

AN EMPIRICAL INVESTIGATION OF INVESTOR
REACTIONS TO CHANGES IN TOP
MANAGEMENT PERSONNEL

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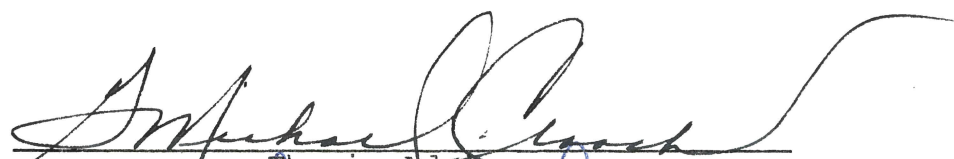
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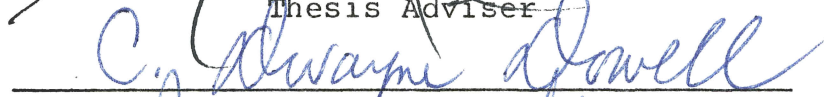
Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF PHILOSOPHY
July, 1978




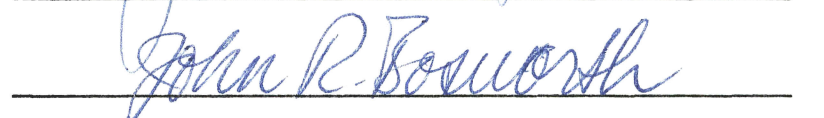
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PREFACE

This study is concerned with the reaction of investors to the announcement of a top management change. The primary objective is to determine the impact of changes in a firm's top management on investors. The secondary objective is to determine if investors' reactions differ with respect to the origins of new management. Results presented are based on an analysis of empirical data gathered from published news reports in The Wall Street Journal and transactions occurring on The New York Stock Exchange.

The author wishes to express his appreciation to his thesis adviser, Dr. G. Michael Crooch, for his constant guidance and assistance throughout this study.

Appreciation is also expressed to the other committee members, Dr. C. Dwayne Dowell, Dr. John C. Shearer, and Mr. John R. Bosworth, for their invaluable assistance in the preparation of this final manuscript.

A special note of thanks is given to Dr. J. Hal Reneau for his assistance in the preparation of the programming model. Thanks are also extended to Mrs. Bernie Rockwood for her assistance in typing earlier drafts of the manuscript, and to Mr. Jack C. Steinhoff for the excellence of the final copy and his valuable suggestions concerning form.

Finally, special gratitude is expressed to my wife, Kay, for her understanding, encouragement, and many sacrifices.

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CHAPTER I

INTRODUCTION

Nature of the Problem

Do top-level management personnel changes affect investor perceptions of firm profitability? If so, management change information is part of the data set used by investors and is useful to investors. If not, management change information is not part of the investor's set of decision criteria.

The accounting profession has experienced significant changes in the past two decades. Two rule-making bodies, the Accounting Principles Board and the Financial Accounting Standards Board, have been established, and the Committee on Accounting Procedure and the Accounting Principles Board have been disbanded. Numerous committees and study groups have been appointed to study the many facets of financial reporting. Currently a comprehensive conceptual framework for financial accounting and reporting is being developed by the Financial Accounting Standards Board. Change has been the password of the accounting profession for the past twenty years. New reporting formats, new accounting principles, and new statements have become acceptable, and in some cases mandatory.

A reporting concept supported by many since the early 1960s is the capitalization of human resources. Basing their arguments on the rationale that economic data concerning a firm's employees constitute information useful to and needed by investors, proponents of human resource accounting claim the additional information will enable investors to improve the efficiency and accuracy of their unknown decision models. If such claims are valid, human resource information should be made available to investors.

The basic premise of human resource accounting is the contention that a firm's employees are valuable resources akin to those items currently classified as assets. As such, changes in the composition of a firm's labor force should be measured and reported in the same manner as is the practice for the assets currently reported. The validity of the basic premise has never been tested. Therefore, all arguments using it for support are rhetorical until its validity can be determined.

A method of testing the validity of the basic premise is to analyze the effect changes in a known quantity, top management, have on another known quantity, market security prices. Top management changes and stock prices are published in leading trade journals. If employees are viewed as valuable resources, an announced change in the most valuable of these resources--top management--should cause a price reaction similar to that occurring when the value of a firm's productive assets are substantially altered.

There are philosophical and psychological reasons why changes in top-level management may affect investor perceptions of a firm's future profitability and risk. Top management may be perceived as a valuable resource of the firm akin to an asset by the current and potential owners of the firm. They possess many characteristics of items currently classified as assets, such as future service potential and the capability of providing economic benefit to the firm, and often their lives are insured by the firm.

Many firms invest in their upper management echelons by providing them with extensive management training programs and seminars. Thus a top-level manager represents a substantial investment by the firm. The services the manager provides in the future will provide a return of that investment to the firm. A premature departure of that manager causes the investment to be lost.

The supply of qualified management is limited. As with any resource commanding a premium payment, there is a fixed number of men capable of completing the required tasks. The loss of a scarce resource involves additional costs in securing the resources of another and the accompanying uncertainty as to its fitness.

The goals and objectives of a firm are dependent upon the dominant members of the management coalition, and organization objectives tend to change in response to changes in the goals of the dominant participants and to

changes in the relationships within the coalition (Caplan, 1971).

Investors may view a top management change as a prelude to a change in firm philosophy. New top management may be perceived as more or less capable than its predecessor. An unexpected change in top management may be perceived as the culmination of a period of internal conflict between the dominant members of the management team, or as the beginning of a short-run period of instability as the entity undergoes a reassessment of goals and objectives. An expected change in top management may be perceived as the end of one era, the beginning of another, or as the expected result of the situation the company now finds itself in due to inept management or a series of factors which need to be dealt with by new people with fresh ideas.

The factors previously discussed are logical rationale as to why top management may be perceived as valuable resources. If they are so perceived, the consequences may be far-reaching. If the addition or loss of top managerial talent affects a firm's stock price and the owners' evaluation of its potential, hiring and firing decisions become of the utmost importance. Timing of the decision is also important. The training and retention of the highest quality personnel will receive added incentive. The infusion into the firm of persons with known abilities will also become important. The knowledge that human resource additions and deletions affect the perceived abilities of a

particular firm with respect to the future profitability and risk will have a profound effect upon the personnel departments of all major corporations with publicly traded stock.

All arguments for the capitalization of human resources and the inclusion of such data in published financial reports are based on two unproven premises: (1) that human resource data constitute information to investors, and (2) that the most efficient, most useful presentation of those data, if information, is on the published financial statements. Until both premises can be shown to be true, all arguments for human resource accounting are without merit. This research is an attempt to provide support for one data set, top management, included in the first premise.

The basic research hypothesis is that corporate investors use management change announcements in their data sets, and that top management changes affect their perceptions of a firm's future profitability and risk, hence the market value of the affected firm's stock. The procedure used will be to analyze the effect top management changes have on the market value of the affected firm's stock.

The Objective of the Study

The primary objective of the study is to determine empirically determine the impact of changes in a firm's top management upon investors. No empirical studies now exist having used actual market data to test the impact of management changes on the market value of a firm's equity

securities. This study is expected to provide evidence of the information content of top-level management changes to one class of accounting information user, e.g., investors. It is also intended that this study be the initial empirical investigation of the usefulness of human resource data to investors.

The secondary objective of the study is to determine empirically determine if the impact on investors is different depending upon the origin of the new top-level management. Whether investors perceive a greater potential change when new management is not previously affiliated with the firm or its subsidiaries than when the new management is promoted from within the corporate entity is the question addressed.

Significance of the Study

The proposed research will respond to the question of whether investors use one type of human resource information, top-level management changes, in their unknown decision model. Until the usefulness of such data can be validated by empirical research, all arguments based upon the assumption that investors need human resource information are without foundation. If this study discovers that investors use management change information in their unknown decision model, the usefulness of one particular type of human resource information will be documented.

The documentation of one kind of useful human resource information will lead to future research documenting other types of useful human resource information. After all sets of human resource information useful to investors are documented, research can begin to determine the most efficient presentation of the information to investors. This study is intended to be the initial step in this process.

Organization of the Study

The second chapter includes a review of the impact of human resource information on investor decision models. Results of past research investigating user group utilization of human resource accounting information is analyzed.

Chapter III is devoted to an explanation of the research methodology employed and presents the specific research hypotheses. The research results and analysis constitute Chapter IV.

A summarization of the study and conclusions regarding the use of management change data are included in Chapter V. Additionally, the implications of the current research results are discussed, and suggestions are made for future research projects.

CHAPTER II

USES OF FINANCIAL ACCOUNTING INFORMATION IN INVESTOR EVALUATION CRITERIA MODELS

Introduction

Publicly released financial accounting information emanates from two principal sources: firm-generated and nonfirm-generated. All information is indigenous or exogenous with respect to its origin. Indigenous information refers to the published periodic statements and the frequent unpublished news releases by a firm. Exogenous information is released or published by nonrelated entities. Such information takes various forms. Newspaper stories, books, lawsuits, and financial evaluations exemplify this type of information.

The publicly released information is used by investors and creditors in their unknown decision models to formulate probability criteria regarding the future profitability of the affected firm. The end result is the establishment of market prices for the firm's stocks and bonds.

This chapter reviews past research which has attempted to ascertain the impact of human resource accounting information upon external users.

User Utilization of Human Resource

Accounting Information

The major use of human resource accounting systems to date has been to provide information for management decision-making. The inclusion of human resource information on financial statements released to investors and other external users has been proposed, but not extensively done. The main reasons appear to have been the failure or inability to select an appropriate valuation model, lack of objective valuation procedures, lack of acceptance of human resources as assets, and the lack of evidence that human resource information is used by investors. The last reason appears to be the most critical. If human resource information is not useful, investors will ignore it. The following discussion reviews research regarding this question: Do investors, creditors, and other external parties perceive human resource information to be useful?

The lack of evidence regarding the usefulness of human resource information to outsiders was underscored in the report of the 1974 American Accounting Association's Committee on Accounting for Human Resources. The conclusion of the committee's report contained the following paragraph:

Perhaps the most important task facing those who wish to advance work in accounting for human resources stems from the necessity to demonstrate the usefulness of human resource accounting systems. Unless empirical data from organizations using human resource accounting systems are collected, analyzed, and published, the attractiveness of current theoretical arguments for human

resource accounting may soon lose their glamour.
(Committee on Accounting for Human Resources,
1974, p. 124; emphasis added)

The report continued: "Research is required to demonstrate both the feasibility of human resource accounting and its effects on attitudes and behavior" (Committee on Accounting for Human Resources, 1974, p. 124; emphasis added).

The apparent value of human resource data to external users of financial information has been alluded to by many individuals. Some references and supporting logic follow.

Gilbert (1970) noted that the value of a firm as a going concern is much greater than the value of its tangible assets. This is evidenced by the amounts paid by firms to acquire other companies in excess of the fair market value of the tangible assets. Gilbert believed this difference is composed of customer goodwill, patents, and the value of the human organization. He supported this contention by stressing that, even for a firm not being acquired by another firm, the market value of its stock usually is significantly higher than the stockholders' equity because the market considers all of the firm's resources and income-producing assets, rather than only those shown on the formal financial statements.

Ogolin (1969) asked how a firm reflects in its records that its five top management personnel have resigned and been hired by a competitor. He implied that they must have had some value, since the total market value of the firm (Motorola) losing its five top managerial employees declined

\$88 million, and the total market value of the firm (Fairchild Camera) hiring these men increased \$48 million (Ogolin, 1969, p. 36).

The magnitude of the value of a firm's intangible assets was revealed in a study by Copeland and Wojdak (1969). In their study of 169 acquisitions by 26 firms listed on the New York Stock Exchange, they found the ratio of total unrecorded goodwill to total book value of the acquired firms to be \$1,604,993,000 to \$652,956,000, or 2.45 to 1.

Pyle (1970) contended that an investor's interest in human resources is similar to that of management--the maximization of the firm's earning power and its efficient management. The investor's role, however, is passive. He has no control over the magnitude of the investment in human resources, nor in its development. Therefore, he is interested in knowing:

(1) Where are the funds going? (2) Have important changes in the firm's human assets occurred during the accounting period? (3) Are current earnings commensurate with the assets at the disposal of management? (4) Is the investment in certain human assets excessive? (5) Are there hidden values in the firm's human assets? (Pyle, 1970, p. 74)

Elias (1972) attempted to determine if the investment decision is altered with the addition of human resource information to the financial statements. A questionnaire was mailed to a random sample of Chartered Financial Analysts, Financial Analysts (other than CFAs), and Certified Public Accountants. The questionnaire also was administered during class time to three college classes: intermediate

accounting, advanced accounting, and a senior finance course. The experiment attempted to answer the following questions:

1. Will the reporting of human assets in the financial statements on the historical cost basis cause investment decision to be different?

2. When human assets are reported in the financial statements, will the investment decisions be the same for different groups with different levels of sophistication in accounting and different orientations?

3. Related to the previous question, what are the background or moderating variables that may cause decisions to be different? (Elias, 1972, p. 216)

Three treatments were used: conventional statements, human asset statements, and combined statements (statements having both sets of data). A participant was given only one treatment and was asked to select which of two companies was the better investment. One company (XYZ) was increasing its human resources, and thus appeared the better investment on human asset statements and vice versa on conventional statements. The other company (ABC) was liquidating its human resources and appeared the better investment on the conventional statements and vice versa on human asset statements.

The study yielded the following results with respect to comparing the conventional statement group to the combined statement group. In general, company choice was associated with the statement treatment. The CPAs had the highest association and the intermediate accounting students the lowest. Statistical significance resulted for all groups except the CFAs and the intermediate accounting students.

No statistical significance was found regarding the second and third questions: level of sophistication, and background and moderating variables (Elias, 1972, p. 223).

Comparing the results of the group receiving the human assets statements with the sum of the other two groups provided the following results. Company choice again was associated with the statement treatment, but to a higher degree. CFAs had the highest association and advanced accounting students the lowest. Consistent with the first comparison, no statistical significance resulted for differences in levels of sophistication nor for the background and moderating variables (Elias, 1972, p. 224).

The importance of this study is twofold: (1) It is the first attempt to determine if human asset data affect investor decision-making. (2) Statistical significance resulted regarding the decisions made. As the first attempt at research in a new field, the study did have its limitations and is subject to criticism. However, the fact that it was done opened the way for others to follow. The results, while subject to severe limitations, do show that human asset information has the potential to alter decision-making regarding investment selection. Even though the level of significance is low, the result hints at the potential impact human resource accounting information may have on external users of accounting information.

Hendricks also studied the potential impact of human resource accounting information on investors. The

experiment attempted to answer two questions: (1) Does human resource accounting information affect stock investment decisions? (2) If so, why might human resource information affect the decisions (Hendricks, 1976, p. 293)?

Hendricks' methodology was similar to that of Elias except that only two treatments--conventional and human asset statements--were used, and comparative data composed of balance sheets for three years and income statements for two years were supplied. The subject group was composed of 91 students enrolled in a graduate finance course; hence, no professional subjects were included.

Subjects in one group received conventional statements, made an investment decision, and then received both sets of statements and were asked to make the same decision again based on both sets of information without referring to the previous decision. A control group received both sets of statements initially and were asked to make the investment decision only once.

Three explanatory variables--background, degree of openness of the belief system, and belief statements about human resource accounting--were examined also. Three hypotheses relating to these explanatory variables were tested as well.

The results of the Hendricks experiment follow. The first question was answered affirmatively. Human resource accounting information did affect the stock investment decision. Statistical significance was found at the .0005

level. The background variables found to be significant were those of age and business experience. No significance was found regarding the degree of openness of the belief system. Significant correlations were found in regard to those making belief statements about human resource accounting and their use of the human resource information in making their decisions. In summary, the Hendricks study found that human resource information changes investment decisions, and that such changes tend to be influenced by age, experience, and a user's belief in the usefulness of the information.

The Hendricks study was subject to the same limitations as the Elias study with respect to the laboratory-type setting, lack of a reward-and-punishment system, and the use of surrogates for actual investors. The Hendricks study did, however, confirm the earlier findings of Elias that the only significant background variable is experience. This has significant implications regarding the inclusion of human resource information on financial statements. Since experience appears to be a critical factor in determining the use of human resource information, the user must have the knowledge and ability to interpret the significance of the information.

Schwan (1973) tested 44 bankers with two treatments--conventional and human resource statements--for a five-year period, with no trends in revenues or income apparent on the statements. The subjects were asked to (1) predict total

revenues, (2) predict net income, (3) rate management's preparedness, and (4) rate management's capabilities.

Schwan found significant differences between the groups in the prediction of net income and the rating of management's preparedness. No significance was found with respect to the prediction of total revenues or the rating of management's capabilities.

The Schwan study suffered the same limitations as did the Elias and Hendricks studies: only bankers were used as subjects, a mailed questionnaire was used, the firms were fictitious, no reward-and-punishment system existed, and in the Schwan study there was no control group.

The importance of these three experiments is the attempt to show the usefulness of human resource information. The results do show that human resource information is used and does change the investor's decision, at least in a laboratory setting with surrogates for investors. This is evidence that the inclusion of human resource information on financial statements would provide some investors with additional information. As both Elias and Hendricks suggested, however, the field needs further research.

Other recent research related to human resource accounting has implied that management changes and management control are information to investors.

Moore (1973) found that income-reducing discretionary accounting changes made by companies experiencing management changes were significantly greater than for companies with no such management changes. Moore hypothesized that new management can benefit from these changes in two ways. The reported low earnings for the current period can be blamed

on the old management, and future income is relieved of these charges; hence an improved earnings trend can be reported. The intent of the new management appears to be twofold: (1) to insure their success in the firm, and (2) to make the firm appear more profitable in the future. The effect of these actions on the stock market is not known. However, if these management changes are substantive, and not merely cosmetic, the market should react when such information becomes known. Such actions by the new management appear to support the belief that management's actions, and hence management's capabilities, can and do affect the profitability of the firm.

Smith (1975) found that policy decisions made by manager-controlled firms smoothed income significantly more often than policy decisions made by owner-controlled firms. The results of the Smith study appear to indicate that the relationship a manager has with his firm affects the way he perceives the role of external financial reporting. Managers enjoying job security, as evidenced by ownership of stock in sufficient amount to provide such, do not feel as compelled to "adjust" the reports to reflect favorably on their actions as do those not having job security. This implies that the human factor affects the external financial statements. Investors, not aware of the control or non-control capabilities of a firm's management, do not currently receive such information from the statements. Although it is available elsewhere, an investor reacting

only to the published information of the firm can make erroneous decisions due to the incomplete data set received.

A study by Eggleton, Penman, and Twombly (1976) reported interaction between management changes, industry classification, and auditors for firms making accounting changes with respect to LIFO valuation of inventories. Investigating possible confounding effects biasing the results of a previous study, the authors used the same sample as Sunder (1973) in order to detect other variables affecting the market reaction. The inclusion and significance of management changes lends credence to the contention that management changes are information. The authors stated:

There might have been a market reaction to firms abandoning LIFO, but Sunder could not observe it because it was confounded by a reaction to the management changes. . . . (Eggleton, Penman, and Twombly, 1976, p. 87)

Specifically, with respect to management changes, the authors found no abnormal management changes occurring with the initial adoption of LIFO, but did find abnormal management changes when the decision to abandon LIFO as a basis for inventory valuation was made. The authors suggested that management changes tend to produce changes in production, investment, financing, and accounting decisions for a variety of reasons (Eggleton, Penman, and Twombly, 1976, p. 68). They further suggested that the association of management changes with accounting changes may be a signal to the market regarding the economic implications of the new

management's policies. This suggestion implies that management and management changes are information used by investors. If management changes are perceived as having the potential to alter the risk and future profitability of a firm, then such changes will elicit an investor reaction. If not, then accounting changes resulting from management changes are "cosmetic" in nature and are ignored by the market.

Summary

This chapter reviewed attempts of past research to measure user utilization of human resource accounting information. Research results imply that the inclusion of quantified human resource data affects investor decision models. Other variables affecting the decision model may be age, experience, and the user's belief in the usefulness of human resource accounting data.

Other research indicates that management policy decisions may profoundly affect the data included in published financial statements. New management may depress earnings in its initial year in order to make the firm appear more profitable in the future. Manager-controlled firms may smooth income trends more often than owner-controlled firms. Management changes may be followed by accounting changes as the new management's policies are implemented.

Chapter III describes the research methodology and presents specific research hypotheses.

CHAPTER III

RESEARCH METHODOLOGY

Introduction

This research is based upon earlier research regarding what has come to be known as the semistrong form of the efficient capital markets hypothesis. The definition of the semistrong efficient capital market is one in which the security prices reflect all publicly available information.

An implication of this definition is that security prices instantaneously adjust for any new information becoming publicly available. Therefore, if a data announcement affects the share price of the firm making the announcement, the announcement contains information.

Early research on the validity of the semistrong form model, by Fama, Fisher, Jensen, and Roll (1969), Ball and Brown (1968), and Scholes (1969), supported the semistrong form hypothesis. Contradictory evidence is scarce (Dyckman, Downes, and Magee, 1975).

Sample Design

The sample was composed of 55 firms, randomly selected, listed on the New York Stock Exchange from January 1, 1968, to June 30, 1977, meeting the following criteria:

1. The firm must have had a major management change (president, chief executive officer, chairman of the board of directors) during the time period January 1, 1970, to December 31, 1975.

2. The firm must not have lost its identity through merger or acquisition during the 1968 to 1977 time period.

3. The firm must not have made other news announcements which could have significantly affected its stock prices during the week the management change was announced, one week before, and one week after the announcement week.

4. The firm did not have other major management changes within 16 weeks before or after the subject change.

The type of management change is limited to the three types listed above for two reasons. Different firms use different terminology for their top executives, and these three terms appear to be the three most commonly used titles. Only top management changes were chosen, since not all firms report all changes at lower levels.

The time period 1970 to 1975 was selected for three reasons: (1) These years represent a current period for which data are available. (2) The six-year period allows for an adequate sample size. (3) Six years is an adequate time period in which to draw conclusions not subject to severe qualifications due to the possibility that the time period included in the study is not representative.

The period of management change announcements for each firm is determined by reference to The Wall Street Journal

Index for the six-year period. This source indicates the dates on which news items pertaining to firms appear for the first time in The Wall Street Journal. Firms experiencing management changes but which had other news announcements in the critical three-week period of the announced management change which could be of such significance as to affect the stock price of the firms were disqualified. If a firm had more than one management change during the six-year period that qualified for use in the sample, each change was used unless the changes were less than 32 weeks apart. All firms eligible for the sample were initially ascertained. Once the total available was known, 55 were randomly selected. The total sample consisted of 35 firms with "intrafirm" management changes and 20 with "interfirm" management changes.

Research Methodology

The current research is designed so that a stock market reaction to the announcement of a top-level management change may be detected through greater than normal fluctuations in the prices of corporate stock. If management changes are information used by investors, the expectation is that investors in the stock market will react to the announced changes in top management. Hence, a significant relationship between top-level management change announcements and corporate stock prices should be noted.

To determine whether there is an association between top management change announcements and stock prices, the following variables will be computed for each firm in the sample on a weekly basis for 121 weeks.

$$R_{it} = \ln \left[\frac{D_{it} + P_{it}}{P'_{it} - 1} \right] ,$$

$$R_{mt} = \ln \left[\frac{(SP)_t}{(SP)_{t-1}} \right] ,$$

where:

- D_{it} = the cash dividend on security i when week t is an ex-dividend week,
- P_{it} = the closing price for share of firm i at end of week t ,
- P'_{it-1} = the closing price at the end of week $t-1$ adjusted for capital changes (e.g., stock splits and stock dividends),
- $(SP)_t$ = the closing value of Standard and Poor's 500 Price Index at end of week t ,
- $(SP)_{t-1}$ = the closing value of Standard and Poor's 500 Price Index at end of week $t-1$,
- R_{it} = the rate of return on security i assuming continuous compounding,
- R_{mt} = a similar measure for the Standard and Poor's 500 Price Index firms (Beaver, 1968, p. 73)

The R_{it} and R_{mt} values will next be divided into two groups, those determined from the weeks designated as the management-change announcement period and those determined from the weeks designated as the nonchange period. The nonchange period values will be used to determine the

relationship of R_{it} to R_{mt} (known as Beta) by the following market regression model (Beaver, 1968, p. 78):

$$R_{it} = a_i + B_i R_{mt} + u_{it},$$

where R_{it} and R_{mt} are as previously defined, $a_i B_i$ are the intercept and slope of the linear relationship between R_{it} and R_{mt} , and u_{it} is the unexplained portion of R_{it} .

Assuming the relationship between R_{it} and R_{mt} constant from nonchange period to change period, the fluctuation in each stock's R_{it} due to general market-wide influences will be removed by using the a_i and B_i values determined for each security in the nonchange period. This will be done by rearranging the market model as follows:

$$\hat{u}_{it} = R_{it} - \hat{a}_i - \hat{B}_i R_{mt},$$

inserting known values for R_{it} and R_{mt} , estimated values for a_i and B_i , and solving for \hat{u}_{it} . The residual, \hat{u}_{it} , presumably includes only the effect on the stock R_{it} of the information unique to firm i in time period t (King, 1966, p. 156).

After weekly price changes for each firm have been converted to residual price changes, \hat{u}_{it} , free of estimated effects of market-wide influences, it is necessary to establish a standard of comparison to gauge the extent of the existence of a response of stock prices to corporate management change announcements. The standard is the average price response for all weekly periods in the 121-week period except for the announcement period.

The selection of the time period to be used as the announcement period appears to be dependent upon the type of news announcement analyzed. Beaver (1968), in examining the information content of annual earnings announcements, used a 17-week announcement period--8 weeks before, 8 weeks after, and the announcement week--to isolate the abnormal price changes. May (1971), in examining the information content of quarterly earnings announcements, used an 11-week announcement period--5 weeks before, 5 weeks after, and the announcement week--to isolate abnormal price changes.

This study utilizes a nine-week announcement period. Past research (Beaver, 1968; May, 1971) indicates that the residuals in the weeks of annual and quarterly earnings announcements are significantly different from those of other weeks. These results and the researcher's desire not to remove these weeks indiscriminately from the nonchange period data resulted in the decision to control against the possible inclusion of any of the earnings announcement weeks in the management change period by using a shorter announcement period. A 9-week period was selected since it was felt that this would be sufficient time to capture any price changes without excluding a potential reaction due to possible leakage of the impending change before the published management change announcement.

Because this study's concern is not with the direction of the price reaction to a management change, but only with the magnitude, the \hat{u}_{it} will be converted to the absolute

value of \hat{u}_{it} , $|\hat{u}_{it}|$. Beaver (1968) squared the residuals in order to abstract from the sign. May (1971) used an absolute value since, as he points out, squaring the residual exaggerates the effects on absolute measurement of a few large price changes. The absolute value does not give disproportional weight to size. For this reason, the absolute value method is adopted in this study. An average $|\bar{u}_{it}|$ will be computed for each firm for the nonchange period weeks.

The next step is to divide the $|\hat{u}_{it}|$ for each weekly period in the management change period by the $|\bar{u}_{it}|$ from the nonchange period. The ratios over the weeks in the nonchange period should have an average value of 1.0. The ratio $|\hat{u}_{it}| / |\bar{u}_{it}|$ will hereafter be called U_C . After U_C is computed for each weekly period in the management change period, an average ratio, \bar{U}_C , across all firms and all weeks in the management change period will be computed. It is hypothesized that if management change announcements are perceived by investors as information different from other types of information, the \bar{U}_C will have a value significantly different from one. Because firm-specific information preceding and following the announced management change is not deleted in computing the $|\bar{u}_{it}|$ in the nonchange period, the \bar{U}_C value will be significantly different from one only if management change announcements affect investors in a different way than other news announcements.

The initial hypothesis tests for a difference between the average ratios of the management change period and one, their expected value in the nonchange period. The null hypothesis is as follows:

Ho: The mean of the average ratios of management change announcement periods is equal to one, i.e.,

$$Ho: \bar{U}_C = 1 .$$

The alternative hypothesis is:

Ha: The mean of the average ratios of management change announcement periods is not equal to one, i.e.,

$$Ha: \bar{U}_C \neq 1 .$$

Rejection of the null hypothesis provides evidence supporting the a priori expectation that price changes of a firm's stock in periods of management changes are significantly different from price changes of the firm's stock in nonchange periods. Investors thus use management change information in their unknown decision models and perceive a management change as altering either the riskiness of the security or the future profitability of the affected firm. Note that failure to reject the null hypothesis does not imply that investors do not use management changes in their unknown decision models because the current model will not isolate as significant information releases of similar magnitude and meaningfulness to investors as those included in the $|\hat{u}_{it}|$.

A two-tailed z-test is applied to the sample mean of the average ratios to test the statistical significance of

the difference between \bar{U}_C and one. The \underline{z} statistic is computed as follows:

$$z = \bar{U}_C - 1 / s \sqrt{n - 1} ,$$

where \bar{U}_C is as previously defined, s is the standard deviation of the unexplained residuals estimated from the sample, and n is the number of firms in the sample (Mendenhall and Reinmuth, 1971).

After testing the entire sample of 55 management changes for information, the sample will be divided into two subgroups--the 35 firms which had "intrafirm" management changes (new individuals promoted from within the same firm) and twenty firms which had "interfirm" management changes (new individuals not previously affiliated with the firm or its subsidiaries).

Doeringer and Piore (1971, p. 13) and Becker (1964, p. 18) have shown that internal labor markets play an important role for all employees of a firm. Penrose (1959) and Marris (1964) have shown that work skills necessary for one team are never the same as the work skills required for another. Thus an individual is forced to make important changes in personal relationships and work habits upon entering a new internal labor market.

The introduction of an individual not previously connected with the firm can be expected to cause greater operational and policy changes than the advancement of an individual within the same firm. Hence, the expectation is

that "interfirm" management changes cause greater price changes than "intrafirm" management changes.

To test the expected difference between the two types of management changes, the \bar{U}_C z-test will be computed for each of the two subsamples as was previously performed on the entire sample. The expectation is that the "interfirm" sample will show greater significance levels than the "intrafirm" sample. It is also possible that once the two types of management changes are separated, the two z-tests may show that investors do not react in a manner which causes significant price changes for "intrafirm" management changes, but do react significantly to "interfirm" management changes. In other words, the following two tests may result in z scores which are not significant for the "intrafirm" management changes but which are significant for the "interfirm" management changes.

The null hypothesis for the "intrafirm" management-change firms is as follows:

Ho: The mean of the average ratios of management change announcement periods for firms experiencing "intrafirm" management changes is equal to one, i.e.,

$$Ho: \bar{U}_{Ca} = 1 .$$

The alternative hypothesis is:

Ha: The mean of the average ratios of management change announcement periods for firms experiencing "intrafirm" management changes is not equal to one, i.e.,

$$Ha: \bar{U}_{Ca} \neq 1 .$$

The null hypothesis for the "interfirm" management-change firms is as follows:

Ho: The mean of the average ratios of management change announcement periods for firms experiencing "interfirm" management changes is equal to one, i.e.,

$$Ho: \bar{U}_{ce} = 1 .$$

The alternative hypothesis is:

Ha: The mean of the average ratios of management change announcement periods for firms experiencing "interfirm" management changes is not equal to one, i.e.,

$$Ha: \bar{U}_{ce} \neq 1 .$$

A two-tailed \underline{z} -test is applied to each of the sample means of the average ratios to test the statistical significance of the differences between U_{ca} and one, and U_{ce} and one. The two \underline{z} statistics are computed as follows:

$$z_a = \bar{U}_{ca} - 1 / s_a \sqrt{n_a - 1} , \text{ and}$$

$$z_e = \bar{U}_{ce} - 1 / s_e \sqrt{n_e - 1} ,$$

where U_{ca} and U_{ce} are as previously defined for the "intra-firm" and "interfirm" samples, respectively, s_a and s_e are the standard deviations of the unexplained residuals estimated from the "intrafirm" and "interfirm" samples, respectively, and n_a and n_e are the number of firms in the "intrafirm" and "interfirm" samples, respectively.

The possible results of the two statistical tests on the above hypotheses, with (+) denoting statistical significance and (0) denoting no significance, are arrayed in Table I. Results 1 or 4 are the a priori expected results. These

results are consistent with the expectations of the test on the entire sample and with the current tests on the split sample.

TABLE I
POSSIBLE RESULTS OF SPLIT SAMPLE Z-TESTS

Result	\bar{U}_{ca} <u>z</u> -test	\bar{U}_{ce} <u>z</u> -test
1	+	+
2	+	0
3	0	0
4	0	+

The occurrence of result 1 will necessitate further examination to determine if a difference, in a statistical sense, is present. Result 4 will provide evidence of greater reaction to "interfirm" management changes than to "intrafirm" management changes. This result will imply that the impact of new management, as perceived by investors, is dependent upon its origins. Result 3 will imply that neither type of management change possesses information different from other information used by investors. Result 2 is contradictory to the hypothesis tested. The occurrence of this result will contribute evidence inconsistent with that of previous research regarding internal labor markets

(Becker, 1964; Doeringer and Piore, 1971; Marris, 1964; Penrose, 1959).

Summary

This chapter presented the research methodology and specific research hypotheses. The foundation for the research methodology is the semistrong form of the efficient capital markets hypothesis which contends that the securities market reacts to new information instantaneously in an unbiased manner. Evidence in support of the semistrong form of the efficient capital markets hypothesis is remarkably consistent. Contradictory evidence is sparse. Specifically, this research attempts to measure the magnitude of the market's response to the announcement of a top-level management change.

The sample consists of 55 randomly selected firms, each of which experienced a major management change between January 1, 1970, and December 31, 1975. Twenty of these changes are "interfirm" and 35 are "intrafirm" changes.

Statistically the entire sample is tested for information content by a z-test of the difference between the average ratios of the management change period weeks and one, their expected value in the nonchange period.

The sample is also divided into two subsamples composed of "interfirm" and "intrafirm" management changes. A second z-test of the difference between the average ratios of the management change period and one is applied to each

sample. The results are used to assess the difference in investor reaction between the two types of management changes. The possible results of these two tests are presented in Table I.

Chapter IV presents the results and an analysis of the statistical tests performed.

CHAPTER IV

STATISTICAL RESULTS AND ANALYSIS

Introduction

Chapter III presented the research methodology and specific research hypotheses. This chapter reports the results of the statistical procedures used to assess the significance of the market reaction to management change announcements followed by an analysis of those results.

The results of the \bar{U}_C z-test on the entire sample is presented initially followed by the results of the two z-tests performed on the split sample. Following the presentation of each test's results is a discussion and analysis of the results in the same order. A summary concludes the chapter.

Results

\bar{U}_C z-Test of Entire Sample

The initial z-test was computed to test for a difference between the average ratios of management-change announcement weeks and one, their expected value in the nonchange weeks. A \bar{U}_C for each week in the 9-week announcement period was calculated and compared to one.

The results of the test for each week in the announcement period are illustrated in Table II.

TABLE II
ENTIRE SAMPLE Z-TEST RESULTS

Week	<u>Z</u> -Score	Probability of Occurrence
-4	-.20224	.84
-3	-.06138	.95
-2	-.18966	.85
-1	-.14341	.89
0	.02828	.98
+1	-.05532	.95
+2	-.11105	.91
+3	-.04568	.96
+4	-.12616	.89

It is readily apparent that no significant difference exists between \bar{U}_C and one in any of the weeks in the management change announcement period. The probability levels are extremely high. These results imply that the information content of management change announcements is no different from the average information content of other announcements in the nonchange period.

U_c z-Tests of Split Sample

Following the two tests presented previously, the sample was divided into two subsamples consisting of 35 firms which experienced "intrafirm" management changes and 20 firms which experienced "interfirm" management changes. The z-test for the difference between the average ratios and one was performed on each subsample. The results of the tests for each week in the announcement period for the two types of changes are illustrated in Table III.

TABLE III
SPLIT SAMPLE Z-TESTS RESULTS

"Intrafirm" Change Sample			"Interfirm" Change Sample		
Week	<u>Z</u> -Score	Probability of Occurrence	Week	<u>Z</u> -Score	Probability of Occurrence
-4	-.05677	.95	-4	2.04920	.04
-3	-.05462	.96	-3	-.12811	.89
-2	.20371	.84	-2	-.38914	.69
-1	-.15245	.88	-1	-.77269	.44
0	-.09438	.92	0	1.60789	.10
+1	-.14371	.89	+1	1.72744	.08
+2	-.19579	.84	+2	-.46827	.63
+3	-.07905	.93	+3	-.17072	.86
+4	.05958	.95	+4	-.19584	.84

Splitting the sample reveals a marked difference with respect to investor reaction to the origins of new management. Market reaction to "intrafirm" management changes parallels that found for the sample as a whole. "Intrafirm" management changes do not appear to investors to possess information of a different type. The market does respond differently, however, to "interfirm" management changes. This is evidenced by the results obtained for the announcement week and for week +1.

Analysis

\bar{U}_C z-Test of Entire Sample

The \bar{U}_C z-test was used to test for an abnormal price reaction in the management change announcement week and the weeks surrounding the announcement week within the management change announcement period. This test compared the average ratios, \bar{U}_C , for each week in the management change announcement period to one, their expected value in the nonchange period. If management change announcements were considered by investors to be information different from the average information content of other news announcements, the \bar{U}_C value would be significantly different from one. As shown in Table II, no statistically significant price reaction occurred in any of the weeks of the management change period.

The probability levels for the two-tailed z-tests for all weeks in the management change period approach one.

The extremely high probabilities associated with the change period weeks suggest strongly that these weeks, thus the management change announcements, do not appear to investors to contain more or different information than the average week in the nonchange period.

In conclusion, the results of the \bar{U}_C \underline{z} -test indicate no unusual response to management change announcements. Investors do not perceive announced management changes, in the aggregate, to contain information different from that received in other news announcements. That is, the announcement of a major management change does not cause investors to alter their perceptions of the firm's value to a greater extent than the average of other news announcements.

\bar{U}_C z-Tests of the Split Sample

The split-sample \bar{U}_C \underline{z} -tests were used to test for a difference in investor reaction regarding the origins of new management. The expectation was that "interfirm" management changes cause different price changes than "intrafirm" management changes; hence, the probability levels should be lower and the significance levels higher for the "interfirm" management change subsample.

The test results, as illustrated in Table III, do show a type of reaction to the "interfirm" changes different from that to the "intrafirm" changes. "Interfirm" management changes elicit a greater response from investors in the

announcement week and the following week. The response to "intrafirm" management changes approximates that of the response to the entire sample. The probability levels are extremely high, similar to those of the entire sample.

The investor reaction to "interfirm" management changes necessitates additional comment. I am unable to explain the result in week -4. The high significance level associated with this week is out of character with the remainder of the weeks in the management change announcement period. A review of all news announcements in week -4 for the 20 "interfirm" change firms produced no plausible explanation for the occurrence. Only three firms had news releases in week -4. All were announcements of quarterly earnings. Hence, the -4 week observation remains unexplained.

In contrast to the other weeks in the announcement period, the announcement week and week +1 elicit a different type of reaction. Whereas all other weeks except week -4 have negative standardized ratios, the announcement week and week +1 have large positive ratios significant at less than .10. The announcement of an "interfirm" management change apparently affects investors' perceptions of the firm's future.

An interesting phenomenon worthy of further study is the behavior of the \underline{z} scores for weeks -3 to +4. In each week preceding the announcement week the average price reaction increases negatively, then switches to significant positive values for two weeks followed by a return to

negative values. Speculating on the reason for this behavior, one may propose that rumors about a possible "interfirm" management change is imminent. These rumors may have a depressing effect on the firm's stock price. Once the rumors are substantiated and the individual named, this is perceived as good news and the market responds. This conclusion is pure speculation on the researcher's part but is worthy of future research.

As previously noted, a two-week adjustment period emerges from the analysis. While contrary to past research using the semistrong form of the efficient capital markets hypothesis and analyzing the effect of accounting data announcements, the two-week adjustment period appears reasonable because of the following two situations and conditions surrounding management change announcements.

1. Six of the 20 "interfirm" management changes were announced on a Friday. The effect of the announcement might have been impounded in the following week due to a lag in receiving the news, or the inability to react to the news on the day it was published.

2. Additional circumstances surrounding the change may have become known the following week, but were not published in The Wall Street Journal.

The difference in investor reaction between the two types of management changes may also be influenced by the profitability positions of the firms at the time of the management change. Firms experiencing "interfirm" management

changes tended to be poor performers. Characteristics of the 20 firms were relatively low market values--less than \$10 per share--and omission of dividend payments. A change in the top management of these firms could be perceived by investors as potentially more beneficial than for firms currently operating profitably. The infusion of new talent is seen as a beneficial change for these firms, whereas the promotion of the individual from within the corporate structure implies the continuance of the status quo.

Summary

This chapter reported and analyzed the results of the statistical tests used to evaluate the formal research hypotheses. The results appear to be mixed.

For the sample as a whole, no response different from the average response to other news items was noted. Probability levels approach one for the majority of weeks in the management change announcement period.

The analysis of investor reaction to the origins of new management provided evidence that the origins did influence investor reaction. Investor reactions to "intrafirm" management changes paralleled those of the entire sample. Reactions to "interfirm" management changes were significantly different in the announcement week and the following week. Thus, the addition of previously unrelated individuals to a firm's top management team appears to investors to be a different type of useful information.

Chapter V contains a summary of the entire study, the implications of the results of this study for the accounting profession and industry, and suggestions for future research in this particular area. A section containing the conclusions evident from the results of this study is also presented.

CHAPTER V

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Summary

The concept that a firm's employees possess characteristics akin to items currently reported as assets has not been subjected to extensive empirical research in order to prove or disprove its validity. Supporters of the concept argue that data about a firm's human resources are used by investors and should be included on the firm's published financial statements. Neither of these two premises has empirical support in the current literature. The primary goal of this research was to test one subset of the first premise: to determine empirically if investors reacted to changes in the top managerial talent of a firm. The secondary goal was to determine if investors' reactions differ with respect to the origins of new management.

The methodology used assumed the semistrong form of the efficient capital markets hypothesis. This methodology allows one to test for information content of published news releases. To that end, all top management changes announced in isolation of other news events in The Wall Street Journal between January 1, 1970, and December 31,

1975, were ascertained. From 170 eligible firms, 55 were randomly selected for inclusion in the final sample. Thirty-five were "intrafirm" and 20 were "interfirm" management changes.

After the final sample was selected, the closing weekly stock prices of all the firms and the closing value of Standard and Poor's 500 Price Index for a 121-week period were determined. Weekly residual returns were computed for each of the 55 firms over the 121-week period. The returns were then divided into two groups, the management change announcement period and the nonchange period. The nonchange period value was used to determine the relationship (Beta) of the firm's rate of return to the market's rate of return. The market-wide influences on the security were removed, resulting in the emergence of the unexplained residuals. These residuals estimated the effect on the security of information unique to that security on a weekly basis.

The residuals across all weeks for each firm in the nonchange period were converted to absolute values, and a nonchange period average absolute residual was computed. An average absolute change period residual was also computed, and that was divided by the nonchange period average absolute residual to determine a weekly ratio. The average of these weekly ratios across all firms for each week in the management change announcement period was calculated.

The initial hypothesis tested for a difference between the mean of the average ratios of the management change

period weeks and one, their expected value in the nonchange period. If investors had perceived management change announcements to be information different from the average of other information received in the nonchange period, a statistically significant difference would be observed between the two values. No such difference emerged. A z-test resulted in probabilities between .84 and .98 for the nine weeks included in the announcement period.

Subsequent to the analysis of the entire group of 55 firms, the sample was split into two subsamples composed of the 35 firms which had experienced "intrafirm" management changes and 20 firms with "interfirm" management changes. Each subsample was tested for a difference between the mean of the average ratios of the management change period weeks and one. In other words, the initial hypothesis test was repeated for each subsample. The results of a z-test showed no significant difference for the "intrafirm" management changes. "Interfirm" management changes demonstrated substantially different price reactions in the announcement week and the following week. These results imply that investors react differently to management changes depending upon the origins of the new management.

Conclusions

The results of this research indicate that the information content of top management change announcements, in the aggregate, was not different from the information contained

in other news releases. Investor response to "intrafirm" management change announcements approximated that found for the entire sample. "Interfirm" management change announcements elicited a response significantly different from that of other types of news announcements.

The announcement of an "intrafirm" top management change elicited little unusual investor response. Investor response to this type of management change may be due to the characteristics common to the changes included in this sample. "Intrafirm" management changes were of three types. Sixteen of the 35 changes involved the replacement of one of the top three positions with a new individual after the resignation, retirement, or death of the previous officer. Thirteen changes occurred by the promotion of one individual to another top-level position and a replacement being named for his old position. Six of the changes involved the assumption of an additional position by an individual currently holding one of the three top positions; in all six cases the individual retained his old position. Thus, in 19 of the 35 changes analyzed, an individual currently in a top management position was either promoted to another top management position or assumed the additional responsibilities of another position along with those of the position currently held.

Investors may not respond in a significantly different manner to an "intrafirm" management change when a former member of the top management team remains on the team. The

announcement of a position change or the assumption of additional responsibilities by a current member of top management is not perceived by investors as affecting the firm differently from other news announcements.

"Interfirm" management change announcements elicited significant response from investors. Again, three types of changes were found to be included in the sample. Eight of the 20 management changes involved the replacement of one of the three top management positions. Another eight changes resulted in the new individual filling two new positions; in all eight cases, the new positions were president and chief executive officer. The remaining four changes resulted in a new individual being brought in as president and chief executive officer and the former holder of these positions being appointed chairman of the board of directors.

The reactions of investors imply that they perceive these changes as affecting the firm differently from other information. Hence, the investors' unknown decision models are altered regarding the firm's future.

In Chapter IV these firms were characterized as poor performers. It appears that the firm's attempt to improve its operating efficiency does not go unnoticed by the market. The management changes signal a change, or an attempt to change, the firm philosophy. Since potential rewards to investors from an improvement in the profitability of these firms are greater than for firms already operating successfully, this type of management change is

perceived differently from other information used by the market.

In conclusion, the replacement of existing management with new individuals not previously connected with the firm is perceived by investors as different information. The management change announcement causes an altering of investor expectations regarding the future profitability and/or risk of a firm experiencing an "interfirm" management change.

Implications

The results of this research are significant for a firm contemplating a major management change. Future research regarding the usefulness of human resource information has also benefited by the current study.

Previous research utilizing the semistrong form of the efficient capital markets hypothesis evaluated the information content of accounting reports and changes in accounting principles. This research addressed the question of whether investors respond differently to management change information than to other types of information.

The study's objective was to determine if investors respond to top-level management change announcements in a manner different than they do to other news announcements. If so, the study's significance was the documentation of one type of useful human resource information.

For a firm contemplating a major management change, the results of this study may be significant. If a goal of the firm is to increase the market value of its outstanding common stock, the origin of the new management may be important. The market reacts differently to "interfirm" management change announcements than to "intrafirm" management change announcements. The direction of the reaction is outside the scope of this research. However, depending upon the profitability position of a firm, an "interfirm" management change could conceivably increase the market's perception of the firm's value or alter its perceived riskiness. If the new management is perceived as more capable than existing management, the change should cause a positive reaction. Thus, in the short run, a firm could increase the market value of its common stock more by hiring its new management from an unrelated entity.

This study has expanded the horizons for future research regarding the effect of human resource information on investors. One type of human resource information has been shown to affect investors' decision models differently than other information. Research can now be initiated to identify other types of human resource information affecting investors in a similar manner. Research can also be started to identify all human resource data constituting information to investors. The documentation of all sets of human resource information is necessary before research can begin to determine the most efficient reporting format.

Recommendations

As with all pioneering research utilizing a borrowed methodology, the methodology is suspect. It is possible that the methodology used is not proper for this particular type of news announcement. As such, it could be beneficial to repeat the study using another type of methodology.

The determination of the directional effect of management changes could have significant implications on future changes in top management and the deployment of top-level management personnel. A sign test on the \bar{u}_{it} in the report period as opposed to those in the nonreport period would allow for the evaluation of the directional affect.

Another change in the current methodology is to reduce the management change announcement period to one week--the week in which the management change is announced. The reduction of the change period to one week further isolates the effect of the change, allowing for the evaluation of only that one piece of information.

Another change in the current methodology is to eliminate from the nonchange period the annual and quarterly earnings announcement weeks. The residuals in these weeks are known to be significantly greater than other weeks. Their elimination would allow for the determination of the relative magnitude of the information content of a major management change announcement.

The sample in this study is heterogeneous with respect to management origins and characteristics of management

changes. A repeat of the study using an equal number of "intrafirm" and "interfirm" management changes would correct for the disproportional weight of the "intrafirm" management changes in this study. In addition, a sample composed of firms whose management changes resulted in the same position being filled for both "intrafirm" and "interfirm" management changes may be desirable. The replacement of a president or chief executive officer may be viewed as more significant than the replacement of the chairman of the board of directors, and the replacement of a president when the vacating president is removed from all managerial authority may be considered more significant than when the former president assumes another top-level managerial position.

The potential for empirical research in human resource accounting is unlimited. All past research studies investigating the impact of human resource accounting information on investor decisions have used laboratory settings. This research is the first empirical attempt to document the actual use of human resource information. Following are six suggested research projects to empirically test the usefulness of human resource information.

1. Determine the effect of large-scale layoffs on the market price of a firm's stock. These announcements imply the contraction of production, hence lower profits in the immediate future and the potential loss of trained employees necessitating additional training costs and lower production

efficiency in the future when full-scale production is resumed.

2. Analyze the effect of multiperson managerial changes on the market value of a firm. Proponents of human resource accounting use two examples of this type of change to support their arguments. An empirical analysis could confirm or deny the validity of these arguments.

3. Analyze the effect on the market value of a firm announcing a relocation of operations. When a firm relocates, not all of its current employees do likewise. Thus, a firm is forced to hire and train new individuals. If the current employees of the firm are viewed as valuable, the relocation should affect the market's perception of the firm's current value.

4. Identify labor-intensive and capital-intensive firms. Select an event typical of each type of firm involving a change in personnel. Analyze the event's effect on the market value of each firm. If human resource data are information to the market, labor-intensive firms should be more sensitive to these changes.

5. Repeat the current research study, but analyze the difference between each firm's average unexplained residual in the management change announcement period and zero, the expected value in the nonchange period. The isolation of individual firms whose top-management changes cause investor reaction will encourage research aimed at determining the attributes responsible for the investor reaction.

6. Repeat the current research study for abnormal changes in the volume of stock traded rather than price changes.

Research regarding the usefulness of human resource accounting data is just beginning. What may be taken for granted as useful or useless may be disproven by research. Which are useful data and how they are used is yet to be discovered. Future research should address these two questions.

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APPENDIX

Sample

Firm No.	Firm Name	Date of Management Change
<u>"Intrafirm" Management Changes</u>		
1	Aetna Life & Casualty	February 2, 1970
2	American Cyanamid	October 19, 1972
3	American Hospital Supply Co.	March 23, 1970
4	Ametek, Inc.	January 27, 1970
5	Armstrong Rubber	June 18, 1971
6	Avon Products Inc.	January 10, 1972
7	Avon Products Inc.	December 13, 1973
8	Castle and Cooke	June 11, 1973
9	CIT Financial Corp.	June 29, 1973
10	Continental Copper and Steel	December 31, 1971
11	Cutler Hammer	November 27, 1974
12	Dillingham Corp.	September 24, 1970
13	Ennis Business Forms	March 1, 1973
14	Ferro Corp.	August 21, 1972
15	Foxboro Corp.	December 23, 1970
16	Foxboro Corp.	April 30, 1973
17	Handleman Co.	November 21, 1974

Firm No.	Firm Name	Date of Management Change
18	Hanes Corp.	June 1, 1972
19	S. S. Kresge	June 18, 1970
20	Lear Sigler	September 30, 1974
21	Libbey-Owens-Ford Glass	December 19, 1975
22	Liberty Loan	March 26, 1970
23	Maytag Co.	December 21, 1973
24	Miles Laboratories	June 26, 1973
25	Oklahoma Natural Gas	December 9, 1971
26	Peoples Drug Stores	April 1, 1970
27	Rochester Gas & Electric	August 23, 1974
28	Safeway Stores	December 20, 1973
29	San Diego Gas & Electric	October 22, 1970
30	Stone Container Corp.	May 5, 1972
31	Sunbeam Corp.	June 21, 1971
32	Thomas & Betts Corp.	January 3, 1974
33	Toledo Edison Co.	August 23, 1972
34	United Nuclear	January 14, 1975
35	Woods Corp.	April 7, 1970

"Interfirm" Management Changes

36	Addressograph-Multigraph Corp. ..	January 27, 1971
37	Automation Industries	March 2, 1971
38	Carlisle Corp.	September 15, 1970
39	Continental Copper and Steel	June 26, 1970

Firm No.	Firm Name	Date of Management Change
40	Dictaphone Corp.	August 6, 1971
41	General Portland Cement	November 25, 1975
42	Great Western Financial	June 25, 1975
43	Gulton Industries	December 1, 1971
44	IPCO Hospital Supply	July 13, 1973
45	Leeds and Northrup	January 5, 1973
46	Macke Co.	November 9, 1971
47	Madison Square Garden	May 8, 1974
48	Michigan Gas Utilities	September 4, 1970
49	National Gypsum	February 9, 1971
50	Republic Corp.	June 6, 1973
51	Royal Crown Cola	December 10, 1974
52	Simmonds Precision	November 11, 1974
53	Standard Pressed Steel	May 17, 1971
54	Victor Comptometer	June 12, 1970
55	Victor Comptometer	April 1, 1974

VITA

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