expertise about the focal organization, should break the club-like atmosphere in the boardroom, should openly assert their opinions, should be willing to criticize the CEOs on behalf of their constituents, and should be more actively involved in firms' performance during normal times. Recognizing the lack of power of outside directors in the boardroom, more legal interventions are needed to enhance the independence of boards, which are recommended to policy makers as follows.

To policy makers, the results of this study challenge the outsider dominance perspective and question the validity of government rules and regulations which have required the presence of outsiders on corporate boards. The law requires that all publicly held companies be governed by boards of directors who have fiduciary responsibilities to stockholders; however, regulations have remained ambiguous. There are no precise guidelines in terms of what directors should or should not do. It is argued that government regulatory agencies, such as the SEC, NYSE, and ASE, may be aiming at the wrong target by imposing outsider requirements. Merely increasing the number of outside directors on a board does not itself make the board become independent, which is the rationale behind the outside dominance perspective. On the contrary, more important legal measures are needed in order to enhance the independence of American boards and carry out boardroom reform.

In order to ensure the true independence of boards and encourage the active involvement of outside directors, several specific changes are recommended. Many researchers (e.g., Herman, 1981; Vance, 1983) have argued that the lack of independence, passivity, and failure of boards is largely due to the dominance of CEOs. Since the CEO is part of the problem of corporate boards, this author concurs with others (Geneen, 1984; Palmieri, 1979) to suggest the separation of the chairman and CEO. Currently, the majority of CEOs serve simultaneously as board chairmen. This arrangement is detrimental to the effective functioning of boards because CEOs represent the incumbent management while board chairmen's role is to question and judge management. Therefore, these two conflicting roles cannot be played by a single individual.

The results of the study also seem to suggest that outside directors are not involved in the operations of the focal organization for reasons other than CEO dominance. As an example, outside directors are typically active executives of other companies with other time consuming commitments. In order to fulfill their duties, directors need an adequate amount of time. Therefore, should legal restrictions be imposed to limit the number of boards on which an active outsider can serve and should a minimum amount of time an outside director spends on the board be set? In sum, boardroom reform and regulatory measures must consider more than the number of outsiders on the board. Obviously, government rules and regulations are not the only solution to boardroom reform; however, their importance should be balanced with other considerations.

#### LIMITATIONS

There are several theoretical and methodological limitations of the study which might have prevented the researcher from finding significant results to support the hypotheses. First, the model failed to take into account the multiple goals and motivations of outside directors. This problem is further complicated when outside directors were classified based exclusively on directors' stock ownership and principal occupation. For example, in collecting data from proxy statements, this author identified an outside director who was a professor at an university (principal occupation), operated his own private consulting company, and owned a substantial amount of stock of the focal organization. Since this particular director owned more than

.2 percent of the stock of the organization, which was the cutoff point for large shareholders, he was classified as a principal outsider. However, it is conceivable that this director may exhibit behavior representing all three types of outsiders, either simultaneously or selectively depending on the circumstances. This example illustrates that the scheme used to classify directors in this study was oversimplified. Outside directors' principal occupation and stock ownership do not adequately reflect their true motivations, self interests, behaviors, and goals. Since secondary data obtained from proxy statements may never adequately describe the true behavior of outside directors, richer schemes based on primary data sources are needed to correctly classify outside directors and adequately test the model.

Second, the selection of Fortune 500 companies as the population is another limitation of the study. Although there are several advantages of using this population such as the firms' importance to the national economy, suitability for applying these three theories, and relative ease of data collection, the exclusive attention to this group of companies ignores the contributions of boards of directors in other types of firms (e.g., small, medium, and private firms). Thus, the results obtained in this study lack external validity beyond large publicly held firms. In addition, the nonrandom sample, constrained by the use of Fortune's data, further restricts the generalization of the findings even to this population. Also, since the sample consists of better and larger firms within the Fortune 500 companies, this

procedure may result in smaller variances, which in turn inhibits the likelihood of findings of any significant results.

Finally, performance is at the heart of management. Unfortunately, academic researchers do not agree on appropriate measures of organizational performance (e.g., Kanter & Brinkerhoff, 1981; Venkatraman & Ramanujam, 1986). Although efforts were made in this study to ensure the comprehensive, systematic, and accurate measure of firms' performance, some measurement problems still exist. For example, one noticeable problem is in the area of corporate social performance. Few areas within management studies have been more frustrated by measurement problems than CSP. Given the narrow focus of previous CSP measures such as social disclosure, Council on Economic Priorities' (CEP) pollution rankings, and Moskowitz's (1972) reputation scale (see Ullmann, 1985, for a comprehensive review), this author, following others (e.g., Fombrun & Shanley, 1990; McGuire, Sundgren, & Schneeweis, 1988) thought that Fortune's data might be the long awaited measure of CSP. However, the unidimensionality of the seemingly different eight attributes (e.g., innovativeness, financial soundness, and responsibility to community and environment) casts doubts on the validity of using Fortune's data as measures of CSP. Moreover, further analyses reveal that there are strong correlations between the factor score extracted from Fortune's data and such performance measures as return on assets, profit margin, Jensen's alpha, and earnings per share, indicating that Fortune's survey might be another measure of firms' financial performance.

## FUTURE RESEARCH

Although the results obtained in this study did not confirm the hypotheses, they do shed light on the directions for future research. The starting point for future research involves replicating the study by making several methodological changes. First, the selection of the population should be extended to other companies besides Fortune 500 firms. As mentioned above, the exclusive focus on Fortune 500 companies ignores the contributions of boards of directors in other types of firms, thus, hinders the external validity of research results. Second, random sampling is urgently needed to adequately test the model. A sample drawn at random is unbiased and representative, thus, allowing us to make reliable statistical inferences. Although researchers often use nonrandom samples, especially in research involving multiple large data bases (e.g., Cook & Campbell, 1979), effort should be made to ensure the randomness of the sample. Finally, large samples should be used to test the model. The results of this study imply that if there is a linear relationship between outside director composition and corporate performance, the relationship is very 'weak.' Statistically speaking, the effect size is very small. Therefore, a larger sample will increase the probability of finding significant results. It should be pointed out that methodological changes may increase the likelihood of finding significant results, however, the obtained models which can only vary small percent of the variance will be theoretically and practically trivial.

Another path for future research efforts is to improve the theoretical model proposed in this study. Specifically, it is suggested



that a richer scheme of classifying outside directors should be developed. The results of this study indicate that the existing mechanism of classifying outside directors, or boards of directors in general, based on directors' principal occupation and stock ownership alone, is inadequate to capture the complex and dynamic nature of the relationship between board composition and corporate performance. For example, in order to understand the true motivations of boards of directors and the relationship between board composition and firms' performance, future researchers should conduct more qualitative research in this area. Field studies, such as observing how boards work and interviewing boards of directors, enhance our understanding, thus, help the development of normative board models or theories.

Still another potential avenue to test the model is to focus on special issues which boards of directors are actively involved in and where their contributions are likely to manifest. For example, many researchers believe that boards of directors, particularly outside directors, are very active in crisis situations such as an unfriendly takeover, a major lawsuit, poor financial performance, and sudden illness or death of the CEO. As one director vividly described it, "Directors are like firemen. They sit around doing very little until there's a fire alarm and then they spring into action" (Lorsch & MacIver, 1989: 97). Consequently, event studies are needed to thoroughly understand and identify the significant roles played by different types of outside directors during a crisis.

Finally, corporate performance measures remain to be improved in future research. Particular attention should be paid to the measurement

of CSP. To date, there is no good universal measure of this construct, even though CSP has been on the agenda of many corporations. The results of this study indicate that the single factor extracted from Fortune's data is strongly linked to financial performance and is not a long awaited measure of CSP. Researchers should use their creativity to develop new CSP measures.

In conclusion, boards of directors are a valuable instrument of corporate governance. Directors' roles are becoming more and more important as companies enter the 1990s. The study of corporate boards will continue to be a promising research area. The model of outside director composition-corporate performance intends to overcome some limitations of past research and suggests new avenues for further meaningful studies. The true purpose of this study is to cast a brick to attract jade, an old chinese saying, meaning that the dissertation offers a few commonplace remarks by way of introduction so that others may come up with valuable options.

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## APPENDIX

## Power Analysis

$$L = \frac{R^2}{1 - R^2} * (N - P - 1)$$

Where:

L = the noncentrality parameter

$R^2$  = the proportion of variance in the dependent variable accounted for by all the independent variables

N = total sample size

P = number of independent variables

Example:

Let:

$$L = 10.90$$

$$R^2 = .15$$

$$P = 3$$

Thus:

$$10.90 = \frac{.15}{1 - .15} * (N - 3 - 1)$$

Solve for N:    N = 66

Source:

Cohen, J. 1988. Statistical power analysis for the behavioral sciences (2nd ed). New Jersey: Lawrence Erlbaum Associations, Publishers.

### VITA

Jia Wang was born in Shanghai, The Peoples' Republic of China on January 17, 1954. He graduated with a diploma in Radio Chemistry from the Fu Dan University in January 1980. He spent the next five years in the Planning Department of Shanghai Science and Technology Committee, where he was promoted as the division chief. As a recipient of a scholarship awarded by the Ministry of Education of China, he attended The California State University, Fresno beginning January 1986. After receiving a Master of Business Administration degree in 1988, Mr. Wang entered the doctoral program at The University of Tennessee, Knoxville in August 1988. In May 1991 he received the Doctor of Philosophy degree with a major in Business Administration (Concentration: Strategic Management).

While a doctoral candidate, he performed well in all his classes, passed the major comprehensive examination with honor, taught seven undergraduate business policy classes, worked as a graduate research assistant, presented papers at both national and regional management meetings, and submitted articles to several journals, which have been accepted or are currently under review. The author is a member of Phi Kappa Phi and the Academy of Management. Mr. Wang will return to California State University, Fresno to teach beginning January 1991.