Corporate reputation and strategic performance.

CORPORATE REPUTATION AND STRATEGIC PERFORMANCE

A Dissertation Presented

By

Bradford J. Knipes

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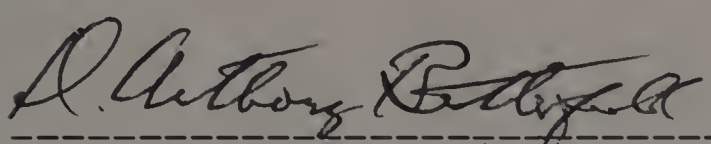
Approved as to style and content by:

Thomas Schneeweis, Chairperson of Committee



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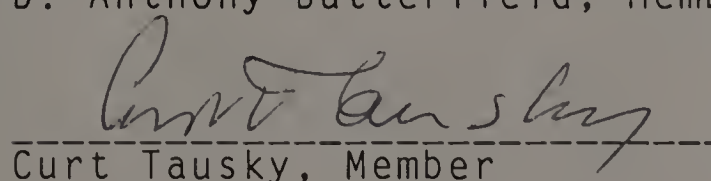

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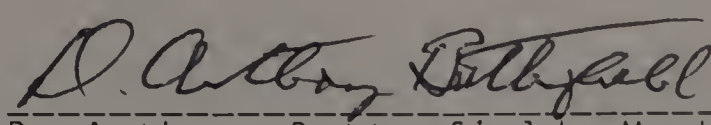

D. Anthony Butterfield, Member
Director of the Doctoral Program
School of Management

This work is dedicated with love to my family: to my wife, Rosanne; to our children, Marlowe, Alaine, and Harlan; and to my father and mother. Without their love and sacrifice it would not have been possible.

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ABSTRACT

CORPORATE REPUTATION AND STRATEGIC PERFORMANCE

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BRADFORD J. KNIPES, B.B.A., UNIVERSITY OF MASSACHUSETTS
Ph.D., UNIVERSITY OF MASSACHUSETTS

Directed by: Professor Thomas Schneeweis

The objective of this study is to investigate relationships among various dimensions of corporate reputation and strategic performance.

Strategic performance may be considered to be the relationship of the whole organization to its environment. The literature on strategic management has recently focused on the use of finance theory and measures of risk in addition to traditional accounting measures of performance. The disciplines of management, economics, psychology, and sociology all suggest relationships between reputation and performance. This study examines possible relationships between corporate reputation and strategic performance. The reputation

data is from **Fortune**'s annual survey of corporate reputations from 1982 to 1984. The sample consists of the 98 firms that were surveyed in all three years. Performance and risk data for the same firms are from the **Compustat** data base for the years 1977 to 1984. The sample was divided into two equal groups of 49 firms each, so that results for one group could be checked by comparison to results for the other. The two groups were matched for equal representation of industries and for overall reputation.

The results show that reputation is related to certain measures of strategic performance, especially return on assets. Other accounting and market measures of performance and risk generally are not related to one another or to reputation. In general, reputation is not related to total stock return, but change in perceived quality of management is strongly related to total stock return. Change in quality of management is also related to prior quality of management.

The conclusion is that reputation is a major aspect of performance. The **Fortune** survey data may be regarded as a valuable predictor of future return on assets. The relationship of change in perceived quality of management to total stock return merits further study.

"Je tiens impossible de connaître les parties sans connaître le tout, non plus que de connaître le tout sans connaître particulièrement les parties."

"I find it as impossible to know the parts without knowing the whole, as to know the whole without specifically knowing the parts."
Blaise Pascal (1623-1662), Pensèes, Chapter I

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INTRODUCTION

The objective of this dissertation is to investigate the relationships among various dimensions of corporate reputation and strategic performance. In this chapter, the terms reputation and performance are defined, the importance of the relationship between reputation and performance is examined, and the literature review, hypotheses, data, and methodologies to be employed are briefly described.

Definitions of Reputation and Performance

The concept of reputation has been variously defined. Two narrow views of reputation lead to a more general view appropriate to the present study. Shapiro (1983:659) defined reputation primarily in terms of product quality, as "an asset...the goodwill value of the firm's brand name or loyal customer patronage. A firm has a good reputation if consumers believe its products to be of high quality." Earlier, Shapiro (1982:21) stated "...each consumer has some expectations regarding product quality. These expectations constitute the firm's reputation..." But reputation is not limited to

product quality. The dictionary defines reputation as "The general estimation in which a person is held by the public (The American Heritage Dictionary, 1985: 1050)." But reputation is not limited to persons. For the present study, corporate reputation is defined as the general estimation in which a firm is held by the public, including estimations of more specific attributes such as management or product quality. Corporate reputation will be operationally defined as results of the **Fortune** surveys of corporate reputation.

Performance is such a fundamental concept that its general definition is usually left implicit and performance related definitions confined to particular approaches or measures (e.g. Chakravarthy, 1986; McGuire, Hill, & Schneeweis, 1986). The dictionary defines performance as "the way in which someone or something functions (The American Heritage Dictionary, 1985: 922). For the present study, corporate performance is defined as the results of a firm's operation. Corporate performance is operationally defined as certain variables obtained from COMPUSTAT[1] including total stock return and return on assets.

Importance of the Study

The relation of reputation to firm performance is important in many ways. Of primary importance is the influence reputation may have on performance.

Modern corporate stakeholder theory suggests that reputation influences performance because the price stakeholders will pay for implicit claims depends on their expectations of future payouts (Cornell and Shapiro, 1986: 12). Implicit claims are unwritten, because they are too nebulous and contingent to reduce to writing at a reasonable cost. An example of an implicit claim is the promise of continuing service to customers. Implicit claims are sensitive to reputation because they are uncertain. By contrast, explicit claims are contractual obligations, like product warranties. It is easier for a firm to default on implicit claims, but they may see honoring them as an investment in reputation.

In the same analysis, Cornell and Shapiro consider the distinction between investor and non-investor stakeholders in the influence of reputation on performance. In explaining the response of stock prices to announcements such as earnings and dividends, the finance literature has ignored the role of non-investor stakeholders. Non-investor stakeholders include customers, suppliers, providers of complementary services

and products, distributors, and employees. "...the response of stock prices to announcements should reflect investors' assessments of the reaction of other stakeholders to the information (Cornell and Shapiro, 1986: 15). If a firm's reputation suffers, non-investor stakeholders may lower the value they place on a firm's implicit claims, or attempt to transfer implicit agreement into more costly explicit agreement, adversely affecting the firm's cash flow.

To the degree that a strong reputation permits a firm to have a relatively greater percentage of implicit costs, that firm may have lower total debt. The low total debt ensures that the firm can more easily continue to meet its implicit and explicit claims, and so it will have lower total risk. Thus reputation may influence risk as well as performance.

In studies relating corporate social responsibility, CSR, to performance, reputation is sometimes considered an intervening variable. Improved performance may come as a result of the increased employee and customer goodwill that have been cited as an important outcome of CSR (Soloman and Hanson, 1985). CSR activities may also improve the firm's reputation with important constituencies (e.g. bankers, investors, the govenrment) and may therefore bring economic benefits (Moussavi and

Evans, 1987). Indeed, banks and other institutional investors report CSR considerations to be a factor in their investment decisions (Spicer, 1978).

An appreciation of the importance of reputation for performance in the literature of economics is pointed out by Kreps and Wilson (1982). Reputation is important in "...contract and labor negotiations; in a firm's employment practices; in a firm's 'good name' for its product; in the maintenance of a cartel; and in international diplomacy (Kreps and Wilson, 1982: 275)." To this list, Milgrom and Roberts (1982: 304) add "credit relationships...implicit contract models, and...the provision of auditing services, bond ratings, job recommendations, and the like." In the context of Industrial Organization, Sherer points to the "demonstration effect that sharp price cutting on one market can have on the behavior of actual or would-be rivals in other markets (1982: 253)."

Kreps and Wilson (1982) present two game-theoretic models that illustrate the role of reputation in the predatory behavior of a monopolist facing potential entrants. The immediate cost of predatory pricing is a worthwhile investment to sustain or enhance its reputation, thereby deterring subsequent challenges and assuring high performance for the monopolist.

Theoretically, reputation, and especially perception of quality of managment, are related to leadership perception, to the broader subject of social perception, and to underlying social and cognitive processes (Cronshaw and Lord, 1987). Social cognition theory (Fiske and Shelley, 1984), categorization (Cantor & Mischel, 1979) and attribution (Kelley, 1973) are current areas of theory development that relate to reputation. Thus firm reputation is closely associated with the entire field of firm performance measurement, and the interrelationship between reputation and performance can be studied through a variety of disciplines including economics, management, psychology, and sociology.

Practically, within organizations, management and leadership perceptions, affected by outside reputation, involve key interpersonal processes that affect formation of status or influence structures and the development of superior-subordinate relations (Seers & Graen, 1984). Ultimately, these interpersonal processes may affect membership in a dominant coalition, the choice of strategy, and corporate performance.

Outside the organization, the importance of reputation is similar to the importance of expectations in the macroeconomic sphere: they are pervasive, crucial,

and sometimes volatile influences. Economic expectations can be self fulfilling:

> ...for any particular set of current wages and prices, there may exist multiple expectational equilibria that exhibit "bootstraps" properties; e.g., if households expect that they will be unable to sell all their labor both this period and next, then it will turn out they they will be unable to sell all their labor; but had they expected there to be inflationary pressures this period and next, then that would have turned out to be the case instead (Neary and Stiglitz, 1983).

If future inflation is expected, individual decisions may be taken that fuel it. If a stock market crash is expected, the ensuing rush of individual decisions to disinvest brings it down.

Similarly, the fortunes of a firm may be influenced by expectations of it. Expectations of future performance are an aspect of a firms reputation. The abitility to raise capital is the ability to attract equity or debt financing with the expectation of future earnings, and those future earnings depend on the prior ability to attract financing.

All stakeholders' decisions are affected by organizations' reputations. Stakeholder's decisions depend on predicting the outcomes of alternatives available to them. Corporate reputations are a major input to those evaluations, because reputation

incorporates an expectation of future performance. It may also influence it, through favorable or unfavorable decisions by investors, customers, competitors, suppliers, and regulators.

Reputation is at once the product and the progenitor of individuals' evaluations of management. In **Fortune**'s survey of corporate reputations for 1986 (Baig, 1987), Merck was ranked number one. The company's chairman, Dr. P. Roy Vagelos, described how this recognition of their reputation further improved that reputation and will likely benefit future performance:

> It did great things for the morale of the company and for our recruiting, because Merck is not a familiar corporate name. Now we are recognized on campuses, so our recruiting results have been just super (**Fortune**, 1988: 38).

Reputation among experts is a major source of information about management quality. Discussions of reputation, and management literature and research in general, have implicitly assumed that the quality of a firm's management has a strong influence on the firm's performance. Management theory analyzes processes such as leadership, motivation, and decision making on the assumption that improving them will improve firm performance (Evans, 1970). For example, studies have indicated that one reason for high performance of

Japanese firms relative to U.S. firms is Japan's higher emphasis on management and product quality (Vogel, 1979;1980). Japan has established a "quality" reputation. Gillingham and Zinger (1986) found that quality of management, based on frequent and formal training, resulted in higher performance, as measured return on equity. Gupta and Govindarajan (1984) found that greater marketing/sales experience, greater willingness to take risk, and greater tolerance for ambiguity on the part of the SBU general manager contribute to effectiveness in the case of "build" SBUs but hamper it in the case of "harvest" SBU's.

Statement of the Problem

The idea that positive firm and management reputation results in higher firm performance seems inherently plausible, but specific relationships must be established empirically. However, management and firm attributes are difficult to ascertain objectively and subjective methodologies have often been found necessary. Unfortunately, the subjective measures of management characteristics and firm attributes may result in certain biases, e.g interviewer bias. Objective measures of strategic performance are also frequently questioned (McGuire, Schneeweis, Hill, 1986). This is true of both

accounting measures (e.g., return on assets) and market determined measures (e.g. price/earnings ratio). An aim of this study is to empirically test the relationships among alternative subjective and objective factors. Results will improve our understanding of those measures currently in use.

The primary problem to be addressed is:

> What are the relationships among expert evaluations of management performance and objective measures of prior, contemporaneous, and subsequent performance?

Literature Review

Chapter II is a review of relevant literature involving several fields of research: strategic performance, decision making, reputation, attribution, and perception. Selected works from the literatures of accounting and market based performance are also critically reviewed.

Hypotheses

Reputation is usually thought of as separate from performance. In this regard it is either a reflection of prior performance, or a prediction of future performance. Reputation is also seen as part of performance, as representing additional contemporaneous dimensions of

performance. Generalized hypotheses, to evolve from the literature review, are as follows:

H_1: Corporate reputation is significantly related to prior strategic performance.

H_2: Corporate reputation is significantly related to subsequent strategic performance.

H_3: Corporate reputation is significantly related to contemporaneous strategic performance.

H_4: The various dimensions of corporate reputation are highly correlated.

Data

The data for this study consist of perceived firm and management attributes obtained from **Fortune's** survey of corporate reputations (Baig, 1987, and prior surveys) and accounting and market measures of firm performance obtained from the COMPUSTAT data base. The attributes included in the **Fortune** study are: quality of management; quality of products or services; innovativeness; long-term investment value; financial soundness; ability to attract, develop, and keep talented people; community and environmental responsibility; and use of corporate assets. The accounting measures of firm performance include: return on assets (ROA), debt/assets ratio, average assets, income growth, sales growth, operating leverage, assets growth, and operating income

growth. The market measures include alpha, beta, and residuals.

Methodology

The study will employ ANOVA, correlation analysis, and simple and stepwise multiple regression analysis to determine the relations among perceptions of management quality, prior, contemporaneous, and subsequent firm performance.

In chapter III, the hypotheses, the data and the statistical methodology to be employed are presented. In chapter IV, numerous relations among the dimensions of management performance and strategic performance are evaluated. In chapter V, the conclusions from this analysis and future directions for research will be discussed.

We close the beginning by reminding ourselves that must understand something of performance throughout the different disciplines to understand performance in the field of strategic management, and we must understand the performance of many firms in a variety of dimensions to understand the performance of one firm in a single dimension. As Pascal said, we cannot know the part without knowledge of the whole, any more than we can know the whole without knowing its parts.

C H A P T E R I I

LITERATURE REVIEW

The objective of the present study is to investigate relationships among various dimensions of corporate reputation and strategic performance. While the literature dealing directly with these relationships is quite limited, relevant fields of study have independently developed very extensive bodies of literature. Relevant fields of study include decision making, perception, attribution, social cognition, accounting, finance, and strategic management. The present literature review is therefore at once broad and, within each area, selective. The objectives of this review are to establish the absolutely pervasive role of performance measurement and reputation, to identify specific theories and research from the disparate fields that are concerned with reputation or performance, and to derive hypotheses about the relationships between reputation and performance.

Strategic management literature is focused primarily on the influence of managerial decisions on organizational performance (McGuire and Schneeweis, 1986; Ryne, 1986; Branch and Gale, 1983; Melicher and

Rush, 1974). Strategic management decisions include merger and acquision decisions, capital investment decisions, and new product decisions. Performance is an issue in many other ways, however. For example, the relationship between strategy making and structure was found to be strongest among organizations that perform well (Miller, 1987). The issue of performance is implicit in all management literature because management is variously defined as control or direction toward performance.

Strategic Performance

In their comparison of alternative approaches to measurement of business performance in strategy research, Venkatraman and Ramanujam (1986) state:

> ...the treatment of performance in research settings is perhaps one of the thorniest issues confronting the academic researcher today. With the volume of literature on this topic continually increasing, there appears to be little hope of reaching any agreement on basic terminology and definitions.

These authors recommend that in view of the breadth and complexity of the topic, attention should be focused on the perspective of the field of strategic management. They argue that a multidisciplinary view will limit discussion to fundamental differences in definitions and assumptions. But the differences in definitions and

assumptions are not fundamental. The following literature review yields some appreciation of the commonality in measurement processes. The same essential structure underlies measurement processes in various settings: decision loops incorporate perception and social cognition processes that are themselves decisions.

Different fields of study are undergoing parallel development of similar concepts, with similar issues arising. Venkatraman and Ramanujam endorse Hofer's observation that "...different fields of study can and should use different measures of organization performance because of the differences in their research questions" (Hofer, 1983: 44; Venkatraman and Ramanujam, 1986: 802). This should not be accepted to mean that measures available to different fields are to be considered mutually exclusive. Many published papers amount to introduction of concepts and measures to one field that were developed in another. The concerns of strategic managment properly encompass the range of other disciplines and a variety of measures.

Stakeholders' Decisions

Many groups of decision makers, each with different interests, are concerned with strategic performance. Stakeholders include labor, suppliers, customers,

creditors, boards of directors, management, governments, and the communities in which an organization operates.

Among stakeholders, boards of directors are expected to decide the compensation of top executives, holding them accountable to shareholders for the performance of the organization (Cook, 1981; Mace, 1971). Incentive compensation plans are common, and salaries, fringe benefits, bonuses, and the value of stock options generally vary with the company`s stock price (Rankin, 1982). However, boards frequently fail to hold management accountable (Kerr and Bettis, 1987: 645, 658), tending to grant "stratospheric salaries" that are unrelated to an executive's measured performance (Vance, 1983: 74). There is a growing interest in the impact on corporate strategy and performance of different alternative performance measures used in compensation plans (Kerr and Bettis, 1987; Miller and Scholes, 1982; Stata and Maidique, 1980). Empirical results have often been contradictory.

Labor is concerned with strategic performance as increasing exposure of firms to international competition threatens job security. For example, Bethlehem Steel's union employees entered into concessionary contracts in 1983 and 1986 (**Fortune**, 1988:39). Bethlehem's overall reputation was ranked 302 out of 306 companies in

Fortune's 1987 survey, despite recent dramatic moves to improve their competitive position.

Suppliers, investors, creditors, and communities all look at an organization's reputation and performance for assurance of its continued viability. This fundamental relationship leads to the first three general hypotheses: reputation may be expected to be related to past, present, and future performance. (See Exhibit 1 for the complete statement of general and specific hypotheses. Exhibit 2 provides a diagrammatic summary of the hypotheses.) Legislators, tax authorities, bankruptcy courts, and regulatory agencies all consider the reputations and performance of firms affected by their decisions.

Managers' decisions may represent the interests of all stakeholders (Hackett, 1985). If managers do act as agents for all stakeholders, one would expect that rather than optimizing one or a few dimensions of performance and reputation at the expense of others, managers would strive to maintain a balance among them. This suggests the hypothesis H_4: various dimensions of corporate reputation are highly correlated.

Non-stakeholders are also interested in strategic performance. Security analysts want an earnings number they can multiply by a standard price-earnings ratio to

arrive at an estimate of the firm's value. Economists want to be able to estimate a corporate contribution to national income. Black contends that all users of financial statements want an earnings figure that results in a constant price-earnings ratio (Black, 1980). That is to say, that they want to see accounting measures that bear a dependable current relation to market measures. This again suggests H_3, that contemporaneous measures are closely related.

Performance Measurement

Venkatraman and Ramanujam recommend focusing on measurement issues in performance(1986: 802). "In its broadest sense, measurement is the assignment of numerals to objects or events according to rules" (Stevens, 1951: 1). In essence, "measurement is a relation" (Kerlinger, 1973: 428). "The fundamental process of measurement is the same" (Kerlinger, 1973: 432). With recognition of the similarity of measurement processes, one is free to focus on the contents: what is being measured, and how are alternative measurements related? Because the process of measuring and making decisions is similar in different contexts, we are free to look from one field of study to another for useful concepts.

Thus, a major focus of research in business policy and strategy is how to measure organizational performance (e.g. Chakravarthy, 1986; Lee and Zumwaldt, 1981; Rumelt, 1974). Firm and management performance have been evaluated with a wide variety of "objective" (e.g. accounting and market) performance measures, but less frequently with "subjective" (e.g. expert ranking of quality of management) measures (McGuire, Schneeweis, & Hill, 1986). Market measures of performance, including stock return, have been gaining prominence in comparison to accounting measures of performance (Branch & Gale, 1983; Pickens, 1985; Rappaport, 1983; Seed, 1985).

Strategic performance has traditionally been studied only in terms of accounting return or stock market return (Branch, 1980), but there is a growing interest in risk as a dimension of performance (Jemison, 1987; Hayes and Gavin, 1982). This is associated with an increase in transfer of ideas and methodology from the literature of finance to that of strategy (e.g. Lubatkin and O'Neill, 1987; Aaker and Jacobson, 1987). Financial theory says that decision makers must be rewarded for the assumption of risk, and that, ex ante, risk and return should be positively related (e.g., Brealy & Myers, 1981) as has been found in many studies using stock market data (e.g., Hurdle, 1974). However, some empirical studies have

found, ex post, that firms may experience a negative relationship between risk and accounting return (e.g., Bowman, 1980; Bettis and Hall, 1982). Fiegenbaum and Thomas (1986) review the contradictory empirical evidence and then, in their own study, find a negative risk-return relation for firms having return on equity below target levels and a positive association for firms with return on equity above target. A field study of firms in the banking industry found different strategies associated with differences in risk, but not in return on assets (Jemison, 1987). A study of 96 small and medium sized firms found centralization of authority related to risk, and found the relationships between risk taking and organization structure to be different between high performing and low performing firms (Miller, 1987). While it is expected that managers must anticipate increased return for them to accept higher risk, a dynamic game model of the agency relationship between corporate insiders and external claimholders illustrates that incentives to avoid risky debt by underinvesting may be moderated by anticipation of improved reputation and bond rating (John, Nachman, & Spatt, 1985). While the ex-ante forecast of return is generally based on the expectation that the assumption of risk requires a commensurately high return, ex-post measures of return

may be inconsistent, reflecting a variety of other influences on actual return. This suggests the need to evaluate H_2, that measures of risk and reputation are related to subsequent return.

An organization's accounting system generates information on several relationships that are considered by many to be measures of risk. This raises the important question of the relationship between accounting and market determined measures. A study of 307 firms in the period 1947 to 1965 found a high degree of contemporaneous association between accounting and market risk measures (Beaver, Kettler, and Scholes, 1970). The questions of intertemporal association and relationships for other firms and time periods remain.

The distinction between systematic and unsystematic risk, formerly applied only to return on stock investments, has now been applied to analysis of strategic business units. Aaker and Jacobson (1987) found that an accounting measure of unsystematic risk had a significant positive relationship to ROI. As a measure of unsystematic risk, they used the standard error of the residual from estimation of accounting beta. Lubatkin and O'Neill (1987) found that mergers tend to be associated with increased levels of unsystematic and total risk, estimated using the market model. These

results are both contrary to what might be expected considering finance theory[2].

Many alternative measures of performance are available: subjective or objective, accounting or market, risk or return, unsystematic risk or systematic risk. If there is little correspondence among alternative measures of performance, if each measure represents different information, the choice of which measure or combination of measures researchers and decision makers use will have substantial effects. If some measures are found to be highly correlated within a time period, one or more may be ignored as redundant. If there are intertemporal relationships, if one measure predicts another, that also has implications. Decisions are made and research based on assumed relationships that must be tested.

Reputation: Subjective Performance Measurement

Corporate Reputation

Corporate reputation has not received current scholarly attention. Treatments of corporate reputation generally represent two approaches. They either discuss the value of a good reputation, or report the results of a survey measuring reputation. Occasionally, the latter is presented as the outcome of some intervention.

Influences on Reputation

Given that reputation is important, what determines whether a reputation will be favorable or not? The question of influences on reputation relates to H_1, concerning the relationship of reputation to prior performance.

Often, results of a survey of reputations are given ad-hoc explanations. When IBM slipped from No. 8 to No. 32 in overall reputation in **Fortune's** most recent survey, these explanations were offered (Schultz, 1988:32):

> Big Blue's decline reflects two years of disappointing profits.
>
> Fading demand for its mainframes and increasing competition from other manufacturers of personal computers and minicomputers have left IBM a little groggy.
>
> ...(despite) tremendous progress in transforming us into a sharper, more competitive company.
>
> Present management is not to blame. The current strategy is probably far more astute than current profits would suggest.

The implication is that experts' subjective evaluations of management depend simply on recent profitability, ignoring other contrary evidence. If this were so, then reputation would follow automatically from the bottom line, those concerned for their reputations should work to improve profitability and researchers could ignore measures of reputation as redundant. The

possible relationship of reputation to prior ROA is reflected in H_{1a}.

However, the opposite is implied concerning Bethlehem Steel, which had the same abyssmal overall reputation rating for 1987 as for 1986, despite a tremendous improvement in profitability (Schultz, 1988: 39). An alternative to H_{1a} is H_{1b}, that reputation is related to prior stock return rather than to ROA.

Specific actions are being taken by management with the hope of improving reputation. Design consultants are engaged to help prepare annual reports that will encourage readers to look beyond "such facts as pretax profits and earnings per share" (LeMan, 1986). The strength of brand reputations are being exploited to sharpen corporate image which in turn can be used to help the firm break into new product sectors (Bowens, J.C., 1986). Corporate image advertising is gaining in importance, according to Joseph Brouillard, whose company performs this service (Reed, 1984; Brouillard, 1983). Public relations research surveys of the many constituencies of a firm are conducted, and business decisions based on the results (ONeill, 1984).

While actions intended to improve reputation are based on assumed relationships, there is evidence suggesting many competing influences on reputation

formation. In the Brouillard study, characteristics identified as important to a winning reputation included quality of products, flexibility, high-caliber management, honesty, customer service, market leadership, and good communications including effective advertising (Marketing News, 1986). Another study found that favorable customer assessment of the quality of products and services provided an average improvement in corporate image of 16% (Lewis, 1985). A survey of community leaders by the Center for Corporate Community Relations indicated that firms that were active in the community were rated highly on nine dimensions that included executive leadership and general reputation (Personnel Journal, 1987). This suggests that, among the dimensions of reputation in the **Fortune** survey, corporate and social responsibility should be significantly related to quality of management. These studies together recommend evaluation of H_4, concerning the relations among the various dimensions of reputation.

A survey of 235 firms found that corporate reputation, as measured by the **Fortune** survey, differed with regard to firm's implementation of human resource succession systems (Friedman, 1986). Implications were drawn for improving management of succession systems. A national policy study by the Work In America Institute

recommended employment security as an integral part of corporate strategy for improving a company's performance and reputation (Roscow and Zager, 1985).

While corporate reputation has received little explicit sholarly attention, extensive research has been conducted in the closely related fields of perception, attribution, and social categorization.

Social Cognition

Social cognition is the study of how people make sense of other people and themselves (Fiske and Shelley, 1984). Reputation grows out of this sense-making activity. Much of corporate reputation, especially quality of management, is about other people.

Corporate reputation does include dimensions such as product quality, however. Reputation for product quality likely reflects social influences on cognition. The process of cognition, and group influences on cognition, have similarities, whether the object of cognition is a person or not. Perhaps the definition of social cognition should be broadened to include study of social influences in cognition of objects in addition to people.

As a field of study, social cognition has grown to incorporate many related subjects, including attribution, social categorization, and social perception. Each of

these subjects will be considered briefly in its relation to corporate reputation.

Perception

Subjective measures of firm performance are based on individuals' perceptions. In this study, **Fortune** magazine's annual survey of corporate reputations represents experts' perceptions. Four constructs from the literature of perception (cf., Schneider, Hastorf, and Ellsworth, 1979; Dember, 1964; Weiner, 1947; Arbib, 1977) are useful in the present study: perceptual lag, difference threshold, halo effect, and selective perception. These are discussed below.

Perceptual lag is the delay between an event and the observer's awareness of the event. Kerr and Bettis (1987:648) observed that three studies of the relationship between compensation and stock return (Benston, 1985; Coughlan & Schmidt, 1985; Murphy, 1985) all erroneously measured a CEO's compensation as the sum of salary payments and bonus awards distributed in a given year:

> To the extent such compensation is based on performance, bonus awards at the end of year t represent a board's perception of a CEO's performance in year t. Salary payments distributed over year t, however, are based on a board's perceptions of a CEO's performance in the previous year, t-1.

This implies perceptual lags on the part of the board that are less than one year: at the end of a year the board is aware of the executive`s performance during that year. However, if the board`s perceptions of management are partly based on accounting measures rather than on direct observation of the CEO's behavior, there is a further delay: management's actions may not result in accounting performance for years.

Another perceptual delay may be introduced if management performance is evaluated on the basis of market measures: stock price changes depend on investors's perceptions. However, the efficient-markets hypothesis (cf. Fama, 1976) states that security prices instantly reflect all available information. Bethlehem Steel's reputation was ranked 302 out of 306 companies in **Fortune's** 1987 survey, despite recent dramatic moves to improve their competitive position. For example, Bethlehem has reduced its operating costs by over $130 per ton, to about $400; they have almost doubled productivity in tons per plant employee; they have spent over $2 billion in modernization since 1981, so that 80% of their flat-rolled steel is continuously cast, up from 23% in 1982; income from steel operations has improved by more than $230 million over 1986 (**Fortune**, 1988:39).

There is strong indication of a perceptual lag in Bethlem Steel's continued low reputation. Walter F Williams, the CEO, stated "the whole steel industry has to communicate our story better to the public and to our employees." Perceptual lag would be reflected in support for H_1 and lack of support for H_3: reputation would be found to be related to prior performance and not related to contemporaneous performance.

Difference threshold has been defined as "the least change in stimulation that can be detected when the system is already being stimulated" (Dember, 1964). For example, an expert who is continually informed of the performance of firms in an industry will not perceive a change in that performance which is below a certain magnitude. This likely will result in some stability of experts' perceptions in the **Fortune** survey, because only noticeable changes cause revision of perceptions. Resistance of perceptions to revision would make it less likely that significant relations would be found to performance, and increase the likelihood that H_1 and H_2 would be rejected.

The halo effect influences perceptions when a single characteristic overrides assessment of an individual's other characteristics (Griffin & Moorhead, 1986: 79). In a classic study, Asch (1946), formed two groups of people

and gave one group a list of personality traits containing the word "warm" and the other group an identical list containing the word "cold." Both groups were asked to further describe the individual whose traits had been listed. People who worked with the list which contained the word warm said the individual must be humorous, intelligent, and popular. The other group said the person was serious and aloof, and did not have many friends. The halo effect may have a serious impact on performance evaluations in organizations (Bernardin & Beatty, 1984).

The perception that management had accomplished a high ROA might lead one to assume the company had a high degree of ability to attract, develop, and keep talented employees. Alexander and Bucholtz (1978) and Bowman and Haire (1975) have suggested that social responsibility may be indicative of management skill which may carry over into other management areas. Cornell and Shapiro (1986) suggest that reputation gained from performance on one set of implicit claims may influence customers' willingness to pay for another set of implicit claims. The result of a halo effect might be a high degree of correlation among the perceived attributes in the **Fortune** survey, representing acceptance of H_4.

Selective perception is allowing current needs and past experiences to partly determine what persons pay attention to and what they perceive. The **Fortune** survey was sent to "senior executives, outside directors, and financial analysts." Each of them is involved in somewhat different decisions. Each decision is based on that person's perceptions of firms in the industry. So each person can be expected to attend somewhat differently to available information. The **Fortune** experts' perceptions would likely be different from those of consumer advocates, for example. Since the **Fortune** sample is to some degree homogeneous, one might expect respondents as a group to base their perceptions more on certain objective performance measures than on others. This would lead one to expect that experts' perceptions would be more closely related to some measures of prior performance than to others, and that those perceptions would be more predictive of some than of others. This suggestion is the basis for each of the specific hypotheses.

Attribution

Closely related to the process of perception is attribution. Attribution is the attempt to assess and evaluate people based upon their behavior (Kelly, 1973).

To understand events, people develop their own implicit theories of behavior. Attribution theory began with the work of Fritz Heider (1958), who believed that people have a natural tendency to see events in terms of causal relationships. Calder identified attribution theory as a conceptual base for studies of leadership (Calder, 1977).

The process of attribution is pervasive as stakeholders, managers, subordinates, competitors, suppliers, buyers, and regulators all base their decisions in part on their attributions of causality to one another. "A favorable stock market evaluation of upper-level management justifies attractive managerial compensation packages, keeps shareholders happy, allows easier access to capital, facilitates relatively inexpensive acquisitions, and defends against takeovers (Branch and Gale, 1983: 41)."

A number of studies have looked at relationships involving performance and attributions of leadership (Butterfield, Powell, & Mainiero, 1978; Lord, Binning, Rush, & Thomas, 1978; Rush, Thomas, & Lord, 1977, Phillips and Lord, 1981). Butterfield and Powell (1981) manipulated performance descriptions and found this explained nearly half of the variance in attributions of leadership style.

An organization's performance is often seen as caused by the quality of its management, it is attributed to the organization's managers. Experts' evaluations of quality of management in the Fortune survey are attributions. Quality of management is an important consideration in investor decisions (Graham et al, 1962). A Harris poll found that major institutional investors considered the quality of management to be the single most important criterion in the selection of stocks (Louis Harris and Associates, 1975). Thus stock price can be seen to depend on a process of attribution. Firms perceived as excellent may have superior access to capital necessary to facilitate favorable future performance. However, Granatelli and Martin (1984) found that the stock market returns of "well managed" firms did not outperform a portfolio of randomly selected companies from the same industries.

Boje and Whetten (1981) studied the attribution of influence in interorganizational networks. They found that strategy, constraints, and centrality were significantly related to attributed influence.

Several constructs from attribution theory are useful. First, the covariance principle states that we attribute the cause of an action to the one factor with which it most strongly covaries (Kelley, 1967). Second,

internal versus external attribution refers to whether the cause is seen as being within or outside the person. The discounting principle states that our confidence in an internal attribution is lowered, or discounted, to the extent that plausible external explanations are also present (Kelley, 1971).

Attributions are based on three types of information. Distinctiveness information indicates how prominent a factor is. Consensus information indicates whether other individuals in the situation are associated with the same results. Consistency information indicates whether the association is stable over time. An attribution of the quality of management of a firm will depend on all of these sources of information, and thus on the relationships with alternative measures of performance. These relationships will be evaluated with H_1.

Perception and attribution are important in compensation decisions, because a frequent concern is whether the success or failure of a strategy was manager-derived or due to factors unrelated to the actions of the management.

Accounting Measurement of Performance

Advantages

In a review of selected literature of organizational performance, accounting based measures were found to be dominant (McGuire, Schneeweis, and Hill, 1986). Accounting measures have an advantage for research in that they are easily available from corporate sources and commonly available data bases. Accounting data is available at the business unit level, while stock market data is limited to the corporate level. Accounting measurements are certified as conforming to generally accepted accounting principles (GAAP), which are established by the Financial Accounting Standards Board (FASB). Accounting data are "primary" data in the sense that they are direct measurements of the organization, undistorted by a further level of judgement. An important question is whether stock market measures, being partly based on accounting measures, represent a correction for accounting bias, or the introduction of a further bias.

Disadvantages

The potential for bias in accounting measures has been well documented by Briloff (1981;1972), Branch (1986) and Beaver and Dukes (1973). While

accountants should strive to calculate an accounting income which accurately reflects economic income, many perceptions and arbitrary judgments are necessary in doing so, and there are many pressures and opportunities for distortion (Getschow, 1980). Among areas of discretion are the allocation of receipts and expenditures, choice of methods of depreciation, determination of pension fund obligations, valuation of inventories and other assets, how to consolidate the financial statements of merged firms, and selection among alternative international accounting standards by multinational firms (McGuire, Schneeweis, and Hill, 1986:134).

Aaker and Jacobson (1987) note that ROI is widely used in practice, which suggests that reputation would be most closely related to ROA, as stated in $H1_a$. Scholars have strongly criticized ROI (Fisher & McGowan, 1983; Solomon, 1971; Harcourt, 1965): the return in the numerator is not necessarily related to the investment in the denominator.

The accounting system reports only financial transactions, while ignoring other important business events such as the failure to preserve assets, decisions to downgrade product quality, and technological changes that make equipment obsolete (Curtis, 1985). Accounting

rules do not allow capitalization of expenses for less tangible assets, such as product quality, reputation, product portfolio, technological base, and human development. The former CEO of General Electric, Ralph Cordiner, recommends that several measures of strategic performance be looked at simultaneously, including market position, technological leadership, personnel development, productivity, and employee attitudes. This suggests that measures of reputation will be different from accounting measures of performance, a suggestion that will be evaluated with H_1 and H_2.

Market Measurement of Performance

Several scholars have recommended the application of finance theory and market measures of performance to questions of strategic management research and practice (e.g. Rappaport, 1981,1983; Johnson, Natarajan & Rappaport, 1985). They argue that market measures of firm performance are better than accounting measures, and that finance theory and risk analysis should be used to guide strategic choice. This leads to consideration of H_{1b}, that reputation is related to prior total stock return.

Several recent strategic management studies have used finance based methodologies such as the Capital Asset

Pricing Model (CAPM) (e.g. Kudla, 1980; Branch and Gale, 1983; Seed, 1985; and Chakravarthy & Singh, forthcoming). Some research uses stock price data without reliance on finance theory (Bourgeois, 1985). A review of recent published research in several management and strategy journals (Academy of Management Journal, Academy of Management Review, Administrative Science Quarterly, California Management Review, Journal of Business Strategy, Journal of Management, Management Science, Planning Review, Strategic Management Journal) finds market data used to address a wide range of topics, including the usefulness of strategic planning, implications of market share, generic strategies, corporate directors, managment turnover, acquisitions, buyer/seller power, distinctive competence, managerial style, and organizational goals (Bromiley, Govekar, and Marcus, forthcoming).

The CAPM resolves several methodological difficulties in the use of accounting-based performance figures (Fama, 1976)[3]. It is not an ad hoc model, but is a fully specified equilibrium model of a firm's stock return (Fama, 1976). Tests have shown that in setting the market value of firms, investors adjust for differences in firms' accounting procedures (Fama, 1976; Brealey & Myers, 1984: 64-81, 248-257). Investors are thought to

immediately evaluate the impact of management change on a firm's future earnings, so that other events do not confound the effect. This suggests that market measures may better predict future accounting performance than will accounting or reputation measures, a suggestion evaluated under H_2.

There is rapidly increasing interest in risk in the management literature (March and Shapira, 1987; Jemision, 1987; Crouch and Wilson, 1982). Again, classical decision theory says that choices are made among alternative actions on the basis of the mean (expected value) and variance (risk) of the probability distribution of possible outcomes (Arrow, 1965). Most authors assume that individuals are risk averse, and so must be compensated for assuming additional risk with commensurate additional return (Ross, 1981). There is contradictory evidence, however, in studies of mergers (Brenner and Shapira, 1983; Mueller, 1969), and in an inter-industry study of the risk-return relationship (Bowman, 1980). There are open questions about the relationship of risk aversion to adversity (March and Shapira, 1987; Kahneman and Tversky, 1979). Managers believe that fewer risks should, and would, be taken when things are going well. They expect riskier choices to be made when an organization is "failing" (MacCrimmon and

Wehrung, 1986). However, there is evidence that wealth rather than adversity leads to risk taking and innovation (Hamilton, 1978; Mansfield, 1968; Brinton, 1938). Again, in considering H_2 this study will evaluate possible relations between risk and subsequent return. Managers appear to depart from the prescriptions of decision theory without justification, and the quality of their decisions might be improved by training (March and Shapira, 1987: 1415).

The CAPM implies that investors price an asset to receive an expected return on a security $E(R_i)$ as specified in equation (1) (Lee, 1985: 223):

$$E(R_i) = R_f + [E(R_m) - R_f]\beta_i \qquad (1)$$

where: R_f = The riskless rate of return.

$E(R_m)$ = The expected return on the market stock portfolio.

β_i = The regression coefficient, which is equal to the ratio of the covariance of the return on security i with the return on the market portfolio normalized by the variance of the return on the market portfolio. (i.e., $\beta_i = \sigma_{im}/\sigma^2_m$)

Systematic Risk: Beta

Thus, the expected return on any security is composed of two parts, the risk-free rate of return, and a risk premium. The risk premium is a proportion, β_i, of the

excess of market return, R_m, over the risk free rate, R_f. The firm's beta coefficient, β, summarizes the relationship between its stock return, and that of the market portfolio. This suggests β is a meaningful measure for strategic management. As the return on the market portfolio changes, the firm's return changes at the rate beta; the change in the firm's return will be beta times the change in the return of the market portfolio. If a firm's beta is greater than one, and the market falls, the firm's stock price will fall more than proportionately. Thus, assuming a fully diversified portfolio, beta is the relevant measure of risk, and determines the return of a security: it will earn the riskless rate plus some compensation for its risk. This relationship will be evaluated with H_{2b}. Beta is referred to as "systematic risk," because it is that part of a firm's risk that is directly related to changes in the return of the market as a whole.

Unsystematic Risk: Mean Square Error (MSE)

Beta, or systematic risk, is that part of a security's risk which cannot be eliminated. In addition, there is an unsystematic component which can be eliminated when that security is held in combination with other securities in a diversified portfolio. The market

model expresses the return on any asset at a point in time, R_{it}, as a linear function of the market return, R_{mt}, plus a random error component, e_{it} (Lee, 1985:225)[4]:

$$R_{it} = a_i + b_i R_{mt} + e_{it} \qquad (2)$$

Using equation (2), the market model, total variance for the ith asset (σ_i^2) can be decomposed as:

$$\sigma_i^2 = b_i^2 \sigma^2 (R_m) + \sigma_{ei}^2 \qquad (3)$$

So the total risk or total variance of a security is the sum of a systematic component, b_i^2 times the variance of the market return, and an unsystematic component, the variance of the error term, called the "mean square error" (MSE). It can be shown that b_i in Eq. (3) is the same as β_i in Eq. (1), the CAPM.

Stock Return

While the market model (2) allows decomposition of risk into systematic and unsystematic components, it also decomposes total stock return into three components: firm specific return, a_i or "alpha"; return due to general market movements, $b_i R_m t$, and a residual error component, e_{it} or "residuals". Alpha is the return that a firm obtains in excess of that due to general market movements. The second term, $b_i R_{mt}$, is the firm's share

of general market movement. Residuals are random changes in return, the difference between observed return and return predicted by the linear relationship between the firm's total return and that of the market.

Abnormal Return Model

It has been argued that if stock price data is to be used, event studies are the appropriate methodology (Kerr and Bettis, 1987: 652). Finance theory states that stock price incorporates information and expectations about the future prospects of the firm. Accepting that the price continuously incorporates these expectations, the impact of a particular factor can only be determined by examining changes that could not reasonably have been anticipated by the market. To distinguish the effect of an event on a stock's returns, the researcher must separate the returns that would have been expected without the event (predicted or normal returns) from those attributable to the event (prediction error or abnormal returns).

Brown and Warner (1980: 206) note the three major techniques for estimating abnormal returns. The first is mean adjusted return, in which the average return on a stock outside the period of interest is subtracted from the observed return in the period of interest. The

second is called market and risk adjusted return, or simply "abnormal return." Rearranging Eq. (2) to solve for e_i yields:

$$e_{it} = R_{it} - (a_i + b_i R_{mt}) \qquad (4)$$

This form is called the "abnormal return model," and has been used in numerous event studies in both economics and finance literature (Morse, 1982;Fama, 1976). It is "abnormal," in the sense that it is the difference between the observed return, R_{it}, and the expected return, $(a_i + b_i R_{mt})$. In applying this model to an event, a_i and b_i are estimated in the period preceding the event, and e_{it}, the prediction error, is calculated after the event.

The third technique is called market adjusted return, and differs from market and risk adjusted return in that α is constrained to equal zero, and β is constrained to equal one (Brown and Warner, 1980: 208)[5].

Morse found that the capital markets are highly efficient in the sense that significant stock price changes, and abnormal returns, were observed in the days surrounding companies' announcements of relevant events. It is telling that "surrounding" means before as well as after the public announcements that inform those who are

not inside traders. Relevant events include dividend increases, product sales, favorable and unfavorable earnings forecasts, acquisition and construction projects, and stock splits.

In management studies, the abnormal return model has recently been used to study the relationship between executive compensation and stock performance (Kerr and Bettis, 1987), the effects of strikes on firm stock performance (Newmann, 1980), and the effects of management strategic planning on firm stock value (Kudla, 1981). Again, the effect of reputed quality of management on subsequent performance will be evaluated with H_2. In light of the foregoing review, it may be expected that measures of risk will be found to be significantly related to subsequent performance.

CAPM: Problems

While the market model is generally regarded as a pure positive prediction model, there are statistical and theoretical problems (Black and Jensen, 1972; Brown & Warner, 1984: 166-178). Use of the market return as a measure of performance does assume that investors evaluate firms appropriately. Managers may feel that investors are inaccurate or uninformed, but the market reaction can correct for some manager biases in

accounting. Because they represent total firm performance, market measures are too aggregate to apply to evaluation of individual projects which may represent strategic moves. Finally, the use of market return and risk measures implies the manager himself or herself is acting for the benefit of fully diversified investors, who are immune to the unsystematic component of risk. To the degree that the manager is concerned with undiversified investors, including the firm and self, then total risk may be a better measure of firm risk due to strategic management.

Managers try to avoid exposure to unsystematic risk by managing well and by choosing to work for businesses that have low unsystematic risk (Aaker and Jacobson, 1987). Shareholders can compose diversified portfolios, but other stakeholders are concerned for unsystematic risk, and managers represent them as well. So high quality of management should be associated with low unsystematic risk. For management to accept increases to unsystematic risk, they should require higher expected return.

There are several reasons to question the assumed efficiency of capital markets (Bromily, Govekar, and Marcus, 1987: 20). Investors tend to overreact to events (e.g. de Bondt & Thaler, 1985), events have different

effects depending on the size of firms, stock returns may be reduced when inflation is significant, there are weekend and day of week effects, investors' actual portfolios include assets other than stocks, and investors may perceive an intrinsic value in dividends.

Comparison of Measures

A comparison of several aspects of accounting, market, and qualitative measures of performance is summarized in Table 2-1 (all tables are placed at the ends of their respective chapters). It is noteworthy that across the three types of measures, subjectivity is a matter of degree. With nominally qualitative measures, experts are free to form their own opinions, knowing they will remain "experts" while those opinions are generally considered creditable. Market measures depend on investors' evaluations. Investors evaluate the prospects of a stock with a more purely pecuniary interest, and that may make them more objective. They are advised by the "experts," however, and so investors own opinions cannot be much more "objective." Stock market crashes certainly do not reflect changes in the economic value of firms, but in perceptions, and especially in the attribution of others' perceptions and resultant future price movements. Finally, there is also subjectivity in

accounting. The wide lattitude for discretion in accounting measurement was discussed above.

There is substantial controversy regarding the relationship between various strategic performance measures and top executives' compensation. Empirical results have been inconsistent. Some researchers have reported a strong relationship between stock return and compensation while others report no relationship (Murphy, 1985; Redling, 1981). Baumol (1959) suggested that executives are compensated on the basis of organization size rather than stock return, and so attempt to maximize sales while maintaining a minimum profit level. Following this suggestion, research has found compensation to be positively related to sales and unrelated to net profit (Meeks & Whitting, 1975; Cosh, 1975; Ciscel, 1974; McGuire, Chiu, and Elbing, 1962) Lewellen and Huntsman (1970) found the opposite: that compensation was strongly related to profits and unrelated to sales. In light of this controversy, it will be interesting to observe the object of compensation: the relation of quality of management to performance.

Peters and Waterman (1982) used both objective and subjective measures to identify excellent corporations. Objective measures used were compound asset growth, compound equity growth, ratio of market to book value, average return on total capital, average return on equity, and average return on sales. Subjective measures represented innovativeness. Select industry experts were asked to rate the companies in their industries on their 20-year record of product or service innovation and on their ability to adapt rapidly to changing industry conditions.

Peters and Waterman's purpose was not to compare approaches to evaluating performance, but to identify excellent firms. Their validation was subjective and partial (Carroll, 1983). Similarly, Chakravarthy used Peters and Waterman's assignation of excellence, and also consulted the **Fortune** ratings for the same reason: to identify a sample of excellent firms (Chakravarthy, 1986). Both studies simply accepted the experts' evaluations as further evidence of excellence.

Industry Differences

Joan Woodward (1965) found that organizational design depended on technology. An industry can often be characterized by its technology. Woodward found that

successful small batch and continuous-process plants had flexible management structures while successful mass production operations were rigidly structured. More recent investigations have offered some support for this technological imperative (Fry, 1982).

A major contribution to the literature of strategic management is Michael Porter's competitive strategy approach, based on industrial organization (Porter, 1980). Industrial organization economists have developed insights into the range of performance available in certain industries (e.g., Caves, Gale, and Porter, 1974; Scherer, 1970; Ravenscraft 1983).

Porter says that the industry is the appropriate level of analysis for strategy. An industry is defined as a group of competitors together with their suppliers, buyers, substitutes, and potential entrants. The best choice among alternative strategies will depend on the relative power of the interacting firms, on the potential rate of growth, the technological sophistication, the rate of innovation, and management capability.

The importance of each of these factors will be different for different industries. For example, are there many capable managers, or just a few? If the potential growth rate in an industry is low and there are few opportunities for innovation, established firms with

substantial assets will easily be able to protect their positions while enjoying relatively high returns and low risk. If potential for innovation and growth in an industry are high, a large amount of fixed assets may limit adaptability, and successful firms may require the highest quality of management and the assumption of a high degree of risk.

Thus, it is likely that some relationships among measures of reputation, risk, and performance are specific to industries and to time periods. For the period 1971-1977, the mean dividend yield was, as expected, significantly greater and the mean beta significantly lower for utilities and banks than for industrial firms (McGuire, Schneeweis, and Hill; 1986). Regulation insulates utilities and banks from general market movements. In addition to lower systematic risk, utilities and banks experienced lower unsystematic (MSE) and total risk (standard deviation of total stock return). While utilities experienced lower total and systematic risk, they also had higher market return. This inverse relationship between risk and return is reasonable in light of the poor performance of the market during this period. The different risk and return characteristics of non-industrial firms makes it likely that experts would perceive them differently and that

this would show up in different relationships between reputation and performance for industrial and non-industrial firms.

Aaker and Jacobson (1987) found that both systematic and unsystematic risk were related to ROI. However, the association of unsystematic risk with return was found to be less uniform across industries. "It is positive and significant for consumer goods businesses and for businesses producing components, materials, and supplies, but small and insignificant for capital goods businesses (Aaker and Jacobson, 1987: 287)."

In a replication of Mintzberg's study of the nature of managerial work, Kurke and Aldrich found, by combining their results with Mintzberg's, that management behavior was more similar between organizations within an industry than between organizations in different industries (Kurke and Aldrich, 1983:982). If there are industry specific differences in management behavior, there are likely to be differences in experts' perceptions and attributions concerning that behavior.

In testing the relationship between stock price and compensation, Murphy (1985) considered an industry-relative performance measure, in which a firm's return was compared to the average return of its industry. Results showed that different performance measures

affected various components of compensation differently, and that raw rates of return were preferrable for predicting overall top management compensation.

Hypotheses H_{1a} and H_{2c} are further evaluated with the data divided into groups of industrial and non-industrial firms, as described in Chapter I I I.

Interdependence of Perceptions

Perceptions of managerial and firm performance may be based on perceptions of strategic performance. Likewise, the interdependence of these perceptions and actual accounting and market performances has important implications for strategic management decisions.

As Branch and Gale point out:

> While the stock market does tend to reward companies for high ROE (profitability), growth, R&D intensity, payout, and interest coverage (low risk), the policy implications of these (separate) relations are less clear. For example, a company that sought to increase its growth at the expense of its ROE might adversely affect its stock price. Moreover, the trade offs between R&D intensity and ROE; payout and growth; etc., should not be ignored. Investors do not reward companies for high ROE, interest coverage, R&D intensity, or payout per se. Rather such characteristics are preferred only when they are viewed as forecasters of a favorable future.

The aim of academic research, then,is the same as that of practicing managers, boards of directors, and investors: to determine the causal relationships between

quality of management, strategy, and strategic performance; to develop better attributions.

Classification of Measurements for Strategy Research

While finance theory has tended to concentrate on a single measure of performance, the strategic management literature is developing a multi-trait perspective on performance (Lenz, 1981; Venkataraman & Ramanujam, 1986). Venkatraman and Ramanujam adopt a two dimensional classificatory scheme for the measurement of business performance in strategy research. Performance may be financial or operational; based on primary or secondary sources.

Financial performance "centers on the use of simple outcome-based financial indicators that are assumed to reflect the fulfillment of the economic goals of the firm...which has been the dominant model in empirical strategy research (p.803)." Financial performance indicators include accounting-based measures such as sales growth, profitability (e.g. return on assets), and earnings per share. With the current view that market-based measures may be more important than accounting-based measures, financial performance may be represented by measures like total stock return.

Operational performance represents a broader, non-financial conceptualization of business performance. Operational performance is represented by such measures as "market-share, new product introduction, product quality, marketing effectiveness, manufacturing value-added, and other measures of technological efficiency within the domain of business performance" (Venkatraman & Ramanujam, 1986: 804). Product quality, and innovativeness (new product introduction), are among the dimensions of the **Fortune** survey.

All of the dimensions of reputation would be considered measures of operational performance, except value as a long-term investment, financial soundness, and use of corporate assets. All of the market and accounting measures in the present study would be considered measures of financial performance.

Venkatraman and Ramanujam futher characterize data by its source as "primary" or "secondary" (1986: 804). Primary data is collected directly from "organizations." Secondary data is "from publicly available records." By these definitions, primary and secondary are not mutually exclusive categories: much data, such as financial statements, are collected directly from the organizations and publicly available. Venkatraman and Ramanujam identify COMPUSTAT data, used in the present study, as a

secondary data source, and PIMS (Product Impact of Marketing Strategies) data as primary data. But COMPUSTAT accounting data is obtained directly from companies, and made available to subscribers unchanged. Many identical measurements could be obtained from either PIMS or COMPUSTAT.

Still, the spirit of the distinction is a desirable one: secondary data should be distinguished not by being public, but by being derived from primary data through some further processing that changes it. In the present study, survey data on corporate reputation are clearly secondary: reputation is an indirect measure of a firm, changed by the filtering of experts' cognitive processes. A more difficult question concerns market measures. Are they primary or secondary? By the revised definition, they are considered secondary measures of organizations, because like reputation, they are derived from primary data processed with a variety of influences, including reputation, in the cognitions of investors.

The authors draw three implications from their classification of measures. First, conceptualizations of performance that combine financial and operational indicators are preferable because they employ a broader construct space, i.e. they provide additional information. The present study will evaluate this claim

by determining whether various financial and operating indicators from secondary sources are strongly related. A highly correlated measure does not offer new information. This relates to H_4: the various dimensions of corporate reputation are highly correlated.

Lack of a significant relationship between measures may mean independent information, a contribution to a more comprehensive causal schema. To know a firm's net income, by itself, is to know nothing about the firm. Any stakeholder requires additional knowledge of performance to make a competent decision. Financial analysis traditionally adds meaning to isolated numbers from a single firm by combining them in ratios, trend analysis, and industry comparisons. The present study performs a similar task at a higher level of analysis by evaluating relations among measures across firms, to see how reputation may add a further dimension of understanding to market and finance measures.

The recent move to adopt other theories including finance theory to strategic management research needs to be followed by examination of the relationships of those theories to existing strategic management theory, so that they can be incorporated and development can proceed. This study will consider both subjective and objective measures of management and firm performance and analyze

their interrelationships. The significance of these interrelationships for management's strategic decisions will be discussed in the final chapter.

Specific Hypotheses and Rationale

From the diverse literature relating to reputation and performance, some major issues have led to the present hypotheses. The first generalized hypothesis is:

> H_1: Corporate reputation is significantly related to prior strategic performance.

The first hypothesis follows from the fundamental nature of cognition: it depends on processing of information from prior events.

If H_1 is true, comparison of the **Fortune** data for one period with COMPUSTAT data for a prior period should reveal significant relationships. A variety of more specific alternate hypotheses are suggested by the literature review and the available data. A few are selected as especially likely or interesting, with others left implicit. Specific hypotheses which relate to H_1 include:

> H_{1a}: Experts' perceptions of quality of management are significantly related to prior ROA.

This follows from the prominence of ROA among various measures of performance. It is widely published, and easily understood.

H_{1b}: Experts' perceptions of long-term investment value are significantly related to prior total stock return.

The questions raised about biases in accounting measures, and the recent high regard for market measures suggests that experts may be following firm's stock market performance in forming their perceptions.

H_2: Corporate reputation is significantly related to <u>subsequent</u> strategic performance.

The interest that stakeholders have in an organization is that its performance will affect them in the future. That is why they search for information and form cognitions. This hypothesis represents the expectation that stakeholders are successful in this and that reputation is an accurate prediction of future performance.

In a generalized sense, it can be said that if H_2 is true, combining the **Fortune** data with the COMPUSTAT data should predict subsequent strategic performance better than the COMPUSTAT data alone. Specific hypotheses related to H_2 include:

H_{2a}: Experts' perceptions of quality of management are a significant predictor of subsequent total stock return.

This suggests that among expert perceptions, the explicit expectation of future investment value will be confirmed.

H_{2b}: Experts' perceptions of quality of management are a significant predictor of subsequent ROA while prior risk measures are not.

Recent trends in research emhphasize market measures. Finance theory leads to the expectation that measures of risk will anticipate future performance. This hypothesis compares risk measures with experts' opinions of management quality for prediction ability.

H_{2c}: A combination of selected dimensions of prior reputation and risk explains more of the variation in subsequent ROA than does prior reputation or risk separately.

There is a possibility that reputation and risk have independent predictive ability with respect to ROA. If so, then in combination, they will have increased explanatory power.

Two further hypotheses derive from considering both of the general hypotheses.

H_3: Corporate reputation is significantly related to contemporaneous strategic performance.

If perceptual lag is substantial, then this hypothesis will not be supported. However, if reputation adjusts as quickly as the efficient market hypothesis suggests stock prices do, then this hypothesis will be confirmed.

H_4: The various dimensions of corporate reputation are highly correlated.

This hypothesis is supported if management acts as agent for a variety of stakeholders, and seeks to balance various dimensions of performance. Reputation also likely reflects a halo effect.

Exhibit 2-1 lists the hypotheses. Figure 2-2 presents a schematic summary of the hypotheses.

EXHIBIT 2-1
GENERAL AND SPECIFIC HYPOTHESES

H_1: Corporate reputation is significantly related to <u>prior</u> strategic performance.

H_{1a}: Experts' perceptions of quality of management are significantly related to prior ROA.

H_{1b}: Experts' perceptions of long-term investment value are significantly related to prior total stock return.

H_2: Corporate Reputation is significantly related to <u>subsequent</u> strategic performance.

H_{2a}: Experts' perceptions of quality of management are a significant predictor of subsequent total stock return.

H_{2b}: Experts' perceptions of quality of management are a significant predictor of subsequent ROA while prior risk measures are not.

H_{2c}: A combination of selected dimensions of prior reputation and risk explains more of the variation in subsequent ROA than does prior reputation or risk separately.

H_3: Corporate reputation is significantly related to contemporaneous strategic performance.

H_4: The various dimensions of corporate reputation are highly correlated.

FIGURE 2-1
SUMMARY OF STATED HYPOTHESES

	Prior	Contemporaneous	Subsequent
H1:	Performance	⟷	Reputation
	ROA	⟷	Quality of Management
	Total Stock Return	⟷	Long Term Investment Value
H2:	Reputation	⟷	Performance
	Long Term Investment Value	⟷	Total Stock Return
	Quality of Management + Risk Measures	⟷	ROA

H3:

Reputation
↕
Performance

H4:

Reputation
↕
Reputation

TABLE 2-1
COMPARISON OF MEASURES

Dimensions of Comparison	Accounting Measures	Market Measures	Qualitative Measures
measure of systematic risk	accounting beta	beta	
measure of firm specific risk		mean square error(MSE) of residuals	
measure of total risk	leverage, earnings variability, earnings growth		"long term investment value"
measure of return	e.g. ROA, ROE	stock market return, dividend yield	
availability	easy: corporate sources and data banks	easy: corporate sources and data banks	require data collection
subjectivity	within GAAP: managers discretion on depreciation, transfer pricing, pricing of long-term assets and liabilities, allocation of expenses	investors' judgements exaggerated by speculation	experts inherently subjective

(continued next page)

TABLE 2-1: (continued).

theoretical basis	ad hoc, accessible	CAPM is widely accepted as a fully specified equilibrium model of a firm's stock return, but there are objections	implicit, inaccessible
assumptions	GAAP	investors evaluate firms appropriately	experts evaluate firms appropriately
scope	limited to specific entities, performance measures and time periods	global, nearly instantaneous	variable, narrow to global
focus	data collected for other purposes	investors motivated by stock return	variable

C H A P T E R I I I

DATA AND METHODOLOGY

The importance of corporate reputation in modern commerce is partly attributable to the great amount of publicity through advertising and reporting in business periodicals. A considerable exchange of reputation information is exemplified by **Fortune** magazine's annual survey of corporate reputations, one of the most comprehensive and widely circulated measurements of reputation available. The **Fortune** survey data operationally define reputation for the present study. Similarly, various measures of performance have gained a high degree of currency by virtue of their accessability through public sources such as the COMPUSTAT data base. This currency supports widespread acceptance of these measures as proper representations of performance. The data for the present study are discussed below, followed by the methodology employed.

The Data

Reputation data, including management quality, were obtained from **Fortune** magazine's annual survey of corporate reputations conducted for 1982 through 1984.[6]

C H A P T E R I I I

DATA AND METHODOLOGY

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The Data

Reputation data, including management quality, were obtained from **Fortune** magazine's annual survey of corporate reputations conducted for 1982 through 1984.[6]

In 1984, the survey covered the ten largest firms (largest by sales) in each of twenty-five industries[7] and included 250 companies (Sellers, 1985: 18). **Fortune** polled 7,000 senior executives, outside directors, and financial analysts each year. The response rate was about 50% for each year. Respondents were asked to rate the ten largest companies in their industry (for analysts, the industry they follow) on eight attributes: quality of management, quality of products and services, innovativeness, long-term investment value, financial soundness, ability to attract, develop, and keep talented people, community and environmental responsibility, and use of corporate assets. Firms were rated on a scale of 0 (poor) to 10 (excellent). An average score for the eight dimensions was computed for each firm.

In addition to the eight attributes measured in the survey, a ninth variable was calculated as the average of the other eight. This variable was named "average quality." Finally, another reputation variable was calculated from the **Fortune** data. An improvement in quality of management is often sought to obtain high performance. Marginal quality of management was computed as the per cent change in quality of management[8] from 1982 to 1984:

$$M_m = [(M_2 - M_1)/M_1]x100 \qquad (5)$$

Fortune's is one of the most comprehensive and widely circulated surveys of managerial attributes available. Both the quality and number of respondents is comparable or superior to the "expert panels" usually gathered for such purposes. Other studies have had fewer or less expert respondents, or have been less broadly based. For example, Dess and Robinson (1985) surveyed corporate executives, but did not include analysts or outside directors. MBA students have been used (Vance, 1975; Alexander and Bucholtz, 1978), but they are likely less expert than **Fortune's** senior executives, financial analysts, or outside directors. **The New York Times** evaluated the quality of management of ten major companies in a telephone poll limited to MBA graduates of six leading schools of management (Clymer, 1987). **Fortune** had 8200 responses, while some studies have relied on individual experts (Vance, 1975; Moskowitz, 1978). Chakravarthy (1986) used as the basis for his study of firms in the computer industry the assignation of excellence by Peters and Waterman (1982). They in turn relied on "an informed group of observers of the business scene." Chakravarthy also used the **Fortune** rankings to select additional excellent companies.

For the present study, **Fortune** data collected in the years 1982 through 1984 were used. Through this period, there were 98 firms that were surveyed in all three years, compared to 250 firms in 1984. This was due to firms entering or leaving the top ten in their industries. This is the sample that was studied. The sample is not random in the sense that it is comprised of firms continuously among the top ten in their industries. These firms may be different from ones that have entered or left this select group during the period of study, and from firms which have not been among the top ten in their industries.

Two types of error are possible: type 1, in which the null hypothesis is rejected when in fact there is no significant relationship; and type 2, in which the null hypothesis is accepted when in fact there is a significant relationship. To reduce the possibility of either type of error, the sample was divided into two equal groups of 49 firms each, so that results for one group could be checked by comparison to results for another group.

The two groups of firms were matched for equal representation of the 25 different industries and for overall reputation. This was done by first sorting all of the firms in ascending order by industry number, and

then sorting the firms within each industry by overall reputation. Then the ordered list of firms was randomly allocated to the two groups by selecting the first firm to group 1, the second to group 2, the third to group 1, and so on. The result was that group 1 and group 2 had the same number of firms in each industry when there were an even number of firms available from that industry in the sample, and a number of firms that differed by 1 when there were an odd number of firms in the sample (see Table 3-1).

To allow evaluation of possible industry differences suggested by the literature review, the two groups were further divided into subgroups of 39 industrial and 10 non industrial firms.

Accounting and market measures of firm performance were selected from those in the COMPUSTAT data base. Exhibit 3-1 defines the COMPUSTAT measures. These variables were chosen because of the importance they have been given in previous studies and in practice.

Beta, or systematic risk, is important because the Sharpe-Lintner capital asset pricing model implies that it is the sole determinant of differences in the expected returns among risky capital assets. There is widespread

EXHIBIT 3-1
DEFINITION OF COMPUSTAT VARIABLES

Alpha (A). From the market model, return in excess of that due to general market movements (Lee, 1985).

Assets Growth (AG). Percent change in total assets.
AG = ΔTA/TA = Change in Total Assets/Total Assets

Average Assets (AA). Beginning assets less ending assets divided by two.
AA = (BA-EA)/2 = (Beginning Assets-Ending Assets)/2

Beta (B). From the market model, the covariance of a stock in relation to the rest of the stock market (Downes and Goodman, 1985). Systematic, nondiversifiable risk (Lee, 1985).

Debt/Assets Ratio (D/A). Total debt divided by total assets (Lee, 1985).
D/A = TD/TA = Total Debt/Total Assets

Income Growth (IG). Percent change in income. This is income before extroardinary items and discontinued operations, after all expenses, including special items, income taxes, and minority interest - but before provisions for common and/or preferred dividends (Industrial Compustat, 1981).
IG = ΔI/I = Change in Income/Income

Operating Income Growth (OIG). Percent change in operating income. Operating income is net sales less cost of goods sold and operating expenses before deducting depreciation, amortization and depletion (Industrial Compustat, 1981).
OIG = ΔOI/OI = Change in Operating Income/Operating Income

Operating Leverage (OL). The extent to which fixed costs are used in a firm's operation. Breakeven analysis is used to measure the extent to which operating leverage is employed (Brigham, 1975).
OL = (S-VC)/(S-VC-F) = (Sales-Variable Costs)/(Sales-Variable Costs-Fixed Costs)

(continued on next page)

EXHIBIT 3-1 (continued).

Residual Error (RE). From the market model, unique firm risk (Lee, 1985).

Return on assets (ROA). A measure of operating performance, of how well assets have been employed since being received by the firm (Garison, 1976).

$$ROA = (NI+IE)/ATA = \frac{\text{(Net Income + Interest Expense)}}{\text{Average Total Assets}}$$

Sales Growth (SG). Percent change in sales. Sales is gross sales and other operating revenue less discounts, returns, and allowances (Industrial Compustat, 1981).

$$SG = \Delta S/S = \text{Change in Sales/Sales}$$

agreement on the overriding importance of systematic risk in the determination of the expected return both for individual corporate stocks and for portfolios (Fama, 1976). When any of the assumptions of CAPM are unwarranted, unsystematic (firm-specific) risk is also likely to affect market price (Levy, 1978). The unsystematic component of risk is represented by the mean square error of the residuals (MSE), an estimate of the variance of the disturbance term in the market model. Accounting variables were chosen to represent risk and return in light of their use in previous studies (Thompson, 1976)

Table 3-2 is a listing of all of the variables in the study, noting the time period of the variable, and if it is a performance or risk measure. Tables 3-3 to 3-8 contain descriptive statistics of all of the variables for both groups. It is apparent that the groups are quite similar.

Methodology

The hypotheses will be tested through correlation analysis, ANOVA, and both simple and stepwise regressions. Compared to ANOVA, which merely indicates the significance of linear relationship, regression analysis further indicates how the variables are related, and multiple regression analysis permits examination of

the combined influence of more than one independent variable.

Correlation Analysis

A correlation coefficient is a measure of linear association in a bivariate population, indicating the degree to which variation in one variable is related to variation in the other (Nie et al, 1976). Correlation analysis was used to determine relationships among the eight dimensions of experts' perception.

Analysis of Variance

Analysis of Variance, ANOVA, was used to reveal any significant relationships between ROA or total stock return and each of the other variables. In ANOVA, the independent variable must be an integer-valued, nonmetric factor. ANOVA examines the variability of the response variable between samples formed on this factor relative to variability of the response variable within samples. Values of the factor correspond to categories or levels of a "treatment." If the samples, represented by their means, are "spread out" compared to the variation of observations within each sample, then the null hypothesis, that there is no difference among the means of populations from which the samples were taken, is

rejected (Miller and Wichern, 1977). If the population means are identical, it is unlikely that sample means would vary more than the observations within samples. Thus, if sample means are found to be significantly different, then the null hypothesis is rejected and one is led to infer that at least one of the population means is different from the others, that the independent and dependent variables are related.

ANOVA requires integer values of independent variables to be used as non-metric factors. To obtain integer values based on the independent variable, ten portfolios were formed from each group by ranking firms by their z-scores[9] on return on assets (ROA). In separate ANOVA's, portfolios were similarly based on total stock return. Ten portfolios were formed so that each "portfolio" contains the minimum sample of five firms (in the case of the tenth portfolio, four firms). The rank number of the portfolio then was used as the independent variable. Thus, if sample means on the response variable are found to be significantly different, then the null hypothesis is rejected and one is led to infer that at least one of the population means is different from the others, that there are real differences between firms with respect to the "response"

measure, when they are grouped according to the specified "factor."

This approach was taken to provide a sensitive test. If either ROA or total stock return is significantly related to any of the independent variables, it will show up with this design. That is, if just two of the ten portfolios are likely drawn from different populations with respect to the response variable, the reported F probability will be significant. Thus, if there are no significant simple relationships found, one may have substantial confidence there are none. The result is robust in this respect. However, some type 2 errors, significant F probabilities when there is no real relationship between independent and dependent variables are likely. This could result from a spurious difference in the dependent variable between only two of the ten portfolios, for example. Duplication of the analysis for a second group of firms provides a check on this. Each independent variable was analyzed in a separate ANOVA, using the SPSS procedure "ONEWAY." Independent variables included all of the performance, risk, and reputation measures.

Simple Regression Analysis

Simple regressions were performed on selected variables in order to further evaluate bivariate relationships through examining the significance of individual beta coefficients. The dependent variables considered included ROA, total stock return, and quality of management, representing the most important among, respectively, accounting, market, and reputation measures as determined in the literature review. For each dependent variable, each of four independent variables was considered in a simple regression: residuals (from the market model), standard deviation of income, quality of management, and beta.

Stepwise Multiple Regression Analysis

Preceding analyses: correlation, ANOVA, and simple regression, merely examined the simple bivariate associations among variables. Multiple regression analysis estimates the degrees of influence of different independent variables on a dependent variable. It furnishes tests of the statistical significance of the combined influences of independent variables and of the separate influence of each independent variable on a dependent variable (Kerlinger, 1973). Several stepwise multiple regressions were performed. In this procedure,

the variable that explains the greatest amount of variance in the dependent variable will enter first, the variable that explains the greatest amount of variance in conjunction with the first will enter second, and so on. In other words, the variable that explains the greatest amount of variance unexplained by the variables already in the equation enters the equation at each step.

Questions adressed include: Which measures or combinations of measures best explain the variations in perceptions of management quality? Does management quality have any ability to forecast subsequent performance? Do measures of perceived management quality add to knowledge of past risk as a predictor of future performance? The analysis involved both leading and lagging the data to explore time-related interactions.

Several possible relationships were considered, involving the same variables that were considered in simple regressions. In each stepwise regression, the independent variable entered first will be that which was most significant among those considered in simple reqressions with that dependent variable. The statistics obtained will be identical. Of interest will be the significance and order of inclusion of remaining independent variables as they are added to the regression equation.

TABLE 3-1
DATA: Representation of Firms Among Industries.

Industry Number	Number of Group 1 Firms	Number of Group 2 Firms
Industrial		
20	3	2
23	0	1
26	4	4
28	3	3
29	3	2
32	0	1
33	1	0
34	1	1
36	3	4
38	3	3
40	3	2
41	4	4
42	4	4
44	4	5
45	3	3
Total Industrial	39	39
Non-Industrial		
91	3	3
92	1	1
95	3	3
96	2	1
97	1	2
Total Non-Industrial	10	10
Total Firms	49	49

TABLE 3-2
LIST OF VARIABLES.

P=PERFORMANCE MEASURE
R=RISK MEASURE

SUBSEQUENT (82 TO 84 AVG.)	MARKET		V1 CUSIP NUMBER
			V2 STANDARD MARKET ADJUSTED RETURNS
		R	V3 BETA
			V4 STANDARD ERROR OF BETA
		P	V5 ALPHA
			V6 STANDARD ERROR OF ALPHA
			V7 RESIDUALS
			V8 MARKET RETURN
			V9 STANDARD DEVIATION OF MARKET RETURN
		P	V10 TOTAL STOCK RETURN
		R	V11 STANDARD DEVIATION OF TOTAL STOCK RETURN
			V12 R SQUARED
	ACCTG		
(82 TO 84 AVG.)		R	V13 DEBT TO ASSETS RATIO
		P	V14 RETURN ON ASSETS
		P	V15 AVERAGE ASSETS
		R	V16 STANDARD DEVIATION OF OPERATING INCOME
		P	V17 SALES GROWTH
		R	V18 OPERATING LEVERAGE
		P	V19 ASSETS GROWTH
		P	V20 OPERATING INCOME GROWTH
PRIOR (77 TO 81 AVG.)	MARKET		V21 STANDARD MARKET ADJUSTED RETURNS
		R	V22 BETA
			V23 STANDARD ERROR OF BETA
		P	V24 ALPHA
			V25 STANDARD ERROR OF ALPHA
			V26 RESIDUALS
			V27 MARKET RETURN
			V28 STANDARD DEVIATION OF MARKET RETURN
		P	V29 TOTAL STOCK RETURN
		R	V30 STANDARD DEVIATION OF TOTAL STOCK RETURN
			V31 R SQUARED

(continued next page)

TABLE 3-2 (continued).

	FORTUNE		
(1982)		V32	QUALITY OF MANAGEMENT
		V33	QUALITY OF PRODUCTS
		V34	INNOVATION
		V35	LONG TERM INVESTMENT
		V36	FINANCIAL SOUNDNESS
		V37	ABILITY TO ATTRACT, DEVELOP, AND KEEP TALENTED PEOPLE
		V38	CORPORATE AND SOCIAL RESPONSIBILITY
		V39	USE OF CORPORATE ASSETS
		V40	AVERAGE QUALITY
PRIOR	ACCTG		
(77 TO 81 AVG.)		R V41	DEBT TO ASSETS RATIO
		P V42	RETURN ON ASSETS
		P V43	AVERAGE ASSETS
		R V44	STANDARD DEVIATION OF OPERATING INCOME
		P V45	SALES GROWTH
		R V46	OPERATING LEVERAGE
		P V47	ASSETS GROWTH
		P V48	OPERATING INCOME GROWTH
SUBSEQUENT	FORTUNE		
(82 TO 84 AVG.)		V49	QUALITY OF MANAGEMENT
		V50	QUALITY OF PRODUCTS
		V51	INNOVATION
		V52	LONG TERM INVESTMENT
		V53	FINANCIAL SOUNDNESS
		V54	ABILITY TO ATTRACT, DEVELOP, AND KEEP TALENTED PEOPLE
		V55	CORPORATE AND SOCIAL RESPONSIBILITY
		V56	USE OF CORPORATE ASSETS
		V57	AVERAGE QUALITY

TABLE 3-3
DESCRIPTIVE STATISTICS: Market and Accounting Performance Measures, 1982-1984 Averages.

	Mean	Standard Deviation
Market Measures:		
Alpha		
Group 1:	-0.0869	1.3962
Group 2:	-0.0038	1.3964
Total Stock Return		
Group 1:	1.3301	1.2484
Group 2:	1.4071	1.2059
Accounting Measures:		
Return On Assets		
Group 1:	147.71	55.40
Group 2:	155.51	60.15
Average Assets		
Group 1:	9299.50	12983.41
Group 2:	7569.83	8502.23
Sales Growth		
Group 1:	-0.5535	0.1745
Group 2:	-0.5532	0.1944
Assets Growth:		
Group 1:	-0.5676	0.1745
Group 2:	-0.5293	0.1964
Operating Income Growth:		
Group 1:	-0.3978	0.3790
Group 2:	-0.3510	0.4063

TABLE 3-4
DESCRIPTIVE STATISTICS: Market and Accounting Performance Measures, 1977-1981 Averages.

	Mean	Standard Deviation
Market Measures:		
Alpha		
Group 1:	-0.0928	1.1083
Group 2:	-0.0722	0.8226
Total Stock Return		
Group 1:	0.6078	1.1619
Group 2:	0.6668	0.9141
Accounting Measures:		
Return On Assets		
Group 1:	164.90	58.33
Group 2:	176.88	60.26
Average Assets		
Group 1:	6204.95	8963.82
Group 2:	5237.49	6017.21
Sales Growth		
Group 1:	-0.8297	0.3709
Group 2:	-0.8570	0.2308
Assets Growth:		
Group 1:	-0.8216	0.3196
Group 2:	-0.8776	0.2232
Operating Income Growth:		
Group 1:	-0.9378	0.5396
Group 2:	-1.0019	0.4396

TABLE 3-5
DESCRIPTIVE STATISTICS: Market and Accounting Risk Measures, 1982-1984 Averages.

	Mean	Standard Deviation
Market Measures:		
Beta		
Group 1:	1.1145	0.3793
Group 2:	1.1097	0.4729
S.D. of Total Stock Return		
Group 1:	7.8695	2.0752
Group 2:	8.1551	2.3020
Accounting Measures:		
Debt to Assets Ratio		
Group 1:	554.79	142.70
Group 2:	557.14	129.88
S.D. of Operating Income		
Group 1:	281.19	514.64
Group 2:	232.26	376.55
Operating Leverage		
Group 1:	0.2387	0.5080
Group 2:	0.0589	0.9123

TABLE 3-6
DESCRIPTIVE STATISTICS: Market and Accounting Risk Measures, 1977-1981 Averages.

	Mean	Standard Deviation
Market Measures:		
Beta		
Group 1:	1.0810	0.3819
Group 2:	1.1402	0.4325
S.D. of Total Stock Return		
Group 1:	7.5722	2.1026
Group 2:	8.0136	2.2333
Accounting Measures:		
Debt to Assets Ratio		
Group 1:	546.23	134.32
Group 2:	549.49	126.32
S.D. of Operating Income		
Group 1:	251.15	474.80
Group 2:	213.67	352.89
Operating Leverage		
Group 1:	0.1289	0.0726
Group 2:	0.1797	0.4606

TABLE 3-7
DESCRIPTIVE STATISTICS: Reputation Measures
1977-1981 Averages.

	Mean	Standard Deviation
Quality of Management		
Group 1:	6.6480	0.9016
Group 2:	6.5243	0.8687
Quality of Products		
Group 1:	7.0524	0.7151
Group 2:	6.8990	0.7235
Innovation		
Group 1:	6.2196	0.8540
Group 2:	6.1157	0.8081
Long Term Investment		
Group 1:	6.1241	0.7886
Group 2:	6.0547	0.8986
Financial Soundness		
Group 1:	6.5449	0.9859
Group 2:	6.5049	1.1686
Ability to Attract, Develop and Keep Talented People		
Group 1:	6.2992	0.8503
Group 2:	6.2035	0.8541
Corporate and Social Responsibility		
Group 1:	6.3220	0.6935
Group 2:	6.3041	0.6897
Use of Corporate Assets		
Group 1:	6.1971	0.7313
Group 2:	6.1204	0.8016
Average Quality		
Group 1:	6.4245	0.7259
Group 2:	6.3400	0.7734

TABLE 3-8
DESCRIPTIVE STATISTICS: Reputation Measures
1982 Averages.

	Mean	Standard Deviation
Quality of Management		
Group 1:	6.5747	1.1002
Group 2:	6.5129	0.9363
Quality of Products		
Group 1:	7.0292	0.8309
Group 2:	6.8718	0.8115
Innovation		
Group 1:	6.1584	0.9919
Group 2:	6.1110	0.9396
Long Term Investment		
Group 1:	6.0047	0.9538
Group 2:	6.0194	0.8474
Financial Soundness		
Group 1:	6.3229	1.2043
Group 2:	6.3188	1.2583
Ability to Attract, Develop and Keep Talented People		
Group 1:	6.1467	0.9892
Group 2:	6.0900	0.8898
Corporate and Social Responsibility		
Group 1:	6.0200	0.7488
Group 2:	6.2131	0.7352
Use of Corporate Assets		
Group 1:	6.0684	0.9276
Group 2:	6.0467	0.8433
Average Quality		
Group 1:	6.3135	0.8586
Group 2:	6.2731	0.8222

C H A P T E R I V

EMPIRICAL RESULTS

As shown in Chapter II, the literature review, important questions exist concerning the relationships among various dimensions of corporate reputation and strategic performance. These questions are addressed through evaluating the stated hypotheses. The emphasis is on testing significance of possible relationships. Relationships among various risk and performance measures are also tested.

Hypothesis One: Prior Objective Measures

H_1: Corporate reputation is significantly related to prior strategic performance.

To evaluate H_1, the significance of relationships between reputation and prior accounting and stock market performance is tested, as is the significance of relationships between prior performance and various other measures of risk and performance. Results for relationships among all performance measures are presented first.

ANOVA

Prior ROA. Tables 4-1 through 4-3 contain results of ANOVA's with classification of firms into portfolios by prior accounting performance: z-score of average ROA for 1977-1981. In Tables 4-1,4-2, and 4-3, measures of performance, risk, and reputation, respectively, are the independent variables.

In Table 4-1, the only significant relationship is that between ROA averaged from 1977 to 1981, and subsequent ROA, averaged from 1982 to 1984. This was highly significant for both groups of firms. Firms with high ROA in a period will likely be able to enjoy continued advantages in a subsequent period.

The lack of significant relationships with other subsequent measures of performance is probably more important. One might expect performance on ROA to be related to total stock return, for example, as managers strive to achieve balance between current profitability and their responsibility to shareholders. The lack of significance in this and other possible relationships represents lack of support for alternative hypotheses. It also suggests that the different performance measures convey independent information.

Table 4-2 looks at relationships between prior ROA and accounting and market measures of risk. Only the

debt to assets ratio bears a significant relationship for both groups of firms, but it is highly significant for both. Obviously, ROA and debt to assets have common denominators, and assets would be relatively stable across periods. A high return could be used to reduce debt, financing assets with retained earnings or by attracting new equity. Thus an inverse relationship between ROA and subsequent debt to assets is likely.

Table 4-3 contains results of ANOVA's with subsequent reputation measures, averaged from 1982 to 1984, as dependent variables. The results, especially compared to Tables 4-1 and 4-2, support the first hypothesis. Overall, nine relationships are significant, six are nearly so, and only three are not significant. Financial soundness and ability to attract, develop, and keep talented people are significant for both groups of firms. Quality of management, however, was significant only for group 1 firms. This is a mixed result for hypothesis H_{1a}: quality of management was not significantly related to ROA for group 2.

In Table 4-4 are results of ANOVA's with subsequent reputation measures, for 1982 only, as dependent variables and ROA as the independent variable. Limited to a more proximate time period, more results become significant: corporate and social responsibility and

average quality are now also significantly related to ROA for both groups.

So, experts' subjective evaluations of performance are significantly related to prior ROA while objective measures except the debt to assets ratio and ROA itself are not. This is an important result, supporting the first hypothesis.

Prior Total Stock Return. Tables 4-5, 4-6, 4-7, and 4-8 contain results of ANOVA's with classification of firms by prior market performance: z-score of average total stock return for 1977-1981.

In Tables 4-5 and 4-6, none of the performance or risk measures is significantly related for both groups, and only standard deviation of total stock return is significant for one group.

In Tables 4-7 and 4-8 reputation is considered as a subsequent measure. The results are rather strange, frequently significant for group 1 and not for group 2. From the group 1 results, it would have been easy to infer experts' lagged perception of corporate attributes from prior stock performance. Instead one is lead to conclude that the matched groups are different in this respect. Recalling that the groups were matched for equal representation of industries, and within each industry, by average quality of management, it is

difficult to imagine random allocation of 98 firms would result in such a consistent difference, but it has. The results, therefore, cannot be said to clearly support or fail to support the hypothesis. Group 1 results appear to support it, and group 2 results do not. The specific hypothesis H_{1b} was not supported, in that long term investment was significantly related only for group 1 firms.

Simple Regression

Prior Total Stock Return. Table 4-9 evaluates the significance of selected measures of risk and quality of management, in simple regressions, to explain the variation in prior total stock return. Only average beta, the measure of systematic risk, is significantly related, and then only for group 1.

Prior ROA. Table 4-10 looks at the relationships between the selected measures and prior ROA. Only residuals is significant for both groups of firms. Residual error measures the firm's unsystematic risk. The correlation coefficient, simple r, is negative. Apparently, risky firms were the ones with higher ROA in the prior period. Average quality of management is significant for group 1, and average beta is significant for group 2. These results fail to support the first

hypothesis, and instead support an alternate hypothesis, that only residuals is strongly related to prior strategic performance.

Prior Quality of Management. In Table 4-11, quality of management for 1982 is the dependent variable, and only averaged quality of management 1982-1984 is significant, but this is nearly an identity. It is notable that the other independent variables are not significant.

Stepwise Regression

Prior Total Stock Return. In Table 4-12, prior total stock return is again considered as the dependent variable, but with the selected subsequent measures as independent variables in a stepwise regression. It can be seen that, for group 1, both beta and residuals are significant, meaning the contribution of each to explained variation in the dependent variable was sufficient, so that it is unlikely that the sample came from a population in which its regression coefficient was zero. For group 1, residuals adds substantially to beta in explaining the variation in prior stock return. This follows from the definition of the market model. However, for group two, the average standard deviation of

income was entered first, and neither beta nor residuals is a significant predictor.

The group 2 result may not be so different from group 1 as it first appears. It is possible that standard deviation of income measures a similar risk effect as the combination of beta and residuals. When standard deviation of income enters first, it may remove much of the variation that beta and residuals would have explained. This could be tested in the future by forcing the prior inclusion of beta and residuals for group 2. For the first group, the overall regression is significant, and explains nearly 20% of the variation in total stock return. For the second group, the overall regression is not significant.

Prior ROA. In Table 4-13, prior ROA is the dependent variable in a stepwise regression. As before in table 10, results are different for the two groups, and inconclusive. For group 1, residuals is the best explanatory variable, with quality of management adding substantially to reach an unadjusted R^2 of .319 in the second step. The group 2 results are quite different, with beta the first and only independent variable significantly related to ROA. The results obtained are not consistent enough to permit one to reject the null hypotheses, that there is no relationship of the

independent variables to prior ROA. However, both overall regressions are significant, with adjusted R^2's of .315 and .156. The full set of explanatory variables, quality of management and risk measures, together account for a significant amount of the variation in prior ROA.

Stepwise Regression: Industrial and Non-Industrial Groups

Tables 4-14 and 4-15 consider the same stepwise regressions, with the two groups of 49 firms further divided into subgroups of 39 industrial and 10 non-industrial firms. These tables also provide the overall results for the groups, as they were reported in Table 4-9. The division of firms into industrial and non-industrial firms was undertaken to determine whether there were industry specific differences with respect to H_1, H_2, and H_3. H_1 is considered next and H_2 and H_3 are considered in later sections.

Prior Total Stock Return. Prior total stock return is the dependent variable in the regression results presented in Table 4-14, with subsequent measures as independent variables. None of the independent variables is consistently significant across groups of firms. The overall regressions are significant for both groups of industrial firms, however.

Prior ROA. In Table 4-15, prior ROA is the dependent variable, with the selected risk measures and quality of management as explanatory variables. Here, results were significant for residuals, quality of management, and beta, but only for group 1 industrial firms, and for group 2 industrial firms only for beta. The overall regressions were significant only because of the significance of relationships among variables for industrial firms.

Stepwise results by industrial group do not consistently support the first hypothesis, since the reputation measure, quality of management, is not significant across both groups of firms in explaining prior performance.

Stepwise Regression With Marginal Quality of Management

In Tables 4-16 to 4-18 are presented the results of stepwise regressions as in Tables 4-12 and 4-13, but with a new variable, marginal quality of management from equation (5), page 69, substituted for quality of management.

Prior ROA. Marginal quality of management does not emerge as a significant predictor of ROA in the stepwise regression presented in Table 4-16. However, the overall regression is significant for both groups, with adjusted

R_2 of .229 for the first group and .143 for group 2. The set of risk measures and marginal quality of management together account for a significant portion of the variation in prior ROA. The simple correlations are all negative, except for standard deviation of income for group 2. A likely explanation is that a high ROA in one period may somewhat reduce risk in a subsequent period: there are additional assets available for eventualities.

Prior Total Stock Return. In Table 4-17, prior total stock return is the dependent variable. None of the explanatory varibles are significant for both groups of firms. The simple R between marginal quality of management and total stock return is negative, suggesting that a perceived improvement in quality of management may be associated with low prior total stock return.

The result is that the new variable, marginal quality of management, is also unable to support the first hypothesis as bearing a strong relationship to prior objective measures of performance.

Prior Quality of Management. By contrast, there is a highly significant negative relationship between marginal quality of management and quality of management for 1982, as reported in Table 4-18. For both groups of firms, marginal quality of management was entered first, and the simple correlation is negative at more than .5. This may

be an important result. It means that firms perceived as having high quality of management in 1982 would be most likely to suffer declines in that perception, and firms with low perceived quality would be seen as improving over the following two year period. This apparent effect could be partly an artifact of the tendency for extreme cases to drift toward the mean in subsequent observations. It likely also involves actual dynamics of perception: a manager perceived as performing poorly in 1982 may be subsequently credited with resulting high performance. We may be most willing to attribute high or low quality of management when we notice a change. The overall regressions were significant, with R^2 of .29 and .39 for the two groups.

Hypothesis Two: Subsequent Objective Measures

H_2: Corporate Reputation is significantly related to subsequent strategic performance.

To evaluate H_2, the significance of relationships between reputation and subsequent accounting and stock market performance is tested, as is the significance of relationships between subsequent performance and various other measures of risk and performance.

ANOVA

Subseqent ROA. In Tables 4-19 through 4-21 are presented results of ANOVA's with classification of firms into portfolios by subsequent accounting performance: z-score of average ROA for 1982-1984. In Tables 4-19, 4-20, and 21, prior measures of reputation, performance, and risk, respectively, are the independent variables.

Table 4-19 contains results of ANOVA's with reputation measures from 1982 only. Since there were no previous surveys, this represents "prior" reputation in relation to ROA averaged from 1982 to 1984. Use of corporate assets and average quality are significant for both groups. "Use of corporate assets" could be taken as approximately synonymous with "ROA." Five other reputation variables were significant for only one or the other of the two groups usually group 2.

In Table 4-20, the only significant relationship is that between subsequent ROA averaged from 1982 to 1984, and ROA averaged from 1977 to 1981. This was highly significant for both groups of firms. Again, apparently only ROA among performance measures is related to ROA in another time period. This is an indication of the reliability of ROA. It may also indicate that managers will use accounting discretion to maintain an image of steady performance, and that conditions influencing ROA

may be fairly stable. The remaining performance measures are not related to ROA.

The lack of a relationship with average assets indicates the lack of a simple returns to scale effect. Larger firms in this time frame were not assured a subsequent higher return on their larger assets. Similarly, growth, whether in sales, assets, or operating income, did not ensure a subsequent higher ROA. One would expect the performance of a firm to be a continuation of its prior performance, but this is not supported here, except specifically with regard to ROA itself.

Table 4-21 looks at relationships between subsequent ROA and accounting and market measures of risk. Only the debt to assets ratio bears a significant relationship, and then only for group 2. Again, the absence of other significant relationships is perhaps more important: firms grouped by ROA will not be significantly different with regard to either prior or subsequent measures of risk.

The results tend to support hypothesis 2 with regard to subasequent ROA, albeit not strongly.

Subsequent Total Stock Return. Tables 4-22 through 4-24 contain results of ANOVA's with classification of

firms into portfolios by subsequent market performance: z-score of average total stock return, 1982-1984.

Remarkably, none of the dependent variables are significantly related for both groups. ROA is significant only for group 1. The second hypothesis is not supported with respect to total stock return. Reputation is not related to subsequent market performance of the firm. This appears to be a strong rejection of the many possible relationships that might be hypothesized as predictions of total stock return: an important negative result.

Simple Regression

Subsequent Total Stock Return. The results of simple regressions evaluating H_2 are in Tables 4-25 to 4-27. In Table 4-25, none of the independent variables was a significant predictor of total stock return for both groups. Thus hypothesis H_{2a} is not supported.

Subsequent ROA. In Table 4-26 are results of simple regressions with ROA as the dependent variable. Prior quality of management and prior beta are significant predictors for both groups. This suggests qualified support for hypothesis H_{2b}: quality of management is a significant predictor of ROA. Though beta is

significant, quality of management has a slightly higher probability.

Subsequent Quality of Management. Quality of management is the dependent variable in Table 4-27, and only prior quality of management is a significant predictor, which is to be expected. since one measure is embedded in the other.

In sum, the simple regressions indicate that none of the independent variables is significantly related to either stock return or quality of management, except prior quality of management. About 10% of the variation in ROA was explained by either prior quality of management or by prior beta. Thus, the second hypothesis is supported by simple regressions, but only with respect to ROA.

Stepwise Regression

Subsequent Total Stock Return. Subsequent total stock return is the dependent variable presented in a stepwise regression in Table 4-28. For the first group, averaged residuals for the period 1977-1981 entered first, and was significant, meaning that it is unlikely that the sample was drawn from a population in which R^2 or, equivalently, beta, equals zero. In group 1, averaged stock beta for the same period entered second,

and was also significant. Interestingly, average beta has a negative relationship with subsequent stock return, once the effect of average residuals has been taken into account. The results for group 2 are quite different, however. None of them are significant, and the order of inclusion is different. The overall regression is significant for group one, explaining nearly 25% of the variation in the independent variable, but not at all significant for group two.

Subsequent ROA. The second equation considered averaged ROA for 1982 to 1984 as the dependent variable, with the same prior measures as independent variables. The result, presented in Table 4-29 matches the corresponding simple regression analysis in Table 4-26 in that prior quality of management is a significant predictor of ROA for both groups of firms. Compared to the simple regressions, in which beta is a significant independent variable for both groups of firms, it has become more significant for group 1 and insignificant for group 2. Both overall regressions are significant when all four independent variables are included, but explain only about 20% of the variation in ROA. This result adds support to the second hypothesis, and suggests that beta adds to quality of management as a predictor of subsequent ROA only for group 2.

Thus, specific hypothesis H_{2c} is only slightly supported: adjusted R^2 for the stepwise regression combining quality of management and risk measures is .191 for group 1, and .216 for group 2, compared to the highest R^2 of .143 for simple regressions using the same variables.

Stepwise Regression: Industrial and Non-Industrial Groups

Tables 4-30 and 4-31 consider the same stepwise regressions, with the two groups of 49 firms further divided into subgroups of 39 industrial and 10 non-industrial firms. These tables also provide the overall results for the groups, as they were reported in Table 4-9, above.

Subsequent Total Stock Return. Total stock return is the dependent variable in Table 4-30. The only independent variable found consistently significant is averaged prior residuals for both groups of industrial firms. Again, residual error measures the firm's unsystematic risk, and apparently, risky firms were the ones with higher subsequent stock returns. Between the two groups of non-industrial firms, the sign of the correlation coefficient, simple R, reverses, being positive for group 1 and negative for group 2. The overall regression is not significant for group 2 firms

because of the non-industrial firms among them: otherwise, the overall regressions are all significant.

Subsequent ROA. Separating industrial and non-industrial firms with ROA as the dependent variable yields more specific results than were obtained in the corresponding overall regression. Table 4-31 shows that prior quality of management and beta are significant predictors for both groups of industrial firms. Quality of management is not significant for either group of non-industrial firms, and beta is not significant for group 1 non-industrial firms. None of the remaining independent variables were found significant. This suggests a possible increase in precision for the second hypothesis, specifying a relationship to ROA for industrial firms only.

Hypothesis Three: Contemporaneous Objective Measures

> H_3: Corporate reputation is significantly related to contemporaneous strategic performance.

To evaluate H_3, the significance of relationships between reputation and contemporaneous accounting and stock market performance is tested, as is the significance of relationships between contemporanous performance and various other measures of risk and

performance. Results for relationships among all performance measures are presented first.

ANOVA

Contemporaneous ROA. In Tables 4-32, 4-34, and 4-36, firms were grouped into ten "portfolios" by the Z-scores of their average ROA's for the period 1982 to 1984. Tables 4-33 and 4-35 were similarly based on ROA for the period 1977 to 1981.

Table 4-32 contains the results of seven "ONEWAY" ANOVA's representing contemporaneous market and accounting performance measures. Total stock return was not found to be significantly related to ROA. Alpha was significant for both groups, however. This is not surprising in that ROA is based on net income, reported net income will influence stock price, and net income is used to pay dividends. So a company's own ROA could be expected to be related to its excess return. Thus, excess return reflects a firm's distinctive performance, while total stock return would dilute this distinctive effect by incorporating general market movements. A check on these relationships for another time period, 1977 to 1981, is provided in Table 4-33. However, in this period, a significant relationship did not exist.

Also notable for their lack of significant relationships with ROA, in either time period, were average assets, sales growth, assets growth, and operating income growth.

The significant relationship between ROA as an independent variable and ROA as a dependent variable is an artifact: they represent the same time period and the same data. This result is included to demonstrate the integrity of the analysis. Similar results are included for ROA in Table 4-32 and 4-33, and for total stock return in 4-37,and 4-40.

Among contemporaneous risk measures presented in Table 4-34, only beta was significantly related to ROA for both groups of firms. Beta is a stock's systematic, non-diversifiable market risk. A significant relationship between beta and ROA could mean either that firms whose stocks move with the market are likely to be more profitable, or the opposite, that firms whose stocks have low betas and move oppositely to the market are more profitable. This effect would likely depend on the direction of movement of the market as a whole in a period, and was not observed for the period 1977 to 1981, as presented in Table 4-35.

Again noteworthy are the variables that might have had significant relationships, but did not. For the 1982

to 1984 period, the relationship to standard deviation of total stock return, a measure of a stock's total risk, was highly significant for group 2: .000, but not significant for group 1: .126. This points out the fact that the two groups, though randomly selected, and matched by industries and by average quality of management, are not necessarily equivalent, and a relationship that is not significant for both groups is less likely to be observed among other groups of firms or other time periods. Similarly, among contemporaneous accounting risk measures, ROA and the debt to assets ratio were significantly related for group 2: .024, but not for group 1: .494. At least this is consistent with the previous distinction between the groups: many relationships were significant for group 1 firms and not for group 2. The remaining risk measures, standard deviation of operating income, and operating leverage, do not bear significant relationships to ROA.

Looking at the period 1977 to 1981, in Table 4-35, the debt to assets ratio bears a highly significant relation to ROA for both groups. One obvious reason for the debt to assets ratio to be related to return on assets is that the two variables have a common denominator. This is true for the significant relationship found for group 1 in Table 34 as well as for

the same relationship found for both groups in Table 35. A further possibility is that greater leverage, a specific measure of risk, is associated with higher return on assets. In sum, neither market nor accounting measures of risk, with the possible exception of the debt to assets ratio, are reliably associated with ROA in the same period.

The relationships between ROA and contemporaneous measures of reputation are presented in Table 36. In the 1982 to 1984 period, fourteen of the possible relationships are significant, and the remaining four are nearly so. This remarkable result indicates that in considering three-year average contemporaneous measures, reputation is much more consistently related to ROA than are either market or accounting measures. Using three year averages does allow some influence of prior ROA on reputation and conversely.

In conclusion, ROA is frequently related to various measures of reputation. Among the measures of reputation, only innovation consistently lacked a significant relationship. Alpha and beta were significantly related to ROA only within the 1982 to 1984 time period. Debt to assets was significantly related as a subsequent measure, and as a contemporaneous measure in 1977 to 1981 only.

It is notable that reputation is more frequently and more closely related to contemporaneous than to prior or subsequent ROA.

Contemporaneous Total Stock Return. In Tables 4-37 through 4-39, firms were grouped into ten "portfolios" by the z-scores of their average total stock returns for the period 1982 to 1984. Tables 4-40 and 4-41 were similarly based on total stock return for the period 1977 to 1981.

Table 4-39 indicates a surprising lack of relationship between total stock return and contemporaneous measures of reputation. Hypothesis 3 is not supported. This important result is in contrast to the frequent significance of relationships between reputation and ROA reported above. Prior measures of reputation, reported in Table 4-24 also lack relationship to total stock return. Apparently, experts perceptions of a firm are more closely based on ROA than on stock return.

Table 4-37 contains the results with contemporaneous market and accounting performance measures as independent variables. The F ratios for alpha are lower, but still highly significant, simply because alpha is a component of the classification variable. None of the accounting measures of performance are significantly related to total stock return for both groups of firms, a surprising

result. The same result was obtained for the time period 1977 to 1981, as indicated in Table 4-40. It is interesting to note, in tables 37 and 40, that in the four instances in which the relationship is significant for one group but not for the other, it is group 1 which is significant.

Contemporaneous risk measures are considered as independent variables for the two time periods in Tables 4-38 and 4-41. Noteworthy is the lack of significant relationships, except for market risk measures in the 1977 to 1981 time period. It may be that firms with high total stock returns tended to have either more or less risk associated with those returns in that period.

Stepwise Regression with Marginal Quality of Management

Contemporaneous Total Stock Return. In Table 4-42, the dependent variable is total stock return. Contemporaneous marginal quality of management is a significant explanatory variable for both groups of firms, accounting for more than 20% of the variation in total stock return. This is another important result. The correlation between marginal quality of management and total stock return is about .5 for both firms. The additional independent variables, prior measures of risk, are not significant for both groups.

Contemporaneous ROA. Marginal quality of management does not emerge as a significant predictor of ROA in the stepwise regression presented in Table 4-43. Only prior beta is significant, as was found in the simple regression of Table 4-26.

Contemporaneous Average Quality of Management. Perhaps surprisingly, marginal quality of management did not emerge as significant in relation to average quality of management for the period 1982-1984, as reported in Table 4-44.

It is remarkable that H_3 is supported with respect to marginal quality of management and total stock return when other reputation measures are more related to ROA. A possible explanation of this is that a change in quality of management has a "figure-ground" effect on investors: they notice a change in progress and continuously revise their expectations. Furthermore, a change in management may have a delayed effect anticipated by investors, reflected in stock return immediately but not reflected immediately in ROA.

Hypothesis Four: Correlation of Reputation Measures

H_4: The various dimensions of corporate reputation are highly correlated.

Correlation

To evaluate hypothesis H_4, correlations among the eight dimensions of management quality were examined. For this purpose, five years of Fortune data were analyzed, including 1982 through 1986. The results, presented in Table 4-45, indicate the high degree of interrelation among these dimensions. The eight variables had an average correlation of .75. Only one variable, social responsibility, had a significantly lower average correlation, .58. Apparently the attribution of social responsibility is less related to the other attributes. The highest correlation, .93, was found between quality of management and use of corporate assets. This suggests a strong halo effect: that experts are influenced by one or a few of the characteristics of an organization and infer similar performance on a variety of dimensions.

Even though the various dimensions of reputation are highly correlated, there were different results when each is considered in relation to performance using ANOVA's. This is due to the sensitivity of ANOVA, as described above under ANOVA in Chapter III.

TABLE 4-1
ANOVA: Prior ROA with Performance Measures.

Independent Variable: Prior Accounting Performance,
Z-score of Avg. ROA, 1977-1981

Dependent Variables: Performance Measures,
1982-1984 Averages

Dependent Variables	F Ratio	F Prob.
Market Measures:		
Alpha		
Group 1:	1.026	0.437
Group 2:	1.138	0.361
Total Stock Return		
Group 1:	1.483	0.189
Group 2:	1.272	0.283
Accounting Measures:		
Return On Assets		
Group 1:	5.528	0.000 **
Group 2:	5.189	0.000 **
Average Assets		
Group 1:	1.029	0.435
Group 2:	1.412	0.217
Sales Growth		
Group 1:	1.165	0.344
Group 2:	1.131	0.365
Assets Growth:		
Group 1:	1.602	0.149
Group 2:	0.682	0.721
Operating Income Growth:		
Group 1:	1.251	0.294
Group 2:	1.173	0.339

** $p \leq .01$ * $p \leq .05$

TABLE 4-2
ANOVA: Prior ROA with Risk Measures.

Independent Variables: Prior Accounting Performance,
Z-score of Avg. ROA, 1977-1981

Dependent Variables: Risk Measures,
1982-1984 Averages

Dependent Variables	F Ratio	F Prob.
Market Measures:		
Beta		
Group 1:	0.481	0.879
Group 2:	1.594	0.151
S.D. of Total Stock Return		
Group 1:	1.015	0.445
Group 2:	2.224	0.041 *
Accounting Measures:		
Debt to Assets Ratio		
Group 1:	5.686	0.000 **
Group 2:	4.324	0.001 **
S.D. of Operating Income		
Group 1:	0.985	0.467
Group 2:	1.018	0.443
Operating Leverage		
Group 1:	1.231	0.305
Group 2:	0.946	0.498

** $p \leq .01$ * $p \leq .05$

TABLE 4-3
ANOVA: Prior ROA with Reputation Measures.

Independent Variable: Prior Accounting Performance,
Z-score of Avg. ROA, 1977-1981

Dependent Variables: Reputation Measures,
1982-1984 Averages

Dependent Variables	F Ratio	F Prob.
Quality of Management		
Group 1:	3.078	0.007 **
Group 2:	0.836	0.588
Quality of Products		
Group 1:	2.039	0.061
Group 2:	2.306	0.035 *
Innovation		
Group 1:	1.353	0.243
Group 2:	1.714	0.119
Long Term Investment		
Group 1:	3.101	0.007 **
Group 2:	1.085	0.394
Financial Soundness		
Group 1:	2.702	0.015 *
Group 2:	2.184	0.045 *
Ability to Attract, Develop and Keep Talented People		
Group 1:	2.970	0.009 **
Group 2:	2.220	0.042 *
Corporate and Social Responsibility		
Group 1:	1.961	0.071
Group 2:	4.637	0.000 **
Use of Corporate Assets		
Group 1:	3.259	0.005 **
Group 2:	1.537	0.169
Average Quality		
Group 1:	3.062	0.007 **
Group 2:	1.933	0.075

** $p \leq .01$ * $p \leq .05$

TABLE 4-4
ANOVA: Prior ROA with Reputation Measures.

Independent Variables: Prior Accounting Performance,
Z-score of Avg. ROA, 1977-1981

Dependent Variables: Reputation Measures,
1982

Dependent Variables	F Ratio	F Prob.
Quality of Management		
Group 1:	3.335	0.004 **
Group 2:	0.901	0.533
Quality of Products		
Group 1:	2.160	0.047 *
Group 2:	1.683	0.126
Innovation		
Group 1:	1.722	0.117
Group 2:	1.524	0.174
Long Term Investment		
Group 1:	3.031	0.008 **
Group 2:	1.188	0.330
Financial Soundness		
Group 1:	2.890	0.010 **
Group 2:	3.355	0.004 **
Ability to Attract, Develop and Keep Talented People		
Group 1:	3.459	0.003 **
Group 2:	2.549	0.021 *
Corporate and Social Responsibility		
Group 1:	2.827	0.012 *
Group 2:	4.446	0.001 **
Use of Corporate Assets		
Group 1:	2.893	0.010 **
Group 2:	1.561	0.161
Average Quality		
Group 1:	3.544	0.003 **
Group 2:	2.143	0.049 *

** $p \leq .01$ * $p \leq .05$

TABLE 4-5
ANOVA: Prior Total Stock Return with Performance Measures.

Independent Variables: Prior Market Performance,
Z-score of Avg. Total Stock Return,
1977-1981

Dependent Variables: Performance Measures,
1982-1984 Averages

Dependent Variables	F Ratio	F Prob.
Market Measures:		
Alpha		
Group 1:	0.799	0.619
Group 2:	0.627	0.766
Total Stock Return		
Group 1:	0.923	0.516
Group 2:	0.670	0.731
Accounting Measures:		
Return On Assets		
Group 1:	1.068	0.407
Group 2:	0.447	0.900
Average Assets		
Group 1:	0.920	0.518
Group 2:	0.664	0.736
Sales Growth		
Group 1:	1.334	0.252
Group 2:	0.883	0.549
Assets Growth:		
Group 1:	1.299	0.269
Group 2:	0.578	0.807
Operating Income Growth:		
Group 1:	1.366	0.237
Group 2:	0.542	0.834

** $p \leq .01$ * $p \leq .05$

TABLE 4-6
ANOVA: Prior Total Stock Return with Risk Measures.

Independent Variable: Prior Market Performance,
Z-score of Avg. Total Stock Return,
1977-1981

Dependent Variables: Risk Measures,
1982-1984 Averages

Dependent Variables	F Ratio	F Prob.
Market Measures:		
Beta		
Group 1:	1.884	0.084
Group 2:	0.189	0.994
S.D. of Total Stock Return		
Group 1:	2.195	0.044 *
Group 2:	0.404	0.925
Accounting Measures:		
Debt to Assets Ratio		
Group 1:	1.079	0.399
Group 2:	1.676	0.128
S.D. of Operating Income		
Group 1:	1.533	0.171
Group 2:	0.834	0.589
Operating Leverage		
Group 1:	0.610	0.781
Group 2:	0.843	0.582

** $p \leq .01$ * $p \leq .05$

TABLE 4-7
ANOVA: Prior Total Stock Return with Reputation Measures.

Independent Variable: Prior Market Performance,
Z-score of Avg. Total Stock Return,
1977-1981

Dependent Variables: Reputation Measures,
1982-1984 Averages

Dependent Variables	F Ratio	F Prob.
Quality of Management		
Group 1:	1.895	0.082
Group 2:	0.917	0.521
Quality of Products		
Group 1:	2.764	0.013 *
Group 2:	1.072	0.404
Innovation		
Group 1:	1.651	0.135
Group 2:	0.642	0.754
Long Term Investment		
Group 1:	2.144	0.049 *
Group 2:	0.950	0.495
Financial Soundness		
Group 1:	1.666	0.131
Group 2:	1.134	0.363
Ability to Attract, Develop and Keep Talented People		
Group 1:	2.163	0.047 *
Group 2:	1.176	0.337
Corporate and Social Responsibility		
Group 1:	1.206	0.319
Group 2:	0.714	0.693
Use of Corporate Assets		
Group 1:	1.918	0.078
Group 2:	1.370	0.235
Average Quality		
Group 1:	2.044	0.060
Group 2:	1.065	0.410

** $p \leq .01$ * $p \leq .05$

TABLE 4-8
ANOVA: Prior Total Stock Return with Reputation.

Independent Variable: Prior Market Performance,
Z-score of Avg. Total Stock Return,
1977-1981

Dependent Variables: Reputation Measures,
1982

Dependent Variables	F Ratio	F Prob.
Quality of Management		
Group 1:	3.777	0.002 **
Group 2:	0.940	0.503
Quality of Products		
Group 1:	3.518	0.003 **
Group 2:	0.999	0.457
Innovation		
Group 1:	2.534	0.021 *
Group 2:	0.628	0.766
Long Term Investment		
Group 1:	3.019	0.008 **
Group 2:	0.980	0.471
Financial Soundness		
Group 1:	2.955	0.009 **
Group 2:	1.056	0.415
Ability to Attract, Develop and Keep Talented People		
Group 1:	3.299	0.004 **
Group 2:	1.036	0.430
Corporate and Social Responsibility		
Group 1:	1.501	0.182
Group 2:	0.824	0.598
Use of Corporate Assets		
Group 1:	3.391	0.004 **
Group 2:	1.471	0.193
Average Quality		
Group 1:	3.532	0.003 **
Group 2:	1.028	0.436

** $p \leq .01$ * $p \leq .05$

TABLE 4-9
SIMPLE REGRESSION: Prior Total Stock Return
with Risk Measures and Quality of Management.

Dependent Variable: Prior Average Total Stock Return,
1977-1981

Independent Variables: Risk Measures and Quality of Management,
1982-1984

Variable	F	Signif.	R^2	Simple R
Avg. Beta				
Group 1:	4.338	0.043 *	0.085	0.291
Group 2:	0.529	0.471	0.011	0.105
Avg. S.D. of Income				
Group 1:	3.123	0.084	0.062	-0.250
Group 2:	4.028	0.051	0.079	-0.281
Avg. Qual. of Mgt.				
Group 1:	2.238	0.141	0.045	0.213
Group 2:	0.650	0.424	0.014	0.117
Avg. Residuals				
Group 1:	0.637	0.429	0.013	-0.142
Group 2:	0.037	0.847	0.001	-0.028

** $p \leq .01$ * $p \leq .05$

TABLE 4-10
SIMPLE REGRESSION: Prior ROA
with Risk Measures and Quality of Management.

Dependent Variable: Prior Average Return on Assets,
1977-1981

Independent Variables: Risk Measures and Quality of Management,
1982-1984

Variable	F	Signif.	R^2	Simple R
Avg. Residuals				
Group 1:	12.789	0.001 **	0.214	-0.462
Group 2:	4.870	0.032 *	0.094	-0.306
Avg. Qual. of Mgt.				
Group 1:	6.183	0.017 *	0.116	0.341
Group 2:	2.420	0.127	0.049	0.221
Avg. Beta				
Group 1:	0.165	0.686	0.004	-0.059
Group 2:	8.726	0.005 **	0.157	-0.396
Avg. S.D. of Income				
Group 1:	0.426	0.517	0.009	-0.095
Group 2:	0.168	0.683	0.004	0.060

** $p \leq .01$ * $p \leq .05$

TABLE 4-11
SIMPLE REGRESSION: Prior Quality of Management
with Risk Measures and Quality of Management.

Dependent Variable: Prior Average Quality of Management, 1982

Independent Variables: Risk Measures and Quality of Management, 1982-1984

Variable	F	Signif.	R^2	Simple R
Avg. Qual. of Mgt.				
Group 1:	168.802	0.000 **	0.782	0.884
Group 2:	144.321	0.000 **	0.754	0.869
Avg. Beta				
Group 1:	2.164	0.148	0.044	0.210
Group 2:	1.698	0.199	0.035	-0.187
Avg. S.D. of Income				
Group 1:	0.781	0.381	0.016	-0.128
Group 2:	1.586	0.214	0.033	0.181
Avg. Residuals				
Group 1:	0.335	0.565	0.007	-0.084
Group 2:	1.360	0.249	0.028	-0.168

** $p \leq .01$ * $p \leq .05$

TABLE 4-12
STEPWISE REGRESSION: Prior Total Stock Return
with Risk Measures and Quality of Management.

Dependent Variable: Prior Average Total Stock Return,
1977-1981

Independent Variables: Risk Measures and Quality of Management
1982-1984

Variable	F	Signif.	Mult. R	R^2	Simple R
Avg. Beta					
Group 1:	4.338	0.043 *	0.291	0.085	0.291
Group 2:	0.854	0.360	0.373	0.139	0.105
Avg. Residuals					
Group 1:	6.602	0.013 *	0.447	0.199	-0.116
Group 2:	F-level insufficient, not entered in equation.				
Avg. S.D. of Income					
Group 1:	2.089	0.155	0.485	0.235	-0.250
Group 2:	4.028	0.051	0.281	0.079	-0.281
Avg. Qual. of Mgt.					
Group 1:	1.583	0.215	0.511	0.261	0.213
Group 2:	2.305	0.136	0.351	0.123	0.117

	Adjusted R^2	F	Signif.
Overall Regression			
Group 1:	0.194	3.895	0.000 **
Group 2:	0.082	2.426	0.070

** $p \leq .01$ * $p \leq .05$

TABLE 4-13
STEPWISE REGRESSION: Prior ROA
with Risk Measures and Quality of Management.

Dependent Variable: Prior Average Return on Assets,
1977-1981

Independent Variables: Risk Measures and Quality of Management,
1982-1984

Variable	F	Signif.	Mult. R	R^2	Simple R
Avg. Residuals					
Group 1:	12.789	0.001 **	0.462	0.214	-0.462
Group 2:	2.333	0.134	0.444	0.197	-0.306
Avg. Qual. of Mgt.					
Group 1:	7.079	0.011 *	0.565	0.319	0.341
Group 2:	0.634	0.430	0.457	0.208	0.221
Avg. Beta					
Group 1:	2.771	0.103	0.599	0.358	-0.059
Group 2:	8.726	0.005 **	0.396	0.157	-0.396
Avg. S.D. of Income					
Group 1:	0.616	0.437	0.606	0.367	-0.095
Group 2:	F-level or tolerance insuffient to enter				

	Adjusted R^2	F	Signif.
Overall Regression			
Group 1:	0.315	6.381	0.000 **
Group 2:	0.156	3.950	0.010 **

** $p \leq .01$ * $p \leq .05$

TABLE 4-14
STEPWISE REGRESSION: Prior Total Stock Return
with Risk Measures and Quality of Management
-With Separate Results For
Industrial and Non-Industrial Firms.

Dependent Variable: Prior Average Total Stock Return, 1977-1981

Independent Variables: Risk Measures and Quality of Management, 1982-1984

Variable	F	Signif.	Mult. R	R^2	Simple R
Avg. Beta					
Group 1:	4.338	0.043 *	0.291	0.085	0.291
Industrial	3.793	0.059	0.305	0.093	0.305
Non-industrial	0.872	0.393	0.709	0.503	0.265
Group 2:	0.854	0.360	0.373	0.139	0.105
Industrial	F-level insufficient, not entered in equation				
Non-industrial	0.179	0.690	0.614	0.377	0.251
Avg. Residuals					
Group 1:	6.602	0.013 *	0.447	0.199	-0.116
Industrial	7.773	0.008 **	0.504	0.254	-0.175
Non-industrial	0.306	0.600	0.645	0.416	0.236
Group 2:	F-level insufficient, not entered in equation.				
Industrial	1.439	0.238	0.451	0.203	0.118
Non-industrial	0.296	0.606	0.595	0.354	-0.186
Avg. S.D. of Income					
Group 1:	2.089	0.155	0.485	0.235	-0.250
Industrial	1.091	0.303	0.526	0.277	-0.259
Non-industrial	0.745	0.417	0.622	0.386	-0.182
Group 2:	4.028	0.051	0.281	0.079	-0.281
Industrial	6.266	0.017 *	0.381	0.145	-0.381
Non-industrial	0.345	0.575	0.568	0.323	0.220

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TABLE 4-14: (continued).

Variable	F	Signif.	Mult. R	R^2	Simple R
Avg. Qual. of Mgt.					
Group 1:	1.583	0.215	0.511	0.261	0.213
Industrial	0.580	0.452	0.537	0.289	0.174
Non-industrial	3.781	0.088	0.567	0.321	0.567
Group 2:	2.305	0.136	0.351	0.123	0.117
Industrial	1.110	0.299	0.413	0.170	0.029
Non-industrial	3.254	0.109	0.538	0.289	0.538

	Adjusted R^2	F	Signif.
Overall Regression			
Group 1:	0.194	3.895	0.000 **
Industrial	0.205	3.450	0.010 *
Non-industrial	0.105	1.264	0.390
Group 2:	0.082	2.426	0.070
Industrial	0.135	2.975	0.040 *
Non-industrial	0.000	0.755	0.590

** $p \leq .01$ * $p \leq .05$

TABLE 4-15
STEPWISE REGRESSION: Prior ROA
with Risk Measures and Quality of Management
-With Separate Results For
Industrial and Non-Industrial Firms.

Dependent Variable: Prior Average Return on Assets,
1977-1981

Independent Variables: Risk Measures and Quality of Management,
1982-1984

Variable	F	Signif.	Mult. R	R^2	Simple R
Avg. Residuals					
Group 1:	12.789	0.001 **	0.462	0.214	-0.462
Industrial	17.931	0.000 **	0.571	0.326	-0.571
Non-industrial	0.155	0.706	0.580	0.337	-0.144
Group 2:	2.333	0.134	0.444	0.197	-0.306
Industrial	F-level or tolerance insuffient to enter				
Non-industrial	2.793	0.133	0.509	0.259	-0.509
Avg. Qual. of Mgt.					
Group 1:	7.079	0.011 *	0.565	0.319	0.341
Industrial	9.250	0.004 **	0.681	0.464	0.439
Non-industrial	0.034	0.861	0.626	0.392	-0.090
Group 2:	0.634	0.430	0.457	0.208	0.221
Industrial	0.720	0.402	0.516	0.267	0.272
Non-industrial	0.880	0.384	0.744	0.553	0.086
Avg. Beta					
Group 1:	2.771	0.103	0.599	0.358	-0.059
Industrial	7.720	0.009 **	0.749	0.561	-0.009
Non-industrial	0.499	0.506	0.623	0.388	-0.217
Group 2:	8.726	0.005 **	0.396	0.157	-0.396
Industrial	12.468	0.001 **	0.502	0.252	-0.502
Non-industrial	0.012	0.916	0.744	0.554	-0.407

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TABLE 4-15: (continued).

Variable	F	Signif.	Mult. R	R^2	Simple R
Avg. S.D. of Income					
Group 1:	0.616	0.437	0.606	0.367	-0.095
Industrial	F-level or tolerance insuffient to enter				
Non-industrial	3.798	0.087	0.567	0.322	-0.567
Group 2:	F-level or tolerance insuffient to enter				
Industrial	F-level or tolerance insuffient to enter				
Non-industrial	3.120	0.121	0.698	0.487	-0.458

	Adjusted R^2	F	Signif.
Overall Regression			
Group 1:	0.315	6.381	0.000 **
Industrial	0.523	14.907	0.000 **
Non-industrial	0.000	0.805	0.570
Group 2:	0.156	3.950	0.010 **
Industrial	0.226	6.547	0.004 **
Non-industrial	0.197	1.552	0.310

** $p \leq .01$ * $p \leq .05$

TABLE 4-16
STEPWISE REGRESSION: Prior ROA
with Risk Measures
and Marginal Quality of Management.

Dependent Variable: Prior Average Return On Assets,
1977-81

Independent Variables: Risk Measures
and Marginal Quality of Management,
1982-1984

Variable	F	Signif.	Mult. R	R^2	Simple R
Avg. Residuals,1982-84					
Group 1:	12.789	0.001 **	0.462	0.214	-0.462
Group 2:	2.333	0.134	0.442	0.197	-0.306
Avg. Beta,1982-84					
Group 1:	0.379	0.058	0.523	0.274	-0.059
Group 2:	8.726	0.005 **	0.396	0.157	-0.396
Marginal Quality of Management					
Group 1:	1.167	0.286	0.541	0.292	-0.241
Group 2:	0.764	0.387	0.459	0.211	-0.084
AVG. S.D. of Income,1982-84					
Group 1:	0.055	0.815	0.541	0.293	-0.095
Group 2:	0.205	0.653	0.463	0.214	0.060

	Adjusted R^2	F	Signif.
Overall Regression			
Group 1:	0.229	4.560	0.000 **
Group 2:	0.143	3.001	0.020 *

** $p \leq .01$ * $p \leq .05$

TABLE 4-17
STEPWISE REGRESSION: Prior Total Stock Return
with Risk Measures
and Marginal Quality of Management.

Dependent Variable: Prior Average Total Stock Return
1977-81

Independent Variables: Risk Measures
and Marginal Quality of Management
1982-1984

Variable	F	Signif.	Mult. R	R^2	Simple R
Marginal Quality of Management					
Group 1:	4.427	0.041 *	0.293	0.086	-0.293
Group 2:	0.502	0.482	0.298	0.089	-0.140
Avg. Beta					
Group 1:	2.814	0.100	0.673	0.139	0.291
Group 2:	0.654	0.423	0.319	0.102	0.105
Avg. Residuals					
Group 1:	4.867	0.033 *	0.472	0.223	-0.116
Group 2:	0.769	0.385	0.343	0.117	-0.028
AVG. S.D. of Income					
Group 1:	1.298	0.261	0.495	0.245	-0.250
Group 2:	4.028	0.051	0.281	0.079	-0.281

	Adjusted R^2	F	Signif.
Overall Regression			
Group 1:	0.176	3.571	0.010 **
Group 2:	0.037	1.463	0.230

** $p \leq .01$ * $p \leq .05$

TABLE 4-18
STEPWISE REGRESSION: Prior Quality of Management
with Risk Measures
and Marginal Quality of Management.

Dependent Variable: Prior Average Quality of Management
1982

Independent Variables: Risk Measures
and Marginal Quality of Management
1982-1984

Variable	F	Signif.	Mult. R	R^2	Simple R
Marginal Quality of Management					
Group 1:	22.333	0.000 **	0.568	0.322	-0.568
Group 2:	15.767	0.000 **	0.501	0.251	-0.501
Avg. Beta,1982-84					
Group 1:	0.459	0.502	0.573	0.329	0.210
Group 2:	0.017	0.898	0.662	0.438	-0.187
Avg. Residuals,1982-84					
Group 1:	0.916	0.344	0.585	0.342	-0.084
Group 2:	8.785	0.005 **	0.609	0.371	-0.168
AVG. S.D. of Income,1982-84					
Group 1:	0.304	0.584	0.589	0.347	-0.128
Group 2:	5.320	0.026 *	0.662	0.438	0.181

	Adjusted R^2	F	Signif.
Overall Regression			
Group 1:	0.287	5.838	0.000 **
Group 2:	0.387	8.571	0.000 **

** $p \leq .01$ * $p \leq .05$

TABLE 4-19
ANOVA: Subsequent ROA with Reputation Measures.

Independent Variable: Subsequent Accounting Performance, Z-score of Avg. ROA, 1982-1984

Dependent Variables: Reputation Measures, 1982

Dependent Variables	F Ratio	F Prob.
Quality of Management		
Group 1:	3.115	0.006 **
Group 2:	1.383	0.229
Quality of Products		
Group 1:	1.717	0.118
Group 2:	2.615	0.018 *
Innovation		
Group 1:	1.441	0.205
Group 2:	1.358	0.240
Long Term Investment		
Group 1:	1.312	0.262
Group 2:	2.067	0.057
Financial Soundness		
Group 1:	1.293	0.272
Group 2:	4.069	0.001 **
Ability to Attract, Develop and Keep Talented People		
Group 1:	2.070	0.057
Group 2:	2.483	0.024 *
Corporate and Social Responsibility		
Group 1:	1.270	0.284
Group 2:	2.855	0.011 *
Use of Corporate Assets		
Group 1:	2.257	0.038 *
Group 2:	2.191	0.044 *
Average Quality		
Group 1:	2.132	0.050 *
Group 2:	2.736	0.014 *

** $p \leq .01$ * $p \leq .05$

TABLE 4-20
ANOVA: Subsequent ROA with Performance Measures.

Independent Variable: Subsequent Accounting Performance,
Z-score of Avg. ROA, 1982-1984

Dependent Variables: Performance Measures,
1977-1981 Averages

Dependent Variables	F Ratio	F Prob.
Market Measures:		
Alpha		
Group 1:	0.504	0.863
Group 2:	0.678	0.723
Total Stock Return		
Group 1:	0.424	0.914
Group 2:	0.750	0.662
Accounting Measures:		
Return On Assets		
Group 1:	3.973	0.001 **
Group 2:	5.883	0.000 **
Average Assets		
Group 1:	1.199	0.323
Group 2:	0.943	0.500
Sales Growth		
Group 1:	0.677	0.724
Group 2:	1.682	0.127
Assets Growth:		
Group 1:	0.887	0.545
Group 2:	0.667	0.773
Operating Income Growth:		
Group 1:	0.114	0.999
Group 2:	1.158	0.348

** $p \leq .01$ * $p \leq .05$

TABLE 4-21
ANOVA: Subsequent ROA with Risk Measures.

Independent Variable: Subsequent Accounting Performance,
·Z-score of Avg. ROA, 1982-1984

Dependent Variables: Risk Measures,
1977-1981 Averages

Dependent Variables	F Ratio	F Prob.
Market Measures:		
Beta		
Group 1:	0.801	0.617
Group 2:	2.074	0.056
S.D. of Total Stock Return		
Group 1:	1.049	0.420
Group 2:	1.572	0.158
Accounting Measures:		
Debt to Assets Ratio		
Group 1:	0.778	0.637
Group 2:	2.505	0.023 *
S.D. of Operating Income		
Group 1:	1.878	0.085
Group 2:	0.679	0.723
Operating Leverage		
Group 1:	0.688	0.715
Group 2:	1.632	0.140

** $p \leq .01$ * $p \leq .05$

TABLE 4-22
ANOVA: Subsequent Total Stock Return with Performance Measures.

Independent Variables: Subsequent Market Performance,
Z-score of Avg. Total Stock Return,
1982-1984

Dependent Variables: Performance Measures,
1977-1981 Averages

Dependent Variables	F Ratio	F Prob.
Market Measures:		
Alpha		
Group 1:	0.973	0.477
Group 2:	0.806	0.613
Total Stock Return		
Group 1:	0.969	0.480
Group 2:	0.609	0.782
Accounting Measures:		
Return On Assets		
Group 1:	2.391	0.029 *
Group 2:	0.886	0.546
Average Assets		
Group 1:	0.762	0.651
Group 2:	0.525	0.847
Sales Growth		
Group 1:	0.655	0.743
Group 2:	0.765	0.649
Assets Growth:		
Group 1:	0.677	0.725
Group 2:	1.555	0.163
Operating Income Growth:		
Group 1:	0.405	0.925
Group 2:	1.223	0.309

** $p \leq .01$ * $p \leq .05$

TABLE 4-23
ANOVA: Subsequent Total Stock Return with Risk Measures.

Independent Variables: Subsequent Market Performance,
Z-score of Avg. Total Stock Return,
1982-1984

Dependent Variables: Risk Measures,
1977-1981 Averages

Dependent Variables	F Ratio	F Prob.
Market Measures:		
Beta		
Group 1:	1.348	0.245
Group 2:	0.329	0.960
S.D. of Total Stock Return		
Group 1:	1.825	0.095
Group 2:	0.479	0.880
Accounting Measures:		
Debt to Assets Ratio		
Group 1:	1.726	0.116
Group 2:	0.869	0.560
S.D. of Operating Income		
Group 1:	0.734	0.676
Group 2:	0.543	0.834
Operating Leverage		
Group 1:	0.448	0.900
Group 2:	0.879	0.552

** $p \leq .01$ * $p \leq .05$

TABLE 4-24
ANOVA: Subsequent Total Stock Return with Reputation.

Independent Variable: Subsequent Market Performance, Z-score of Avg. Total Stock Return, 1982-1984

Dependent Variables: Reputation Measures, 1982

Dependent Variables	F Ratio	F Prob.
Quality of Management		
Group 1:	1.073	0.404
Group 2:	0.438	0.906
Quality of Products		
Group 1:	0.964	0.484
Group 2:	0.304	0.969
Innovation		
Group 1:	1.184	0.332
Group 2:	0.538	0.838
Long Term Investment		
Group 1:	1.256	0.291
Group 2:	0.367	0.944
Financial Soundness		
Group 1:	0.951	0.494
Group 2:	0.464	0.890
Ability to Attract, Develop and Keep Talented People		
Group 1:	0.936	0.505
Group 2:	0.387	0.934
Corporate and Social Responsibility		
Group 1:	1.607	0.147
Group 2:	1.637	0.139
Use of Corporate Assets		
Group 1:	0.845	0.580
Group 2:	0.346	0.953
Average Quality		
Group 1:	1.068	0.407
Group 2:	0.335	0.958

** $p \leq .01$ * $p \leq .05$

TABLE 4-25
SIMPLE REGRESSION: Subsequent Total Stock Return
with Risk Measures and Quality of Management.

Dependent Variable: Subsequent Average Total Stock Return,
1982-1984

Independent Variables: Risk Measures, 1977-1981;
and Quality of Management, 1982

Variable	F	Signif.	R^2	Simple R
Avg. Residuals				
Group 1:	6.288	0.016 *	0.118	0.344
Group 2:	0.022	0.882	0.000	0.022
Avg. S.D. of Income				
Group 1:	2.081	0.175	0.039	0.197
Group 2:	1.896	0.175	0.039	0.197
Avg. Qual. of Mgt.				
Group 1:	0.441	0.510	0.009	-0.096
Group 2:	0.216	0.644	0.005	-0.068
Avg. Beta				
Group 1:	0.380	0.541	0.008	-0.090
Group 2:	0.672	0.416	0.014	-0.119

** $p \leq .01$ * $p \leq .05$

TABLE 4-26
SIMPLE REGRESSION: Subsequent ROA
with Risk Measures and Quality of Management.

Dependent Variable: Subsequent Average Return on Assets,
1982-1984

Independent Variables: Risk Measures, 1977-1981;
and Quality of Management, 1982

Variable	F	Signif.	R^2	Simple R
Qual. of Mgt.				
Group 1:	5.969	0.018 *	0.113	0.336
Group 2:	7.856	0.007 **	0.143	0.378
Avg. Beta				
Group 1:	5.631	0.022 *	0.107	-0.327
Group 2:	4.636	0.036 *	0.090	-0.300
S.D. of Income				
Group 1:	2.047	0.159	0.042	0.204
Group 2:	1.893	0.175	0.039	0.197
Avg. Residuals				
Group 1:	1.585	0.214	0.033	-0.181
Group 2:	0.189	0.666	0.004	-0.063

** $p \leq .01$ * $p \leq .05$

TABLE 4-27
SIMPLE REGRESSION: Subsequent Quality of Management
with Risk Measures and Quality of Management.

Dependent Variable: Subsequent Average Quality of Management, 1982-1984

Independent Variables: Risk Measures,1977-1981;
and Quality of Management, 1982

Variable	F	Signif.	R^2	Simple R
Avg. Qual. of Mgt.				
Group 1:	168.802	0.000 **	0.782	0.884
Group 2:	144.321	0.000 **	0.754	0.869
Avg. S.D. of Income				
Group 1:	1.291	0.262	0.027	0.164
Group 2:	1.491	0.228	0.031	0.175
Avg. Beta				
Group 1:	0.363	0.550	0.008	-0.088
Group 2:	2.269	0.139	0.046	-0.215
Avg. Residuals				
Group 1:	0.097	0.757	0.002	-0.045
Group 2:	1.875	0.177	0.038	-0.196

** $p \leq .01$ * $p \leq .05$

TABLE 4-28
STEPWISE REGRESSION: Subsequent Total Stock Return
with Risk Measures and Quality of Management.

Dependent Variable: Subsequent Average Total Stock Return,
1982-1984

Independent Variables: Risk Measures, 1977-1981;
and Quality of Management, 1982

Variable	F	Signif.	Mult. R	R^2	Simple R
Avg. Residuals					
Group 1:	6.288	0.016 *	0.344	0.118	0.344
Group 2:	0.925	0.341	0.258	0.066	0.022
Avg. Beta					
Group 1:	7.869	0.007 **	0.497	0.247	-0.090
Group 2:	0.405	0.528	0.217	0.047	0.119
Avg. S.D. of Income					
Group 1:	2.177	0.147	0.531	0.282	0.206
Group 2:	1.896	0.175	0.197	0.039	0.197
Avg. Qual. of Mgt.					
Group 1:	F-level insufficient, not entered in equation.				
Group 2:	0.310	0.580	0.270	0.073	0.068

	Adjusted R^2	F	Signif.
Overall Regression			
Group 1:	0.234	5.880	0.002 **
Group 2:	0.000	0.865	0.490

** $p \leq .01$ * $p \leq .05$

TABLE 4-29
STEPWISE REGRESSION: Subsequent ROA
with Risk Measures and Quality of Management.

Dependent Variable: Subsequent Average Return on Assets, 1982-1984

Independent Variables: Risk Measures, 1977-1981; and Quality of Management, 1982

Variable	F	Signif.	Mult. R	R^2	Simple R
Avg. Qual. of Mgt.					
Group 1:	5.969	0.018 *	0.336	0.113	0.336
Group 2:	7.856	0.007 **	0.378	0.143	0.378
Avg. Beta					
Group 1:	7.076	0.011 *	0.481	0.231	-0.327
Group 2:	3.470	0.069	0.451	0.203	-0.300
Avg. S.D. of Income					
Group 1:	1.292	0.262	0.502	0.252	0.204
Group 2:	0.909	0.346	0.530	0.281	0.197
Avg. Residuals					
Group 1:	0.342	0.562	0.508	0.258	-0.181
Group 2:	3.859	0.056	0.516	0.266	-0.063

	Adjusted R^2	F	Signif.
Overall Regression			
Group 1:	0.191	3.829	0.000 **
Group 2:	0.216	4.301	0.000 **

** $p \leq .01$ * $p \leq .05$

TABLE 4-30
STEPWISE REGRESSION: Subsequent Total Stock Return
with Risk Measures and Quality of Management
-With Separate Results For
Industrial and Non-Industrial Firms.

Dependent Variable: Subsequent Average Total Stock Return, 1982-1984

Independent Variables: Risk Measures, 1977-1981;
and Quality of Management, 1982

Variable	F	Signif.	Mult. R	R^2	Simple R
Avg. Residuals					
Group 1:	6.288	0.016 *	0.344	0.118	0.344
Industrial	6.183	0.018 *	0.378	0.143	0.378
Non-industrial	0.681	0.433	0.280	0.078	0.280
Group 2:	0.925	0.341	0.258	0.066	0.022
Industrial	4.587	0.039 *	0.332	0.110	0.332
Non-industrial	7.195	0.028 *	0.688	0.474	-0.688
Avg. Beta					
Group 1:	7.869	0.007 **	0.497	0.247	-0.090
Industrial	1.402	0.244	0.513	0.264	-0.004
Non-industrial	10.839	0.013 *	0.799	0.638	-0.210
Group 2:	0.405	0.528	0.217	0.047	0.119
Industrial	3.561	0.067	0.436	0.190	0.063
Non-industrial	0.450	0.524	0.711	0.505	-0.507
Avg. S.D. of Income					
Group 1:	2.177	0.147	0.531	0.282	0.206
Industrial	4.277	0.046 *	0.484	0.234	0.255
Non-industrial	0.314	0.599	0.914	0.835	-0.138
Group 2:	1.896	0.175	0.197	0.039	0.197
Industrial	1.444	0.238	0.472	0.222	0.224
Non-industrial	0.088	0.777	0.716	0.512	0.086

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TABLE 4-30: (continued).

Variable	F	Signif.	Mult. R	R^2	Simple R
Avg. Qual. of Mgt.					
Group 1:	F-level insufficient, not entered in equation.				
Industrial	0.163	0.689	0.517	0.267	-0.056
Non-industrial	6.391	0.045 *	0.908	0.825	-0.258
Group 2:	0.310	0.580	0.270	0.073	0.068
Industrial	0.321	0.575	0.479	0.230	-0.104
Non-industrial	0.084	0.784	0.721	0.521	0.089

	Adjusted R^2	F	Signif.
Overall Regression			
Group 1:	0.234	5.880	0.002 **
Industrial	0.181	3.099	0.020 *
Non-industrial	0.703	6.337	0.030 *
Group 2:	0.000	0.865	0.490
Industrial	0.139	2.535	0.050 *
Non-industrial	0.137	1.357	0.360

** $p \leq .01$ * $p \leq .05$

TABLE 4-31
STEPWISE REGRESSION: Subsequent ROA
with Risk Measures and Quality of Management
-With Separate Results For
Industrial and Non-Industrial Firms.

Dependent Variable: Subsequent Average Return on Assets,
1982-1984

Independent Variables: Risk Measures, 1977-1981;
and Quality of Management, 1982

Variable	F	Signif.	Mult. R	R^2	Simple R
Avg. Qual. of Mgt.					
Group 1:	5.969	0.018 *	0.336	0.113	0.336
Industrial	5.917	0.020 *	0.371	0.138	0.371
Non-industrial	3.592	0.107	0.825	0.681	0.122
Group 2:	7.856	0.007 **	0.378	0.143	0.378
Industrial	10.647	0.002 **	0.473	0.223	0.473
Non-industrial	1.690	0.235	0.836	0.698	0.037
Avg. Beta					
Group 1:	7.076	0.011 *	0.481	0.231	-0.327
Industrial	5.924	0.020 *	0.510	0.260	-0.361
Non-industrial	0.819	0.407	0.852	0.726	-0.415
Group 2:	3.470	0.069	0.451	0.203	-0.300
Industrial	5.615	0.024 *	0.616	0.379	-0.260
Non-industrial	13.365	0.006 **	0.791	0.626	-0.791
Avg. S.D. of Income					
Group 1:	1.292	0.262	0.502	0.252	0.204
Industrial	1.241	0.273	0.560	0.314	0.241
Non-industrial	2.202	0.181	0.700	0.490	-0.384
Group 2:	0.909	0.346	0.530	0.281	0.197
Industrial	1.227	0.275	0.499	0.249	0.205
Non-industrial	3.061	0.131	0.895	0.800	-0.493

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TABLE 4-31: (continued).

Variable	F	Signif.	Mult. R	R^2	Simple R
Avg. Residuals					
Group 1:	0.342	0.562	0.508	0.258	-0.181
Industrial	1.440	0.238	0.538	0.289	-0.122
Non-industrial	3.926	0.083	0.574	0.329	-0.574
Group 2:	3.859	0.056	0.516	0.266	-0.063
Industrial	1.317	0.259	0.526	0.276	0.039
Non-industrial	0.321	0.596	0.901	0.812	-0.528

	Adjusted R^2	F	Signif.
Overall Regression			
Group 1:	0.191	3.829	0.000 **
Industrial	0.233	3.890	0.010 **
Non-industrial	0.506	3.307	0.110
Group 2:	0.216	4.301	0.000 **
Industrial	0.306	5.184	0.002 **
Non-industrial	0.662	5.410	0.040 *

** $p \leq .01$ * $p \leq .05$

TABLE 4-32
ANOVA: Contemporaneous ROA with Performance Measures.

Independent Variable: Contemporaneous Accounting Performance,
Z-score of Avg. ROA, 1982-1984

Dependent Variables: Performance Measures,
1982-1984 Averages

Dependent Variables	F Ratio	F Prob.
Market Measures:		
Alpha		
Group 1:	0.920	0.046 *
Group 2:	2.235	0.040 *
Total Stock Return		
Group 1:	0.605	0.785
Group 2:	1.836	0.092
Accounting Measures:		
Return On Assets		
Group 1:	197.312	0.000 **
Group 2:	79.014	0.000 **
Average Assets		
Group 1:	1.038	0.428
Group 2:	0.777	0.638
Sales Growth		
Group 1:	0.839	0.585
Group 2:	0.506	0.861
Assets Growth:		
Group 1:	1.761	0.108
Group 2:	0.293	0.973
Operating Income Growth:		
Group 1:	0.887	0.546
Group 2:	0.756	0.656

** $p \leq .01$ * $p \leq .05$

TABLE 4-33
ANOVA: Contemporaneous ROA with Performance Measures.

Independent Variable: Contemporaneous Accounting Performance,
Z-score of Avg. ROA, 1977-1981

Dependent Variables: Performance Measures,
1977-1981 Averages

Dependent Variables	F Ratio	F Prob.
Market Measures:		
Alpha		
Group 1:	2.004	0.065
Group 2:	0.352	0.951
Total Stock Return		
Group 1:	1.617	0.144
Group 2:	0.412	0.921
Accounting Measures:		
Return On Assets		
Group 1:	78.871	0.000 **
Group 2:	239.057	0.000 **
Average Assets		
Group 1:	0.676	0.726
Group 2:	1.276	0.281
Sales Growth		
Group 1:	0.695	0.709
Group 2:	1.468	0.194
Assets Growth:		
Group 1:	0.814	0.607
Group 2:	0.828	0.594
Operating Income Growth:		
Group 1:	0.655	0.743
Group 2:	0.992	0.463

** $p \leq .01$ * $p \leq .05$

TABLE 4-34
ANOVA: Contemporaneous ROA with Risk Measures.

Independent Variables: Contemporaneous Accounting Performance, Z-score of Avg. ROA, 1982-1984

Dependent Variables: Risk Measures, 1982-1984 Averages

Dependent Variables	F Ratio	F Prob.
Market Measures:		
Beta		
Group 1:	2.167	0.046 *
Group 2:	3.116	0.006 **
S.D. of Total Stock Return		
Group 1:	1.685	0.126
Group 2:	4.531	0.000 **
Accounting Measures:		
Debt to Assets Ratio		
Group 1:	0.951	0.494
Group 2:	2.490	0.024 **
S.D. of Operating Income		
Group 1:	1.297	0.270
Group 2:	0.769	0.645
Operating Leverage		
Group 1:	1.000	0.456
Group 2:	1.076	0.402

** $p \leq .01$ * $p \leq .05$

TABLE 4-35
ANOVA: Contemporaneous ROA with Risk Measures.

Independent Variables: Contemporaneous Accounting Performance,
Z-score of Avg. ROA, 1977-1981

Dependent Variables: Risk Measures,
1977-1981 Averages

Dependent Variables	F Ratio	F Prob.
Market Measures:		
Beta		
Group 1:	0.464	0.890
Group 2:	1.543	0.168
S.D. of Total Stock Return		
Group 1:	1.401	0.221
Group 2:	1.679	0.127
Accounting Measures:		
Debt to Assets Ratio		
Group 1:	3.699	0.002 **
Group 2:	5.726	0.000 **
S.D. of Operating Income		
Group 1:	0.971	0.478
Group 2:	1.418	0.214
Operating Leverage		
Group 1:	0.954	0.492
Group 2:	1.735	0.114

** $p \leq .01$ * $p \leq .05$

TABLE 4-36
ANOVA: Contemporaneous ROA with Reputation Measures.

Independent Variable: Contemporaneous Accounting Performance,
Z-score of Avg. ROA, 1982-1984

Dependent Variables: Reputation Measures,
1982-1984 Averages

Dependent Variables	F Ratio	F Prob.
Quality of Management		
Group 1:	3.879	0.001 **
Group 2:	2.080	0.056
Quality of Products		
Group 1:	2.421	0.027 *
Group 2:	3.598	0.002 **
Innovation		
Group 1:	1.915	0.078
Group 2:	1.943	0.074
Long Term Investment		
Group 1:	2.631	0.018 *
Group 2:	2.554	0.021 *
Financial Soundness		
Group 1:	3.176	0.006 **
Group 2:	4.046	0.001 **
Ability to Attract, Develop and Keep Talented People		
Group 1:	2.907	0.010 **
Group 2:	3.307	0.004 **
Corporate and Social Responsibility		
Group 1:	1.768	0.106
Group 2:	3.228	0.005 **
Use of Corporate Assets		
Group 1:	3.991	0.001 **
Group 2:	3.732	0.002 **
Average Quality		
Group 1:	3.628	0.002 **
Group 2:	3.739	0.002 **

** $p \leq .01$ * $p \leq .05$

TABLE 4-37
ANOVA: Contemporaneous Total Stock Return with Performance Measures.

Independent Variables: Contemporaneous Market Performance,
Z-score of Avg. Total Stock Return,
1982-1984

Dependent Variables: Performance Measures,
1982-1984 Averages

Dependent Variables	F Ratio	F Prob.
Market Measures:		
Alpha		
Group 1:	16.565	0.000 **
Group 2:	14.023	0.000 **
Total Stock Return		
Group 1:	23.136	0.000 **
Group 2:	111.611	0.000 **
Accounting Measures:		
Return On Assets		
Group 1:	1.330	0.254
Group 2:	1.163	0.345
Average Assets		
Group 1:	0.920	0.519
Group 2:	0.482	0.878
Sales Growth		
Group 1:	3.252	0.005 **
Group 2:	1.361	0.239
Assets Growth:		
Group 1:	2.366	0.031 *
Group 2:	0.695	0.709
Operating Income Growth:		
Group 1:	1.384	0.229
Group 2:	1.155	0.350

** $p \leq .01$ * $p \leq .05$

TABLE 4-38
ANOVA: Contemporaneous Total Stock Return with Risk Measures.

Independent Variables: Contemporaneous Market Performance, Z-score of Avg. Total Stock Return, 1982-1984

Dependent Variables: Risk Measures, 1982-1984 Averages

Dependent Variables	F Ratio	F Prob.
Market Measures:		
Beta		
Group 1:	0.977	0.474
Group 2:	0.257	0.982
S.D. of Total Stock Return		
Group 1:	1.170	0.340
Group 2:	0.805	0.614
Accounting Measures:		
Debt to Assets Ratio		
Group 1:	1.998	0.066
Group 2:	0.178	0.995
S.D. of Operating Income		
Group 1:	0.822	0.600
Group 2:	0.789	0.628
Operating Leverage		
Group 1:	0.780	0.636
Group 2:	1.110	0.379
Assets Growth:		
Group 1:	2.366	0.031
Group 2:	0.695	0.709
Operating Income Growth:		
Group 1:	1.384	0.229
Group 2:	1.155	0.350

** $p \leq .01$ * $p \leq .05$

TABLE 4-39
ANOVA: Contemporaneous Total Stock Return with Reputation Measures.

Independent Variable: Contemporaneous Market Performance, Z-score of Avg. Total Stock Return, 1982-1984

Dependent Variables: Reputation Measures, 1982-1984 Averages

Dependent Variables	F Ratio	F Prob.
Quality of Management		
Group 1:	1.366	0.237
Group 2:	0.652	0.746
Quality of Products		
Group 1:	0.864	0.564
Group 2:	0.174	0.996
Innovation		
Group 1:	1.680	0.127
Group 2:	0.466	0.888
Long Term Investment		
Group 1:	1.240	0.300
Group 2:	0.839	0.586
Financial Soundness		
Group 1:	1.568	0.159
Group 2:	0.656	0.743
Ability to Attract, Develop and Keep Talented People		
Group 1:	1.124	0.370
Group 2:	0.329	0.960
Corporate and Social Responsibility		
Group 1:	1.559	0.162
Group 2:	1.572	0.158
Use of Corporate Assets		
Group 1:	1.306	0.265
Group 2:	0.904	0.531
Average Quality		
Group 1:	1.320	0.258
Group 2:	0.431	0.910

** $p \leq .01$ * $p \leq .05$

TABLE 4-40
ANOVA: Contemporaneous Total Stock Return with Performance Measures.

Independent Variables: Contemporaneous Market Performance,
Z-score of Avg. Total Stock Return,
1977-1981

Dependent Variables: Performance Measures,
1977-1981 Averages

Dependent Variables	F Ratio	F Prob.
Market Measures:		
Alpha		
Group 1:	22.453	0.000 **
Group 2:	56.400	0.000 **
Total Stock Return		
Group 1:	23.732	0.000 **
Group 2:	150.326	0.000 **
Accounting Measures:		
Return On Assets		
Group 1:	2.006	0.065
Group 2:	1.213	0.315
Average Assets		
Group 1:	1.266	0.286
Group 2:	0.787	0.630
Sales Growth		
Group 1:	3.015	0.008 **
Group 2:	1.788	0.102
Assets Growth:		
Group 1:	2.148	0.048 *
Group 2:	0.888	0.545
Operating Income Growth:		
Group 1:	4.430	0.001 **
Group 2:	2.690	0.016 *

** $p \leq .01$ * $p \leq .05$

TABLE 4-41
ANOVA: Contemporaneous Total Stock Return with Risk Measures.

Independent Variables: Contemporaneous Market Performance,
Z-score of Avg. Total Stock Return,
1977-1981

Dependent Variables: Risk Measures,
1977-1981 Averages

Dependent Variables	F Ratio	F Prob.
Market Measures:		
Beta		
Group 1:	2.388	0.029 *
Group 2:	1.787	0.102
S.D. of Total Stock Return		
Group 1:	2.183	0.045 *
Group 2:	2.512	0.023 *
Accounting Measures:		
Debt to Assets Ratio		
Group 1:	0.844	0.581
Group 2:	0.979	0.472
S.D. of Operating Income		
Group 1:	1.006	0.452
Group 2:	0.757	0.655
Operating Leverage		
Group 1:	1.016	0.444
Group 2:	1.395	0.224
Assets Growth:		
Group 1:	2.366	0.031
Group 2:	0.695	0.709
Operating Income Growth:		
Group 1:	1.384	0.229
Group 2:	1.155	0.350

** $p \leq .01$ * $p \leq .05$

TABLE 4-42
STEPWISE REGRESSION: Total Stock Return
with Risk Measures
and Marginal Quality of Management.

Dependent Variable: Average Total Stock Return
1982-1984

Independent Variables: Risk Measures, 1977-1981;
and Marginal Quality of Management
1982-1984

Variable	F	Signif.	Mult. R	R^2	Simple R
Marginal Quality of Management					
Group 1:	14.491	0.000 **	0.485	0.236	0.485
Group 2:	13.200	0.001 **	0.468	0.219	0.468
Avg. Residuals					
Group 1:	4.859	0.033 *	0.556	0.309	0.344
Group 2:	0.265	0.609	0.502	0.252	0.022
Avg. Beta,					
Group 1:	2.850	0.098	0.591	0.350	-0.090
Group 2:	0.220	0.641	0.498	0.248	-0.119
S.D. of Income					
Group 1:	0.840	0.364	0.602	0.362	0.206
Group 2:	1.500	0.227	0.494	0.244	0.197

	Adjusted R^2	F	Signif.
Overall Regression			
Group 1:	0.304	6.242	0.000 **
Group 2:	0.184	3.708	0.010 **

** $p \leq .01$ * $p \leq .05$

TABLE 4-43
STEPWISE REGRESSION: ROA
with Risk Measures
and Marginal Quality of Management.

Dependent Variable: Average Return On Assets,
1982-1984

Independent Variables: Risk Measures, 1977-1981;
and Marginal Quality of Management,
1982-1984

Variable	F	Signif.	Mult. R	R^2	Simple R
Avg. Beta					
Group 1:	5.631	0.022 *	0.327	0.107	-0.327
Group 2:	4.636	0.036 *	0.300	0.090	-0.300
Avg. S.D. of Income					
Group 1:	1.091	0.302	0.357	0.128	0.204
Group 2:	1.304	0.260 **	0.386	0.149	0.197
Marginal Quality of Management					
Group 1:	0.181	0.673	0.362	0.131	0.050
Group 2:	0.011	0.918	0.387	0.149	0.052
Avg. Residuals					
Group 1:	0.068	0.795	0.364	0.133	-0.181
Group 2:	1.827	0.183	0.353	0.125	-0.063

	Adjusted R^2	F	Signif.
Overall Regression			
Group 1:	0.054	1.680	0.170
Group 2:	0.073	1.932	0.120

** $p \leq .01$ * $p \leq .05$

TABLE 4-44
STEPWISE REGRESSION: Quality of Management
with Risk Measures
and Marginal Quality of Management.

Dependent Variable: Average Quality of Management
1982-1984

Independent Variables: Risk Measures, 1977-1981
and Marginal Quality of Management
1982-1984

Variable	F	Signif.	Mult. R	R^2	Simple R
Avg. S.D. of Income					
Group 1:	1.291	0.262	0.164	0.027	0.164
Group 2:	1.055	0.310	0.260	0.067	0.175
Marginal Quality of Management					
Group 1:	1.853	0.180	0.254	0.064	-0.143
Group 2:	0.234	0.631	0.269	0.072	-0.041
Avg. Beta					
Group 1:	0.428	0.516	0.271	0.073	-0.088
Group 2:	2.269	0.139	0.215	0.046	-0.215
Avg. Residuals					
Group 1:	0.385	0.538	0.285	0.081	-0.045
Group 2:	0.162	0.690	0.275	0.076	-0.196

	Adjusted R^2	F	Signif.
Overall Regression			
Group 1:	0.000	0.973	0.430
Group 2:	0.000	0.900	0.470

** $p \leq .01$ * $p \leq .05$

TABLE 4-45
CORRELATION: Reputation Measures, 1982-1986.

	1	2	3	4	5	6	7	8	Avg. Corr.
1.Quality of management	1.0	.775	.808	.882	.727	.891	.498	.927	.787
2. Quality of product	.775	1.0	.765	.762	.652	.840	.674	.722	.741
3. Innovation	.808	.765	1.0	.732	.579	.835	.485	.763	.775
4. Long-term investment value	.882	.762	.732	1.0	.874	.914	.566	.897	.804
5. Financial Soundness	.727	.652	.579	.874	1.0	.838	.631	.821	.732
6. Ability to attract people	.891	.840	.835	.914	.838	1.0	.657	.872	.835
7. Social Responsi-bility	.498	.674	.485	.566	.631	.657	1.0	.522	.576
8. Use of Corp. Assets	.927	.722	.763	.897	.821	.872	.522	1.0	.789
Overall Average Correlation									.754

C H A P T E R V

SUMMARY, CONCLUSIONS, AND DIRECTIONS FOR FURTHER RESEARCH

Summary

In the previous chapter, and Tables 1 through 45, detailed results were presented for each hypothesis. In Table 5-1, these results are summarized according to whether they support each hypothesis, fail to support it, or are mixed. All of the hypotheses, both general and specific, are presented in Exhibit 2-1. The hypotheses are summarized diagrammatically in Figure 2-1.

> H_1: Corporate reputation is significantly related to <u>prior</u> strategic performance.

The general hypothesis H_1 was supported by ANOVA's which showed that dimensions of reputation were often significantly related to prior ROA (see Tables 4-3 and 4-4).

The results of ANOVA's testing H_1 with respect to total stock return were mixed: relationships to reputation were frequently significant for group 1 but never for group 2 (Tables 4-5 to 4-8). Simple and stepwise regressions failed to support H_1 with respect to

total stock return: the beta coefficients relating quality of management to prior total stock return were not significant.

Industry differences might have led to different results for industrial and non-industrial groups with respect to H_1. Stepwise regressions with the firms separated into industrial and non-industrial groups did not support H_1 for either group (Tables 4-14 and 4-15). Neither did stepwise regressions with marginal quality of management (Tables 4-16 to 18). A significant relationship was found between marginal quality of management and quality of management, 1982, however.

> H_{1a}: Experts' perceptions of quality of management are significantly related to prior ROA.

In relation to the specific hypothesis H_{1a}, ANOVA, and simple and stepwise regressions provided mixed results: the beta coefficients relating quality of management to prior ROA were significant for group 1, but not for group 2 (Tables 4-3, 4-4, 4-10, 4-13).

> H_{1b}: Experts' perceptions of long-term investment value are significantly related to prior total stock return.

Results were mixed for specific hypothesis H_{1b}: ANOVA's found a significant relationship between perception of long-term investment value and total stock return only for group 1 (Tables 4-7 and 4-8).

H_2: Corporate Reputation is significantly related to <u>subsequent</u> strategic performance.

Hypothesis H_2 was supported by ANOVA's on ROA (Tables 19 to 4-21), but not as often as was H_1. Several reputation variables were significant in relation to subsequent ROA, and use of corporate assets and quality of management were significant for both groups of firms. As with prior ROA, ROA among performance measures, and debt to assets among risk measures were significantly related to subsequent ROA, but debt to assets only for group 2.

ANOVA's yielded mixed results in terms of the second hypothesis with respect to total stock return: while neither performance nor return measures were significant, eight of nine reputation measures were significant, but only for group 1 (Tables 4-22 to 24). The marked difference between groups in this regard is intriguing.

Simple regressions supported H_2 with regard to ROA: only beta and quality of management were significant for both groups (Table 4-26). Simple regressions on total stock return yielded no significant predictors, however, failing to support H_2 (Table 4-25).

Separate stepwise results for industrial and non-industrial firms showed that the significance of beta and quality of management in relation to ROA were

specifically for industrial firms (Table 4-31). H_2 was not supported with respect to subsequent total stock return: only residuals was significant, and only for both groups in the case of industrial firms (Table 4-30).

> H_{2a}: Experts' perceptions of long term investment value are significantly related to subsequent total stock return.

Results of ANOVA failed to support $H2_a$: perception of long term investment value was not significantly related to total stock return (Table 4-24).

> H_{2b}: Experts' perceptions of quality of management are a significant predictor of subsequent ROA while prior risk measures separately are not.

Results of simple regression support H_{2b}, except that average beta, the measure of systematic risk, was also a significant predictor of subsequent ROA (Table 4-26).

> H_{2c}: A combination of selected dimensions of prior reputation and risk explains more of the variation in subsequent ROA than does prior reputation or risk separately.

A comparison of simple and stepwise regressions provides support for H_{2c} (Table 4-26, Table 4-29). It indicates that beta, the measure of systematic risk, is relatively independent of quality of management as a predictor, remaining significant for group 1 and nearly so for group 2, and adding substantially to explanatory power: from R^2=.113 and .143 for quality of management in

simple regressions, to R^2=.231 and .203, for stepwise regressions adding beta to quality of management. Furthermore, the relationship between beta and ROA was found to be negative: greater risk meant lower return. Comparable results with total stock return as the dependent variable were mixed (Table 4-28).

Hypothesis H_3 was strongly supported by ANOVA with ROA as the independent variable (Tables 4-3, 4-4, 4-21, and 4-36). Reputation measures were much more often significantly related to contemporaneous ROA than to prior or subsequent ROA. ANOVA based on total stock return failed to support the third hypothesis: none of the contemporaneous reputation measures were significantly related (Table 4-39).

In stepwise regression marginal quality of management was found to be a highly significant explanatory variable in relation to total stock return, and not in relation to ROA, or even quality of management (Tables 4-42 to 44). It is remarkable that marginal quality of management was related to total stock return, when reputation measures were otherwise related only to ROA.

The remaining hypothesis, H_4, that the dimensions of reputation would be highly correlated, was confirmed for all of the dimensions, with an average correlation coefficient of .75 (Table 4-45). It was noted that the

average correlation for social responsibility was lower, at .58.

In sum, with a range of methods, significant relationships were found between reputation and performance, but generally for ROA and not for total stock return. The relationships were strongest when the performance and reputation measures were contemporaneous three-year averages. Correlation analysis showed that the eight dimensions of reputation were themselves highly interrelated.

TABLE 5-1
SUMMARY OF RESULTS BY HYPOTHESIS

H_1: Corporate reputation is significantly related to <u>prior</u> strategic performance.

Supported	Not Supported	Mixed
ANOVA: ROA		ANOVA: Total Stock Return Simple and Stepwise Regression: ROA

H_{1a}: Experts' perceptions of quality of management are significantly related to prior ROA.

Supported	Not Supported	Mixed
		ANOVA, Simple, and Stepwise: ROA

H_{1b}: Experts' perceptions of long-term investment value are significantly related to prior total stock return.

Supported	Not Supported	Mixed
		ANOVA: Total Stock Return

(continued next page)

TABLE 5-1 (continued).

H_2: Corporate Reputation is significantly related to <u>subsequent</u> strategic performance.

Supported	Not Supported	Mixed
ANOVA and Simple Regression: ROA Stepwise Regression: ROA for Industrial Firms	Simple and Stepwise Regression: Total Stock Return Stepwise Regression: ROA for Non-Industrial Firms	

H_{2a}: Experts' perceptions of long term investment value are a significant predictor of subsequent total stock return.

Supported	Not Supported	Mixed
	ANOVA: Total Stock Return	

H_{2b}: Experts' perceptions of quality of management are a significant predictor of subsequent ROA while prior risk measures and quality of management separately are not.

Supported	Not Supported	Mixed
Simple Regression: ROA		

(continued next page)

TABLE 5-1 (continued)

H_{2c}: A combination of selected dimensions of prior reputation and risk explains more of the variation in subsequent ROA than does prior reputation or risk separately.

Supported	Not Supported	Mixed
Simple and Stepwise Regressions: ROA		

H_3: Corporate reputation is more often significantly related to contemporaneous strategic performance than to prior or subsequent strategic performance.

Supported	Not Supported	Mixed
ANOVA: ROA	ANOVA: Total Stock Return	
ANOVA: Total Stock Return -Marginal Quality of Management		

H_4: The various dimensions of corporate reputation are highly correlated.

Supported	Not Supported	Mixed
Correlation: Reputation		

Conclusions

The results of this study show that specific expert perceptions are related to certain measures of strategic performance, especially ROA. Table 5-2 contains selected references to literature that relate to these results.

Accounting

Accounting measures, and especially return on investment, have been often criticized (Fisher & McGowan, 1983; Solomon, 1971; Harcourt, 1965). Curtis (1985) suggests that the accounting system fails to recognize non-financial transactions, such as the failure to preserve assets. Yet, ROA was found to be significantly related to use of corporate assets, in Tables 4-19 and 4-36. In Table 4-36, ROA was found to be significantly related to most of the other dimensions of reputation. It appears that ROA does correspond to the perceptions of experts in a variety of dimensions. Other accounting and market measures of performance and risk generally are not significantly related. This lends some support to the value of ROA as a summary measure of strategic performance.

Attribution

Attribution theory suggests that reputation, especially for quality of management, is related to prior performance.

Butterfield and Powell (1981) found that performance descriptions explained nearly half of the variance in attributions of leadership style. Tables 4-3 and 4-4 report several significant relations between reputation and prior ROA. Quality of management specifically was significant only for group 1, but abililty to attract, develop, and keep talented people was significant for both groups. This suggests a selectivity in attribution by experts.

A significant negative relationship between perceived quality of management for 1982 and change in perceived quality of management from 1982 to 1984, Table 4-18, may be due to operation of the covariance principle (Kelley, 1967). The covariance principle states that we attribute the cause of an action to the one factor with which it most strongly covaries. We may be most willing to attribute high or low quality of management when that represents a change.

Prior ROA was more often significantly related to reputation than was total stock return. ROA likely represents distinctiveness information (Kelley, 1971), in

that it is a prominent, widely reported measure. Experts may observe more covariance (Kelley, 1967) with ROA than with stock return, which is more random.

Business

The significant relations observed between prior ROA and reputation confirm statements made by the **Fortune** authors. "Big Blues' decline (in reputation) reflects two years of disappointing profits (Schultz, 1988)."

Economics

The literature of economics suggests there is a relationship between reputation and subsequent performance. Shapiro (1983) points out that reputation is an asset. Reputation sometimes appears on balance sheets as "good will."

Cornell and Shapiro (1986) discuss the influence of reputation on the price stakeholders will be willing to pay for implicit claims. Reputation for quality of management was found to be related to subsequent ROA for industrial firms, Table 4-31. It does not apparently influence total stock return, which includes the price stockholders pay for a firm's implicit future stream of earnings, Table 4-24.

Cornell and Shapiro also suggest that reputation gained from performance on one set of implicit claims may influence customers' willingness to pay for another set of implicit claims. Similarly, reputation gained in one dimension might influence reputation in another dimension. The reputation for high quality of a firm's products might influence its reputation for ability to attract, develop, and keep talented people. In fact, the various dimensions of reputation were found to be highly correlated.

Finance

Black (1980) states that users of financial statements want an earnings figure that results in a constant price-earnings ratio. They want to see accounting measures that bear a dependable current relation to market measures. In the present study, marginal quality of management was found to be significantly related to contemporaneous total stock return, while other reputation measures were related to contemporaneous ROA.

Several authors (e.g. Branch & Gale, 1983; Fama, 1976) suggest that investors consider quality of managment, while Granatelli and Martin (1984) found that stock market returns of "well managed" firms did not

outperform a portfolio of randomly selected companies from the same industries. These views may be reconciled by the present results in that while quality of management is not significantly related to total stock return (see Table 4-39), the change in quality of management, marginal quality of management, is (see Table 4-42). A possible reason for this may be the difference threshold, discussed under perception, below.

Feigenbaum and Thomas (1986) discuss the evidence on the expected risk-return relationship, that may or may not be observed ex-post. Beta, the market measure of systematic risk, is related to subsequent ROA, as reported in Tables 4-26 and 4-31. It is also related to contemporaneous ROA (see Table 4-34). An accounting measure of risk, debt to assets, is related to prior ROA (see Table 4-2), as is beta (see Table 4-15). Debt to assets is also related to contemporaneous ROA, Table 4-35. It is interesting that, in the present study, risk measures are related to accounting return but not to stock market return.

Marketing

The popular literature focuses on how a firm may gain a good reputation, and public relations and advertising firms are engaged to accomplish this. **Marketing News**

(1986) cites Brouillard about what characteristics are important to a winning reputation. The present findings suggest that profitability is a key characteristic.

Perception

Bernardin and Beatty (1984) suggest that the halo effect may have a serious impact on performance evaluations in organizations. The various dimensions of reputation are highly correlated, Table 4-45, though they represent different areas of organizational responsibility, and so could represent a problem for performance evaluation.

In general, perceptions of quality of management are not related to total stock return, but a newly created variable, marginal quality of management was very significantly related to total stock return, Table 4-42, more so than were prior residuals, beta, or accounting risk. Marginal quality of management represents the percent change in management from 1982 to 1984. This change may be related to total stock return because it represents a difference threshold (Dember, 1964): investors perceive a difference in management rather than its absolute quality and influence stock price accordingly.

Perceptual lag (Schneider, Hastorf, and Ellsworth, 1979) is apparantly less than the lag considered in the present study, as reputation was more often significantly related to performance when the measures were simultaneous three-year averages, Table 4-36, than when performance represented a prior three-year period, Tables 4-3 and 4-4.

Research Methods

Kerlinger (1973) discusses measurement as essentially a relation. The present study contributes information about a variety of relationships finding several that are significant, and many that might have been but are not. For example, perceived quality management might have been found to be measure of stock return, but marginal quality of management is a better measure.

Strategic Management

Finance theory, as presented by Aaker and Jacobson (1987) and Lubatkin and O'Neill (1987), suggests that risk will be related to return. The present study suggests that it generally is not. This does not mean that it does not represent important information. To the contrary, it is an independent piece of information that

might be considered separate from return in evaluating a firm or its managers. This follows Venkatraman and Ramanujam's (1986) recommendation on incorporating a variety of measures. Hackett (1985) and Chakravarthy (1986) suggest that managers represent all stakeholders. The relationship of various dimensions of reputation to ROA suggests that managers are perceived as representing a variety of interests to generate profits.

The final conclusion is that expert perceptions are related to ROA, in keeping with the observation of McGuire, Schneeweis, and Hill (1986) that accounting based measures are predominant. Quality of management was significantly related to ROA in both prior and subsequent time periods. ROA is one of the most easily understood and widely circulated of firm performance measures. Its salience, attributed causal relationships, and a halo effect may account for the strong association with various perceptions of a firm. The Fortune survey data should be regarded as a valuable predictor of future ROA. Expert perceptions generally are not related to other measures of strategic performance.

TABLE 5-2
SELECTED LITERATURE RELATING TO THE RESULTS

<u>Accounting</u>	
Curtis, 1985	The accounting system reports only financial transactions, while ignoring other important business events such as the failure to preserve assets, decisions to downgrade product quality, and technological changes that make equipment obsolete.
Fisher & McGowan, 1983; Solomon, 1971; Harcourt, 1965	Scholars have strongly criticized ROI: the return in the numerator is not necessarily related to the investment in the denominator.
<u>Attribution</u>	
Butterfield and Powell, 1981	Performance descriptions explained nearly half of the variance in attributions of leadership style.
Kelley, 1967	The covariance principle states that we attribute the cause of an action to the one factor with which it most strongly covaries.
Kelley, 1971	Attributions are based on three types of information. Distinctiveness information indicates how prominent a factor is. Consensus information indicates whether other individuals in the situation are associated with the same results. Consistency information indicates whether the association is stable over time.
<u>Business</u>	
Schultz, 1988	"Big Blues decline reflects two years of disappointing profits."

(continued next page)

TABLE 5-2 (continued).

<u>Economics</u>	
Cornell and Shapiro, 1986	Reputation influences performance because the price stakeholders will pay for implicit claims depends on their expectations of future payouts.
Cornell and Shapiro, 1986	Reputation gained from performance on one set of implicit claims may influence customers' willingness to pay for another set of implicit claims.
Shapiro, 1983	Reputation is "an asset."
<u>Finance</u>	
Black, 1980	Users of financial statements want an earnings figure that results in a constant price-earnings ratio. They want to see accounting measures that bear a dependable current relation to market measures.
Branch and Gale, 1983: 41	A favorable stock market evaluation of upper-level management justifies attractive managerial compensation packages, keeps shareholders happy, allows easier access to capital, facilitates relatively inexpensive acquisitions, and defends against takeovers.
Fama, 1976; Brealey & Myers, 1984: 64-81, 248-257	Tests have shown that in setting the market value of firms, investors adjust for differences in firms' accounting procedures. Investors are thought to immediately evaluate the impact of management change on a firm's future earnings.
Fiegenbaum and Thomas, 1986	Contradictory empirical evidence on the risk-return relationship. Ex-ante, ex-post differences.

(continued next page)

TABLE 5-2 (continued)

Granatelli and Martin 1984	Stock market returns of "well managed" firms did not outperform a portfolio of randomly selected companies from the same industries.
Louis Harris and Associates, 1975	A Harris poll found that major institutional investors considered the quality of management to be the single most important criterion in the selection of stocks.
<u>Marketing</u>	
Brouillard, in Marketing News, 1986	Characteristics important to a winning reputation include quality of products, flexibility, high-caliber management, honesty, customer service, market leadership, and good communications.
<u>Perception</u>	
Bernardin & Beatty, 1984	The halo effect may have a serious impact on performance evaluations in organizations.
Dember, 1964	Difference threshold.
Schneider, Hastorf, and Ellsworth, 1979	Perceptual lag, halo effect, selective perception.
<u>Research Methods</u>	
Kerlinger, 1973	Measurement is a relation.
<u>Strategic Management</u>	
Aaker and Jacobson, 1987	Systematic and unsystematic risk.
Chakravarthy, 1986	Excellent organizations are distinguished by the quality of their transformations and by their satisfaction of all stakeholders.
Hackett, 1985	Managers' decisions may represent the interests of all stakeholders.

(continued next page)

TABLE 5-2 (continued)

Lubatkin and O'Neill, 1987	Mergers may increase risk generally. Related mergers may decrease systematic risk.
McGuire, Schneeweis, and Hill, 1986	In a review of selected literature of organizational performance, accounting based measures were found to be dominant.
Venkatraman and Ramanujam, 1986	Useful research will involve different data sources: primary and secondary; financial and operational.

Directions for Further Research

A number of the findings of the present study suggest questions for further research. Why were the two groups, carefully matched for industries and quality of management, so consistently different in the significance of relationships tested? The surprising relationship of marginal quality of management to total stock return merits further study. What is the relationship to future stock return?

What are the perceptions of managers and investors about the causal relationships between management quality and performance? How are management and investment decisions based on such perceptions? How stable are perceptions over time? How are they affected by unpredictable events, like the Bhopal disaster?

Finally, there is no pristine ideal of performance waiting to be revealed. Steers argued that "a meaningful way to understand the abstract idea of effectiveness is to consider how researchers have operationalized and measured the construct in their work" (1975: 546). Cameron and Whetton noted that:

As a construct, organizational effectiveness is similar to an unmapped terrain, where the responsibility lies with the investigator to chart it (1983).

But the construct of organizational effectiveness is not an autonomous reality to be charted. Nor is an organization's performance a pure and absolute fact that we will one day measure with precision and certainty. "Woo and Willard (1983) (used) the PIMS data base to explicate the underlying dimensions of performance..." (Venkatraman and Ramanujam, 1986: 806). Underlying what "performance?" Performance "is" whatever we all think of it, and what we together agree it is, not once and for all, but in a dynamic social construction with respect to all stakeholders. The objective of the present study is to contribute to the process of understanding that dynamic social construction. We continually choose how we measure performance, whether consciously, or by default. It is hoped the present study will help inform that choice.

ENDNOTES

1. Standard & Poor's COMPUSTAT service consists of a number of computer readable libraries of financial, statistical and market information covering several thousand industrial and non-industrial companies.

2. While most mergers might be expected to reduce risk because of diversification, mergers do introduce some uncertainty, particularly around the event date. For this reason, increases in risk, at least temporary ones, would not be surprising.

3. The market model expresses the return on an asset as a linear function of the market return, R_m, plus a random error component, e_i (Lee, 1985):

$$R_{it} = a_{it} + b_i R_m + e_i$$

4. Close study of Lee (1985:225) reveals inconsistent use of the time subscript, which has been corrected here.

5. It should be noted that the mean adjusted return approach, mentioned first, is based on the average of past returns: i.e. $\alpha=1$ and $\beta=0$. This is sometimes referred to as the "naive model."

6. Data from 1985 and 1986 were added for correlation analysis of the Fortune variables only. The survey published in January of each year contains data collected in the prior year. The first year of the survey collected data for 1982, which was published in 1983.

7. The industries (were) 25 of the largest in the fortune 500 and Fortune Service 500 directories of U.S. industrial and non-industrial corporations. Industry groups are based on categories established by the U.S. Office of Management and the Budget. Companies are assigned to industry groups according to the business that contributed most to the prior year's sales (or assets, for certain industries) (Sellers, 1985:18).

8. Here quality of management is one of the eight simple attributes, not the average of all eight.

9. The z-score of a variable X is also called the "standardized version of X," and calculated:

$$h(X) = (X-\mu_X)/\sigma_X$$

where

μ_X = Mean of X.

σ_X^2 = Variance of X.

The mean and variance of a standardized random variable are always 0 and 1, respectively (Miller and Wichern, 1975).

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